



Driving forces behind marine litter generation in European regional seas

CleanSea is exploring the socioeconomic dimension of marine litter throughout Europe. As a first step, the drivers of marine litter were identified in regional seas, i.e. Baltic Sea, North Sea, Black Sea and Mediterranean Sea. The **drivers of marine litter** are factors that directly or indirectly trigger, sustain, expedite or exacerbate the inputs of marine litter to the sea. Drivers can be actions, sectors, management, or characteristics of the socioeconomic system that stand in the way of achieving Good Environmental Status (GES)¹ for marine litter. Based on their identification through literature review and regional stakeholder workshops, drivers of marine litter were assessed in terms of ‘**intensity**’ and ‘**manageability**’ for each of the four regional seas.

Baltic Sea

The literature review showed that the main socioeconomic drivers generating marine litter in the Baltic Sea are mainly linked to consumer behaviour in response to (single use application) products marketed to them, and shoreline and recreational activities including tourism. Economic activities contributing to the generation of marine litter are mainly the shipping and fishing industries. A lack of sufficient waste management, both solid waste and wastewater was also identified as contributing to the marine litter problem. ‘Measured problems get managed’, and the lack of comparable and reliable data in a harmonized litter monitoring system is considered a major obstacle with regard to knowledge needed to manage marine litter in the Baltic Sea.

North Sea

There is interplay of several driving forces that contribute to marine litter in the North Sea. Demographic drivers (high population density) and economic drivers (tourism, fishing and maritime transport) are some of the key contributors to the existing marine litter problem in the area. Cultural drivers of marine litter investigated were assessed to be moderate, although there is scope for consumers to assume more responsibility in terms of reducing (littering) actions that are causing environmental impacts. North Sea EU Member States have more technical capacity (in terms of waste treatment facilities, tools) and know-how to address marine litter problems in comparison with other EU regions. Limited coordination amongst institutions, insufficient financial (and other) incentives for collection and recycling of polluting materials and insufficient awareness campaigns are some of the most important drivers of marine litter identified. In the case of awareness campaigns and institutional coordination, North Sea Member States could achieve improvements in these domains by coordinating actions and educating consumers about the impacts of marine litter. There is potential for policy interventions that can successfully mitigate the impact of these driving forces, particularly in the case of tourism and fisheries sectors.

Mediterranean Sea

High population density in coastal areas and ineffective waste management are among the main drivers of marine litter in the Mediterranean Sea. Intervening to improve waste management should be considered a priority when designing marine litter mitigation strategies and policies. Special attention must also be given to socio-political drivers, e.g. limited local and regional involvement in environmental

¹ The main goal of the Marine Directive is to achieve Good Environmental Status of EU marine waters by 2020. The Directive defines Good Environmental Status (GES) as “The environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive”

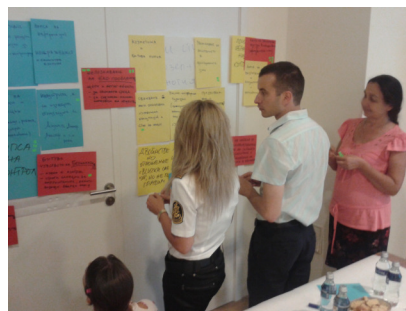
policy or political stability, which appears to make an intermediate contribution to the overall generation of marine litter. Tourism, recreational activities and maritime transport are major marine litter drivers while the economic activities of agriculture, fisheries and land-based industry are moderate drivers.

Managing socioeconomic drivers of the marine litter problem is impaired by: (a) insufficient financial incentives to prevent and clean-up marine litter; (b) insufficient awareness campaigns and educational programmes and; (c) technological and other challenges regarding recyclability and reuse of plastics. Inadequate or poor implementation of institutional and legislative frameworks are also an intense marine litter driver that would require cooperation between EU Member States, as well as between EU and non-EU countries to remove. Finally, the insufficient coordination among institutions and authorities and the absence of standard surveillance and monitoring methodologies act as moderate drivers of the marine litter problem, although these drivers can be managed relatively easily.

Black Sea

Tourism, waste dumping and consumer behaviour are crucial drivers of marine litter in the Black Sea. Particular pressure also comes from the rapid rise in the coastal population during high tourist season, which leads to increased consumption levels and demand for waste infrastructure (waste collection bins, waste water treatment plant, etc.) which was not designed to respond to increased waste flows. Bad consumer habits and individual behaviour have a strong influence on waste generation. Such negative attitude is expected to impact the behaviour of coming generation and impede the uptake of effective measures. Demographic changes, fisheries and marine transport as well as the socio-political context are regarded as weaker marine litter drivers. The study identified that insufficient waste management and infrastructure, insufficient incentives for waste collection, reusing and recycling, coordination at national and international level between institutions, policy implementation and legal enforcement all help drive the marine litter problem. Lack of information, data on marine litter quantities and regular monitoring, insufficient awareness and educational problems, lack of organizational capacity combined with improper investments are also challenges which contribute to marine litter in this region.

Two stakeholders meetings were held in the beginning of July 2013 in Varna and Burgas (Bulgaria) with the objective to identify the drivers for marine litter in the Black Sea. The workshops aimed at integrating the views of experts but also a wider range of stakeholders on the growing issue of marine litter.



Drivers of marine litter are complex and intertwined with other issues. Drivers can be found at many levels, including at the level of the individual consumer, but more often than not drivers are imbedded in larger systems that are not straightforward for individuals to control. The drivers identified here presumably can be removed by the right mix of technological, socio-economic, political and cultural innovations. It is clear that European Member States can benefit from working together, also with non-EU partners sharing regional sea coastlines, to address common marine litter drivers wherever possible. This initial assessment of marine litter drivers serves as a basis for follow-up project activities, such as the analysis of **marine litter socioeconomic costs** and identification of **market based instruments to address marine litter**.