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**TECHNOLOGY NEEDS ASSESSMENT (TNA) REPORT**

<b>COMPANY:</b>	PROVINCIAL GOVERNMENT OF ROMBLON
<b>ADDRESS:</b>	ROMBLON, ROMBLON

**SCOPE OF ASSESSMENT**



- A. Strategic Directions
  - a. Vision and Mission
  - b. Goals and Objectives
  - c. Strategic Alliances
- B. Management Aspects
- C. Technical Aspects
- D. Marketing Aspects
- E. Financial Aspects

**SUMMARY OF ASSESSMENT****BACKGROUND:**

Situated in the heart of the Philippines, the archipelagic province of Romblon is located in the MIMAROPA region. It is composed mainly of three big islands, namely, Romblon, the provincial capital; Tablas, the largest island covering the municipalities of Calatrava, San Agustin, San Andres, Santa Maria, Odiongan, Ferrol, Looc, Alcantara, and Santa Fe; and Sibuyan which covers the municipalities of Magdiwang, San Fernando, and Cajidiocan. The province also has island municipalities, namely, Corcuera, San Jose, Banton and Concepcion, and a few more isles. It is situated in the south of Marinduque and Quezon, east of Oriental Mindoro, north of Aklan and Capiz, and west of Masbate.

The province has become one of the places frequented by tourists. Its natural attractions include numerous beaches, diving sites, rivers, and falls, the most popular of which are Bonbon, Cobrador and Tiamban in Romblon; Cresta de Gallo in San Fernando; Cawa-cawa and Gomot Falls in Cajidiocan; and Lanas and Bignay Beach in San Jose, that is only an hour boat ride from Boracay. Considered to be the "Galapagos of Asia", the Sibuyan island attracts enthusiasts due to its well-preserved natural environment. As one of the mountains with high trail difficulty due to its steep and jagged summit, mountain climbers frequent Mount Guiting-Guiting, also in Sibuyan island.

The rise in tourism contributed to an increase in the economic activities in the province. While it provided economic opportunities such as creating jobs and generating income for

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businesses, the influx of tourists comes with an escalation in the volume of waste generated and may pose environmental concerns. With this, it's imperative to implement proactive measures to mitigate the possible negative impact on the environment and marine biodiversity, and promote sustainable eco-tourism.

### METHODOLOGY



In the recently concluded Best Practices for Municipal Solid Waste Management in the Province of Romblon: The Quest, it was found out that the three municipalities that need to enhance their solid waste management practices are Romblon, San Jose and Cajidiocan. This was based on the effectiveness of the current practices on collection, segregation and disposal; compliance with environmental regulations; adoption of waste management technology methods; and integration of social, economic, and environmental aspects.

The staff from PSTO-Romblon held a Technology Needs Assessment (TNA) to further investigate the gaps and explore possible innovative solutions that may address this environmental concern.

In a report provided by the Municipal Environment and Natural Resources Officer (MENRO) of the municipality of San Jose, an estimated 2 tons of marine litter were collected, 70% of which were PET bottles. Interestingly, these drinks were not locally available in the island and were found to be manufactured in Buatan, Malaysia. The island municipality also periodically experiences a surge in collected marine litters in its coastline brought by the Southwest Monsoon (Habagat). This usually occurs in August to November. The waste collected are composed mainly of PET bottles.

In addition to the coastal wastes collected, the top sources of daily wastes collected in the island are biodegradable wastes and recyclables. While biodegradable waste is the top contributor, it is the least concern in terms of solid waste management. This is mainly because most of the barangays in the municipality are rural, where agricultural wastes are used as fertilizers for crops and composting and food waste are fed to their livestock and farm animals.

Meanwhile, in the municipality of Romblon, the average coastal waste collected by the municipality is 32 sacks, where 14 sacks contain 70 kgs of plastic bottles in normal conditions. During the western monsoon, wastes collected escalate to 87 sacks, 217kgs of which are purely plastic bottles. In the recent coastal cleanup in 2023, the municipality collected a total of 492 sacks of waste which weighs 1,273.65 kgs. Majority of the wastes are plastic food wrappers and beverage plastic bottles.

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Furthermore, the distribution of waste collected daily is as follows: 450kgs for non-biodegradable waste, 300kgs for biodegradable waste, and 250 kgs of residual waste. Majority of these non-biodegradable wastes are plastic wrappers and plastic bottles.

A similar situation is experienced in the municipality of Cajidiocan. Majority (36%) of wastes collected daily are recyclables, followed by biodegradable wastes (33%), which weigh 166kg and 155kg, respectively.

The three municipalities usually sell the bulky recyclables to junkshops at Php3/kg, which are then sold to Lucena City, Caticlan, Malay, Aklan and Tablas Island. However, as island municipalities, the transportation cost from the island to the mainlands is expensive. Wastes that are bulky consume more space in trucks resulting to high transport cost and lesser revenue. Additionally, recyclables such as plastic bottles which are sold in bulk have a low value. They are practically unsellable.

Results of the TNA revealed the need to acquire technologies that optimizes space during transport of wastes to help municipalities improve its waste management. Since plastic bottles dominate the wastes collected in these tourism areas, the proposed technology is junk compactor which will reduce the bulky size of collected bottles, thereby increasing transport capacity of trucks. Tightly compacted waste consumes less space, allowing more materials to fit in a single flight, resulting in higher revenue and improved efficiency. Correspondingly, wastes will be more sellable, and the transportation costs of the compacted wastes will be relatively cheaper.

### SUMMARY OF FINDINGS

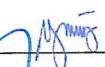

#### 1. Strategic Direction

##### a. Vision and mission

The province envisions all its municipalities, especially island municipalities frequented by tourists, to have well established solid waste management policies, facilities and practices which are essential for the sustainability, environmental protection, public health, and economic well-being. Its mission is to promote sustainable economic growth through responsible ecotourism.

##### b. Plans and Objectives

A 10-Year Provincial Solid Waste Management Program has been crafted. Correspondingly, the target municipalities have already drafted their respective 10-year plans.

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**c. Strategic alliances and current agreements**

The province has a very active Provincial Solid Waste Management Board (PSWMB) which regularly meets to discuss updates, address pressing concerns, and provide avenue for sharing of best practices, technologies and resources. Also, the identified LGUs are supportive of the solid waste management efforts put forth by the provincial government. They already have partner junk shops who will become the buyers of compacted waste.

**2. Management Aspect**

**a. Human resources**

The target beneficiary municipalities have designated MENRO who will oversee the proposed project. The LGUs will hire staff to ensure that the compactor will be operated regularly.

**b. Purchasing**

N/A

**c. Work environment**

The target LGUs have proposed a building that will house the proposed technology.

**d. Business ethics and social responsibility**



N/A

**e. Occupational health and safety management**

As part of its mandate, the LGUs observe occupational health and safety during its operation and processes.

**3. Technical Aspect**

**a. Operational and outsourcing practices**

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**Production system**

N/A

**Production planning and control**

N/A

**Production layout**

N/A

**Work Study/Improvement**

N/A

**Equipment management and maintenance**

The equipment will be housed in the designated facilities of each LGU. The operators will be trained in equipment operation and maintenance to ensure that it will be utilized properly.

**Quality assurance system**

N/A

**Outsourcing practices**

N/A

**b. Product and process performance and improvement****Re-engineering and research development**

N/A

**Performance measures and results – Process**

N/A

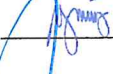

**Performance measures and results – Product**

N/A

**Procedures for continuous improvement**

N/A

**Product quality standards**

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N/A

**c. Environmental management system****Waste management**

N/A

**4. Marketing Aspect****a. Marketing plan**

N/A

**b. Market outlets**

N/A

**c. Promotional activities**

The provincial government launches intensive information and education campaigns focusing on RA 9003 and the Provincial Ordinance No. 10 Series 2010, known as the "Operasyon Tulong Iligtas ang Kalikasan Program" which targets municipal and barangay LGUs, public markets, junkshop and business owners.

**d. Market competitors**

N/A

**5. Finance****a. Cash flow and other related documents**


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**b. Source of capital/credit**

N/A

**c. Accounting system**

N/A

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**CONCLUSIONS:**



Based on the interview, the TNA team concludes the following:

1. The increase in tourism activities engendered the pressing need to address the emerging solid waste management concerns in the province, especially in the coastlines of its major island municipalities frequented by tourists.
2. The LGUs are supportive of the solid waste management efforts of the provincial government and can provide facilities and personnel that will be needed in the implementation of the proposed project. Corresponding training activities are needed to ensure that the project will be sustained.
3. The needed intervention applied under the GIA will reduce the bulky sizes of plastic wastes which will make them sellable. The transportation of these compacted wastes to junk shops and other neighboring islands will be cheaper.

**RECOMMENDATIONS:**

The following are recommended by the TNA team:

1. DOST MIMAROPA should extend relevant interventions such as the provision of junk compactor technologies to the identified three municipalities, namely, Romblon, San Jose, and Cajidiocan.
2. Training on operation and maintenance of the junk compactor should also go with the intervention to help in optimizing the service life of the technology.
3. The proponents should submit additional requirements that will be attached to the proposal.

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