



Development of the Western Indian Ocean Action Plan on Marine Litter and Microplastics

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Marine litter: a global and regional problem

Marine litter and microplastics has recently taken a top slot in the political and public agenda on the health and integrity of the world's oceans (Galgani et al. 2015; UNEP 2016). Over 80% of marine pollution that constitute marine litter and microplastics is from land based sources (GESAMP 1991; Sheavly 2005), largely associated with diverse anthropogenic activities such as increasing use of synthetic materials, industrialization and urbanization of coastal areas, where disposal and waste management practices are inadequate (Chen, 2015). To effectively manage marine litter, an adequate knowledge is necessary about drivers, sources, types, amount and dispersion. Policy measures are then needed to address the generation of marine litter and microplastics, in particular those that can be prevented at the sources (Veiga et al. 2016).

The Nairobi Convention commissioned two studies on marine litter for the region: an overview and assessment of marine litter related activities (Lane et al. 2007) and a review of policy, legal, regulatory and institutional frameworks (UNEP/NC and WIOMSA 2009). Main issues identified by these two studies include:

- (i) Sources of marine litter in the WIO region are mostly inferred rather than demonstrated; warranting baseline assessment about original sources for introducing effective marine litter control measures.
- (ii) Countries of the WIO lack specific policies, laws and regulations to exclusively deal with marine litter and microplastics;
- (iii) Runoff from urban areas is the most significant source of marine litter and success in managing the problem varies significantly between countries;
- (iv) Effective waste management to reduce marine litter is mostly constrained by inadequate awareness about the impacts and shortage of resources;
- (v) Land based sources of marine litter are more significant than marine based sources, however, marine-based sources are more difficult to control; and
- (vi) Countries of the region have varied capacities for preventing solid waste generated on land, from reaching the sea.

Developing WIO Marine Litter Action Plan

Development of regional action plans on marine litter and microplastics is sanctioned by the United Nations Environment Assembly (UNEA) Resolutions 1/6 of 2014 and 2/11 of 2016 on "Marine Plastic Litter and Microplastics". The resolutions request the UN Environment to provide assistance in the development of national and regional measures to address marine litter, acknowledging that resources available to tackle the issue, vary between regions, where measures need to be taken and adapted as appropriate to local, national and regional situations. Resolution UNEP/EA.3/L.20 of 2017 specifically invited relevant international and regional organizations and conventions including the Regional Seas Conventions, as appropriate within their mandates, to support prevention and reduction of marine litter and microplastics and their harmful effects.



The Nairobi Convention had already in its Decision CP7/2, made during the Conference of the Parties held in Mahe, Seychelles in 2015, urged the Contracting Parties to implement the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) within the context of the Protocol on Land Based Sources and Activities (LBSA), with the support of UN Environment. It is from this background that development of a regional the WIO Regional Action Plan on Marine Litter is warranted to guide the identification of needs and operations of combating marine litter and microplastics.

The propositions of the regional action plan has the following specific objectives:

- (i) To provide guidance and enhance knowledge on the prevention and reduction of marine litter and microplastics and their impact on marine ecosystem services, public health and safety through coordinated regional actions.
- (ii) To monitor the quantities and distribution of marine litter and microplastics for enhancing knowledge and establishing a regional mechanism to address marine litter.
- (iii) To serve as a guide in the management of marine litter and microplastics in accordance with accepted international and regional standards and approaches.
- (iv) To advocate for reduction of marine litter and microplastics to the largest extent possible.

Proposed Regional Actions on Management of Marine Litter

Institutional Action

Action 1: *Establish a regional forum to coordinate stakeholder participation in marine litter management in the form of a WIO Marine Litter Working Group to co-ordinate and advise on appropriate actions for marine litter management. The group should be composed of designated National lead institutions to serve as National Marine Litter Focal Points.*

Policy and Legal Action

Action 2: *Review, evaluate and compare, strengthen and/or enact new jurisdictional measures to address marine litter*

Existing waste management legislation needs to be reviewed, updated or revised to provide support for prevention and monitoring efforts. The introduction of new legislation, where necessary, dealing specifically with marine litter and microplastics management is proposed and their effectiveness periodically evaluated

Operational Actions

Action 3: *Improve port reception facilities to effectively manage ship-generated waste*

A survey of the adequacy of existing Port Reception Facilities of all the countries in the WIO is necessary to identify priority areas for improvement. Based on such a survey, targeted intervention may be enacted by some countries to improve their facilities.

Action 4: *Eliminate, change or adapt products for environmental benefits*

It is necessary to evaluate all products and processes that include primary microplastics and act, if appropriate, to reduce their impact on the marine environment. All appropriate sectors (manufacturing, retail etc.) should be engaged to explore the possibility of voluntary agreements to phase out the use of microplastics as a component in personal care and cosmetic products. It is important to carry out an evaluation of the potential harm caused to the marine environment by items such as cigarette filters/butts, balloons, cotton buds and bio-film support media used in sewage plants. Based on this evaluation, proposals can be made on the elimination, change or adaptation requirements for these other potentially problematic items.



Action 5: Maintain zero pellet loss or prohibit pellet loss

Measures to regulate industrial waste are provided in the binding and voluntary instruments by Regional Seas Programmes, but the application of these measures must be extended to include compliance with existing programmes that target zero pellet loss from industrial facilities.

Action 6: Identify probable 'hotspots' of land- and sea-based sources for plastic and microplastics

To allow mitigation measures to be better targeted, and used to predict and verify their effectiveness, using a combination of targeted modelling, knowledge of actual and potential sources (e.g. coastal tourism, aquaculture, fisheries, riverine inputs, urban inputs) is warranted.

Action 7: Maintain clean environmental compartments

Regional maps of hotspots of floating litter should be developed through identification of snagging sites or historic dumping grounds. For instance, identifying where accumulations of ghost nets pose a threat to the environment.

Education and Outreach Actions

Action 8: Develop human capacity and infrastructure

Developing scientific and technical capacity in research and practice through education, training and knowledge exchange to enhance capacity for assessment, monitoring and policy making to address marine litter and its impacts. Investing in infrastructure development, acquisition and application to improve waste management systems is equally important.

Action 9: Promote the 3 Rs (Reduction, Re-use and Recycling)

Development of innovative and effective solutions by which used plastics can be seen as a useful resource, with commercial value, rather than a waste problem requiring the allocation of scarce public and private sector resources.

Action 10: Encourage product labelling

Promote labeling of products to show microbeads content and campaign to raise awareness of the potential for harm to the marine environment and to encourage consumers to proper disposal of these products.

Action 11: Establish a clearinghouse mechanism on effective strategies and practices for waste management

The establishment of database to make information on effective strategies and practices for enforcement of waste management practices accessible throughout the region. The database would be used as a repository of the marine debris data collected annually, allowing for direct processing and sharing of information and Best Management Practices.

Monitoring, Research and Reporting Actions

Action 12: Design standard methodologies for studying, monitoring and reporting on marine litter and microplastics for the WIO region including its sources, types and impacts.

Develop common methodologies, guidelines and reporting format for assessment and monitoring of marine litter and microplastics, its sources, types and impacts. The recommendations provided by international bodies (such as GESAMP WG40) should be taken into consideration as important m

Action 13: Update baseline data on marine litter and microplastics in the WIO region.

Undertake survey(s) to update baseline data on marine litter at both regional and national level using common methodologies and assessment criteria developed.



Action 14: Promote research on alternative biodegradable materials

Explore technologies for production of biodegradable alternatives to plastics. Investigation into alternatives to expanded polystyrene (EPS); design of stronger, more durable materials to prevent the generation of microplastics from wear and tear during product use; and production of truly biodegradable polymers that meet international standards.

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