

## Perhentian Island: A Social Entrepreneurship Initiative

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**Abstract:** Located in the South China Sea of Terengganu, Perhentian Island is rated one of the most beautiful islands in Malaysia. Boasting a wide range of coral reefs, it is one of the most sought tropical islands in the world. The popularity has caused an increase of tourism activities that created an undesired problem. Perhentian Island is facing the danger of pollution and poor waste management that affect its reputation as well as the life of the coral reefs. Realizing the severity of the situation, Enactus UiTM stepped in and did a social entrepreneurship project in order to empower the community to uphold the well-being of the island. This paper will discuss on the Perhentian Island waste management system problems and the social entrepreneurship initiatives that has been carried out to improve the situation.

**Keywords:** Pressure ulcer; decubitus ulcer; musculoskeletal disorders; pressure relieve; multi-fowler bed.

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## INTRODUCTION

Perhentian Island, located about 19 miles off the east coast of Terengganu, Malaysia, is famous for its crystal clear beaches. It has two main islands comprising of Pulau Perhentian Besar and Pulau Perhentian Kecil (Figure 1). Total population in the Perhentian Islands is about 1,300 people of which 80% are involved with the tourism sector, while the other 20% in the public sector and the retail business. Water-based tourism activities such as scuba diving, snorkeling and swimming are popular among local and foreign tourists. The only access to the islands is by boat from small fishing town of Kuala Besut on the mainland.



Figure 1: Perhentian Islands

Perhentian Island is a paradise for tourists to enjoy the beauty of its undersea marine life. However, this beauty has become increasingly polluted due to the ineffective solid waste and sewage management systems. To overcome this problem, Enactus UiTM has embarked on a social entrepreneurship program on the island with the local authority, residents, hoteliers and non-governmental organizations on the island. This paper descriptively analyzes and presents this initiative.

### PERHENTIAN ISLAND SOLID WASTE MANAGEMENT

The solid waste management in Perhentian Island is under the administration of *Majlis Daerah Besut* (MDB). Previously, the practice adopted by MDB involves three phases (Figure 2). First the resort operators collect the waste and fill it up into plastic bags.

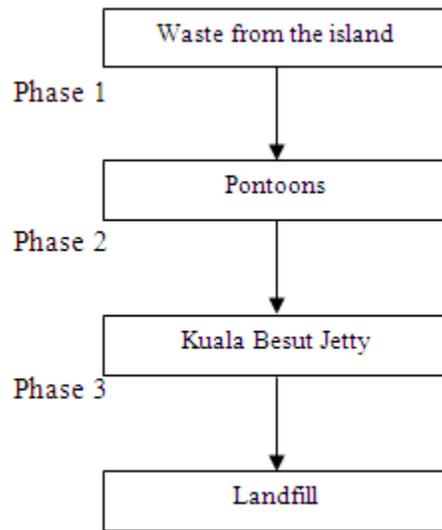


Figure 2 : Previous solid waste management in Perhentian Island

There is almost no separation of waste according to recyclable and non-recyclable waste. Then the plastic bags are transferred to floating platform called pontoon, located at sea. The pontoons act as buffer for approximately one week while waiting for the second phase, during which the solid waste collector will collect the waste using a big boat and transfer them to Kuala Besut jetty. The process takes up to four hours depending on the weather and the amount of garbage. Finally the third phase involves MDB lorry picking up the waste at Kuala Besut jetty for disposal at landfill.

Based on the solid waste management illustrated above, the process that involves the removal and garbage collection in several platforms placed at sea before being collected by contractors has caused serious pollution to the seawater surrounding the island. When it rains, debris will fall into the sea and pollute the sea and seabed.

During the peak tourist season, from July to September, visitors are likely to see piles of garbage in dilapidated pontoons scattered around the islands. This is the solid waste left on the pontoons by the operators of the resort. Realizing that the system is not effective, Marine Parks Department took the step to ban the use of pontoon and created an improved waste management system in Perhentian Island (Figure 3). The new practice involves smaller boats dispatched to collect waste from resorts and transfer them to a larger boat that would ferry the garbage to Kuala Besut jetty.

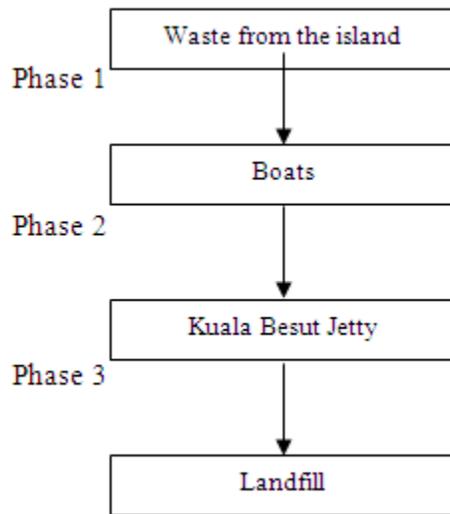


Figure 3 : Current solid waste management in Perhentian Island

Although the prohibition of the pontoons was successful in minimizing the number of garbage falling into the sea, it creates another problem as garbage are disposed or burnt on the beach. This scenario happens because the amount of garbage is too much to be handled by the waste collector. It is estimated that up to 10 tonnes of trash is generated each day at the island (Choong,2012).

There are few resorts that took the initiative for a greener waste management. One of them, Tuna Bay Resort, has just installed the Bio-Robic septic tank to treat sewage, which remains a big problem for the island. Using an anaerobic and oxidation filtration technology, the system produces treated wastewater that is low in ammonia nitrogen and can be used for watering plants and washing. (Allan, 2011).

A few of the resorts organized beach clean-ups activities for the guests by awarding them free night stay or free food for their effort.

### **SOCIAL ENTREPRENEURSHIP INITIATIVE**

Social entrepreneurship is the process of pursuing innovative solutions to social problems (Mohtar and Rahim,2014; Rahim and Mohtar,2015) More specifically, social entrepreneurs adopt a mission to create and sustain social value. They draw upon appropriate thinking in both the business and nonprofit worlds and operate in a variety of organizations that includes non-profit organization or hybrid organizations that has both financial and social objectives (Rahim and Mohtar,2015).

Enactus Universiti Teknologi Mara (UiTM), a nonprofit organization under the administration of Malaysian Academy of SME and Entrepreneurship Development (MASMED), that strives to improve the quality and standard of living of communities by teaching the principles and values of entrepreneurship (Rahim and Lajin,2014; Rahim and Chik,2014), took an initiative to improve the dire situation in Perhentian Island. In 2012, the social entrepreneurship project called “Better Perhentian” took off as collaboration between Besut District Council, , Terengganu State Economic Planning (UPEN), Ecoteer and Enactus UiTM was agreed.

Rafee and Owee (2007) reported based on their study, the waste in the island consists of 77% food waste and 21% recyclable waste. Realizing that most of the waste at the island is food waste, Perhentian island Business Association -*Persatuan Pengusaha-Pengusaha Pulau Perhentian* - bought a 200kg compost machine worth RM25,000. The machine can compost up to 25kg of food waste daily and produce the average of 100kg of fertilizer per month. A new combination model of waste management system and income generation is generated (Figure 4) and a pilot project was carried out to test the effectiveness and the impact of the new solution.

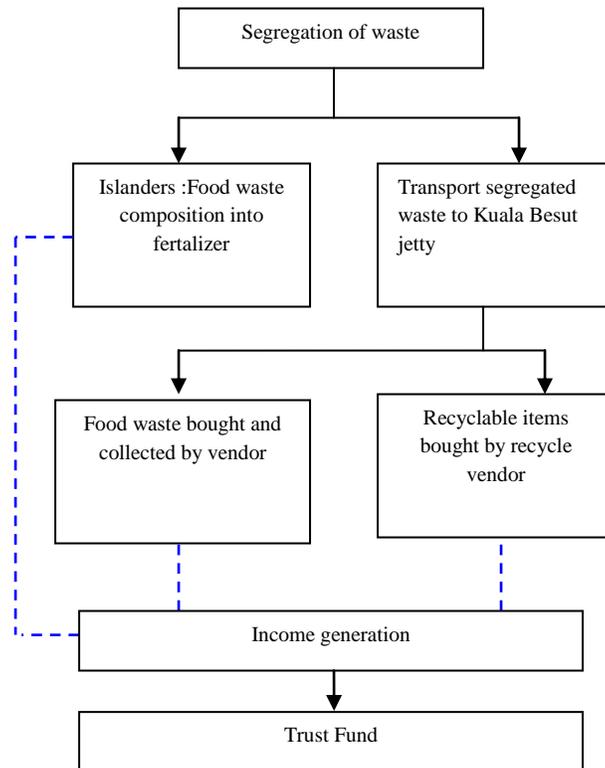


Figure 4 : Combination model of waste management system and income generation

Awareness programs were carried out to reach the islanders and resort owners that the waste need to be segregated in order to achieve desired result due to the fact that the first step of the model require the waste to be segregated into 3 colour-coded plastic bags; pink is for food waste, orange for recycle items, and green represents non-recycle items. To make it easier for the islanders and the tourists, six sets of labeled recycle bins were placed all over the island. The next step involves transfer of food waste to be processed into fertilizer using the newly bought compost machine. The remaining food wastes, recyclable items and other waste are transported to the Kuala Besut jetty.

Finally, at the Kuala Besut jetty, recycle vendor would purchase the recyclable items. For the remaining food waste, the plan is that it will be picked up by a hired lorry driver who will deliver it to another community in Tok Bali, Kelantan, where the waste will be transformed into food pallets for animals. All of the income generated from these proceedings will go to a trust fund owned by the islanders' association.

Based on above solutions, the initial 3 steps procedure in collecting garbage in the island has been expanded into a comprehensive 8 steps procedure.

- Procedure 1: Villagers and Hoteliers sort out the garbage according to the colours of plastic bags
- Procedure 2: Contractors collect the waste and group it at dump site .
- Procedure 3: A portion of the food waste is transported to the compost machine
- Procedure 4: Small boats collect waste at every dump site point and sort it according to plastic colour.
- Procedure 5: Small boats deliver waste to big boats.
- Procedure 6: Big boats will send the garbage to Kuala Besut jetty
- Procedure 7: Food waste and recyclable items are sold
- Procedure 8: Non-recyclable items are sent to the landfill

## IMPACTS OF THE PROGRAM

After the social entrepreneurship initiative has been conducted, positive impacts can be seen (Table 1). Within a month, 500kg of paper, 400kg of plastic and 200kg of glass were recycled and generating RM1,092 of income. Even better, the total amount of energy saved due to the recycled items were 7,000kWh which is equivalent to 19,500 standard 60 watt light bulbs switched on for the whole night. For the organic compost fertilizer, RM162 profit was generated monthly and 1800kg of waste saved, reducing landfill space by 48.17m<sup>3</sup>. A total of 121 people were impacted on this pilot project.

	Project Description	Impact
1.	500kg of paper, 400kg of plastic and 200kg of glass recycled	RM1,092 generated & 7000kWh of energy saved
2.	Organic compost fertilizer	RM162 generated
3.	Waste saved	1800kg
4.	Reducing landfill space	48.17m <sup>3</sup>
5.	Community	121 people impacted

## CONCLUSION

The “Better Perhentian” social entrepreneurship project has improvised the waste management model of the island and has considerable impact on the economy and environment of the island. Though it can be seen that the impact is not as great as one would like, nevertheless, it was a good start for a pilot stage and prove that the model is workable and beneficial for the community as well as the Perhentian Island itself. Limited impact was due to the fact that only 10 resorts collaborated for this pilot project and not as a collective whole community of the island. Further effort need to be made to sustain and improvised the new waste management system model introduced in this study and to bring more hoteliers and residents on board. It is hoped that it can lead to a more sustainable Perhentian Island which can retain its beauty and cleanliness for years to come.

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