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Item 4.3 of the agenda

RECOMMENDATION ADOPTED BY THE SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE

XX/5. Addressing impacts of marine debris and anthropogenic underwater noise on marine and coastal biodiversity

The Subsidiary Body on Scientific, Technical and Technological Advice recommends that the Conference of the Parties at its thirteenth meeting adopt a decision along the following lines:

The Conference of the Parties

Impacts of anthropogenic underwater noise on marine and coastal biodiversity

1. *Takes note* of the updated report entitled "Scientific synthesis of the impacts of underwater noise on marine and coastal biodiversity and habitats",[1] and *invites* Parties, other Governments and relevant organizations to make use of this information, as appropriate, within their competencies, and in accordance with national legislation and international agreements;

2. *Recalls* decision XII/23, in particular paragraph 3, and *invites* Parties, other Governments and competent organizations, including the International Maritime Organization, the Convention on the Conservation of Migratory Species of Wild Animals,[2] the International Whaling Commission, other relevant stakeholders, and indigenous peoples and local communities, as appropriate, within their competencies, and in accordance with national legislation and international laws, to further collaborate and share their experiences on the application of measures, in line with the precautionary approach, in line with the preamble to the Convention, to avoid, minimize and mitigate the significant adverse impacts of anthropogenic underwater noise on marine and coastal biodiversity, including the measures specified in paragraph 3 of the same decision, and *requests* the Executive Secretary, subject to the availability of resources, to continue his work on the compilation, synthesis and dissemination of these experiences, including scientific research on the adverse impacts of underwater noise on marine and coastal

[1] UNEP/CBD/SBSTTA/20/INF/8.

[2] United Nations, *Treaty Series*, vol. 1651, No. 28395.

biodiversity, and, based on scientifically identified needs, to develop and share, in collaboration with Parties, other Governments and relevant organizations, practical guidance and toolkits on measures to avoid, minimize and mitigate these impacts, and to make this compilation, as well as the guidance and toolkits referred to above, available for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at a future meeting held prior to the fourteenth meeting of the Conference of the Parties;

Addressing impacts of marine debris on marine and coastal biodiversity

3. *Recalling* the G7 Action Plan to Combat Marine Litter, *takes note* of the report of the Expert Workshop to Prepare Practical Guidance on Preventing and Mitigating the Significant Adverse Impacts of Marine Debris on Marine and Coastal Biodiversity and Habitats[3] and *also takes note* of the ongoing work under the United Nations Environment Assembly on marine litter and microplastics;

4. *Also takes note* of the voluntary practical guidance on preventing and mitigating the impacts of marine debris on marine and coastal biodiversity and habitats, as contained in the annex to the present decision;

5. *Urges* Parties and *encourages* other Governments, relevant organizations, industries, other relevant stakeholders, and indigenous peoples and local communities, to take appropriate measures, in accordance with national and international law and within their competencies, to prevent and mitigate the potential adverse impacts of marine debris on marine and coastal biodiversity and habitats, taking into account the voluntary practical guidance contained in the annex to the present decision, and incorporate issues related to marine debris in the mainstreaming of biodiversity into different sectors;

6. *Invites* Parties and other Governments to consider, where appropriate, extended producer responsibility for providing response measures where there is damage or sufficient likelihood of damage to marine and coastal biodiversity and habitats from marine debris;

7. *Urges* Parties, and *encourages* other Governments and relevant international organizations to develop and implement measures, policies and instruments to prevent the discard, disposal, loss or abandonment of any persistent, manufactured or processed solid material in the marine and coastal environment;

8. *Invites* competent intergovernmental organizations, including the International Maritime Organization, the Food and Agriculture Organization of the United Nations, the United Nations Environment Programme and regional seas organizations and other competent bodies, within their mandates, to take appropriate measures, and to assist Parties and other Governments in taking appropriate measures to prevent and mitigate the potential adverse impacts of marine debris on marine and coastal biodiversity and habitats, taking into account the voluntary practical guidance contained in the annex to the present decision;

9. *Requests* the Executive Secretary, subject to the availability of resources:

(a) To facilitate collaboration among Parties, other Governments and relevant organizations, including the International Maritime Organization, the Food and Agriculture Organization of the United Nations, the United Nations Environment Programme, the United Nations Division on Ocean Affairs and the Law of the Sea, regional seas organizations and other competent bodies, including in the framework of regional action plans on marine litter, on the application of measures within the respective jurisdictions of Parties and other Governments and the mandates of intergovernmental organizations, to prevent and

[3] UNEP/CBD/SBSTTA/20/INF/7.

mitigate the impacts of marine debris on marine and coastal biodiversity and habitats, including those in the voluntary practical guidance contained in the annex to the present draft decision, by facilitating the sharing of experiences, information, toolkits and best practices;

(b) To facilitate the provision of capacity-building opportunities to developing countries, in particular the least developed countries and small island developing States, as well as countries with economies in transition, for the implementation, in areas within national jurisdiction, of measures to prevent and mitigate the impacts of marine debris on marine and coastal biodiversity and habitats, including those in the voluntary practical guidance contained in the annex to the present draft decision.

Annex

VOLUNTARY PRACTICAL GUIDANCE ON PREVENTING AND MITIGATING THE IMPACTS OF MARINE DEBRIS ON MARINE AND COASTAL BIODIVERSITY AND HABITATS

Marine debris and its impacts on marine and coastal biodiversity and habitats

1. Marine debris is usually defined as any persistent, manufactured or processed solid material discarded, disposed of, lost or abandoned in the marine and coastal environment. This includes materials transported into the marine environment from land by rivers, drainage or sewage systems or winds. Marine debris originates from a range of sea- and land-based sources.

2. Marine debris incurs socioeconomic costs, threatens human health and safety, and impacts marine organisms. It is broadly documented that entanglement in, or ingestion of, marine debris can have negative consequences on the physical condition of marine animals and may lead to their death. Ingestion of plastics is also of concern as it may provide a pathway for the transport of harmful chemicals into the food web. Additionally, marine debris is known to damage, alter or degrade habitats (for example, by smothering) and to be a possible vector for the transfer of alien species.

3. Negative effects include alteration of the biological and ecological performance of individuals, external injuries or death. Determining the effect of ingesting marine debris on an individual organism can be difficult, and the consequences of ingestion are still not fully understood. Species that show a high incidence of debris ingestion or entanglement may be susceptible to population-level effects. This could have negative consequences for small populations, particularly those that are endangered and/or exposed to multiple stressors. Identifying the impacts of marine debris at the ecosystem level should include the evaluation of the loss of ecosystem services that can be attributed to this stressor.

4. Microplastics[4] are likely to increase in abundance, and are a persistent pollutant that is present in all marine habitats. The trophic transfer of microplastics through benthic and pelagic food webs may facilitate the transfer and accumulation of both plastics and toxic chemicals. There is evidence of transfer of chemical additives from ingested plastics into tissue. There is also concern that the ingestion of microplastics, as well as macro- and mesoplastics, can cause physical effects, such as internal abrasion, blockage and injury, and may also provide a pathway for the uptake of harmful chemicals (for example, additives contained in plastic products) by marine organisms.

[4] Microplastic is defined as pieces or fragments of plastic smaller than 5 mm (JRC Scientific and Technical Reports. 2010. Marine Strategy Framework Directive Task Group 10 Report Marine Litter. EUR 24340 EN – 2010). The breakdown of these items results in numerous tiny plastic fragments, which are called secondary microplastics. Other microplastics that can be found in the marine environment are categorized as primary microplastics due to the fact that they are produced either for direct use, such as for industrial abrasives, or cosmetics or for indirect use, such as pre-production pellets or nurdles (OSPAR Commission, Regional Action Plan for Prevention and Management of Marine Litter in the North-East Atlantic, OSPAR Agreement 2014-1).

5. Marine debris can also serve as a vector for the transport of invasive alien species and may facilitate the dispersal of pathogens. Debris in the sea can be rapidly colonized by microbes to form a biofilm on the surface, effectively becoming an artificial microbial substrate. Debris can also be transported via animals through ingestion and subsequent egestion.

6. The considerable gaps in knowledge of the sources, distribution and quantity of marine debris items, and their impacts on marine and coastal biodiversity and habitats, is limiting the ability to address the problem effectively. There is a lack of information on the amount of debris entering the marine environment and degradation or fragmentation rates for debris under a range of conditions. There is limited information available for the physical and chemical consequences of debris on marine species through ingestion/uptake.

Approaches for preventing and mitigating the impacts of marine debris on marine and coastal biodiversity and habitats

7. The following general approaches are suggested for preventing and mitigating the impacts of marine debris on marine and coastal biodiversity and habitats:

(a) There should be a focus on preventing the discard, disposal, loss or abandonment of any persistent, manufactured or processed solid material in the marine and coastal environment;

(b) Measures to prevent and mitigate the significant adverse impacts of marine debris, should, as appropriate, use existing platforms and tools for cooperation, which will enhance synergies and capitalize on the progress made in these forums (such as the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities,[5] the Global Partnership on Marine Litter (GPML) and the Regional Seas Conventions and Action Plans);

(c) A broad range of available instruments and policy responses, including economic incentives, market-based instruments and public private partnerships, can be used to support action aimed at preventing and mitigating the impacts of marine debris.

Priority actions for mitigating and preventing the impacts of marine debris on marine and coastal biodiversity and habitats

8. For land-based sources of marine debris, the following actions are suggested:

(a) Identify baseline data on the main land-based sources, quantities and impacts of marine debris;

(b) Promote structural economic changes that would reduce the production and consumption of plastics, increase production of environmentally friendlier materials, and support the development of alternative materials, increase recycling and reuse, and support an enabling environment for these changes through capacity-building, regulations and standards, and cooperation between industry, governments and consumers;

(c) Support research aimed at developing technology to better understand the environmental impacts of plastics on the marine environment, to design new or improved biodegradable products and to assess cost-effective production on a commercial scale;

[5] A/51/116, annex II.

(d) Promote and disseminate best practices in resource-efficient and closed product-to-waste cycles, taking into account the following:

(i) Supporting the design of products that are long-lasting and reused, reparable, re-manufacturable and recyclable with the most effective use of resources;

(ii) Limiting superfluous consumption by enabling consumers to make responsible, well-informed decisions and discouraging inappropriate disposal behaviour;

(iii) Promoting adequate collection and separation of different types of waste to maximize return rates of high-quality materials;

(iv) Promoting recycling over incineration and landfilling;

(e) Promote best practices along the whole plastics manufacturing and value chain from production to transport, such as aiming for zero loss;

(f) Assess whether different sources of microplastics and different products and processes that include both primary and secondary microplastics[6] are covered by legislation, and strengthen, as appropriate, the existing legal framework so that the necessary measures are applied, including through regulatory and/or incentive measures to eliminate the production of microplastics that are have adverse impacts on marine biodiversity;

(g) Improve the waste management systems of countries through the sharing of best practices as well as identifying and addressing loopholes that contribute to the generation of marine debris.

9. For sea-based sources of pollution, the following actions are suggested, within the respective jurisdictions of Parties and other Governments and the mandates of intergovernmental organizations:

(a) Develop approaches, in collaboration with the International Maritime Organization, to optimize waste delivery to port reception facilities and to ensure that waste is disposed of properly;

(b) Identify options to address key waste items from the fishing industry and aquaculture that could contribute to marine debris, and implement activities, including pilot projects, as appropriate, and good practice examples, such as deposit schemes, voluntary agreements and end-of-life recovery, in collaboration with the Food and Agriculture Organization of the United Nations and the United Nations Environmental Programme (UNEP);

(c) Promote and disseminate best practices in relation to all relevant aspects of waste management within the fishing sector (including, for example, waste management on board, waste management at harbours, operational losses/net cuttings, deposit schemes and extended producer responsibility) in collaboration with Food and Agriculture Organization of the United Nations and the International Maritime Organization;

(d) Apply guidelines on best practices (for example, 1991 FAO Voluntary Guidelines for the marking of fishing gear; 1995 FAO Code of Conduct for Responsible Fisheries, 2011 FAO International Guidelines for bycatch management and reduction of discards) to reduce the input of abandoned, lost or discarded fishing gear from commercial and recreational fishing, as appropriate;

[6] Ibid.

(e) Foster partnerships with international and regional organizations, port authorities and non-governmental organizations, to encourage the implementation of initiatives for containing, utilizing and/or processing marine litter, such as passive “fishing for litter” schemes, to collect litter caught in fishing nets during normal fishing activities;

10. With regard to information exchange, knowledge-sharing, awareness-building, capacity-building, and socioeconomic incentives, the following actions are suggested:

(a) Promote and undertake education activities on marine debris in partnership with civil society groups, including activities related to prevention and promotion of sustainable consumption and production;

(b) Promote outreach and education activities leading to individual behaviour change that can reduce the generated amount of debris entering the environment;

(c) Establish a collaborative platform for sharing experiences and exchange of information on good clean-up practice in beaches and coastal environments, pelagic and surface sea areas, ports, marinas and inland waterways, in cooperation with relevant local stakeholders; develop best practices on environmental friendly clean-up technologies and methods; and promote the “adopt a beach” system;

(d) Identify and promote curricula for marine-related education, including both professional seafarers and the recreational sector (for example, diving and sailing schools), in order to increase awareness, understanding and respect for the marine environment and secure commitment to responsible behaviour at personal, local, national and global level;

(e) Develop and implement socioeconomic incentives to prevent the introduction of waste into the environment, such as levies for the sale of plastic bags and/or banning single-use plastic bags, in particular for coastal communities and coastal tourist resorts;

(f) Collaborate, based on existing eco-labels, with international environmental certification schemes on information exchange and inclusion of the management and prevention of marine debris in their criteria, in accordance with the rules of the multilateral trading system;

11. For integrated management and coordination, the following actions are suggested, within the respective jurisdictions of Parties and other Governments and the mandates of intergovernmental organizations:

(a) Support the development and implementation of national or regional action plans to prevent or mitigate the impacts of marine debris on coastal and marine biodiversity and habitats, also by drawing upon existing action plans and guidance in certain regions (such as the Caribbean, North-East Atlantic, Mediterranean and Baltic Sea regions) taking into account existing Regional Action Plans (RAPs) of the Regional Sea Conventions;

(b) Mainstream marine debris consideration into existing and newly developed regulatory frameworks and develop necessary legislative and institutional framework that will put sustainable waste management into practices, including through the promotion of extended producer responsibility and waste management infrastructure;

(c) Mainstream existing legislation to integrate marine debris issues and targets, in line with existing packaging and waste regulations;

(d) Set in place quantifiable and operational targets for avoiding or minimizing marine debris and for preventing and mitigating their impacts on marine and coastal biodiversity and habitats;

(e) Define the role of marine debris prevention strategies within the context of cross-sectoral and area-based management tools based on the ecosystem approach.

12. For addressing knowledge gaps and research needs, the following actions are suggested:

(a) Support and promote, as appropriate, harmonized approaches to monitoring, analysis and reporting based on standardized methodologies, taking into account existing monitoring guidance for marine litter, such as the European Union Monitoring Guidance for Marine Litter in European Seas;

(b) Ensure access to, sharing and utilization of technology to support marine debris monitoring, particularly in developing countries, in particular the least developed countries and small island developing States, as well as countries with economies in transition;

(c) Develop and promote means to identify sources, pathways and distribution of marine debris to understand individual and population-level effects of marine debris on marine species;

(d) Investigate and promote the best available techniques as well as research and develop additional techniques in wastewater treatment plants to prevent microparticles entering the marine environment;

(e) Promote research on the potential trophic transfer of marine microdebris in food webs to determine whether there is a bioaccumulation effect for plastics and harmful chemicals;

(f) Develop and strengthen the use of citizen science schemes that address the monitoring and enforcement of environmental standards on marine debris;

(g) Undertake socioeconomic research to better understand the social factors which may contribute to the production of marine debris, the impacts of marine debris on various coastal and maritime sectors and communities, and consumer preferences, perceptions and attitudes that can help to inform targeted outreach programmes designed according to local/cultural context;

(h) Develop a risk assessment of impact of debris on marine and coastal species and ecosystems, and identify potential hotspots of gear loss and their associated biodiversity impacts;

(i) Develop monitoring strategies, taking account the following needs:

(i) To evaluate possible population-level impacts that consider in a coordinated way the migration routes and the distribution of species and populations;

(ii) To include species life stages and the specific vulnerability to marine debris (for example, monitoring of juveniles to quantify the burden on adults);

(iii) To address sublethal effects while taking into account that a broad range of interacting natural and human factors determines the survival and reproductive success of individual animals;

(iv) To take into account that, in the case of highly endangered species, direct harm caused by marine debris on one individual can easily have an effect on the entire population;

(j) Apply modelling as a useful tool for marine debris management and mitigation. It can be used with spatial mapping to estimate debris distribution, encounter rates between debris and species, and support the production of global risk assessments, especially for threatened species.

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