



A review of research on marine plastics in Southeast Asia:

Who does what?

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Executive Summary



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Executive Summary

Scope

The scope of this review is marine pollution from marine plastic in Southeast Asia with a focus on the ten ASEAN member states: Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam. The aim is to provide a regional overview of marine plastics research in Southeast Asia. This includes a review of the current knowledge on pollution from marine plastic in ASEAN member States, of recent marine scientific plastics research about Southeast Asia and of research interest on this topic by international and regional intergovernmental bodies and initiatives interested in marine plastics. The data and analysis included in the report are the result of several years of work by National University of Singapore (NUS) on marine plastic pollution in Southeast Asia, completed with rigorous consultation of relevant scientific databases, journals and internet research.

Methodology and analysis

The review of scientific research in each ASEAN member state shows an important variation in efforts expended in each, in methods used and in research focus. Indonesia displayed attempts to understand more aspects of the marine plastics problem than all other Southeast Asian countries. It is the only country which, with the assistance of the WorldBank tried to identify hotspots and accumulation zones of marine plastics. The most common research focus across the countries is to survey and monitor the level of plastic pollution in the coastline or in the waters. Results also showed that the examinations of the ecological and environmental impacts of marine plastics are of interest to many countries. The literature search also showed that some research topics are reported more readily in grey literature and less in research publications, such as the quantification of macroplastics in general, compared to the quantification of microplastics. For the sampling of plastics in the marine environment, sediment or substrate sampling is the most common, which may be attributed to coastal (intertidal) sampling. Quantification of the amount of plastics in or on marine organisms appears to be often opportunistic.

The review also analysed research interest by 10 regional and 9 international intergovernmental bodies with a particular focus on pollution by marine plastics as well as 13 governmental and non-governmental organisations, research centres and initiatives with a focus on marine plastics in Southeast Asia. Research interest was assessed with respect to 20 research topics on marine plastics pollution from three categories: (1) discharge or leakages of plastics into the coastal and marine environment, (2) methodologies for and study of their ecological, environmental and socio-economic impacts, and (3) treatment of pollution by education and outreach, law and policy, including action plans, guidelines and standards.

Several main points can be noted from this comparative analysis:

- ASEAN governments are concerned with pollution by marine plastics and are pushing for a better understanding of the issues. Research activity is therefore recent and still at an early stage;
- Among the regional bodies, COBSEA stands out as the regional body with the most developed action plans and documents with respect to marine plastics;
- The topic of highest shared interest overall is upstream research and waste management, including the development of the circular economy;
- Several intergovernmental bodies emphasize the importance of a risk approach;
- Among non-governmental efforts, Ocean Conservancy stands out as one of the organisations with the greatest breadth and involvement in the region;
- NGOs and independent research centres play a particularly important role with respect to public outreach and language and cultural barriers where regional and global research interest is markedly lower;
- Natural science research is lagging behind the interest of international and regional bodies and initiatives in 3 research topics: monitoring and assessment methodologies, accumulation zones and fragmentation; and,
- Interestingly, the interest of natural scientists in microplastics exceeds that of international and regional bodies and initiatives.

Recommendations

A risk approach has been followed in the identification of the following recommendations.

Primary recommendations

- Surveys and monitoring
- Accumulation zones & Hotspots
- Source differentiation
- Ecological and environmental impact
- Contribution of fisheries/Lost and abandoned fishing gear

Secondary recommendations

- Methodology for the monitoring and assessment of marine litter
- Contribution from rivers/river basin management
- Fragmentation and degradation

INTERNATIONAL LAW AND POLICY ON POLLUTION FROM MARINE PLASTICS IN SOUTHEAST ASIA¹

