



*Floating marine litter with snorkeling divers on Bali, Indian Ocean. Photo Credit: Annelie Pompe*

# MARINE PLASTIC LITTER ON SMALL ISLAND DEVELOPING STATES (SIDS): IMPACTS AND MEASURES

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## EXECUTIVE SUMMARY

### PURPOSE OF THIS REPORT

Plastic waste that ends up in the oceans as marine litter is a tangible and urgent environmental pressure reaching even the most remote parts of the global oceans. It impacts marine life from plankton to whales and turtles to albatrosses. Public awareness on how the modern lifestyle and the use of plastics in all sectors of society has influenced the marine ecosystems in the last decades is growing, and an emerging discourse about countermeasures of all types can be seen in policies enacted by authorities in national, regional, and international policy arenas. Different coastal areas have launched Regional Action Plans (RAP) on marine litter that provide structured measures that need to be taken and general advice adapted to the respective region. However, the scale of the problem is not only global in dimension, it also cuts across all sectors in society, and until the use of materials in society becomes sustainable, plastic waste will continue to flow into the seas. This report focuses on how marine plastic litter affects Small Island Developing States (SIDS) because these are considered to be more directly vulnerable to environmental changes, including marine litter, than other countries.

This report was commissioned by the Swedish Agency for Marine and Water management and written by analysts at the Swedish Institute for the Marine Environment (affiliated with the University of Gothenburg, Lund University, and Chalmers University of Technology). In this report, it is documented how marine plastic litter reaches even the most remote parts of the oceans, such as some of the small island states, and how SIDS are especially vulnerable to environmental impacts such as climate change and marine litter. The origin and composition of marine plastic litter and its environmental and economic impacts are described. Finally, measures are discussed that can be launched to mitigate the problem, both from state agencies and private corporations. Here, measures from existing RAPs on marine litter are reviewed and examples of private initiatives are mentioned. Further, the corresponding legal framework is given and side effects of marine litter measures on the Sustainable Development Goals of the UN are debated.

### THE SPECIAL VULNERABILITY OF SIDS TO MARINE LITTER

SIDS are a set of island nations located in the Caribbean Sea, the Pacific Ocean, and the so-called AIMS region (Atlantic, Indian Ocean, and South China Sea). They are characterised by their small size, isolated location, exposedness, and limited resources. Not all SIDS are islands, and Belize, Papua New Guinea, Guyana, and Suriname are considered SIDS based on the same structural disadvantages. SIDS also tend to have a high biodiversity and are often home to endemic species found only in a single place on Earth. In addition, SIDS are home to an exceptional cultural diversity and heritage. SIDS are exposed to concentrations of plastic litter that often are disproportionate to their own consumption and populations due to a combination of being located near the so-called ocean gyres, which are known to accumulate marine litter, and due to often sub-performing waste collection and treatment systems. SIDS are also especially vulnerable to impacts of marine plastic litter because such litter might lead to lower revenues from the tourism and fishing industries that their economies largely depend on. Finally, their remote locations constitute a significant challenge in organising inter-island logistics, and their limited resources lead to bigger challenges regarding the management of plastic litter compared to their mainland counterparts. In places where people lack food, clean water,

shelter, etc., these basic human needs are of immediate priority. In the long term marine litter might become a vital human problem and should be combated, but not at the expense of other development goals. However, several measures for marine litter mitigation foster other goals as well, so positive synergies can occur here.

### **ORIGINS AND COMPOSITION OF MARINE PLASTIC LITTER**

Marine debris and marine litter are used synonymously in this report and are defined as “any persistent, manufactured or processed solid material that is discarded, disposed of, or abandoned in the marine or coastal environment”.<sup>1</sup> Because plastic, a persistent and potentially hazardous pollutant, is commonly reported to make up most marine debris, the focus of this report is on plastic litter.

Marine plastic litter that is washed ashore on SIDS originates from both distant countries overseas and the SIDS themselves. At sea, plastic materials degrade slowly and do not readily mineralise; instead, they break down into ever-smaller fragments over time, which persist in the marine environment. Buoyant plastic litter is globally distributed by ocean currents and is found washed ashore on beach lines around the globe where it negatively impacts ecological and human systems both in the open water and on the coast. Plastics end up in the marine environment through leaks from the global value chains that run from the oil industry through various other industries to local retailers and consumers. The plastic materials are lost from production to disposal through transport, production, use, waste collection, and waste treatment. In the environment, the very same qualities of lightness and resistance that make them attractive to producers and consumers turn them into a nuisance for other species.

A smaller but significant stream of plastic litter follows from the difficulties of many SIDS to establish and maintain efficient waste management systems. Like most if not all countries in the world, SIDS face the challenge of an increasing generation of waste due to the combined result of economic growth, increased population, growing urbanisation, and changes in consumption patterns. “As the urban population of Small Island Developing States (SIDS) continues to grow significantly, the need for extensive waste management systems has like-wise increased. Given SIDS’ limited land areas, and landfills acting as the primary method of waste, their capacity to manage waste leaves them at risk to potential environmental damage and public health risks.”<sup>2</sup>

### **IMPACT OF MACRO- AND MICROPLASTIC LITTER ON ECOLOGICAL, SOCIAL, AND ECONOMIC VALUES**

Marine litter has been shown to have negative environmental, social, and economic consequences. It impacts the environment and organisms therein in various ways, including through entanglement, ingestion of litter, transfer of chemicals, by smothering, or by otherwise altering habitats. The extent of the economic impact that plastic litter can have on countries around the world is not currently well known. However, the dependence of SIDS on their natural resources through tourism and fisheries, in combination with their exposed coastlines, make them economically vulnerable to plastic litter. Although the effect that marine litter might have

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1 UNEP, 2009. *Marine Litter: A Global Challenge*. Nairobi: UNEP. 232 pp.

2 UN-DESA (2016). *SIDS ACTION PLATFORM, 18 SAMOA pathway priority areas. Management of Chemicals and Waste, including Hazardous Waste*. From: A/CONF.223/10. Retrieved 2017-03-16, from <http://www.sids2014.org/partnerships/?area=11>

on revenues from tourism is likely to be region-dependent, several studies in other tourism-rich areas show that it might have a considerable effect.

### **MITIGATION AND REMEDIATION STRATEGIES**

Mitigation and remediation are the main approaches against environmental problems. For problems related to plastics in general, this means the reduction, reuse, and recycling of plastics in many applications. For marine plastic litter in particular, mitigation implies improved control and management of plastics, which limits leakages into the oceans, whereas remediation is the removal of marine plastic litter from the environment. For plastic litter that reaches SIDS, both remediation and mitigation, especially through waste management and recycling, become necessary.

### **LEGAL AND POLITICAL FRAMEWORKS**

The legal framework for preventing and managing marine litter is present on all levels of governance, from international to national and local rules and regulations, and it can be found within many areas of law and with different types of legal effects. Global agreements that aim at the protection of ecosystems and marine species and biodiversity are highly related to the issue of marine litter. Apart from binding agreements, there are a number of declarations and recommendations relevant to marine litter on SIDS. One of them is the SAMOA Pathway, a declaration made at the third International Conference on Small Island Developing States in 2014, which calls for measures to manage waste, including marine plastic litter. Multilateral agreements require party states to take actions, but because these requirements are often generally formulated, their achievements depend on the choices and participation of all parties.

### **POLICY MEASURES PROPOSED BY REGIONAL ACTION PLANS**

There exist 18 Regional Seas programmes under the United Nations Environmental Program (UNEP). The aim of this programme is to protect the marine environment through a shared approach across state borders where neighbouring countries work together for the protection of the oceans and seas. Some of the Regional Seas programmes have written strategies to guide actions and efforts against marine litter. Supported by UNEP, the member governments of the respective region agreed on a political agenda for the management of marine litter, the RAPs. The contents of different action plans show strong similarities, commonly including measures of legislation, best practise, best techniques, education/awareness, and voluntary agreements. The analyses conducted here show that most measures suggested by RAPs are aimed at downstream processes (i.e. when the material has already escaped controlled material flows), while fewer measures address the problem upstream. Therefore, additional projects and measures are necessary to solve such a global problem.

### **VOLUNTARY AND COMMERCIAL INITIATIVES**

Plastic litter is a problem that comes from numerous sources and affects many parts of society. While the important role of government agencies in solving the problem is evident, marine litter is not only a matter of management or government, but also of governance. Governance takes place in networks, is typically multilateral, and requires collaboration. Single actors cannot address the issue of plastic marine litter, and what is needed is an array of actions, from the local to the global level, that tackle the issue in a coordinated manner. Most of the measures suggested in RAPs and the current work against marine litter involve not only government managers, but also businesses, NGOs, and voluntary initiatives.

### **RECOMMENDATION: IMPORTANT AREAS FOR FUTURE COOPERATION**

To conclude, there is much work to be done on SIDS to solve the problem of marine litter. Competence and enthusiasm for the issue on SIDS as well as elsewhere is growing, but there is still a long way to go. The issue cannot be solved nationally or even regionally alone, and solutions will require international cooperation. Four recommendations for cooperation are highlighted here, and these might be especially valuable for SIDS and other developing countries:

- Prevent litter from entering the ocean and thus reaching SIDS: Support cooperation in regional and international agreements
- Plastic material that reaches SIDS should not be released into the environment: Technical cooperation and support for local waste management
- If waste reaches the environment, collect it where appropriate: Support beach clean-up campaigns and other remediation measures
- When waste has been collected, ensure that it has a value: Develop recycling markets and opportunities





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