

**Sixth Regional 3R Forum in Asia and the Pacific**

*“3R as an Economic Industry - Next Generation 3R Solutions for a Resource Efficient Society and Sustainable Tourism Development in Asia and the Pacific”*

Malé, Maldives, 17-19 August 2015

# **City Report**

**(Draft)**

**<Zamboanga City Region IX, The Philippines>**

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This city report was prepared by Zamboanga City Region IX, The Philippines as an input for the Sixth Regional 3R Forum in Asia and the Pacific. The views expressed herein do not necessarily reflect the views of the United Nations.

**Guidelines for City Reporting on Major Initiatives/Achievements in 3R areas**

The main objective of the City Reporting is to share among international community the progress, achievements and best practices, including various challenges faced, in the areas of **3R (Reduce, Reuse, Recycle)**, and sustainable waste management. This would help development agencies, donors, including development banks, in assessing the needs and challenges of cities to better devise their existing as well as future capacity building programmes and operations in the field of 3Rs and sustainable waste management.

It would be appreciated if a consolidated city report could kindly be prepared by answering the following questionnaire (7 Questions in total) and submitted to the **Secretariat of the Regional 3R Forum in Asia and the Pacific** by email to [3R@uncrd.or.jp](mailto:3R@uncrd.or.jp)

Timeline for submission: **17 July 2015**

Secretariat of the Regional 3R Forum in Asia and the Pacific  
United Nations Centre for Regional Development (UNCRD)

<b>City Report [City Name: Zamboanga City (Region IX), PHILIPPINES]</b>	
Sixth Regional 3R Forum in Asia and the Pacific, 17-19 August 2015, Male, Maldives	
<b>Q1</b>	<b>What are the roles of local government stipulated in the 3R-related policies, acts, laws, or regulations?</b>
	<p>The role of local government in the areas of 3R is stipulated under <u>Republic Act (RA) 9003</u> or the Ecological Solid Waste Management Act of 2000.</p> <p><u>Section 10 of RA 9003</u> states that the segregation and collection of solid waste shall be conducted at the barangay level specifically for biodegradable, compostable and reusable wastes. <u>Section 22 of the Act</u> provides that the solid waste containers shall be properly marked or identified for onsite collection as “compostable”, “non-recyclable”, “recyclable”, or “special waste”, or other classification as may be required.</p> <p>Under <u>Section 16 of the Act</u>, the local government unit (LGU), through its local solid waste management board, is mandated to prepare its 10-year solid waste management plan consistent with the National Solid Waste Management Framework. The waste management plan will be for the reuse, recycling and composting of wastes generated in the jurisdiction of the LGU. The plan places primary emphasis on implementation of all feasible reuse, recycling, and composting programs while identifying the amount of landfill and transformation capacity that will be needed for solid waste which cannot be reused, recycled, or composted.</p> <p>Based from the <u>Solid Waste Management Plan of Zamboanga City</u>, the constituted City Solid Waste Management Board (CSWMB) shall coordinate and/or establish linkages with the following various government offices concerned to carry out 3R-related activities :</p> <ul style="list-style-type: none"> <li>• <b>DepEd</b> – Inclusion of SWM in school curricula in all levels;</li> <li>• <b>DOST/DTI</b>- Training in processing of waste materials and marketing finished products;</li> <li>• <b>City Planning and Development Coordinator’s Office</b> – Endorsement for</li> </ul>

	<p>inclusion of SWM projects in the City's 20 percent Development Fund;</p> <ul style="list-style-type: none"> <li>• <b>City Treasurer's Office</b>- Intensify collection of garbage fees from different sectors of waste generators and fines/penalties among violators;</li> <li>• <b>City Agriculturist's Office</b> – Establish tie-up with other agricultural office in other localities to promote composting and use or patronage of the same; and</li> <li>• <b>Barangay Solid Waste Management Board (BSWMB)</b> – Dissemination of information at the grassroots level to bolster a wider awareness of SWM.</li> </ul> <p>Based from the Plan, stakeholder participation is broadened through the inclusion of recyclers-junkshop operators in the composition of the CSWMB.</p> <p>Under <u>Section 32 of RA 9003</u>, the barangay or cluster of barangays are mandated to allocate a certain parcel of land (barangay-owned or leased land) for the establishment of a Materials Recovery Facility (MRF). The MRF shall receive mixed waste for final sorting, segregation, composting, and recycling. In support of the composting program, <u>City Ordinance No. 2002-092</u> was enacted to regulate and prescribe fees for the sale of compost fertilizers produced by the MRFs in the city.</p> <p><u>City Ordinance No. 500 (The Sanitary Code of Zamboanga)</u> and its amendments mandate the separation of various wastes that shall comply with the city's solid waste management program.</p> <p>Several Barangay Ordinances and Resolutions for the implementation of solid waste management were enacted to complement existing Ordinances and Resolutions of the Sangguniang Panlungsod (City Council).</p>
<p><b>Q2</b></p>	<p><b>Is 3R policy integrated in your city development strategy or master plan?</b> (Please attach photo(s) of your city's waste management if available)</p>
	<p><input checked="" type="checkbox"/> Yes =&gt;Please share goals/visions/major achievements/important lessons learnt that could be replicated elsewhere</p> <p><input type="checkbox"/> No =&gt;Please go to Q6 (please also answer Q4, 5, and 7)</p> <p>One of the city's priority projects is the establishment of a sanitary landfill facility to help solve the city's solid waste management problems and to comply with RA 9003. This goal was realized with the opening of the Zamboanga City Sanitary Landfill (SLF) at Barangay Salaan, Zamboanga City this year. The construction of the MRF component of the SLF, however, has been delayed.</p> <p>Another goal of the city government is to conduct a massive information, education, and communication (IEC) campaign and come up with an ordinance on Ecological Solid Waste Management. An Executive Order is also being drafted to encourage officials at barangay level to formulate and implement the SWM program consistent with the City SWM Plan.</p> <p>The following 3R programs/projects are already in place in the City:</p> <ul style="list-style-type: none"> <li>• Four (4) Materials Recovery Facilities (MRFs) located at the Zamboanga City Abattoir and Office of the City Environment and Natural Resources (OCENR) in Barangay San Roque, at the City Public Market at Magay St., at the Bagsakan Center at Sta. Cruz Public Market, and at Barangay Lumbangan are continuously</li> </ul>

operated in order to effectively reduce the volume of wastes being disposed into the SLF. The MRFs are provided with composting equipment utilizing the patented “Happy Soil System Technology.” The City is able to collect and process approximately 20-30 tons of biodegradable wastes daily from various sources. Final sorting of recyclables are done at the MRF at Barangay Lumbangan.

- Informal waste pickers sort and recover recyclable materials and sell these recyclables, such as cartons, plastics, and bottles, among others, to the junkshop operators in the City. There is a total of 41 junkshop operators in the city and they are able to recover 16 tons per day of recyclables.
- The City has acquired a plastic recycling technology called “Styro / Plastic Densifier and Grinding Machine” through the assistance of the Department of Science and Technology (DOST) Region IX. Collected wastes such as polystyrene (styrofoam/styropor) and plastics are fabricated into hard styro blocks / bar of different shapes / form and are used by the City Government for structural / decorative purposes. The machine processes around 0.5 tons per day of styrofoam/styropor.

Please attach photos with caption, if available:



Photo 1 The photo shows the entrance to the Sanitary Landfill (SLF) of Zamboanga City at Barangay Salaan.



Photo 2 A cell of the landfill is being covered with clay and geosynthetic liner system during its construction.



Photo 3 The signage publicizes the issuance of Environmental Compliance Certificate (ECC) to the Sanitary Landfill Facility.



Photo 4 The disposed wastes are covered with geotextile instead of compacted soil. This was taken one month after the SLF operated in April 2015.



Photo 5 The MRF at Sta. Cruz Market is equipped with circular composting bins utilizing the patented “Happy Soil System Technology.”



Photo 6 The pile of composted material will be sun dried before it will be sorted, packaged, and marketed.



Photo 7 The MRF located at Magay St., Zamboanga City is also operated by the City Government.



Photo 8 The composting process at the Zamboanga City Abattoir at San Roque makes use of animal manure as the prime composting material. The finished product is mixed with compost coming from other MRFs to improve its quality.



Photo 9 Waste materials are fed into the Styro / Plastic Densifier and Grinding Machine that is operated by the City Government.



Photo 10 The output from the machine drops into a molding of different shapes and sizes.



Photo 11 Stack of the finished products



Photo 12 The blocks can be used as decorative additions to patios and walkways.

<b>Q3</b>	<b>What are the major challenges and constraints faced by your city in implementing 3R policies and programmes?</b> (Please answer only if your answer to Q2 is “yes”)	
	<b>Financial constraints:</b>	The city is financially stable when it comes to the implementation of the 3R policies and programs, however, financial constraints are being dealt with by government officials at the barangay level.
	<b>Institutional/governance challenges:</b>	The legislative body is currently working for the passage of the ordinance on Ecological Solid Waste Management. Waste segregation, which must be conducted at the barangay level, poses a challenge to barangay officials. Political will of barangay officials is very crucial to effectively implement this mandate of RA 9003.
	<b>Policy gaps:</b>	The policy on the Ecological Solid Waste Management is under deliberation at the Sangguniang Panlungsod (City Council). Other policies had been formulated, however, the problem lies with their approval by the City Council.

	<b>Other challenges such as technical capacity, human resource etc.:</b>	Challenges faced by the city in its implementation of the 3R policies and programs include the need for enhancement and capability building of technical personnel and enforcers of said policies and programs.
<b>Q4</b>	<p><b>What programme is in place in your city to support NGOs activities towards promotion of 3Rs?</b></p> <p>Currently, the LGU has no program in place for NGOs regarding the promotion of 3Rs, however, the presence of NGOs like recyclers-junkshop operators helps support the city's efforts in the promotion and implementation of 3Rs.</p> <p>The Environmental Management Bureau Region IX provides technical assistance and conducts capability building to diverse groups of organizations engaged in activities related to the implementation of 3Rs.</p>	
<b>Q5</b>	<p><b>Is there any collaborative 3R related activity/project/partnerships with cities and organizations at international level?</b></p> <p><input type="checkbox"/> Yes =&gt;Please brief the project(s) including objectives, project partners, target, period, budget, etc.</p> <p><input checked="" type="checkbox"/> No=&gt; The City is open for partnership with any NGO working at an international level.</p> <p>Please attach photos with caption, if available: N/A</p>	
<b>Q6</b>	<p><b>Even if your city doesn't have any dedicated 3R policies/programmes//activities, what future prospects or opportunities does your city have in 3R areas?</b></p> <p>The City has dedicated 3R policies but it lacks enforcement of these policies.</p> <p>Solid waste management in the City is a serious concern especially in the urban areas because of urbanization and economic growth. Municipal wastes from households are increasing year by year because of the increasing population growth. However, the city's number of appropriate treatment facility for reduction and detoxification of wastes is insufficient at present. The city's sole sanitary landfill, which was only operated this year, could easily be filled up if waste diversion will not be seriously pursued by the city government.</p> <p>There are several programs or activities on 3Rs that can be implemented in the City. One of these possible prospects is the operation of a waste-to-energy facilities. These facilities utilize municipal solid waste as their fuel rather than coal, oil or natural gas. Far better than using energy to explore, recover, process and transport the fuel from some distant source, waste-to-energy facilities find value in what others consider as wastes. These facilities recover the thermal energy contained in the wastes in highly efficient boilers that generate steam that can then be sold directly to customers, or used on-site to drive turbines for electricity production. Aside from combustion to generate heat, other waste-to-energy technologies include gasification to produce combustible synthesis gas (syngas), pyrolysis to produce syngas, oil or char, and biological processes such as anaerobic digestion or fermentation to produce biogas or alcohol.</p> <p>Another waste-to-energy technology that recovers energy from municipal solid wastes (MSW) and converts the wastes into compact form is briquetting. Briquetting is mostly</p>	

used for compacting materials such as sawdust, wood shavings, straw, and paper but it has also been used to compact MSW such as plastics, textile, and cartons. However, due to regulatory constraints on the incineration of MSW, it is best to limit the use of biodegradable wastes with low moisture content.

The establishment of a waste-to-energy project in Zamboanga City will help maximize the sustainable recovery of materials from waste for energy recovery. The project is expected to contribute to the modernization of the city's integrated solid waste management by improving its economic, environmental and social performance. It will also help alleviate the power shortage that the city is currently experiencing.

Another prospect to expand the 3R activities in the city involves the waste pickers. The waste pickers in the City belong to the informal economy as their activities are outside of government regulation. Thus, there is an opportunity for this informal sector to be organized and be in the forefront of the waste collection and recycling activities in the city. The waste pickers can be organized into a cooperative and be given the opportunity to handle the collection of recyclable materials from households especially in urban areas not served by municipal solid waste collection.

The City lacks local sustainable markets for recyclables such as papers, cartons, and PET bottles. There is a need for the city government to promote recyclables and recycled products and established linkages among the various players in the market. This initiative will help address the problem of stakeholders, such as the waste pickers and junkshop operators, who do not have a full grasp of the market where to sell the recyclables. This will also help the stakeholders gain access to government institutions that provide support to these endeavors.

There is also an economic opportunity in the City for private enterprises to venture into the processing of recyclable wastes as there are no large-scale processing plants in the City that processes recyclables like plastic and paper into finished products.

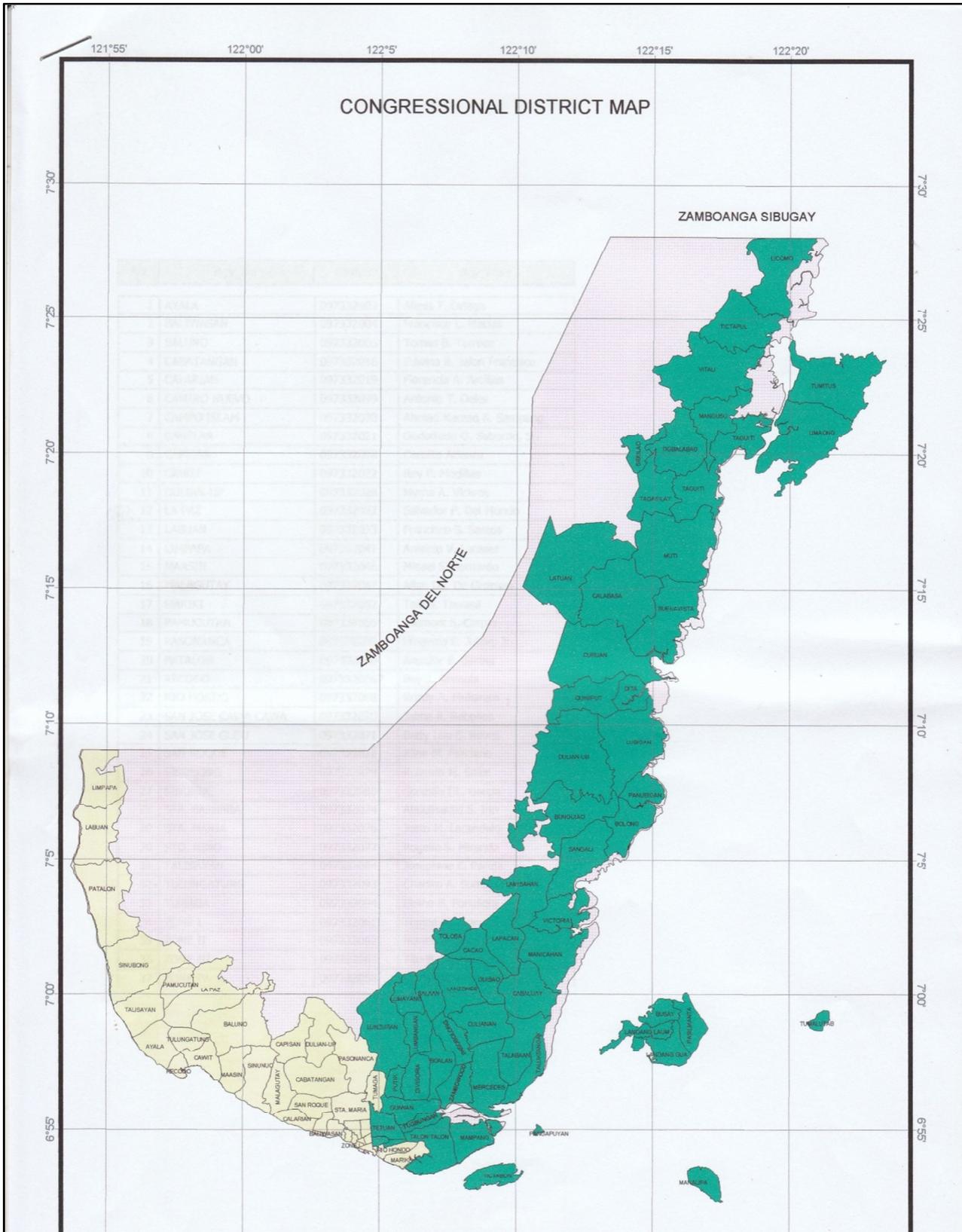
**Q7 What type of 3R infrastructure and facility your city is equipped with? Please tick the appropriate.**

- waste collection facility
- waste segregation facility
- waste storage facility
- waste processing & treatment facility
- resource recovery facility
- waste recycling facility – styro/plastic densifier machine
- industrial zone
- science parks & theme parks covering 3R areas
- others (please specify: )

Thank you for your kind cooperation.

MAPS

Political Boundary Map of Zamboanga City:



General Land Use Map:

