Marine Litter Prevention

Reducing plastic waste leakage into waterways and oceans
through circular economy and sustainable waste management

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EXECUTIVE SUMMARY

SIGNIFICANTLY REDUCING MARINE POLLUTION BY 2025, AS ENVISAGED BY THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS, REQUIRES CONCERTED INTERNATIONAL ACTION. Several international forums have adopted declarations and action plans to achieve this. A crucial challenge lies in translating global commitments into national, regional and local action. This study deals with the question of how decision-makers can improve their municipal solid waste management systems and move towards a circular economy in order to prevent plastic leakage into waterways and the ocean. It focuses on plastic waste from human settlements as a substantial share of marine litter consists of plastics stemming from land-based sources. In contrast to organic waste, which also enters waterways, plastics are durable and degrade only slowly into ever-smaller particles, which impact marine ecosystems.

THE STUDY OUTLINES POTENTIAL APPROACHES TO PREVENT MARINE PLASTIC LITTER AND ANALYSES THE SITUATION IN TWO LOCAL CONTEXTS IN SOUTHEAST ASIA AND NORTH AFRICA. It is based on an extensive literature review as well as field visits, observations and interviews in Sidoarjo Regency, Indonesia, and Annaba Province, Algeria. A methodological approach is elaborated to assess plastic waste leakage in qualitative and quantitative terms, enabling deeper understanding of these characteristically chaotic plastic waste flows. While the context of each case study is different, the analyses and recommendations will also be relevant for other municipalities and regions.

THE TWO CASE STUDIES UNDERLINE THE NEED FOR ACTION AT LOCAL AND REGIONAL LEVEL. They show that plastic waste enters into the riverine and marine environment through various pathways. Sidoarjo in Indonesia generated an estimated 7'616 t of marine plastic litter in 2017 or 3.17 kg per inhabitant. This is equivalent to one plastic bottle of 30g thrown into the ocean every 3 to 4 days by each of its inhabitants. It is estimated that the Algerian province of Annaba contributed 1'494 t of marine plastic litter in 2017 or 2.09 kg per capita – the same as throwing one plastic bottle into the ocean every 5 days. Whilst demonstrating the need to act, these two case studies also show that marine litter can be avoided if stakeholders take appropriate measures.

PROMOTING INTEGRATED SUSTAINABLE WASTE MANAGEMENT IS KEY TO PREVENTING MARINE LITTER. Waste collection coverage and efficiency need to drastically increase to reduce wild disposal and burning of plastic waste. Promoting separate collection and recycling of plastics is instrumental to enhance resource efficiency and reduce negative impacts of landfilling. Nevertheless, under certain conditions, energy recovery and landfilling can be viable options to keep plastics out of the environment. Sound governance, operator models and cost-recovery mechanisms are necessary to ensure organisational effectiveness and financial sustainability. Implementing extended producer responsibility mechanisms as well as deposit-refund systems can play an important role in this regard.

DECISION-MAKERS SHOULD PROMOTE A SHIFT TOWARDS CIRCULAR ECONOMY IN PACKAGING VALUE CHAINS. Single-use plastic packaging and items should be reduced and replaced by reusable alternatives. Policies should also take the impacts on other environmental objectives into account such as preventing food waste and mitigating climate change. Moving towards circular value chains requires product design that makes end-of-life recycling easier and uses recycled materials for new products. It requires political incentives and enhanced exchange amongst stakeholders along the packaging value chain. Plastic bag regulations can represent important, emblematic initiatives, even though they only concern one type of plastic waste.

MARINE LITTER PREVENTION ALSO REQUIRES COOPERATION ACROSS SECTORS AND BORDERS. Plastic flows in rivers can connect several regions and countries. Source-to-sea approaches can be helpful in dealing with fragmented governance systems along them. In all cases, various stakeholders from public authorities, the private sector, civil society and scientific institutions must be involved. Due consideration should be made to include biodiversity conservation, coastal management, water management, wastewater management and waste management. Global plastic value chains also require enhanced dialogue with consumer good companies active in various countries. 'Glocal' governance is necessary to enhance exchange of experiences between committed municipalities as well as to deepen international cooperation.

LOCAL AND REGIONAL DECISION-MAKERS CAN TAKE ON A MORE ACTIVE ROLE IN THE GLOBAL EFFORT TO PREVENT MARINE PLASTIC LITTER. The methodology used in this study presents a practical first step to overcome information barriers, an important pre-requisite for involving decision makers at local level. In quantifying how much plastic waste enters into water bodies instead of counting what can be found at beaches or in the sea, this approach complements other marine litter monitoring approaches. It is, however, based on a large number of assumptions that must be presented in a transparent way. In a next step, the methodology could be developed further into a practical tool and graphic visualisation of plastic waste flows, which could be used in different regions to support the dialogue in municipalities on marine litter prevention. Linking the methodology to cost-benefit analyses may also support decision-making about which measures and investments are suitable in a given context.

10 KEY MESSAGES FOR PREVENTING MARINE LITTER

1. Promote integrated sustainable waste management
2. Respect the waste hierarchy: reduce, reuse, recycle as much as possible
3. Drastically expand waste collection coverage, efficiency and the separation of plastics
4. Enhance awareness raising and cleaning activities of streets, canals and beaches
5. Build sound institutions, policies, operator models and cost-recovery mechanisms
6. Implement extended producer responsibility schemes and deposit-refund systems
7. Promote reusable packaging and product design for recycling
8. Enable cooperation of stakeholders across sectors from source to sea
9. Facilitate the exchange of local decision-makers across borders
10. Strengthen dialogue along plastic and packaging value chains