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## **Key facts**

- Solid Waste Management and enforcement is a government priority at the country, regional, municipal and barangay level.
- Improper disposal of waste is still widespread on Malapascua (burning, burying, dumping on shoreline)
- However, improvements in segregation and collection processes have been noted (2016-2017)
- There is no waste collection for northern sitios (Guimbitayan, Langub, Kalubi-an, Bool and Bakhaw)
- People Associations, 4Ps members, the private sector and NGOs are very active in cleaning Malapascua's surroundings.
- Coordination between different stakeholders is still lacking.

#### Introduction

The 2017 census conducted by the Barangay health workers reported 4,867 local inhabitants and 946 households on Malapascua. The overall population of Malapascua (including western and non-local residents) is estimated to about 6,000 people. 65% of the population lives in the south of the island, with the remaining 35% living in the northern villages. There is no paved road to reach those villages. Villagers use motorbikes and boats to travel to the different areas of the island.

Solid waste management is considered a priority for all stakeholders in Malapascua. Everyone – the business sector, the tourists, the local community, the government – agrees that for tourism to thrive, and people to live in a healthy environment, the solid waste issue needs to be addressed. This report was compiled from data collected by People and the Sea between October 2015 and August 2017 and aims to share current available information and knowledge about current practices and actions being undertaken by the different stakeholders. House to house questionnaires, workshops, interviews of private sector owners, barangay representatives, municipal representatives, and provincial representatives were used.

This information is not an exhaustive review of all aspects of Solid Waste Management in Malapascua but is willing to provide detailed information to support the sharing of best practices and decision-making by relevant governmental institutions and the private sector.

#### 1. COMMUNITY

Consumption practices of the local community are heavily reliant on single use plastics. Most purchases are carried out in small quantities and packaged in disposable plastic bags (e.g. oil, sugar, salt, vegetables...). Single dose (sachets) are also the norm, as per the rest of the Philippines: coffee, soap, detergent, etc. During the 2017 International Beach Clean Up day on Malapascua, participants were asked to segregate the collected waste between recyclables (magamit-pa) and residual (di-malata). Organic waste (malata) was not collected. Over 1000 kgs of waste was collected on that day from the Barrio beach. Only 350 kgs of those were recyclables.

Most people are aware that waste should be segregated but *segregation practices remain incorrect*. However, a willingness to keep streets and house surroundings clean has clearly been noted. Moreover, most people truly believe that it is everyone's duty and responsibility to help each other to deal with the waste produced on the island.

The surveys carried out showed the following waste disposal processes used by members of the community:

- Burning
- Burying
- Composting
- Disposal in a hole
- Dropped on the ground/beach
- Disposal to barangay collection point



View on Barrio Beach: plastic waste was digged out after a heavy rain



Burning of waste inland

<u>Mistaken segregation practices</u>: during the many interviews, questionnaires and general discussion with people of the community, it has been noted that people still remained unsure of the segregation requirements concerning the <u>different kind of plastics</u>. There is also a lack of knowledge regarding the status of glass bottles, tin cans and aluminium.

Lack of knowledge about the industrial recycling process: there is a low level of awareness of recycling techniques. People do know how to upcycle waste such has glass bottles or plastic bottles for decoration or gardening but they don't know why those items are called "recyclable": few people know that we can do a new glass bottle by melting an old one or a new plastic bottle by shredding and melting recyclable plastic. Even though people are aware that other people buy those recyclable items, they don't know what they do with it.

<u>Disposal of diapers</u>: diapers are a very disputed category, with most people unsure of how to dispose of them in the correct way. They are found all over the island, the beaches and on the dive and snorkelling sites. They are a major source of health concern (water pollution). People have also mentioned that the <u>LGU refused to collect diapers</u> and therefore resorted to burying them. It seems that people have been asked to clean the diapers and separate the non-biodegradable part from the plastic part and to segregate it properly. This has seemingly led people to believe that diapers were biodegradable.

<u>Sourcing sacks</u>: At the moment, a rice/grain sack cost between 6 and 10 pesos, which is <u>expensive</u> for most families. Rice/grain sacks are more resistant than black garbage bags and ensure waste is not being spilled during storage at the collection points and transportation. One of People and the Sea study in Tawigan neighbourhood showed that 60% of the households were using old rice sacks while the other 40% could not afford to buy one.

<u>Absence of street bins</u> (except of the bins in the touristic sector): people are unsure of what to do with their waste while on the go. People, and kids mostly, also have the <u>habit of dropping their</u> waste on the floor – even when nearby a street bin.

<u>Cleaning the street and burning plastic</u>: even though people are very active in cleaning the streets every morning, separating the amount of little pieces of plastic wrappers among the leaves collected while sweeping is a headache for people who resort to <u>burning all leaves and plastic together</u>.

<u>Distance to collection points</u>: there are at the moment <u>only 2 collection points</u> on the eastern and western side of the south of the island. Transporting heavy sacks of waste is difficult on sandy roads, and the <u>distance to the collection</u> point is seen as a break in complying with correct disposal process. Also, the <u>waste in the north villages of the island is not being collected at present.</u>

**Regularity of collection**: It is difficult for the barangay to follow a regular schedule of waste collection. The collection depends on availability of the boat, tides, amount of waste at collection point and weather. A change in collection day (from Tuesday-Saturday to Monday-Wednesday-Friday) was implemented early 2016, which led to some confusion about collection days.

#### **Observed Improvements**

A positive trend has been noticed during the past two years. The barangay collection boat is now running more regularly, more people are aware of the collection days and of the segregating process. People and the Sea and TEDH Compass have run many activities and workshop to raise awareness about the waste issue and the solutions available. Private businesses are also strongly incentivising their staff to use proper segregation and disposal practices.

Over 100 families are now using Takakura compost, as a way to deal with their biodegradable waste and comply with LGU request that biodegradable waste should not be taken to the mainland. People and the Sea is facilitating this process by teaching families how to set up their compost and is monitoring each family regularly. Families can generate a small income when selling their compost to resorts. Identifying solutions to manage biodegradable waste is a major progress in managing solid waste, as it reduces waste contamination (which leads to bad smells, insects, dogs opening bags, etc...).

Families and stores have been putting bins or sacks outside their house to help with garbage collection

Children and teenagers usually know how to segregate better than adults.

<u>Two municipality employees are cleaning the streets on a regular basis.</u> It is however difficult to measure their impact as their work is not coordinated with the other clean-up efforts on the island.

#### 2. Businesses Infrastructure

## 2.1 Touristic Businesses

Malapascua hosts almost 70 dedicated touristic infrastructures (resorts, dive centers, restaurants, hostels). The amount of waste produced by these varies greatly between the peak season (November to May) and the lean season (June to October).

The private sector has the obligation to dispose of its waste by itself, and they are not allowed to use the barangay collection points - Compliance is not 100% but it has been improving in the past 2 years.

Different processes for waste disposal are being used by those touristic infrastructures:

- <u>Individual disposal</u>: resorts store their waste on their property and dispose of it on an individual basis by sending it to the collection point, or bringing it to Maya by themselves with their own boat
- <u>Collective disposal</u>: 11 resorts have teamed together to organize a common boat on M-W-F days. Each week a resort is responsible to organize for a pick-up boat to collect waste from 5 different locations on Bounty Beach.

<u>Pay-for-removal</u>: some resorts and businesses pay for the right to dispose of their waste on
private land in Malapascua. The waste is then buried or burned, or stored while waiting to
be removed.

Apart from their main waste disposal, the resorts and dive centres of the island are also regularly organising beach and underwater clean ups.

The business association is also employing 2 workers to clean the streets around Bounty Beach.

## Highlighted issues

<u>Biodegradable waste (malata):</u> Some private businesses are not aware that they <u>should not send</u> their <u>biodegradable waste to Maya</u>. Moreover, most are not informed on the possibility of composting.

<u>Lack of coordination</u> between structures: touristic structures' competitive edge heavily lies in their eco-friendliness. There are many good initiatives implemented but most are done on an individual manner. Sharing of best-practices and the implementation of collective solutions are rare.

Some businesses are still not dealing with their waste, and <u>paying for the right to dispose</u> on the island.

Tourists on the island are rarely made aware of the waste problem. Initiatives to <u>help</u> <u>tourists reduce their plastic consumption</u> (such as bottle refill, no using of straws, etc.) are still scarce and rarely shared.

#### **Observed Improvements**

<u>Increase in composting</u>: 44% of the tourist businesses are currently using compost (based on a questionnaire held in July 2017). 8 new resorts have shown interest to start using composting.

Most private businesses are compliant in <u>segregating waste</u> and are trying to buy, reuse or upcycle recyclable waste.

#### 2.2 Local Businesses

Malapascua hosts almost 50 local businesses only in the south of the island such as groceries (Sari Sari store), street food shops, or bakeries. Those little Sari Sari shops are using single use plastic to sell their products. The number of sari sari shops is still unknown in the North, but similar habits are the norm there also. It is unsure whether the no waste to collection point rule is to be applied to Sari Sari stores and other local businesses.

More information still need to be collected from sari-sari stores to better understand their concerns and issues in dealing with waste.

## Highlighted issues

<u>Predominant use of single use plastic</u>: the stores sell their food by wrapping each item in a single plastic bag. Goods such as oil, sugar, powder milk, etc. is also sold in small quantities in a plastic bag. Soft drinks, water and on-the-go food are also sold in plastic bags.

<u>No visible waste bin or sack</u>: most sari-sari stores will not provide a sack for their customer to put their waste after their purchase. Children for example will buy sweets, unwrap them and put the wrapping on the floor immediately.

Most sari-sari stores have a lot of *packaging* and dispose of it by burning it.

#### **Observed Improvements**

Some sari-sari stores have begun a <u>zero-plastic policy</u> on certain days, and have started using paper bags instead.

#### 3. Schools

There are two elementary schools in Malapascua, one in the Barrio and one in Guimbitayan. The high school is in Barrio. There are also three daycare centers (near the barangay hall, Indonacion and Guimbitayan).

In the Barrio, students are asked to segregate their waste in their classroom. Each classroom has bins that are labelled for segregation (malata/di-malata/magamit-pa). The teachers or the older students take the waste regularly to the school MRF and then to the collection point. All biodegradable waste (mostly paper and leaves) is kept and managed by the schools. In Guimbitayan, each class have bins in the classrooms for segregating. However, it is still unknown if the waste is being brought to the collection point.

## Highlighted issues

<u>Lack of training about segregation</u>: it appears that children in the Barrio are better at segregating than the children in Guimbitayan. They usually get more support and training from the many NGOs visiting the island. Few outside organisations visit the Guimbitayan school.

<u>The management of paper and leaves is still a problem</u>. The elementary school in the Barrio has a compost area for paper and leaves, but some students still put plastic in it. The composting of dry paper, in such big quantities remains a problem (dry paper only doesn't compost well).

The <u>schools' surroundings are consistently littered</u> with wrappings of candy, drinks, and snack food. Two sets of bins have been set up by the business association in the Barrio, and are managed by the elementary and high school. However many students still litter by dropping their snacks wrapping on the floor.

#### **Observed Improvements**

The elementary school in the Barrio has a <u>Material Recovery Facility</u> which has been rehabilitated (November 2016) during an activity involving parents and teachers. Each class of the elementary school is regularly trained on the correct segregation and disposal practices. The school is currently testing a trash to cash process by segregating and sorting their recyclable waste in order to sell it to scrap yards.

#### 1. Malapascua to Maya

As explained above, the barangay has a waste collection schedule on Mondays, Wednesdays and Fridays. However, the collection depends on availability of the boat, tides, amount of waste at collection point and weather. It's the households' responsibility to bring their waste to these collection points on those specific days. There is no collection in the north of the island.

This collection system is meant to manage only the local community's waste.

Do's and Don'ts at the collection points are:

- All waste should be PROPERLY SEGREGATED
- NO BIODEGRADABLE waste should be taken to the collection points
- All waste should be SECURED IN BAGS (preferably rice or grain sacks) and sacks should be closed tightly
- Waste should only be taken to the collection points on designated days

Most people are aware of the collection points and their location, but many are still unsure of the boat collection schedule.

## 2. Waste Management overview in Daanbantayan

Once in Maya, the municipality dump truck is collecting the waste coming from the island. The dump truck staff is usually re-segregating all the waste before removing it. Until July 2017, the nonrecyclable waste was taken to the Pajo landfill but it has now been closed as it didn't comply with legal environmental criteria.





Segregated trash waiting to be collected to be Employees from the municipality are segregating sold to scrapbuyers.

the waste from the island before taking it away.

The LGU is planning to implement the following process in the next months:

- All barangays have to manage their biodegradable waste and ensure that the remaining waste is segregating properly.
- A transit zone called RCA will be used to receive residual waste
- The residual waste will then be transferred to another landfill station in Bogo city or Asturias city. The LGU will pay for the right to dispose of their waste there.
- The recyclable waste will be sold to private businesses as usual.
- A shredder will be used to shred paper, carton and coconuts to be reused in high school vermicomposting projects.
- A shredder will be used to shred glass and plastic. This material will be given for free to people who need it for construction.

#### 3. Scrap Yards and Recycling – Trash to value process

A privately managed scrapyard is located in Daanbantayan. It buys different kinds of segregated waste: different kind of metals, plastic bottles, aluminium cans, carton, glass bottles, sacks…etc. They do not buy paper or broken glass.

It is however difficult to identify potential waste buyers. The recycling system in Cebu island (and probably in the entire Philippines) is managed by private businesses. Each municipality is in charge of segregating its own waste and needs to find a way to recycle it. Most of the segregated recyclable waste goes through junk shops who then sell it on. However, there is no transparency about what actually happens to this waste, and even the PENRO is unsure of who are the main actors.

# **Summary of Ongoing Actions**

In order to inform all stakeholders and facilitate best practice sharing and improvements to the current situation, here is a summary of known ongoing or planned actions regarding solid waste management in Malapascua Island.

Action	Owner	Description	Status
Beach and Island Clean Ups	EVERYONE	Regular clean ups	Ongoing
Collection of residual waste in the south of the island	Barangay	Collection of community waste on Monday-Wednesdays-Fridays	Ongoing
Collective disposal of waste	Group of resorts	Some resorts on Bounty beach have pooled their resources to collect waste collectively.	Ongoing
Community fee for garbage collection	Barangay	Household fee to help pay for garbage collection	Planned
Common Composting Facility	Businesses	Set up of a common facility to dispose of biodegradable waste and turn it into compost	Planned
Guerilla gardening	People and the Sea	Clean areas used for dumping and burning trash and convert to garden with the help and to the benefit of the surrounding community	Ongoing
Joint collection of island waste	LGU and Barangay	The LGU will share the responsibility of the collection from the island, and will collect waste on alternate days to the barangay. This will lead to a daily collection from the island to Maya	Planned
Lympio Stations (Trash banks)	People and the Sea	Organising pools of families to segregate and store waste to sell to scrapyards. Introduce the concept of trash banks.	Planned
Material Recovery Facility	Barangay	Design of an MRF to allow collection of recyclable materials	Cancelled for lack of land. Budget has been reallocated.
Material Recovery Facility	Barrio Elementary School	The elementary school MRF has been re-instated and is now fully functioning	Ongoing
Material Recovery Facility	High School - People and the Sea	The high school is planning to re-instate their MRF which is not used currently	Planned
Scrap businesses	Private initiative	Several scrap buyers have recently started buying recyclable waste from households and the schools	Ongoing
Street Bins	Business Association	Street bins have been dispatched around main resorts	Ongoing
Street Sweepers	Business Association	2 employees are currently sweeping the streets around resorts	Ongoing
Street Sweepers	LGU	The LGU has appointed 2 employees to sweep the streets	Ongoing

Takakura Composting	People and the Sea	Introducing the Takakura composting method to businesses and households.	Ongoing
Waste Assessment and Characterisation Study	MENRO	3-7 days study to identify and quantify the waste produced by each category of stakeholders. The study will weigh and specify waste daily in households, businesses, schools, etc.	Planned
Underwater Clean Ups	Dive centres and NGOs	The organisation of underwater clean ups with customers and volunteers	Ongoing
Zero Waste	TEDH Compass	Group of sari-sari stores avoiding the use of single use plastics on certain days.	Ongoing