

Harmonising methods for monitoring and assessment of marine plastics and microplastics*

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*GESAMP Working Group 40 – *Sources, fate & effects of plastics & microplastics in the marine environment*

Microplastic debris, Hong Kong, post-typhoon



GESAMP

The Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection

An inter-agency body of the United Nations established in 1969

Purpose: 'to provide authoritative, independent, interdisciplinary scientific advice to organizations and governments to support the protection and sustainable use of the marine environment.'



IMO



FAO



UNESCO



IOC



WMO



UNIDO



IAEA



UN

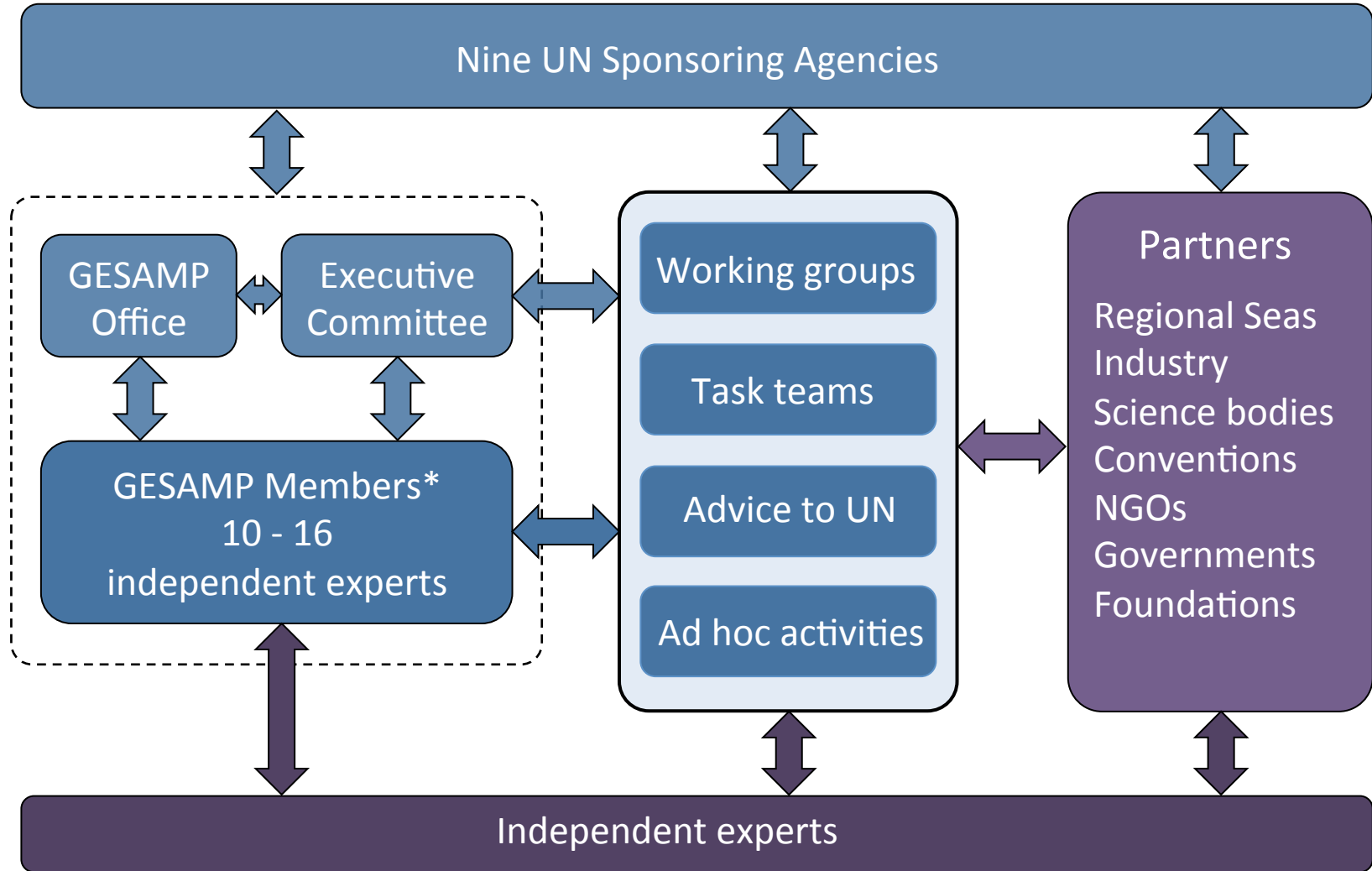


UNEP



UNDP

How GESAMP functions



* Membership (February 2017): Australia, Italy, India, Germany, Mexico, Netherlands, Nigeria, UK, USA

GESAMP working groups:

WG 1 – hazard evaluation of harmful substances carried by ships – IMO (self-funded)

WG 34 – review of applications for ‘active substances’ in ballast water management systems – IMO (self-funded)

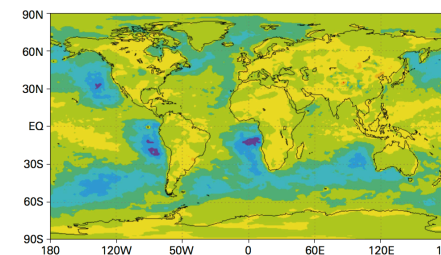
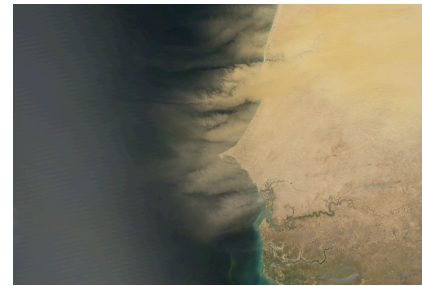
WG 38 – atmospheric inputs of chemicals to the ocean - WMO

WG 39 – global trends of pollution of coastal ecosystems – IAEA

WG 40 – sources, fate & effects of plastics & microplastics – IOC, UN Environment

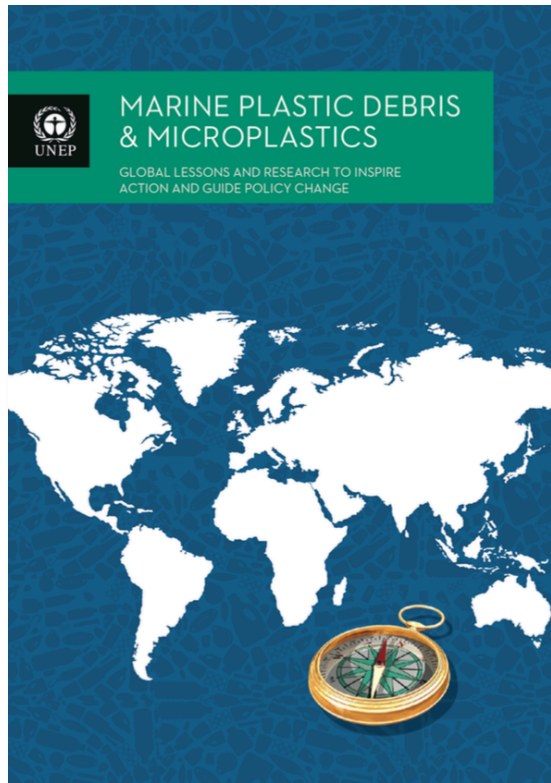
WG 41 – marine geo-engineering – IMO, IOC

WG 42 – impacts of mine tailings - IMO



WG40: a short history





Policy-relevant recommendations

‘..... in order to address problems related to marine litter in the most efficient and effective way, it is recommended that States:

(h) Develop cost-effective monitoring and assessment strategies with regard to marine litter at all levels, taking into account existing programmes,

i) Promote harmonization and standardization of methods (e.g., protocols, sampling) for marine litter, including for assessment and monitoring of marine litter contamination;’

WG40 3rd Phase - Revised Terms of Reference:

2017 onwards

1. To develop guidelines covering terminology and methodologies for the sampling and analysis of marine macro-plastics and microplastics
2. To assess the occurrence and effects of nano-sized plastics on marine organisms, and make research and policy-relevant recommendations *
3. To assess the significance of plastics and microplastics as a vector for indigenous and non-indigenous organisms, and make research and policy-relevant recommendations *

* To be reviewed in 2018

WG40 3rd Phase - Revised Terms of Reference:

1. To develop guidelines covering terminology and methodologies for the sampling and analysis of marine macro-plastics and microplastics
2. To assess the occurrence and effects of nano-sized plastics on marine organisms, and make research and policy-relevant recommendations.
3. To assess the significance of plastics and microplastics as a vector for indigenous and non-indigenous organisms, and make research and policy-relevant recommendations.

WG40 objectives 2017 – 2018:

1. To develop guidelines covering terminology and methodologies for the sampling and analysis of marine macro-plastics and microplastics
 - a) size and shape definitions of particles
 - b) sampling protocols for the whole spectrum of particle/object sizes in surface and sub-surface seawater, seabed sediments, shorelines and biota
 - c) methodologies for physical and chemical identification and analysis of polymers and associated chemicals
 - d) requirements for monitoring and assessment

WG40: 3rd Phase Institutional Support, ToR 1:

Lead Agencies: UN Environment & IOC-UNESCO

- IMO (residual industry funding)
- NOAA, USA (Marine Debris Program)
- Ministry of Environment, Japan (G7 Marine Litter Action Plan)
- State Ocean Administration, China (G20 Marine Litter Action Plan)
- North West Pacific Action Plan (NOWPAP) (G7 – Regional Seas collaboration)
- BASEMAN – JPI Oceans^a project (microplastics methods)

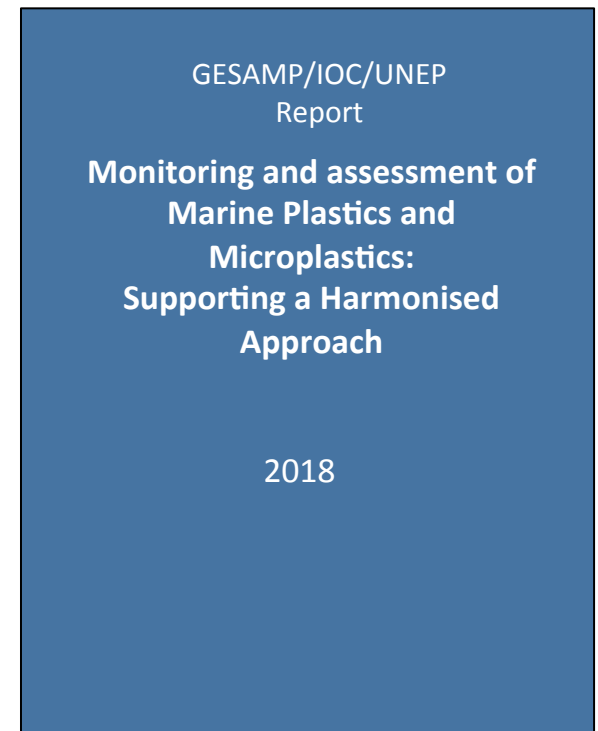
^a Consortium of European countries to support ocean research

WG40 3rd Phase membership (ToR 1):

Name	Role	Country	Sponsor
Alexander Turra	Co-Chair macro-plastics	Brazil	UN Env.
Peter Ryan		South Africa	UN Env.
Markus Erikson		USA	UN Env.
Akbar Tahir		Indonesia	UN Env
Martin Thiel		Chile	UN Env.
Chris Wilcox /Denise Hardesty		Australia	IOC-UNESCO
Peter Kershaw	Chair	UK	IMO
Francois Galgani	Co-Chair microplastics	France	IMO
Amy Lusher		Norway	IMO
Chelsea Rochman		Canada	IMO
Sheri Mason		USA	NOAA
Martin Hasselov		Sweden	BASEMAN
Sang Hee Hong		Korea	NOWPAP
Hideshige Takada		Japan	Gov. Japan
Weiwei Zhang		China	SOA
Amy Uhrin	Observer	USA	NOAA
Ulrike Kammann	Observer	Germany	Inst. Fish. Ecol.

WG40 work programme 2017 – 2018:

- Workshop: 11-14 September 2017, Paris, IOC-UNESCO
- Mini-workshop & evening side event: 14 & 17 March 2018, San Diego, 6th Int. Marine Debris Conf. (6IMDC)
- Workshop: June 2018, Bangkok
- Draft report: 31 August 2018
- Review: September 2018
- Publication: December 2018



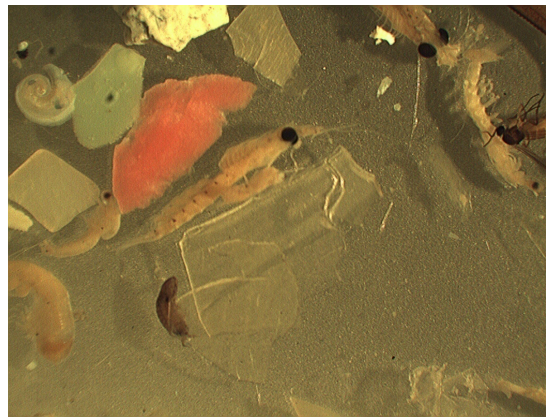
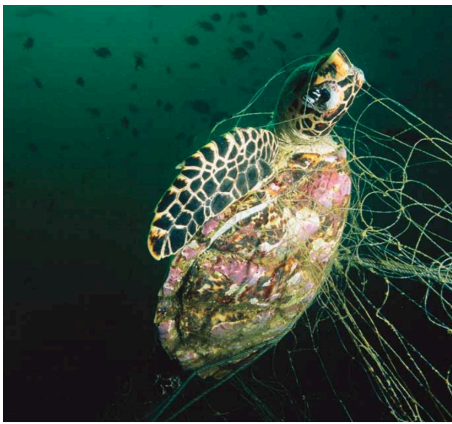
Executive summary

1. Purpose
 2. Background and objectives
 3. Definitions
 4. Basic principles of monitoring and assessment
 5. Monitoring methods for shorelines
 6. Monitoring methods for ocean surface
 7. Monitoring methods for water column
 8. Monitoring methods for seafloor
 9. Monitoring methods for biota
 10. Additional monitoring strategies for biota/plastics interactions
 11. Selection of analytical methods for physical , chemical and biological characterization
 12. Harmonised assessment & monitoring of marine plastics and microplastics
 13. Conclusions
- References & Annexes

GESAMP report structure:

Intended users of guidelines for harmonised methods:

- UN sponsoring agencies
- Other sponsoring organisations
- Intergovernmental Organisations/Conventions
- Regional Seas organisations (RS Marine Litter Action Plans)
- Countries of the G20 group (G20 Marine Litter Action Plan)
- Countries of the G7 group (G7 Marine Litter Action Plan)
- Other countries (e.g. Norway, Sweden
- Private & public sector organisations
- Civil society/citizen science
- NGOs
- Academia



Thank You!

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