


COMPENDIUM OF CASE STUDIES AND LEARNINGS IN ADDRESSING PLASTIC POLLUTION IN THE PHILIPPINE MARITIME INDUSTRY

INTRODUCTION

SEPTEMBER 2023





COMPENDIUM INTRODUCTION

This compendium, published by World Wide Fund for Nature (WWF)-Philippines, is a compilation of case studies and lessons learned from the **“Clean Ports, Clean Oceans: Improving Port Waste Management in the Philippines”** project (hereinafter "the project"). The project was implemented in partnership with the Grieg Group and funded by the Grieg Foundation. It is **composed of briefers, independent and connected with each other**, that aim to capture specific project implementation areas - from baselining to monitoring.

The main objective of this compendium is to share the lessons learned from the implementation of the project and especially the piloted solutions to address plastic pollution in the maritime industry. These solutions have the potential to be replicated in ports within and outside the Philippines where all were piloted. WWF has a Plastic Smart Cities platform where the lessons learned from these solutions will be consolidated and be made available for any practitioner who wants to advocate for the reduction of plastic waste leakage in ports and ships.

This document is meant to be shared to maritime authorities, practitioners, and those who are interested in working with this industry. There are eight briefers in this compendium which can be read separately so readers can select specific case studies to learn. These briefers will all be available online at the project's landing page [here](#).



THE PLASTIC POLLUTION CRISIS

Plastic pollution is one of the fastest growing global environmental problems. It is generally assumed that 80% of marine plastic litter comes from land-based activities and 20% comes from sea-based activities, such as fishing, aquaculture, and shipping.

It is recognized that plastic pollution has severe impacts on marine species and ecosystems [1], increasing public health and development impacts on land [2], and economic impacts for activities such as fisheries and aquaculture [3]. Efforts to tackle plastic pollution have been growing for the past years. In the maritime industry, actions to reduce plastic pollution have strongly increased and recently, the international community also made important progress related to this topic.

THE MARITIME SECTOR AND THE PLASTIC POLLUTION CRISIS

The maritime sector, in particular maritime transport, is an essential element of global trade and the economy [4]. It has been estimated that there are about 58,000 vessels [5] and over 6,000 ports [6] in the world. The maritime sector includes activities at sea but also at the interface between sea and land, which represent some of the sources of plastic pollution. Plastic waste coming from vessel activities, crew members, passengers, as well as items from shipping operations, such as lost containers, are among the marine plastic litter in the sea attributable to shipping and cruises [7]. Microplastics generated, among others, from paints and marine coatings is also an issue [8].

In ports, berthing ships are often not knowledgeable on how the waste they bring will be managed. Once the waste lands in a port, it enters the country's solid waste management system and should be handled under its governing laws. Ports usually have control over the waste they generate during operations and provide guidelines for the waste generated from berthing ships.

In addition, there are instances when communities are adjacent to ports, in which waste handling depends on the guidelines set by the country. In the Philippines, for example, waste generated from communities should be collected by the city government that they are part of.

[1] Kuhn and van Franeker, "Quantitative overview of marine debris ingested by marine megafauna", Marine pollution bulletin, vol. 151, 2020; Convention on Biological Diversity, "Marine debris: understanding, preventing and mitigating the significant adverse impact on marine and coastal biodiversity", Technical Series No.83, 2016

[2] CIEL, "Plastic and Health: The Hidden Costs of a Plastic Planet", 2019

[3] N. J. Beaumont and others, "Global ecological, social and economic impacts of marine plastic" ScienceDirect, 2019

[4] European Maritime Safety Agency (EMSA). Prevention of Pollution from Ships, <https://www.emsa.europa.eu/web/sustainability/environment.html>

[5] Statista - <https://www.statista.com/statistics/264024/number-of-merchant-ships-worldwide-by-type/>

[6] World Port Source - <http://www.worldportsource.com/countries.php>

[7] GESAMP (2021). "Sea-based sources of marine litter", (Gilardi, K., ed.) (IMO/FAO/UNESCO-IOC/UNIDO/ WMO/IAEA/UN/UNEP/UNDP/ISA Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection). Rep. Stud. GESAMP No. 108

[8] GESAMP (2021). "Sea-based sources of marine litter", (Gilardi, K., ed.) (IMO/FAO/UNESCO-IOC/UNIDO/ WMO/IAEA/UN/UNEP/UNDP/ISA Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection). Rep. Stud. GESAMP No. 108,

In the Philippines, a World Wide Fund for Nature (WWF) – Philippines study estimated that at least 114,000 kg of waste are generated annually in Philippine ports while at least 128,000 kg of waste are generated by vessels. Out of this generation, only 4% are recycled which potentially leaves about 96% of waste being brought to landfills. This is problematic as the country has only 191 sanitary landfills – approximately 11% of the total required number in the Philippines [9].

Like many stakeholders, the maritime industry is quite new to the concept of plastic pollution and solutions on how to address this environmental issue. Working with entities from the maritime industry is an opportunity to provide guidance on how to adopt circular solutions to plastic pollution. Despite these threats to the marine environment posed by the maritime sector, there is an equal opportunity for the industry to be at the forefront of finding solutions to the marine pollution crisis.

THE “CLEAN PORTS, CLEAN OCEANS: IMPROVING PORT WASTE MANAGEMENT IN THE PHILIPPINES” PROJECT

WWF is implementing the No Plastic in Nature initiative - a global and holistic approach in addressing plastic pollution that aims to stop the flow of plastic entering nature by 2030. This global initiative works with businesses, policymakers, cities, communities, and other relevant stakeholders to implement circular solutions that reduce plastic waste leakage into nature.

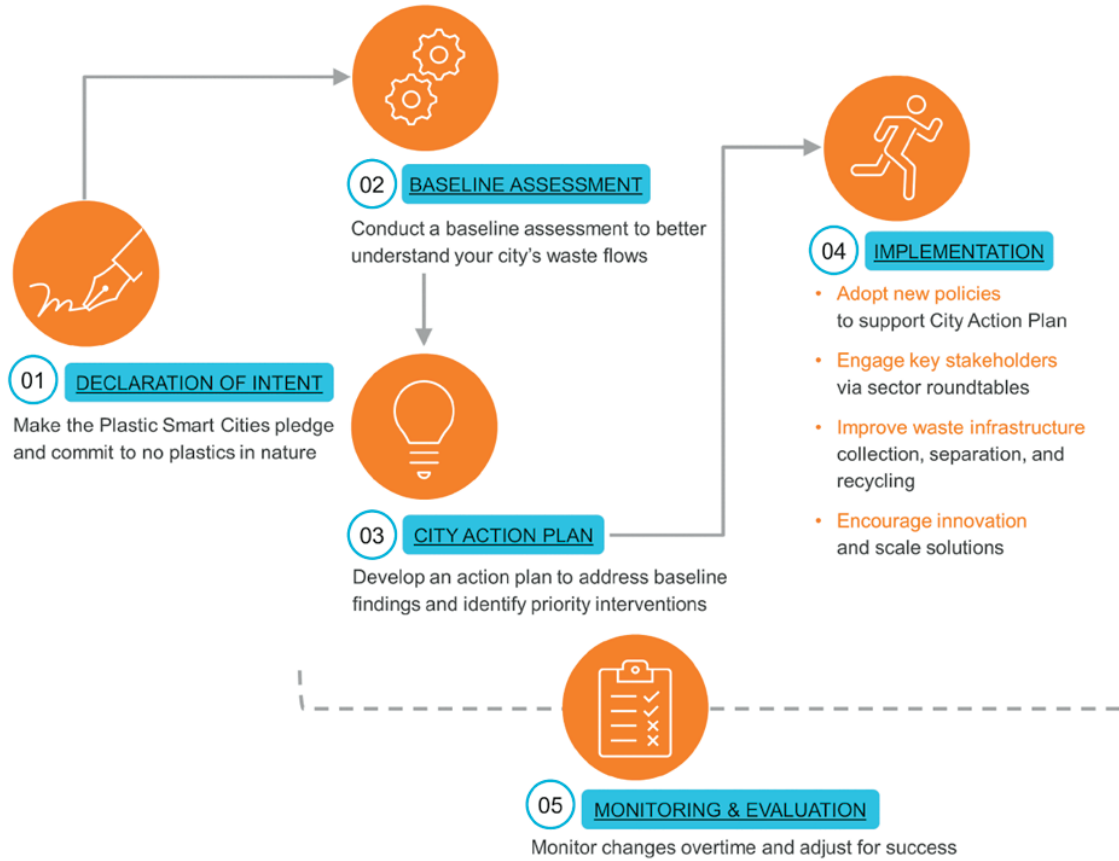
Under this initiative, WWF started the “Clean Ports, Clean Oceans: Improving Port Waste Management in the Philippines” project. This project, implemented by WWF in partnership with the Grieg Group, took place from 2020 to 2023 and was funded by the Grieg Foundation. The project aimed to achieve 50% reduction of plastic waste leakage in three Philippine ports – the port of Batangas, the port of Cagayan de Oro, and Manila North Port and developed models that could be scaled up in other ports in the Philippines and around the world. The project has been implemented in partnership with the Philippine Ports Authority (PPA), the Maritime Industry Authority (MARINA), the Philippine Coast Guard, the concerned Local Government Units, communities and other relevant stakeholders.



[9] EPR Scheme Assessment in the Philippines - https://wwf.org.ph/wp-content/uploads/2021/03/WWF_REPORT_EPR_Philippines_11Mar21.pdf



The project aligned with the Plastic Smart Cities framework shown below, developed by WWF.



The Plastic Smart Cities (PSC) Framework

The implementation of the project started with the commitment from PPA and identifying Port Management Offices (PMOs) that committed to addressing plastic pollution. This was later followed by the commitment of the Maritime Industry Authority (MARINA). Upon selection of project areas, baselining studies on the generation and management of waste, including plastic waste, were conducted and presented to local stakeholders for co-identifying interventions to tackle plastic pollution to be piloted. All agreed interventions were integrated into a strategic action plan in the three ports covered by the project, implemented, documented, and monitored for possible scaling up to other ports, ships, and communities. The most important findings and learnings from the project are compiled in this compendium of briefers.

BRIEFERS IN THIS COMPENDIUM

- 1** **Baselining on plastic waste generation and management in ports as foundation for piloting solutions**
- 2** **How to make single-use plastic bans work?**
- 3** **Development of a strategic approach for the maritime industry to address marine plastic litter**
- 4** **Social and behavioral change for effective plastic waste management in ports**



5 Establishing recycling markets
for a full solid waste management system

6 Incentives for plastic collection
and recycling in ports and communities

7 Empowering waste workers
within and outside the port premises

8 Positive attitude
starts at maritime school!

