



# CLEAN CITIES, BLUE OCEAN

## 3R/SWM and Marine Debris Reduction Strategy Alignment Assessment | Philippines



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## Acronyms and Abbreviations

3Rs	Reduce, reuse, recycle
ASEAN	Association of Southeast Asian Nations
CCBO	Clean Cities, Blue Ocean
CE	Circular Economy
CESET	Cebu Environmental and Sanitation Team
COBSEA	Coordinating <i>Body on the Seas of East Asia</i>
DPS	Department of Public Services
EAS	East Asia Summit
GDP	Gross Domestic Product
IWC	Independent Waste Collector
LGU	Local Government Unit
MPs	Microplastics
MSW	Municipal Solid Waste
MSWM	Municipal Solid Waste Management
MWRP	USAID Municipal Waste Recycling Program
NSWMC	National Solid Waste Management Commission
NPOA-ML	The National Plan of Action for Marine Litter
OMSW	Ordinary Municipal Solid Waste
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
PENRO	Provincial Environment and Natural Resources Office
PPPs	Public Private Partnerships
SBC	Social and Behavior Change
SWM	Solid Waste Management
TIPs	Trials of Improved Practices
UDW	Urban Domestic Waste
USAID	United States Agency for International Development

## Executive Summary

As an archipelagic country consisting of almost 7,500 islands, an expanding coastal population, and rapid economic growth, plastic waste generation and management are critical components to protecting the environment of the Philippines and livelihood of the Philippine people. As of late 2020, the Philippines has a new (in draft) national marine debris plan, The National Plan of Action for Marine Litter (NPOA-ML), with a focus on improving solid waste management and recycling markets, promoting a shift to sustainable business models, providing enabling policies for circular economy, reducing litter from marine sources, collecting baseline and ongoing data on marine pollution and policy implementation, promoting a large scale mass media education campaign, and conducting cleanups of existing and riverine marine litter.

In August 2019, Tetra Tech was awarded the Clean Cities, Blue Ocean (CCBO) Program, a five-year, \$48 million contract from the U.S. Agency for International Development's Bureau of Economic Growth, Education, and Environment. CCBO is the Agency's flagship program to respond to the global crisis of marine plastic pollution and includes the Philippines as one of its seven focal countries. CCBO's objectives and its Year One+ Workplan (May 2020 - September 2021) for the Philippines has strong alignment with the draft marine debris plan, by also focusing on enhancing solid waste management and reduce, reuse, recycle practices; building social and behavioral change through educational and community efforts; and establishing effective policy with sustainable implementation. CCBO also offers support for the Philippines' progress toward its marine debris plan in its engagement sites of Iloilo City, Batangas City, and the Manila Bay area (Pasig and Las Piñas Cities).

In general, CCBO has strong alignment with the draft NPOA-ML especially in enhancing solid waste management and reduce, reuse, recycle (3R) practices, building SBC through educational and community efforts, and establishing effective policy with sustainable implementation. Of particular relevance to CCBO's work are the NPOA-ML's Action Items 3 (Enhance recovery and recycling coverage and markets) and 4 (Prevent leakage from collected or disposed waste), which align with CCBO Objective 1 to promote reduce, reuse, recycle (3Rs) practices and strengthen local and regional markets for recycled plastics. The draft NPOA-ML also acknowledges a need for technical expertise, policy recommendations, and baseline research—all recognized as essential by CCBO.

To inform CCBO's approach and highlight the ways in which CCBO can support the Philippines' existing marine debris strategies and to provide recommendations for increased impact, the program has produced this 3R/SWM and Marine Debris Reduction Strategy for the Philippines. In terms of prioritization and timing, addressing historical barriers should come first and any projects related to data gathering, monitoring and assessment (especially if baseline data is desired before starting other projects). In addition, supporting livelihoods, gender, and inclusion can be interwoven into every project as a part of the overall CCBO context. Community engagement is critical at initial stages and authentic inclusion in the process will build local relationships. Other partnership creation can be cultivated in initial years but implemented in subsequent years after developing relationships. With a lot of work within the region in general, CCBO can continue to assess the regional context to leverage projects and programs conducted at a regional scale.

# I. Introduction

On August 28, 2019, Tetra Tech was awarded the Clean Cities, Blue Ocean (CCBO) Program, a five-year, \$48 million contract from the U.S. Agency for International Development's Bureau of Economic Growth, Education, and Environment. CCBO is the Agency's flagship program to respond to the global crisis of marine plastic pollution. The objectives of CCBO are to:

**Objective 1:** Promote reduce, reuse, recycle (3Rs) and strengthen local and regional markets for recycled plastics;

**Objective 2:** Build social and behavior change (SBC) for 3Rs and sustainable solid waste management (SWM);

**Objective 3:** Increase capacity and effective governance of SWM and recycling systems; and

**Objective 4:** Support international fora, public-private partnerships (PPPs), and multi-stakeholder alliances.

As a cross-cutting objective, CCBO also works to support and enhance the livelihoods of those working in the waste and recycling sectors, particularly women, as well as advance gender equality within the sector and opportunities for women's economic empowerment.

Over the next five years, CCBO will collaborate with local USAID missions and key stakeholders to test and scale 3R/SWM solutions with an initial focus in seven focal countries: Indonesia, the Philippines, Sri Lanka, the Maldives, Vietnam, the Dominican Republic, and Peru. To inform CCBO's approach, the program is producing 3R/SWM and Marine Debris Reduction Strategy Alignment Assessments in each of the focal countries to highlight the ways in which CCBO can support existing marine debris strategies and provide recommendations for increased impact. The Jambeck Research Group at the University of Georgia was selected to produce the Reduction Assessments for The Philippines, Vietnam, Sri Lanka/the Maldives, and Indonesia. These assessments were generated through literature review of existing marine litter plans and strategies, review of CCBO Work Plans, interviews with CCBO staff, and additional desktop research.

While the focus of CCBO is on waste management, there are also a range of intersectional issues and USAID initiatives in the Southeast Asia region that are complementary to the work of CCBO. These include programs related to biodiversity conservation and the reduction of illegal fishing activity, such as USAID Wildlife Asia, the recently completed USAID Oceans and Fisheries Partnership, as well as programs related to gender equality and female empowerment. Issues of waste management are often closely tied to issues of environmental and social justice and there may be opportunities for CCBO to build upon existing work and partnerships of USAID in the region.

## 2. Scope and Background

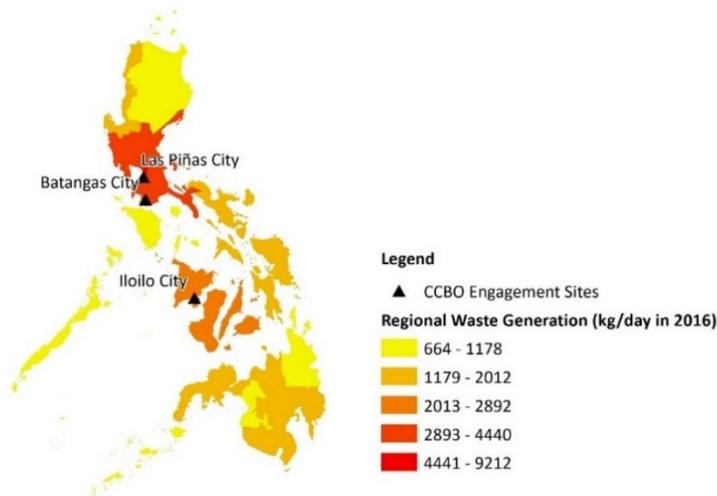
Inadequate SWM in the Philippines remains a primary source of marine debris. Population growth and urbanization in coastal cities has led to high leakage rates of municipal solid waste (MSW) into the ocean, even with low per capita waste generation. While abandoned and discarded fishing gear also contribute to marine debris in the Philippines, most leakage is directly traceable to mismanaged waste on land. Systems

for waste collection do exist, but open dumping continues to be common practice across the country.<sup>1</sup>

## 2.1 Generation and Characterization of MSW and Plastic Waste in the Philippines

Average per capita waste generation in the Philippines is estimated to be 0.39 kg/person/day.<sup>2</sup> With a population of over 109 million (CIA, 2020), we estimate total waste generation in the Philippines to be over 15 million metric tons annually. There is significant regional variation in waste generation as shown in Figure I, with Metro Manila being a hub for both population and waste generation.

Figure I. Philippines Regional Waste Generation Rate (kg/day) in 2016 (Source: NSWMC 2017)<sup>3</sup>



The National Solid Waste Management Council estimates that of the total waste generated in the Philippines, 52% is biodegradable, 28% is recyclable, 2% is special/hazardous waste, and 18% is other residuals. The largest source is residential waste at 57%, followed by commercial waste at 27%, institutional waste (such as government offices, educational and medical institutions) at 12%, and industrial and manufacturing waste at 4%.<sup>4</sup> As part of the recyclable fraction, plastic is estimated to comprise 10.55% of the total waste generated, shown in Figure 2.<sup>5</sup>

It is also worth noting that COVID-19 has significantly impacted not only the composition of the waste being generated, but also the ability for generated waste to be effectively managed. During COVID-19 lockdowns, less than 5% of recyclers in the Philippines were estimated to be operational, and as of June 2020, the recycling industry was operating at 30-60% capacity.<sup>6</sup> At this time, many recyclers were impacted by a lack of demand for recycled plastic coupled with low sales prices, a lack of materials availability, and a lack of available workers or restrictions on worker availability. Independent waste collectors are believed to have been particularly impacted.<sup>7</sup>

<sup>1</sup> Kaza et al., 2018.

<sup>2</sup> Ibid.

<sup>3</sup> Regional generation rates refer to the 17 administrative regions which coordinate planning and organize national government services across multiple LGUs. Regions are divided among Luzon (Regions I–V, Cordillera Administrative Region [CAR] and National Capital Region [NCR]), Visayas (Regions VI–VIII) and Mindanao (Regions IX–XIII and Bangsamoro Autonomous Region in Muslim Mindanao).

<sup>4</sup> NSWMC, 2017.

<sup>5</sup> Kaza et al., 2018.

<sup>6</sup> GA Circular, 2020.

<sup>7</sup> Ibid.

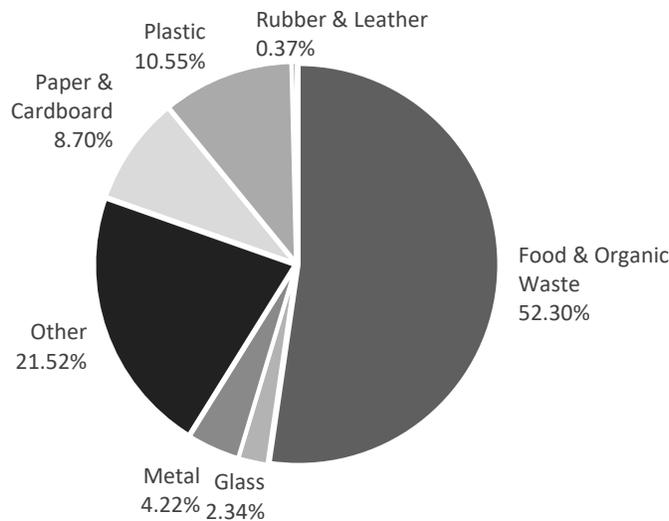


Figure 2. Waste Composition in the Philippines  
(Source: Kaza et al., 2018)

## 2.2 Context of Plastic Waste in the Philippines

Using similar methods to Jambeck et al., 2015, but with updated data on waste generation, composition, and mismanagement from Kaza et al. (2018), the Jambeck Research Group estimates total mismanaged plastic waste in the Philippines will reach 1.2 million metric tons/year in 2020. Because the Philippines is an archipelagic country consisting of almost 7,500 islands and because major population centers such as Manila are directly on the coast, it is likely that a significant fraction of the mismanaged plastic in the Philippines may enter the ocean.

Examination of litter can indicate a relationship to marine debris. A study of litter in the urbanized coastal environment in Macajalar Bay found that plastic was the primary component of the litter, which was determined to be of local origin based on the identifiable packaging.<sup>8</sup> Plastic was also the primary component of litter recorded on a beach near Luzon in the southwestern part of the Philippines, with consumer goods like sachet wrappers, disposable cups and plates, plastic bags, straws and stirrers, and plastic sacks comprising the top five plastic litter types.<sup>9</sup> The negative impact of plastic waste and solid waste in general has been widely documented, with some 700 species of marine animals and nearly every species of seabird reported to have eaten or become entangled in plastic.<sup>10</sup> This is of particular concern considering the rich marine biodiversity of the Philippines and neighboring regions.

## 2.3 Collection and Management of MSW in the Philippines

72% of waste generated (by mass) in the Philippines is reported as “unaccounted for” and for the purposes of this report is assumed to be inadequately managed; the other 28% (by mass) is reported to be recycled<sup>11</sup>—which corresponds to the NSWMC’s country-level reported “recyclable fraction” characterization of the waste stream. More specifically, the NSWMC reports a 48% diversion rate (from

<sup>8</sup> Esquinas et al., 2020.

<sup>9</sup> Palar et al., 2019.

<sup>10</sup> Hardesty et al., 2015.

<sup>11</sup> Kaza et al., 2018.

landfills) for Metro Manila and a 46% diversion rate from those outside the city; specifics on what the diversion goes to are not given and data on SWM and recycling remain incomplete in many parts of the country.

Under the Ecological Solid Waste Management Act of 2000 (RA 9003), local government units (LGUs) are responsible for the collection, transport, and disposal of solid waste, typically administering their own collection systems or contracting out this service to private contractors.<sup>12</sup> While cities like Quezon City and Cebu report 100% collection rates,<sup>13</sup> the nationwide collection rate is between 40-85%. Metro Manila is estimated to have an 85% collection rate, but lower income and informal areas of cities and rural communities remain under-serviced.<sup>14</sup>

Under RA 9003, local SWM Boards are tasked to submit and implement a plan for the safe and sanitary management of solid waste generated in areas under their geographic coverage; however, these plans have been delayed both in preparation and implementation. RA 9003 also requires LGUs to close existing open dumpsites, however, 403 open dumpsites and 108 controlled dumpsites remained in operation as of 2016. The number of sanitary landfills increased from 48 in 2010 to 118 in 2016, but less than 15% of LGUs have access to sanitary landfills.<sup>15</sup> Open dumping remains the general practice of waste disposal throughout the Philippines.

RA 9003 also required LGUs to establish materials recovery facilities (MRFs) to achieve a minimum 25% diversion rate of MSW through reuse, recycling, composting, and other resource-recovery activities. About 9,883 MRFs were in operation as of 2016, reaching 31.3% of the barangays (the smallest administrative district) in the country.<sup>16</sup> While there is not more detail on where, why, or if MRFs continue to expand (it is likely they are if RA 9003 is being followed), activity by groups such as the Mother Earth Foundation to create “zero waste cities” has spurred on changes in Metro Manila and has resulted in the creation of MRFs and higher recycling rates in the barangays in the cities of Taguig, Malabon, and Tacloban.<sup>17</sup>

## 2.4 The Role of the Informal Sector

The informal sector is a significant contributor to recycling in the Philippines. Estimates from Manila and Quezon City place the percent of the urban population working as informal recyclers between 0.1% and 0.79%. The mass of waste recycled by the informal sector in these cities as a percentage of total waste generated is estimated at 6% and 31%, respectively.<sup>18</sup> A similar study for Ormoc City, located in Leyte, Eastern Visayas, puts the informal sector recycling rate between 18% to 24% and estimates that the informal sector accounts for more than 50% of all recyclables collected in the city.<sup>19</sup> Differences in these estimations highlight the variation between cities (Quezon City has a population of 2.9 million in Metro Manila and Ormoc has a population of 191,000 on a much less urbanized island), but also the lack of

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<sup>12</sup> NSWMC, 2017.

<sup>13</sup> Kaza et al., 2018.

<sup>14</sup> NSWMC, 2017.

<sup>15</sup> Ibid.

<sup>16</sup> Ibid.

<sup>17</sup> Henam, S. and Sambayal, S., 2019.

<sup>18</sup> Lange & Linzer, 2013.

<sup>19</sup> Hetz et al., 2011.

available data on the informal sector. For plastic, recovery rates in Ormoc City are estimated to be 85-90% for PET, 45-50% for hard plastic, and 0% for plastic bags.<sup>20</sup> Notably, the informal sector is only incentivized to collect plastics and other materials with a value for recycling markets, generally excluding film and multilayer plastics from the system.

With varying degrees of success, there have been efforts to integrate the informal recycling sector into formal 3Rs/SWM operations. In Iloilo City, the government facilitated the creation of a waste workers association as part of the creation of a new integrated waste management center, with the objective of formalizing their status as waste workers and enrolling them into a skills development program. The association has 240 members that jointly recover materials from the dumpsite; a considerable amount of recyclables are still brought to the dumpsite although household segregation and delivery to the local MRFs are mandatory. The association has enabled the group to explore new livelihood options such as the recovery of alternative fuels for the cement industry and household use, production of compost, and making of handicrafts out of used packaging.<sup>21</sup> In Metro Manila, the Linis Ganda program established a network of itinerant collectors called eco-aides who were provided with ID cards, green shirts, and green push carts. Eco-aides are both land-based, where they purchase small quantities of waste or collect from the garbage bins on the streets on fixed routes, and river-based, where they collect recyclables in single person boats.

Women comprise 30% of the 100,000 eco-aides in the San Juan river.<sup>22</sup> In addition to collecting recyclables, eco-aides are trained to serve as educators and engage households with the program. Linis Ganda is now present in 370 barangays in Metro Manila and has partnered with Unilever to facilitate the collection of flexible plastics such as sachets and plastic bags.<sup>23</sup>

## 2.5 Waste Management in CCBO Engagement Sites

**Iloilo** - In 2006, a waste characterization in Iloilo City showed that the waste stream was 46.4% organic waste and 15% plastic, among other materials.<sup>24</sup> This study involved the local informal waste community as Iloilo decided to change the local dumpsite into a more formalized landfill and recycling system. At the time, a waste workers association was formed so that the 300 informal workers could be included in the process as much as possible. The Calahunan Livelihood Association Inc. (UCLA) was formed with 240 members who committed to follow guidelines and to work jointly to recover recyclable items. The UCLA also explored using organic and other waste materials as alternative fuels.<sup>25</sup>

At the East Asia Seas Congress in 2019, the “Iloilo Ministerial Declaration on East Asian Region, Moving as One to Secure Healthy Oceans, People and Economies” was created, which marked the first time that East Asia nations developed a collaborative pledge to support the reduction of marine pollution.<sup>26</sup> More recently, the Provincial Environment and Natural Resources Office (PENRO) has made announcements about the capitol city being an example for other cities on the island, and they started a new initiative in

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<sup>20</sup> Ibid.

<sup>21</sup> Paul et al., 2012.

<sup>22</sup> Chikarmane & Narayan, 2009.

<sup>23</sup> Unilever Philippines, 2020.

<sup>24</sup> Paul et al., 2012.

<sup>25</sup> Paul et al., 2011.

<sup>26</sup> Lena, 2018.

2019 called “Barangay Kapitolyo Solid Waste Management” (while reports on this were not found, official posts by the government were reviewed). The governor mentioned treating the capitol as a barangay and is limiting single-use plastic and prohibiting Styrofoam food containers.<sup>27</sup>

Additionally, source segregation is now required, and new bins were put out in 2020 for non-biodegradable, recyclable and biodegradable waste. PENRO plans to put uniform, standard trash bins in every provincial government office. The Provincial Engineering Office also designed a MRF that will serve the Capitol and the Sports Complex and the organic wastes generated by the Capitol will be maintained by the Provincial Agriculture Office in the plant nursery in the La Paz district and residual wastes will be managed by the City Government. The mayor expressed his goals to minimize the use of single-use plastic with the intention of a complete ban eventually.<sup>28</sup> Notably, amidst the COVID-19 pandemic in 2020, St. Paul’s Hospital of Iloilo was recognized for its ability to actually reduce the volume of healthcare waste generated and increase the use of reusable personal protective gear by staff.<sup>29</sup>

**Batangas** - In 2013, Batangas City’s residents were surveyed about their SWM practices and desires for future change. Responses found that commonly, residents were feeding food scraps to animals, selling items of value, and burning waste regularly; they were not composting or recycling (in a formal way). The perceived benefits of proper SWM was clean and orderly surroundings and epidemic elimination. In terms of obstacles to improved SWM, residents reported inadequate waste management facilities, irresponsible government officials, rapid urbanization, and inefficient collection of waste.<sup>30</sup> Since this research was conducted, a centralized waste collection system was developed and subcontracted to the Metrowaste Solid Waste Management Corporation (Metrowaste). Centralized Batangas City has waste collection includes biodegradable, non-biodegradable, and residual wastes. More recently, under the USAID Municipal Waste Recycling Program (MWRP), the Mother Earth Foundation worked with the Batangas City to bring zero waste management methods to 30 of 105 barangays in the city that were not serviced by Metrowaste because of their distance from the city center.<sup>31</sup> In terms of addressing marine litter, Conservation International Philippines and the Sea Scouts are active in the city – they spread awareness and conduct beach cleanups (including characterization of the litter).<sup>32</sup>

**Pasig** - Pasig City is located east of Manila City and within Metro Manila. Pasig has developed a ten-year SWM Plan that goes from 2015 to 2024. Within a portion of that plan that is available, the plastic percent by mass in the waste stream is cited to be 18.8% (higher than a global average of 11-12%).<sup>33</sup> A 1997 WHO report on the Pasig River noted that collection by the Metro Manila Authority (now referred to as the Metro Manila Development Authority) in the residential areas of the 367 barangays in Pasig varied from 70 to 100%. At that time, inaccessible areas occurred mostly along the riverbank where trash was then thrown into the water. Historical estimates of accumulation in these areas were 34 tons (1990) to 55 tons (2005).<sup>34</sup> The Pasig River, a major waterway in Pasig City, ranks 30<sup>th</sup> for levels of plastic waste input into

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<sup>27</sup> Momblan, 2019.

<sup>28</sup> Ibid.

<sup>29</sup> Cabico, 2020.

<sup>30</sup> Reyes and Furto, 2013.

<sup>31</sup> USAID, 2019.

<sup>32</sup> Genosa, M. T., 2019.

<sup>33</sup> Pasig City, 2015.

<sup>34</sup> Cruz, R. T., 1997.

the ocean.<sup>35</sup> Organizations like Plastic Tides Philippines and the Pasig River Rehabilitation Commission work to clean up the Pasig River and its tributaries.

**Las Piñas** - Las Piñas is a city located south of the City of Manila and within Metro Manila. The city also has a ten-year SWM Plan documented with the Philippine Government.<sup>36</sup> According to the city website, the city manages its own waste and this results in Las Piñas having the lowest expenses in waste management among the cities in Metro Manila.<sup>37</sup> Waste collection occurs in over 250 private villages and subdivisions as well as the 20 other barangays. There are about 1000 “Kaagapay sa Kalinisan” and “Yellow Boys Volunteers” that maintain cleanliness on streets and major roads.<sup>38</sup> As far back as 2013, the city was setting goals of waste volume reductions of 35% after it had already achieved a 13% reduction the year before.<sup>39</sup> And in 2011, recycling “kiosks” were installed (these were small processing units for waste, not drop-off centers) to build recycling infrastructure.<sup>40</sup> And in 2014, a successful food waste composting system was reported in the news.<sup>41</sup> Because of Las Piñas’ location south of Manila City and along Manila Bay, plus its proximity to Freedom Island—a patch of mangrove forest and salt marsh spanning 30 hectares (74 acres) that forms part of the 175-hectare (432-acre) Las Piñas-Parañaque Critical Habitat and Ecotourism Area (LPPCHEA) along its coast—marine litter, waste management, and plastic pollution remain high concerns for this city.

## 2.6 Prior Stakeholder Engagement and USAID MWRP

There is ongoing work in the Philippines by various stakeholders. Fellow CCBO partner, The Alliance to End Plastic Waste (AEPW), is partnering with a local social enterprise in Manila called The Plastic Flamingo to scale up collection and processing of plastic waste in the Metro Manila area through developing a new recycling facility. The waste will be turned into “eco-planks” for emergency shelter and temporary disaster housing.<sup>42</sup> Through the CCBO program and a partnership agreement signed in June 2020, AEPW has also partnered with USAID on ocean plastics projects in Asia.

In Manila Bay, the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) Integrated Information Management System for Coastal and Marine Environment has developed a five-year Integrated Environmental Monitoring Program (IEMP) which includes pollution and habitat/resource monitoring.<sup>43</sup>

UN Environment Program (UNEP) has published several studies on plastic, consumer preferences, and the circular economy in South-East Asia. In 2019, UNEP and the Coordinating Body on the Seas of East Asia (COBSEA) published a study on the role of packaging regulation in the circular economy which focuses on 10 South-East Asian countries including the Philippines, with a key finding that limited packaging-related

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<sup>35</sup> Lebreton et al., 2017.

<sup>36</sup> NSWMC, 2015.

<sup>37</sup> City of Las Piñas, 2020.

<sup>38</sup> Ibid.

<sup>39</sup> Radyo Natin, 2013.

<sup>40</sup> Morelos, 2011.

<sup>41</sup> Ranada, 2014.

<sup>42</sup> AEPW, 2020.

<sup>43</sup> PEMSEA, 2020.

policies and weak enforcement are contributing to plastic pollution in the region.<sup>44</sup> More recently, UNEP and Food Industry Asia (FIA) published a study on the perceptions of consumers and food and beverage businesses on plastic waste in South-East Asia. Key findings include that both consumers and businesses want further action by governments and that consumers say they are concerned about plastic waste but are not necessarily changing habits. For the Philippines, 94% of consumers said they are extremely concerned about plastic waste issues, but only 49% say they are less likely to buy a product from non-recycled material.<sup>45</sup>

The Jambeck Research Group has knowledge of the following groups through USAID's Municipal Waste Recycling Program (MWRP) in the Metro Manila area, and they may be considered for partnership in this space: CSO, EcoWaste Coalition, and Save Our Philippine Seas (Metro Manila Area). As of January of 2021, CCBO will also have awarded grants to Catholic Relief Services, Green Antz Builders, Inc., Communities Organized for Resource Allocation, Inc., Plastics Credit Exchange, and Project Zacchaeus Marketing Cooperative. Other potential groups for CCBO to explore partnerships with in the Philippines include: Conservation International-Philippines (all Philippines), Greenpeace Philippines (all Philippines), Mother Earth Foundation (all Philippines), the Pasig River Rehabilitation Commission, Philippine Reef and Rainforest Conservation Foundation, Inc. (Negros Island), Plastic Tides Philippines, Sea Scouts (in Batangas), and WWF (all Philippines). Corporations with local presence or influence include Globe, Coca-Cola Foundation, Colgate-Palmolive, Nestle, SC Johnson, and SM Supermalls.

Projects funded under USAID MWRP (2016-2021) are continuing to address issues related to waste management and plastic pollution in the Philippines. Comprehensive results of these projects were not available at the time of writing, but a summary of the projects based upon a USAID publication is included below. Further insight will be gained once all projects are complete and final results are made available. It is understood that CCBO will build upon progress made under the MWRP program, leveraging its learnings, continuing efforts or scaling them to new locations, and continuing to support select MWRP grantees that have demonstrated significant achievements.

According to USAID, under the MWRP and with an investment of \$1.4 million, MWRP grantees have improved the 3Rs and SWM services and promoted better household-level waste management practices among 1.3 million residents across 16 cities in the Philippines. Specifically:

- In Batangas City, a zero-waste model was expanded to 30 neighborhoods.
- In Puerto Princesa, SWM was improved and recycling increased around marine protected areas.
- In Bacolod and Negros Island, zero-waste convenience stores were promoted.
- In several projects in Manila Bay, data was collected on plastic waste flow, circularity, people's knowledge and perceptions, recycling and consumer awareness was promoted; as a result SWM was being improved among 23,000 households in informal settlements and citizen science data collection was introduced to the government, academia and NGOs through the collection of litter data with the Debris Tracker mobile app.<sup>46</sup>

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<sup>44</sup> UNEP, 2019.

<sup>45</sup> Sea Circular, 2020.

<sup>46</sup> "Partnering with Cities to Reduce Ocean Plastics: The Municipal Waste Recycling Program: The Philippines," May 2020. [https://urban-links.org/wp-content/uploads/20200608\\_MWRP-Philippines-Country-Profile.pdf](https://urban-links.org/wp-content/uploads/20200608_MWRP-Philippines-Country-Profile.pdf)

## 3. Relevant National and Local Actions

### 3.1 Regional Actions

The Philippines sits in a region with a heavy focus on marine litter and development of SWM infrastructure. The Asia Pacific Economic Cooperation (APEC) includes the Philippines and APEC has a “Roadmap on Marine Debris” that the 21 APEC Economies have agreed to work on together. Each hosting country often takes action over their host year and meetings and workshops are held to share knowledge and build capacity to address marine debris.

The Philippines is also a part of Association of Southeast Asian Nations (ASEAN). The ASEAN Framework of Action on Marine Debris was developed based upon recommendations from the ASEAN Conference on Reducing Marine Debris in ASEAN Region in Phuket in November 2017, taking into account the East Asia Summit (EAS) Conference on Combating Marine Plastic Debris in Bali in September 2017. The Philippines signed the Bangkok Declaration on Combating Marine Debris with ASEAN in 2019, which re-affirmed UN Sustainable Development Goal 14.1 of preventing and significantly reducing marine pollution, including marine debris. The declaration calls for a land-to-sea prevention approach, a focus on promoting the circular economy and the 3Rs, and collaboration among the ASEAN countries.<sup>47</sup>

The Philippines is also a member of Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) and Iloilo hosted the PEMSEA East Asia Seas Congress in 2018. PEMSEA members include: Cambodia, China, the Democratic People's Republic of Korea, Indonesia, Japan, Laos, the Philippines, the Republic of Korea, Singapore, Timor-Leste, and Vietnam which have gathered together to build capacity both at the Congress and in workshops in Busan Korea in 2019. In addition, in partnership with Coca-Cola Foundation and Caritas Diocese of Imus Foundation, PEMSEA is beginning a Plastic Wastes Recycling Project in the Philippine Province of Cavite.<sup>48</sup>

### 3.2 National Supporting Legislation

Currently, 3Rs and SWM in the Philippines is regulated at the national level under the Ecological Solid Waste Management Act of 2000, RA 9003. RA 9003 was passed in 2001 and created the National Solid Waste Management Commission (NSWMC). RA 9003 required LGUs in the Philippines to move away from open dumping practices and collect, transport, and dispose of waste in sanitary landfills; requiring the aforementioned 25% diversion rate with the construction of MRFs.<sup>49</sup> In practice, however, implementation of RA 9003 at the local level has been limited. With a backlog in the development and approval of municipal-level ten-year SWM plans, the NSWMC cites technical, political, and financial limitations of LGUs as causes for the delayed implementation of the law. Developing ten-year SWM plans and obtaining approval has been a lengthy process. As of 2017, only 318 SWM plans had been approved, with the lack of institutional capacity to provide technical support to the LGUs cited as an inhibiting factor.<sup>50</sup> As of

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<sup>47</sup> ASEAN, 2019.

<sup>48</sup> PEMSEA, 2019.

<sup>49</sup> NSWMC, 2017.

<sup>50</sup> NSWMC, 2017.

September 2020, that number sharply increased to over 950 approved plans.<sup>51</sup> Because SWM plans are written at various levels, the total number of plans required is not known at this time. As of March 2020, there are 81 provinces, 146 cities, 1,490 municipalities, and 42,046 barangays in the Philippines, all with varying needs to effectively manage solid waste being generated.

The Philippines' current national 3Rs/SWM regulation was initially developed in response to the Payatas dumpsite disaster in Quezon City, 2010, in which over 400 hundred waste pickers lost their lives when they were buried under 2,000 tons of garbage during a rainstorm. The disaster compelled the government to react with RA 9003, and the Asian Development Bank donated \$1.8 million to implement the Act.<sup>52</sup> While emphasizing waste reduction and segregation, RA 9003 prohibits waste picking in MRFs or disposal facilities, unless the owner or operator allows it.

### 3.3 National Action Plan

The National Plan of Action for Marine Litter (NPOA-ML) is still under development in the Philippines. The Jambeck Research Group at the University of Georgia (UGA) obtained draft documents and notes from the multi-stakeholder workshop conducted in August 2019 by the Department of Environmental and Natural Resources (DENR). Participants in the workshop recognized the gap between national policy making and local implementation highlighted by RA 9003, citing the lack of technical, financial, and human resources capacity to implement the provisions of the law. In addition to the need for local political will and transparency in the policy making process, participants discussed the need for coordination and reporting mechanisms of implementing agencies with roles of government agencies needing to be well-defined.

The outline presented below is not intended to be fully comprehensive of the final NPOA-ML, but rather to provide a general overview of items likely to be included based on draft documents compiled in the multi-stakeholder workshop. The full outline of proposed action items is provided in the Appendix, but key activities are as follows:

1. Establish science- and evidence-based baseline information on marine litter.
2. Mainstream circular economy and sustainable consumption and production initiatives.
3. Enhance recovery and recycling coverage and markets.
4. Prevent leakage from collected or disposed waste.
5. Reduce sea-based sources of marine litter.
6. Manage litter that is already existing in the marine/riverine environment.
7. Develop, monitor, assess and update efforts in implementing the NPOA-ML.
8. Enhance policy support and enforcement for marine litter prevention and management.
9. Develop and implement a strategic and targeted social marketing and communications campaign using various media.
10. Enable sufficient and cost-effective financing and other institutional resource requirements for the implementation of the NPOA-ML.
11. Strengthen LGU capacities and local level implementation of NPOA-ML.

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<sup>51</sup> NSWMC, 2020.

<sup>52</sup> Chikarmane & Narayan, 2009.

### 3.4 Local Policy Implementation

While the NPOA-ML is still in development at the national level, there has been some local policy action focused on marine debris reduction in communities across the Philippines. According to the UNEP Single-Use Plastics Roadmap, 27 cities and provinces have implemented economic instruments to discourage the use of plastic bags and Styrofoam. The city of Muntinlupa, in Metro Manila, implemented a ban on the use of plastic bags on dry goods and regulations on their use for wet goods in 2011, but no data is available on the impact (UNEP, 2018). In addition to a ban on Styrofoam containers and cellophane, San Carlos City encourages stores to provide an express “Green Lane” for customers who bring their own reusable bags.<sup>53</sup>

Despite widespread delay, some cities have also made progress towards implementing the safe and sustainable 3Rs/SWM systems outlined in RA 9003. Cebu, the second largest city in the Philippines, has reduced waste by 30% while simultaneously experiencing 3% annual population growth. The city submitted a ten-year SWM plan in 2005 with technical assistance provided by Fort Collins, USA, under the Resource Cities Program of CCBO partner, the International City/County Management Association. Cebu’s own sanitary landfill reached maximum capacity within several years of opening in 1998, and the city now pays a tipping fee to dispose of its collected waste in an adjacent municipality. Waste collection is facilitated by the Department of Public Services using garbage and barangay trucks, typically using a communal method where common waste receptacles are located in public places or through direct household collection. Since April 2011, the city has strictly enforced a ‘No Segregation, No Collection policy’ and educated citizens to separate into different biodegradable, recyclable, and residual categories. The Cebu Environmental and Sanitation Team (CESET) was established to issue citation tickets to violators, carrying a penalty of a fine of PHP 1000 (US\$ 20) to PHP 5000 Peso (US\$ 100) or by imprisonment between one month and six months. Fines have generally decreased over time with increased awareness. This approach has been coupled with education campaigns on SWM carried out by the environmental committee with local volunteers from each barangay. Cebu has also implemented a cash for trash program to work with women’s cooperatives to collect recyclables and a household and barangay-level composting program. Implementing RA 9003 in Cebu required local political support but also the creation of local legislation translating the national policy to the local context.<sup>54</sup>

### 3.5 Local Stakeholder Engagement and Plan Feedback

While still in draft form, the National Action Plan has received criticism from environmental advocacy groups. UGA obtained comments on the draft authored by several large NGO groups in the Philippines. Firstly, the NGO groups say the draft plan does not hold the plastic industry and related manufacturing sectors accountable for the end-of-life of their products and that it requires local municipalities to bear the cost burden of efforts to conduct coastal and river cleanups. As another provision of RA 9003, the NSWMC was charged with delivering a list of Non-Environmentally Acceptable Packaging and Products; this never materialized, and the draft NPOA-ML does not re-address the creation of such a list. In Section 2.3, the draft NPOA-ML calls for the development voluntary or mandatory Extender Stakeholder Responsibility (ESR) system appropriate for the Philippines context through a multi-stakeholder design

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<sup>53</sup> Karasik et al., 2020.

<sup>54</sup> Premakumara et al., 2014.

process; again, environmental groups call for required take-back systems and a polluters tax rather than voluntary ESR. In addition, the draft calls for studying appropriate CE business models in section 2.4; the NGOs advocate that there are effective existing business models that need tax incentivization. Section 3.5 of the draft calls for waste-to-energy systems for residual waste after segregation, which is also opposed by some environmental groups and prohibited in some locations.

Significant activism in the Philippines has focused on the brands that are contributing to plastic pollution; groups such as the Plastic Tide, Greenpeace Philippines, GAIA, and #BreakFreeFromPlastic, among others, have been vocal in naming specific companies for their contribution to plastic pollution based on brand-audits of litter found in the environment. Many multi-national companies have launched eco-friendly products or recycling campaigns targeted at the Philippines in response to both the country's current waste management situation and this brand-auditing approach. For example, Nestle Philippines is shifting to paper straws in their ready-to-drink containers (Nestle Philippines, 2020); Unilever is working with the Philippine Reef & Rainforest Conservation Foundation Inc. to pilot personal care product refill options in the Philippines (Unilever, 2020); and Coca-Cola Beverages Philippines invested in a bottle-to-bottle recycling facility that will be operational in 2021 and launched a 100% recycled PET plastic packaging for water brand Viva! (Coca Cola, 2019).

Efforts to educate consumers have had mixed results. In a survey in Manila, household respondents were asked to identify factors impacting a successful waste management program; political will was first on the list, followed by discipline of household members, and then need of information and education on proper waste management.<sup>55</sup> Surveys of a rural community in the Philippines found that participants were not informed about aspects of waste management and that there was little reuse and recycling of waste materials among the households.<sup>56</sup> A study in Butuan City, in the Southern Philippines (Mindanao), examined an education campaign conducted by government agencies and revealed poor information dissemination in both rural and urban village; the concept of 3Rs (Reduce, Re-use, Recycle) was seldom covered in the education efforts.<sup>57</sup> Some educational campaigns have taken more community-based approaches to facilitate household participation in 3Rs/SWM. The Save the Rivers, Save the Sea program in Tabaco City within the province of Albay mobilized students and local youth to collect data and work with the LGU to develop a community-led sustainable action plan for 3R/SWM; the community-based approach was found to be effective in increasing community awareness of 3Rs/SWM practices, but requires LGU support for long-term sustainability.<sup>58</sup>

## 4. CCBO Alignment

The activities proposed in the CCBO Year One+ Work Plan for the Philippines (May 2020 - September 2021), including focused work at key engagement sites, largely complements the draft existing legislation under RA 9003 to establish 3Rs/SWM systems and MRFs in communities. The draft NPOA-ML also has sections dedicated to improving SWM and recycling markets, with a focus on implementing 3Rs/SWM at the LGU-level through political and financial levers and enabling mechanisms for the creation of new

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<sup>55</sup> Bernardo, 2008.

<sup>56</sup> Limon et al., 2020.

<sup>57</sup> Herrera et al., 2012.

<sup>58</sup> Wynne, 2018.

recycling markets. Other sections of the draft NPOA-ML that could provide a supportive environment for CCBO work are: enabling policies for circular economy (which would promote recycling and the development of recycling infrastructure), collecting baseline and ongoing data on marine pollution and policy implementation (related to other baseline CCBO work), promoting a large-scale mass media education campaign (related to the 3Rs in cities), and conducting cleanups of existing and riverine marine litter (informs what is of value for recycling).

Of particular relevance, the NPOA-ML’s Action Items Three (Enhance recovery and recycling coverage and markets) and Four (Prevent leakage from collected or disposed waste) align with CCBO Objective 1 to promote 3R practices and strengthen local and regional markets for recycled plastics.

The following table maps CCBO Activities to related action items and resource requirements in the draft NPOA-ML to provide an overview of areas for potential collaboration. NPOA-ML items are not listed in order, as they do not directly match the CCBO activities. Areas of collaboration are grouped in the same row based on related activities. Key resources that overlap with CCBO efforts are bolded.

Table 1. NPOA-ML Needs and Actions Aligned with CCBO Activities

<b>Goals of Draft NPOA-ML</b>	<b>Draft NPOA-ML Action</b>	<b>CCBO [Work Plan] Activity</b>
<b>Baseline information</b> /studies per material type; Online database on the proper management, operation, and maintenance of recycling and sanitary landfill facilities	<b>3.4.1</b> Baselining and collection of data from the LGUs’ materials recovery facilities (MRFs) with emphasis on capacities  <b>4.3</b> Establish infrastructure, identify gaps, and provide funding for solid waste treatment and disposal	<b>PH 1.2</b> Support the development and/or strengthening of long-range SWM Plans in engagement sites  <b>PH 1.2.1</b> Establish baseline of how waste, especially plastics, is managed in CCBO engagement sites
Baseline information/studies per material type; Roadmap development; Policy recommendations; Publication on market database for recyclables and its markets; Value chain analysis; Funds to support <b>pilot testing of innovative technologies</b> , logistics and approaches	<b>3.2</b> Establish and link markets for recyclables and recycled materials, with priority on locally recovered materials  <b>3.3</b> Strengthen the domestic recycling industry for all types of materials	<b>PH 2.1.1</b> Assess locally viable technology and infrastructure solutions  <b>PH 2.1.2</b> - Promote 3Rs by identifying and testing new local business models
<b>Pre-requisite technical and policy studies and research</b> ; Workshops and consultations; Baseline information/studies per	<b>3.1</b> Enable mechanisms for recyclables market creation and scaling with the involvement of all stakeholders along the value chain  <b>3.4</b> Support LGU efforts on segregated	<b>PH 2.1.3</b> Identify scalable best practices for the 3Rs  <b>PH 1.2.4</b> Provide data and technical assistance to develop or strengthen local SWM

material type; Online database; <b>Policy Recommendations;</b> Funds to support LGU collection and recycling infrastructure projects	collection, materials recovery, and processing	Plans  <b>PH 2.1</b> Increase uptake of 3Rs in CCBO engagement sites
<b>Pre-requisite technical and policy studies and research;</b> Workshops and consultations	<b>3.1.1</b> Establish standards for recycled products and recyclables  <b>3.1.2</b> Develop mandatory minimum requirements for use of materials with recycled content, e.g. percentage of recycled content in building materials or in blended cement to create market for alternative construction materials.	<b>PH 2.2</b> Engage on 3R policy discussions as opportunities arise
<b>Technical expertise and human resources; Provide support to plan formulation</b>	<b>9.1</b> Formulate an effective national social marketing and strategic communication plan for marine litter prevention and management, including relevant environmental laws.  <b>9.1.1</b> Conduct capacity mapping of institutions and knowledge and perception gap assessment for the general public in terms of the critical behaviors such as, but not limited to, littering, excessive use of single-use materials, and segregation-at-source and recycling  <b>9.1.2</b> Establish baseline capacities, knowledge, and perceptions vis-à-vis behavioral and infrastructural barriers	<b>PH 3.1.1</b> Conduct formative research on SBC in engagement sites and capacity building of CCBO grantees, as appropriate, to contribute to the research  <b>PH 3.1.2</b> Conduct Trials of Improved Practices (TIPs) for key behaviors and willingness/ability to pay
<b>Technical expertise and human resources;</b> Consider providing support to national campaigns that are developing social marketing materials and dissemination, or investigate how CCBO can capitalize on these efforts to build and measure longer-term behavior change	<b>9.2</b> Implement massive campaigns and outreach programs that target specific stakeholders to take interest in connecting their day-to-day actions with marine litter impacts and do their share.  <b>9.3.3</b> Implement multi-level social marketing campaigns using creative IEC materials, human-interest stories, and social media, preferably in local Philippine languages  <b>9.3.4</b> In coordination with LGUs, empower communities on the ground by doing IEC at the barangay level	<b>PH 3.2</b> Begin implementation of SBC plans in CCBO engagement sites  <b>PH 3.2.3</b> - Engage youth and women's organizations
<b>Technical expertise and manpower; Pre-</b>	<b>8.1</b> Mainstream marine litter lens in national policies and programs	<b>PH 1.4.1</b> Analyze national level SWM laws, policies, and

<b>requisite technical and policy studies and baseline research;</b> Funding support for LGUs	<b>8.1.1</b> Map out and review existing policies, including enabling and conflicting policies and agency mandates to serve as basis for necessary actions, including particular emphasis on sectoral, material-specific, and emerging policy needs  <b>8.2</b> Mainstream marine litter lens in local development plans, policies, and budgeting	enforcement mechanisms  <b>PH 2.2.1</b> Identify strategic actions for 3R/SWM and marine debris reduction in support of national plans
<b>Technical expertise and manpower; Support to developing training materials;</b> Conduct of training-workshops	<b>9.3</b> Capacitate national and local government agencies on relevant laws and measures for the prevention and management of marine litter, including strategic training rollout	<b>PH 1.4.3</b> Develop Awareness and Training Materials for Local Government to Build Capacity for Local Implementation and Enforcement
Support to embedding the marine litter lens in policies, programs and in mandates of existing national and local law; enforcement bodies; Technical expertise and manpower; <b>Pre-requisite technical and policy studies and baseline research</b>	<b>8.1.2</b> Develop and strictly enforce and implement incentives and penalty mechanisms for all stakeholders (national and local government, private sector, communities, etc.)  <b>8.3</b> Enhance the monitoring and enforcement of marine litter-relevant laws, specifically through existing law enforcement bodies	<b>PH 1.4.2</b> Identify current gaps in local (engagement site) compliance and enforcement practices
<b>Technical expertise; Pre-requisite technical and policy studies and baseline research</b>	<b>11.1</b> Develop a roadmap or framework for the local-level implementation of the NPOA-ML	<b>PH 1.2</b> Support the development and/or strengthening of long-range SWM Plans in engagement sites
<b>Pre-requisite technical and policy studies and baseline research</b>	<b>10.1</b> Identify and address barriers to private sector investments or public-private partnerships (PPPs) aimed at reducing marine litter	<b>PH 2.3.1</b> Develop Private Sector Landscape Analysis

As identified in the table above, CCBO has strong alignment with the draft NPOA-ML, especially in enhancing SWM and 3R practices, building SBC through educational and community efforts, and establishing effective policy with sustainable implementation. In particular, the draft NPOA-ML acknowledges a need for technical expertise, policy recommendations, and baseline research.

Participants in the 2019 multi-stakeholder workshop for developing the NPOA-ML action items listed above included government agencies, fishermen associations, private sector businesses, and NGOs and development partners, including the United Nations Development Program and the World Wildlife Fund. Existing policies were reviewed as part of the development process, including the *ASEAN Framework of Action on Marine Debris*, the *Coordinating Body on the Seas of East Asia (COBSEA) Regional Plan of Action on Marine Litter*, the *Honolulu Strategy – A global framework for prevention and management of marine debris*,

*Indonesia's Plan of Action on Marine Plastic Debris 2017-2025, Malaysia's Roadmap Towards Zero Single-Use Plastics 2018-2030, Vietnam's National Action Plan on Marine Plastic Debris Management until 2030, and Thailand's Plastic Waste Management Roadmap 2018-2030.*

## 5. Recommendations and Gap Identification

The following recommendations are made with the acknowledgment that this report is based on CCBO's first-year work plan and proceeding CCBO workplans should take the evolving landscape into consideration. In terms of prioritization and timing, addressing historical barriers should come first and any projects related to data gathering, monitoring and assessment (especially if baseline data is desired before starting other projects). In addition, the support of livelihoods, gender, and inclusion, while called out as a separate section here should be interwoven into every project so that this is not an afterthought or add-on, but part of the overall CCBO context. Community engagement is also critical at initial stages and years in the program, authentic inclusion in the process will build local relationships. Finally, other partnership creation can be cultivated from initial years, but implemented in subsequent years after developing initial relationships to see if there is alignment with goals and initiatives. CCBO should continue to assess the regional context to leverage projects and programs, including ongoing and future initiatives of the U.S. Government and other development agencies.

**Addressing Historical Barriers.** The need for expanded SWM in the Philippines continues. The draft NPOA-ML repeats some of the same provisions called for in RA 9003 and runs the risk of facing the same difficulties in implementation without examination of current barriers and future funding mechanisms. CCBO Activities 1.4 – Improve Local Implementation and Enforcement of Laws, Policies, and Regulations – and 1.5 – Strengthen the financial sustainability of SWM in CCBO engagement sites – could prove instrumental in providing a model for the application of both existing national SWM legislation as well as the proposed NPOA-ML. The current draft NPOA-ML references national level funding but does address local revenue streams for project implementation. This is something that should be aligned with CCBO and addressed as soon as possible to ensure sustainability of the work.

**Partnerships and Funding.** With the focus on “polluting brands” in the Philippines, there is potential to leverage brand interest in hard-to-recycle product take-back systems to create new revenue streams for waste pickers or waste worker associations. The NPOA-ML references the development of voluntary or mandatory Extended Stakeholder Responsibility (ESR) system, although details are indistinct at this phase. CCBO could provide facilitation of voluntary public-private partnerships and provide policy recommendations for an appropriate ESR system in the Philippines context. The NPOA-ML has limited exploration of private sector focused SWM/3R strategies and could benefit from the insights gained from CCBO Activity 2.3 – Engage the private sector on 3Rs. With USAID's historical and current programs and partnerships in the region (those outlined here include current local projects/partnerships with Coca-Cola Foundation, Nestle, Unilever, etc.), this is something that could take immediate affect and provide significant benefit to CCBO.

**Scaling Community Engagement.** CCBO's model of engagement sites as pilot cities with projects across multiple modes of engaging with the 3Rs and SWM could be valuable in demonstrating effective policy and SBC. The SBC model called for in CCBO's Philippines work plan is distinctly participatory with a community-specific focus, directly referencing the ineffectiveness of top-down education campaigns. The

draft NPOA-ML focuses on education of consumers primarily through mass media and school curriculum. Although different in context, findings from CCBO's SBC research could be examined for learnings in application to a mass media or traditional educational setting. CCBO could also explore models to engage local partners to quickly scale effective participatory SBC approaches in conjunction with a national educational campaign and outreach program. At a minimum, CCBO's SBC research in sites across the Philippines could inform a clear call to action for the targeted social marketing campaign in the NPOA-ML.

**Household Research.** CCBO also plans to use household-level research with Trials of Improved Practices (TIPs) to assess ability and willingness to pay. This model is again participatory and works with local partners to test adaptive behavioral alternatives. As discussed earlier, this data could be informative for LGUs as their funding mechanisms for implementation are not discussed in detail in the NPOA-ML beyond national level support. The current draft NPOA-ML does not address access to waste collection services; poor and rural areas are still less likely to have access to waste collection services, and in many CCBO engagement sites informal settlements along waterways may be directly dumping waste into the marine environment. While it may be difficult to research and identify these informal developments, engaging and understanding the residents in such settlements may also provide insight into activities that directly contribute to this growing problem. We recommend addressing this divide in access to waste management services in the household research and TIPs studies.

**Measurement and Evaluation.** Several sections of the NPOA-ML regard monitoring and assessing implementation, developing policy for marine litter prevention, and strengthening LGU capacity for local implementation (Sections 7, 8, and 11). The utility of CCBO's expertise in assessing gaps and barriers and developing effective policy is evident in this context. Activity PH 3.1.1 – Conduct Gap Analysis of SWM Laws, Policies, and Enforcement Mechanisms – could be re-implemented after the NPOA-ML is finalized to ensure that the local partnership is aware of what works, what does not work, and what can be improved in real-time. Knowledge of enforcement mechanisms from the initial review could be beneficial to incorporate in the NPOA-ML.

**Support for Livelihoods, Gender, and Safety Considerations.** CCBO also plans to implement the TIPs model for increased safety, income, and living conditions among waste pickers (Activity PH 3.1.2). Transitions from an informal recycling economy to more structured recycling markets described in the NPOA-ML will likely impact the livelihoods of many informal sector workers; more formal SWM systems may exclude waste pickers from access to dumpsites or MRFs for safety concerns. Although the NPOA-ML discusses strengthening local recycling markets conceptually, it does not directly reference how waste pickers may be incorporated into a more formal SWM system. CCBO's research in Activity PH 3.1.2 could be useful in informing this transition across the Philippines, especially if CCBO engagement sites that are undergoing this transition. This is particularly relevant with CCBO's focus on women's global development and prosperity. Models of waste picker associations that have worked in the Philippines have often relied on and provided livelihoods to women's co-operatives. As a cross-cutting approach, CCBO addresses gender quality, women's economic empowerment goals, and those of the U.S. Government's Women's Global Development and Prosperity (W-GDP) Initiative, as part of the Year One+ Workplan for the Philippines. Gender roles are a relevant consideration in this space – women are typically the members of the household who are making consumer choices and are common participants in the informal sector. The NPOA-ML does not address gender equity or women's economic empowerment in the current draft and could benefit from policy recommendations from CCBO on incorporating gendered goals within the NPOA-ML framework. This is something for CCBO to consider for future iterations and direction of the

program.

In summary, CCBO should target existing research efforts to inform implementation of the NPOA-ML and play a role in encouraging representation of vulnerable populations such as women and the informal sector in the local implementation of the NPOA-ML.

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