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PXL HOGESCHOOL ♦ ARTESIS - PLANTIJN HOGESCHOOL ANTWERPEN

Academic year 2018-2019

The Boracay Clean-Up

Sustainable leap forward or ineffectual attempt?

De Boracay Clean-up

Duurzame stap vooruit of vruchteloze poging?

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Master's Thesis submitted for the
degree of

Master in Tourism

by:
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Summary

Boracay is one of the 7641 islands of the Philippine archipelago and one of the country's most popular tourism destinations. In 2017 Boracay welcomed over 2 million visitors predominantly originating from China and South-Korea. However, the island has undergone very rapid tourism development since the past three decades and faces issues of overcrowding, social imbalances and deterioration of nature. In order to address the pressing environmental issues, president Duterte declared a state of calamity and closed the island for visitors from 26 April to 26 October 2018. During these six months, several actions have been carried out in order to ameliorate the environmental conditions on the island.

This study aims to find out whether the Boracay clean-up programme has led to a paradigm shift in tourism that is capable of preventing pollution of the destination on the short and the long term. Research for this thesis is based on the 'triangulation' method that allows the examination of the different viewpoints of governments, residents, entrepreneurs and visitors on the complex case of Boracay's rehabilitation. The data were gathered through local resident and visitor questionnaires, secondary data and semi-structured interviews. Furthermore, the Beach Resort Model of Smith (1991) serves as the foundation for research.

Results indicate that Boracay has shifted further into the last phase of development in the Beach Resort Model and has become a fully urbanized city resort. The physical and environmental aspects described in the model are designated as the main contributors to the rapid decision to close the island. Both the top-down resolution for closure as the execution of the rehabilitation actions caused confusion among residents and entrepreneurs. Nonetheless, the demolition of around 600 edifices, the installation of drainage pipes and the beach clean-up actions have engendered visible short-term improvements. However, the carrying capacity has already been exceeded since the reopening and the overall amount of dwellings is still not connected to the sewer system. Furthermore, no evidence is found for the establishment of a long-term vision for development and tourism on Boracay. Several factors indicate that the environmental issues on the island might even aggravate in the future.

Nonetheless, as this study exposes some of the most pressing issues experienced by local residents and visitors, it is believed that there is room for a further project-based approach that focuses on the natural environment and the mobility on this exceptional island.

Samenvatting

Boracay is een van de 7641 eilanden van de Filipijnse archipel en een van 's lands meest populaire toeristische bestemmingen. In 2017 verwelkomde Boracay meer dan 2 miljoen bezoekers, voornamelijk afkomstig uit China en Zuid-Korea. Toch onderging het eiland zeer snelle ontwikkelingen tijdens de laatste drie decennia en kreeg te maken met overbevolking, sociale ongelijkheid en verslechterde kwaliteit van de natuurlijke omgeving. In een poging tot het verbeteren van de natuurlijke omgeving riep president Duterte de noodtoestand uit over het eiland en sloot Boracay voor toeristen van 26 april tot 26 oktober 2018. Tijdens deze zes maanden werden tal van acties uitgevoerd om de omgevingskwaliteit aan te pakken.

Dit onderzoek is erop gericht om te achterhalen of deze opruimcampagne heeft geleid tot een paradigmaverschuiving in toerisme die in staat is om verdere vervuiling van het eiland te voorkomen op korte en termijn. Het onderzoek is gebaseerd op de triangulatie methode die toelaat verschillende perspectieven van overheden, bewoners, ondernemers en toeristen op de complexe situatie van Boracay onder de loep te nemen. De data zijn verzameld door middel van enquêtes bij bezoekers en bewoners, secundaire data en semi-structureerde interviews. Verder dient het Beach Resort Model van Smith (1991) als de basis van dit onderzoek.

De resultaten tonen aan dat Boracay verder is opgeschoven naar de achtste en laatste fase in het Beach Resort Model en zo is uitgegroeid tot een verstedelijkt resort. The fysieke aspecten en milieu aspecten die beschreven werden in het model worden aangeduid als belangrijke factoren die hebben geleid tot de snelle beslissing om het eiland te sluiten. Zowel deze top-down beslissing tot sluiting als de uitvoering van herstellingsacties zorgden echter voor verwarring bij de bewoners en ondernemers. Niettemin heeft de sloop van ongeveer 600 gebouwen, de installatie van afwatering en de opruiming van de stranden gezorgd voor een zichtbare verbetering op korte termijn. Toch wordt de fysieke draagkracht van het eiland dagelijks overschreden sinds de heropening van het eiland en is het merendeel van de woningen op Boracay niet aangesloten op een rioleringsstelsel. Verder werd geen bewijs gevonden van het bestaan van een lange termijn planning voor toerisme en verdere ontwikkelingen. Diverse factoren wijzen erop dat de milieukwesties op het eiland mogelijks nog kunnen verslechteren in de toekomst. Toch kwamen in deze studie een aantal urgente maar concrete obstakels omtrent natuurlijke omgeving en mobiliteit aan het licht die uitermate geschikt zijn om projectmatig mee aan de slag te gaan.

Acknowledgements

Writing this thesis has been a true adventure for mind and soul. Traveling to the Philippines and having numerous intense conversations with the population of Boracay was an unforgettable experience.

I would first like to express my sincere gratitude to my supervisor Prof. Dr. Dominique Vanneste for her excellent guidance and support. Thanks to the overwhelming amount of respondents in the Philippines for their warm welcome, their help and their valuable information and research material. To Prof. Camilo Botero: thanks for sharing your insights on coastal resort management. I would also like to thank Sha, Shen and Gina for their excellent translations.

There would never even be a thesis without the support from my family. Thank you to my husband Dirk for giving me the opportunity to become a student again. Niels and Seppe, thank you for being patient with your mom who always had to work for school too. Thanks to my parents for their emotional and logistical support. Last but not least, this thesis is dedicated to my enthusiastic grandparents who never stopped believing in me.

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Abbreviations

BRM	Beach Resort Model
DENR	Department of Energy and Natural Resources
DILG	Department of Interior and Local Government
DOT	Department of Tourism
DSP	Dominant Social Paradigm
GDP	Gross Domestic Product
ISMW	Integrated Solid Waste Management
LGU	Local Government Unit
NGO	Non-Governmental Organization
PHP	Philippine Peso
POPCOM	Commission on Population and Development
RUI	Resource Use Intensities
SDG	Sustainable Development Goal
TALC	Tourist Area Life Cycle
UNWTO	United Nations World Tourism Organization
USP	Unique selling Proposition
WCED	World Commission on Environment and Development
WWF	World Wide Fund for nature

1. Introduction

1.1. Frame and problem setting

On April 26 2018 the island of Boracay in the Philippines was closed for visitors by order of the president Duterte (Baert, 2018). According to several newspaper articles, this six-month closure is the result of severe contamination of seawater and soil leading to an unhealthy and harmful setting. However, this contamination cannot be described as a recent issue. The 10,32km² destination suffers from severe pollution of its natural environment since the past three decades. Over the years, Boracay has undergone fast and unplanned development as a tourism destination leading to overcrowding, unchecked building, social imbalances and deterioration of nature. Already in 1997 the Philippine authorities prohibited visitors to swim in the Sibuyan Sea due to contamination by coliform bacteria as a result of ineffective sewage systems (Trousdale, 1999). Moreover, other issues such as water shortage, air pollution and an enormous increase of solid waste have been reported by Smith et al. in 2011. While closed from April 2018 onwards, Boracay partly reopened for visitors in October 2018.¹ By that time, public and private stakeholders had to improve their wastewater treatment, clean up beaches and improve solid waste management.

The environmental issues on Boracay Island have been an object of research since many years (Trousdale, 1999; Smith et al., 2011; Carter, 2004). Subsequently, it is questionable whether the six-month clean-up has had a significant positive impact on the natural surroundings. Moreover, it is worth knowing which phenomena have led to the closure, how a plan was developed and in what manner this plan aims to result in a more sustainable environment on the long term.

Therefore, applied research is necessary not only to detect whether the closure of Boracay has indeed led to improved environmental conditions on a short term but also to assess to what extent the previous alarming conditions have led towards a change in the rules, attitudes and practices in tourism development on the long term. The result of the research on this clean-up action might contribute to the approach on the overall increasing and global issue of pollution of the natural environment by defining its best practices and significant mistakes.

¹ <https://www.vrt.be/vrtnws/nl/2018/10/26/paradijseiland-boracay-gaat-weer-open-na-schoonmaakbeurt-van-zes/>

1.2. Objective and Research questions

The aim of this research is to reveal whether the Boracay clean-up program has led to a paradigm shift in tourism that is capable of preventing pollution as part of an unsustainable tourism development of the destination on the short and the long term. This results in the research question which is subject to the title: "The Boracay Cleanup, sustainable leap forward or ineffectual attempt?" In order to become a comprehensive overview that takes into account the visions of the different stakeholders, several sub-questions are developed:

1. Which factors and stakeholders contributed to the initiation of the closure and clean-up programme of the island?
2. Has the precarious situation on Boracay improved on the short term concerning quality of seawater, solid waste pollution and overall tourism development since the closure of the island?
3. Did one develop a plan for the period of closure and afterwards? What are the vision, strategy and action components and to what extend is it based on the United Nations Sustainable Development Goals (SDGs)?

This study uses quantitative and qualitative analysis in order to get a clear overview of the complex situation on Boracay. Whereas the quantitative data provide information about the opinions and concerns of residents and visitors about the closure and the environment, the qualitative data allows us to get an overview of the initiation of the closure and the future plans. This analysis will be guided by the Beach Resort Model developed by Smith in 1991 and by updates of the model for Boracay in 2011 by Smith et al.

Several researchers have attempted to convert tourism destination development into an explanatory model. Each of them selected a specific angle from which to investigate the progress of a non-touristic area into a tourism destination. Not only the evolutionary cycles served as a guide, such as Butlers Tourist Area Life Cycle model (TALC) (1980), also psychological needs of the visitor (Cohen, 1972), alteration of spatial relationships (Smith, 1991) and changing economics (Prideaux, 1998) were used to explain these shifts. These numerous examinations and their variation display the complexity of explaining tourism development. None of these models seem to fully clarify the way tourism changes an area, as consequences are visible in different areas such as economy, social changes, morphology, etc.

For this thesis, the Beach Resort Model of Smith (1991) is chosen as a directory for it employs key environmental characteristics as explanatory factors including indicators such as seawater quality, beach erosion, etc. In the case of the closure of Boracay, this model could be efficient to simplify the very complex situation on the island, to determine

its current stage of development and to distillate the primary factors that lead to the rehabilitation. Moreover, it also takes into account other tourism-related indicators that are frequently investigated in other models, such as tourist arrivals and their expenditure. The operation of the model has already been illustrated by an analysis of tourism development in Boracay itself eight years ago (Smith et al., 2011) and in a number of other Southeast Asian destinations (Smith, 1991). Therefore, it would be valuable to apply this model on the island after the major clean-up program. This model has been applied on the case of Denarau Island, Fiji as well (Xie et al. 2013). This research reveals that the morphological changes of the destination does not entirely follows the traditional Beach Resort Model due to the implementation of a master plan implemented by the local authorities that could prevent unexpected expansion. However, similarities were found in the economic and environmental components of the model.

1.3. Structure of the thesis

The literature chapter of this thesis provides an overview of three concepts. Firstly, the global impact of tourism is explored together with the consequences of the generation of solid waste and wastewater. Secondly, the chosen model to adequately estimate the contemporary level of tourism development on Boracay Island is explained. Finally, tourism is framed in the contemporary worldview and in a possible paradigm shift.

Chapter three visualises the area of research by describing its geographical attributes, its development as a tourism destination, the environmental impact it has undergone, a brief history of national and local governmental measures and the course of the closure. In chapter four, the methodology used for the research on Boracay is discussed in detail. An overview is provided of the research methods, types of data collection used for this thesis, choice and recruitment of respondents, etc.

The results of the different sub-questions are provided in chapter five, six and seven. Firstly, the phase of tourism development at the time of closure is described and serves as a basis to notice possible improvements. The next outlines the findings on the actions of the clean-up programme and the vision on long-term solutions. Finally, the concluding chapter reveals the key findings of the research on Boracay that are discussed in depth and the recommendations for further research.

2. Conceptual framework

This chapter explores the concepts in order to achieve a better understanding of the complexity of Boracay's current situation. First, the notion of global environmental impact is delineated. Secondly, our development model for tourism is justified and explained. Finally, tourism is framed in the broad concept of prevailing and alternative paradigms.

2.1. The environmental impact of tourism

2.1.1. The global impact of tourism

As planet Earth has entered the Anthropocene time interval, the consequences of human activities become more visible. Pollution of air, water and soil becomes difficult to absorb and vulnerable ecosystems degrade rapidly (Steffen et al, 2011). According to Gössling and Peeters (2015) tourism largely contributes directly and indirectly these alterations in the environment.

Despite the complex nature of the tourism industry, Gössling (2002) attempted to identify the principal areas affected by tourism through reviewing the most critical aspects of global environmental change. Based on Sala's et al. (2000) fundamental components causing loss of ecosystems, Gössling comes to five major fields in which tourism offers a contribution: changes in land cover, energy use, biotic exchange and extinction of wild species, exchange and dispersion of diseases and changes in perception of the environment. Water is added in Gössling's framework as a sixth field of change. Furthermore, Gössling and Peeters introduced the concept of Resource Use Intensities (RUI's) in 2012 in order to clearly quantify the past, current and future impact tourism has on the environment and in particular on the consumption of energy, water, food and land. The next sections focus on with the impact on water and land by tourism as these elements appear to be two major subjects influenced by the travel industry (Gössling, 2002).

a. Land use

Conversion and use of land is a significant consequence of tourism development. Large areas of land are exploited for the construction of accommodation, mobility infrastructure (e.g. airports, parking lots and walking trails), activity infrastructure (e.g. marinas and golf courses) and other tourism-related infrastructure. These alterations are considered as a direct type of land-use for tourism (Gössling and Peeters, 2015). Moreover, the usage of land for food production, landfill, wastewater treatments and production of infrastructure is regarded as a significant part of additional land-use for and by tourism. In this light, the environs affected by tourism reaches far beyond the direct land use of a destination.

Despite the fact that, according to Vail and Hultzkranz (2000), the complexity of the tourism industry makes it difficult to estimate the exact amount of land used for tourism, Gössling and Peeters (2015) calculated the amount of land used for tourism expressed in square meters per bed, taking into account the additional services typical for each type of accommodation (e.g. lobbies, gardens or swimming pools), the multiple purposes of mobility infrastructure and the plurality of recreational activities. The amount of space needed for each bed depends substantially on the type of accommodation according to Gössling (2002). Whereas an average area of 25m² is needed for a bed in a pension, 130 m² is required for holiday villages up to 200m² for vacation homes. The land used per bed tends to be even greater for resort hotels. Gössling et al. (2002) reported land use values up to 4580m² per bed for a resort with adjacent golf course. Traffic infrastructure and activities seem to be even more demanding concerning land use as they too consume a high amount of space. As calculated by Gössling and Peeters (2015), the total area used by tourism for accommodation, traffic infrastructure and activities would be approximately 62.000 km² or about 11,7m² per tourist in 2012. Additionally, these rapid conversions of land cause a misbalance in biodiversity and global warming (Sala et al., 2000). As Cronk (1997) points out, land alteration for tourism on islands with low latitudes might be the most vulnerable as species in these areas are very sensitive to modifications.

b. Water use

For years, scholars refer to water as a valuable but vulnerable system. As human population grows, location bound over-use of water has already led to shortages, water contamination and pollution crises for decades leading to the deterioration of the environment (World Bank, 2018). In this respect, tourism largely contributes to these issues as this industry often increases the demand for freshwater resources in water scarce areas, exacerbating already existing problems. Moreover, tourists tend to use significantly more water on their holiday than they do at home and more than the local community (Gössling, 2001b) with an estimated 350 litres on average for accommodation per day per person. On their holiday, visitors are likely not only to use their bathroom facilities but other infrastructure as well, such as a swimming pool, a high water demanding golf course, an artificial ski slope or wellness facilities.

Although Gössling (2002) considers the treatment of solid waste and wastewater as a form of land and water use, the generation of it and its possible consequences has not been described in detail in the research mentioned above. Therefore, the difficulties of solid waste generation and wastewater treatment in tourism destinations are explored in the next chapter of the conceptual framework about the impact of tourism.

2.1.2. Solid waste impact by tourism

a. Solid waste generation

The amount of solid waste generated by the world population increases enormously each year (Figure 1). It is expected that approximately 3.4 billion tons of solid waste will be produced in 2050 in a business-as-usual scenario, whereas in 2016 earth's population generated 2.01 tons (World Bank, 2018). As economies develop and public habits change and the world population grows, the amount of solid waste increases along. This enormous amount of plastic, recyclables, food waste and other garbage not only disfigures the aesthetic view of the environment (Dileep, 2007), it also contaminates oceans and soil, transmits diseases, causes air pollution by burning and harms the health of humans and animals that consume it unknowingly (World Bank, 2018).

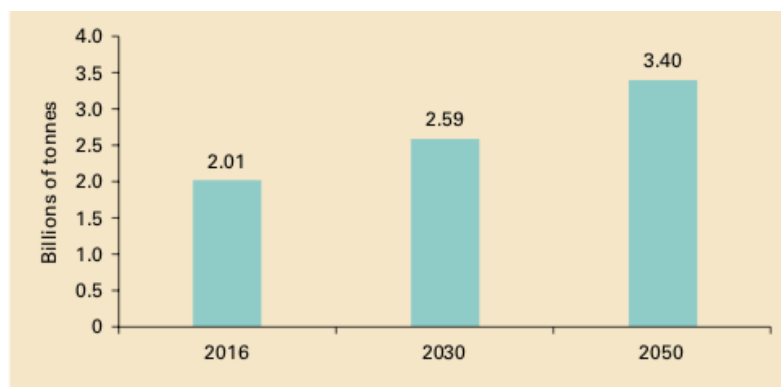


Figure 1 Projected Global Waste Generation. (The World Bank, 2018:25).

The World Bank (2018) indicates that industry produces the largest amount of waste. However, the tourism sector is a significant generator of litter as well. Pigram (2000b) already pointed out that the travel industry generates a wide range of waste such as solids, liquids and gas. Moreover, both the supply and demand side of the tourism industry generates biodegradable and non-biodegradable waste in a destination (Chan & Wong, 2006). Improper treatment of it will not only affect the environment of the holiday area but the society as a whole as well (Dileep, 2007).

Multiple scholars have investigated the impact of tourism on the amount and type of waste that is generated in a destination. In Pahalgam, India, for example, Bashir and Goswami (2016) demonstrated that tourism creates extra pressure on solid waste management by generating 75 percent of all waste during holiday season. Due to unilateral processing of all garbage, the entire lot is dumped in the open resulting in the death of cattle, deterioration of vegetation and in water borne diseases such as diarrhoea, gastroenteritis, dysentery, and typhoid. Solid waste can even be found in higher regions of the Himalaya

mountain range. In 2019, the Chinese basecamp near Mount Everest closed for visitors without climbing permit due to solid waste issues. Over 8 tons of garbage was collected during a clean-up actions after closure. Shamshiry et al. (2011) demonstrated that over 80 tons of solid waste ends up on the landfill of Langkawi island in Malaysia on daily basis and that visitors presumably generate double the amount of solid compared to local residents.

b. Solid waste treatment

About 37 percent of all waste ends up in landfill where a vast part of it is buried (Figure 2). Another 33 percent is dumped in the open. About 19 percent is recovered through composting and recycling and 11 percent is incinerated. However, significant differences are found in the treatment of waste in different regions of the world. Whereas controlled landfill is a common technique in high and upper-middle-income countries, open dumping appears to be a common practice in the lower and low-income regions (World Bank, 2018).

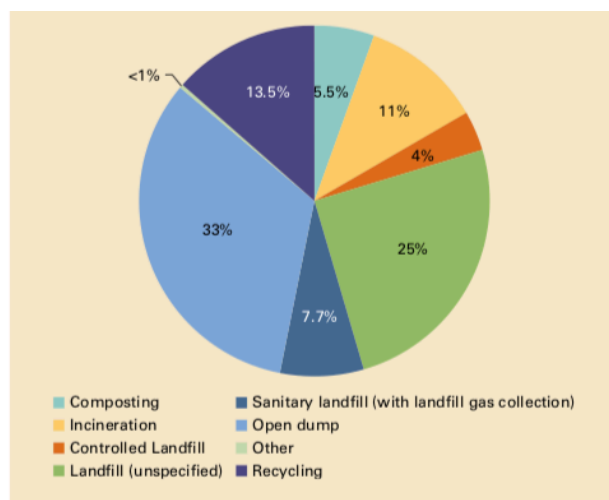


Figure 2 Global Waste Treatment and Disposal. (The World Bank, 2018:34)

Although land filling is the most general way of handling waste (Uberoi, 2003), it is proven to be a treat to the environment and surrounding social life due to the risk of contamination of groundwater, soil and air by open burning (Dileep, 2007). The controlled incineration of solid waste is a relatively recent fashion of processing. Unfortunately this treatment proves to do harm to the environment as well. In 1992, during the Rio Earth Summit, strategies were formulated for reducing the amount of solid waste by minimizing its production and overconsumption, maximizing reuse and recycling and creating an Integrated Solid Waste Management (ISWM) plan. Moreover, the World Bank (2018) recognizes that pollution by solid waste has a significant social impact as well by saying that: “Just as gaps in solid

waste services disproportionately affect the poor, improvements in service delivery can dramatically improve the lives of vulnerable populations.” Furthermore, waste recycling is often a common informal source of income for poor and vulnerable urban residents in low- and middle-income countries. By formalizing this occupation and enhancing the working conditions would not only improve waste collection but also the living conditions of this group (World Bank, 2018).

2.1.3. Impact of tourism on water pollution

a. Water pollution and wastewater generation

As mentioned in the previous chapter, the use of water causes misbalance in Earth's ecosystem. Nonetheless, the pollution of it significantly threatens environmental quality as well (Reopnichkul et al, 2009). Water makes contact with a whole range of heavy pollutants. Solid waste, increased nutrients and poisonous substances contaminate groundwater, watercourses and oceans. Solid litter induces degradation of habitats and death or injury of marine wildlife. Moreover, it prevents daylight from reaching the bottom of rivers and coastlines causing a deterioration of biodiversity (Asoh et al., 2004). Increased levels of nutrients in surface –and groundwater are proven to be a threat for the global water system. Particular algae tend to benefit from these increased levels causing phenomenal blooms. Consequently, less sunlight reaches the underlying parts of the seabed provoking a slowdown in coral growth, a decrease in biodiversity and erosion of beaches (Reopnichkul et al., 2009). Not only the fertilization of farmlands is responsible for the deterioration of water quality (Dept. Landbouw en Visserij, n.d). Reopnichkul et al. (2009) pointed out that the degradation process of organic material in wastewater discharge decreases the level of dissolved oxygen in the water. Therefore, the low levels of oxygen and the increased levels of nutrients in wastewater seriously affect ecosystems. Moreover, as water is a globally connected system, the contamination does not remain a local issue. Currents carry the polluted substance with them, affecting much larger areas.

b. Tourism contributing to water contamination

As mentioned previously, water quality deteriorates due to human activity (Simachaya, 2000). In this respect, also tourism might be considered as a contributor to water pollution. Mosley and Aalbersberg (2003) recorded high levels of nutrients near tourist sites. Also Reopnichkul et al. (2009) linked the severe contamination of coastal waters in Thailand with the rapid, intense and uncontrolled tourism development, poor maintenance of sewers and the consequential numerous sewage outfalls. Intensively developed and densely populated areas appear to be a major source of pollution through wastewater discharge.

2.2. The Beach Resort Model (Smith, 1991)

2.2.1. The beach resort model explained

Smith experienced difficulties applying existing models on tourism destinations, specifically on upcoming beach resort areas. According to the author, Butler's model seems applicable to some coastal destinations and might serve as a base but does not seem sufficient to describe the evolution of contemporary upcoming beach resorts (Smith, 1992). Therefore, Smith (1991) first hypothesized a tentative model examining the cases of Batu Ferringhi (Malaysia), Pattaya (Thailand), Hua Hin (Thailand) and Surfers Paradise (Australia).

This model illustrates how beach resorts evolve through consecutive phases or stages of development with variable duration (Smith, 1992).

Smith (1992) defines five categories of circumstances under which phases evolve: physical, environmental, economical, social and political aspects.

1. Physical aspects (in previous research done by Smith (1991) partly appointed as morphological aspects) comprise information about the tourism industry in the area such as number of tourist accommodations and beds, arrivals, types of accommodation, the location of the business areas and number of roads towards and along the beach.
2. Environmental aspects include indicators such as flood and erosion damage, pollution of sea, beach congestion, water shortage, traffic congestion, central sewers, traffic change and rehabilitation.
3. Economic aspects focus on the revenues from visitors, tourism-related jobs and housing conditions based on rental prices.
4. Social aspects include the number of residents, the rate of migration to and from the destination, crime and corruption rates.
5. Political aspects intend to describe the actions the authorities take in order to manage the destination and who has the most power to change the view of an area.

Based on these aspects, several stages were developed to classify destinations according to their rate of development. Smith (1991) thought out eight phases, primary described by their physical aspects:

- Stage 1: the predevelopment datum is used to describe the phase before tourism exists in the area. Villages exist and roads only connect villages in between.

- Stage 2: the explorative tourism phase. Explorers predominantly visit the destination on a budget with independent itineraries that seek contact with the local villagers. Residents might gain some extra income from tourists they accommodate although their attitude might move from apathy to irritation.
- Stage 3: the first hotel phase with improved accessibility and the first major tourism development in the form of a high-class hotel, financed from abroad, and organized trips. Average tourism expenditure is rather high but decreases in the next phases as low-budget segments replace the high-budget travellers.
- Stage 4: the strip development pattern reveals a concentration of visitors along the beach, the alteration of houses into businesses focused on tourists and the increased job opportunities in tourism for residents.
- Stage 5: the established business centre is focused on tourism and expands the former village business area. The area attracts domestic and foreign migrants. The first signs of environmental deterioration start to show and the carrying capacity of beach and water is reached. Pollution becomes a problem from this stage on.
- Stage 6: the hotels far away from the beach are built as the area along the beach is already fully developed. Concentrated development reduces the natural environment and the aquatic life. Pollution remains problematic and beaches suffer from erosion. Development has been rather uncontrolled and only tourism-oriented. Often a master plan is set up to resolve difficulties.
- Stage 7: the second road parallel to the beach is often established at this point to improve access. Especially lower-grade hotels open and the resort becomes urbanized. Central sewers are established. Average tourism expenditure continues to decline as package tourists dominate the visitor profile.
- Stage 8: the recreational and commercial business district separate in this mature phase. The beach is polluted and little used. Master planning has failed. Investors buy the majority of tourism facilities. Local residents often feel antagonism.

To illustrate factors and stages, Smith (1992) mostly used graphs and maps. One example is the combination of environmental factors and their occurrence in particular stages in Pattaya, Thailand in 1992 (Figure 3).

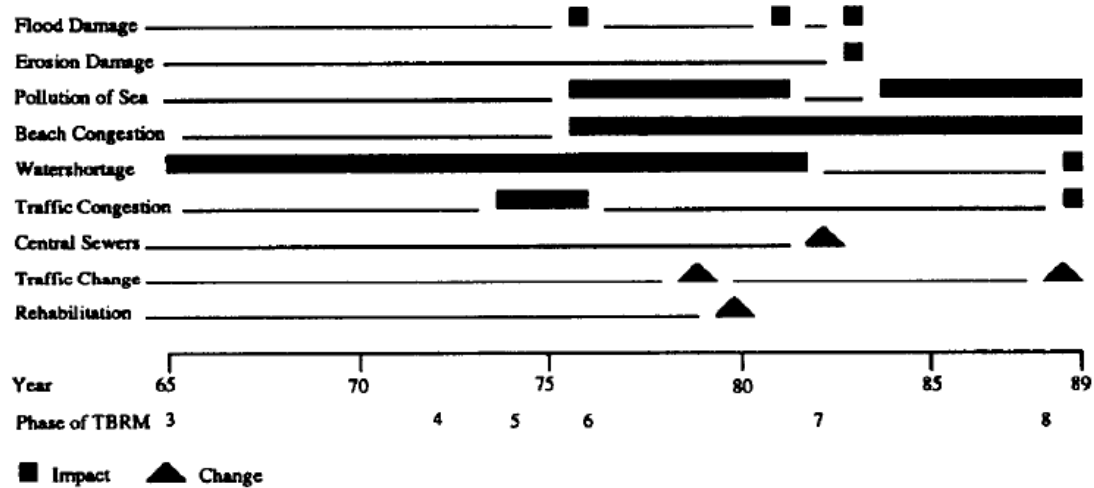


Figure 3 Impact and Events, Pattaya. (Smith, 1992:313)

2.2.2. Additional considerations

Although environmental factors are taken into consideration in the Beach Resort Model, solid waste is not explicitly included. Pollution of sea mostly explains quality of seawater as it might be affected by deficiencies in the sewer system. It would be interesting to integrate the impact of solid waste on the destination. Therefore we add this factor to the model for this thesis.

The models described above seem to consider growth of the destination, albeit economic or evolutionary, as a rather positive progress, at least to a certain point. Although Smith demonstrates that development implies a negative impact on the environment, he only starts describing this environmental impact from stage five. However, as Castellani and Sala (2012, p142) point out "tourism represents an additional load to the already existing impacts of local communities, even in areas with low levels of urbanization and relatively high levels of natural habitat". Therefore, it might be appropriate to take environmental aspects into consideration from the beginning.

The difficulty of interpreting the changes on Boracay island in the light of this model lies in the characteristics of the data. Although a model should be applicable on several beach resorts, interpretation might remain vague, as indicators are not approached numerical. Therefore, it is difficult to determine the exact threshold of each stage. Even Smith et al.

(2011) do not use numerical indicators to determine the level of Boracay's development. Therefore it might be inconvenient to make this model completely operational. Moreover, Smith (1992) gives a rather extensive overview of indicators used in his research. However, Smith et al. (2011) do not use all of these indicators while determining the development phase of Boracay. Some indicators are left out or received different names.

Smith (1991) named the eight phases mostly according to their morphological angle that might lead to confusion because he uses far more indicators than only morphology for the interpretation. The further research in this thesis will only use the numbers of stages, not their names, similarly to Smith et al. (2011) in their investigation of Boracay.

Arrivals in tourism and average expenditure are part of the physical and economic aspects of the model. As several researchers describe, expenditure and arrivals may decline or stagnate once reached a particular stage (Butler, 1980). However, as time evolves, it would be interesting to investigate whether the satisfaction of tourists has also changed over the years. Due to the limited time of research, visitor satisfaction could not be integrated in our research. However, it would be valuable to insert this indicator in future studies.

2.3. The paradigm shift in sustainable tourism

Having learned about the possible impacts of tourism, it would be expedient to explore the setting in which the travel industry is created. It was Becken (2016) who assigned the consequences of tourism to the prevailing view on society. The next paragraphs explore the influence of the contemporary paradigm of society as a whole on tourism development and its impact. Furthermore, the concerns about sustainable development and the possibility of a paradigm shift are discussed as well.

2.3.1. The Dominant Social Paradigm (DSP) and tourism

In the 1960's Thomas Kuhn was the first to introduce the concept of paradigm as a set of thought patterns, a time-related social or scientific mental attitude (Kuhn, 1970). Later, Pirages and Ehrlich (1974) attempted to concretize this mental frame and designated it as the Dominant Social Paradigm or DSP, which refers to dominating beliefs and values within a certain social group. Several researchers have tried to determine the DSP for the 'Western' and 'developed' society. Although the designations of 'Western' and 'developed' are considered to be obsolete according to Rössling (2018), they will still be used in the following chapters because of their appearance in other work. Despite the complexity of labelling a social group, several beliefs were found to be common for the developed society such as "material abundance, consumerism, individualism, perpetual economic growth and strong belief in technology" (Becken, 2016, p836). In his essay, Samuel Alexander (2014) clearly identifies this prevailing paradigm with the pursuit of maximizing the Gross Domestic Product (GDP) of nations around the world. In this situation, the increase of economical growth is understood as the 'progress' of nations and possibility for governments to contribute to social, economic and ecological wellbeing.

However, economic growth not only implies augmented production but also a raise in personal income and therefore in consumption. According to the WWF's Living Planet Report of 2016, the sustainable carrying capacity of planet Earth has been exceeded by 60% causing a wide variety of ecological problems such as biodiversity loss, floodings and droughts, erosion, pollution, etc. Despite the growing production of goods and services it becomes evident that economic growth collides with the natural environment. Therefore, many ways have been proposed to respond to these issues.

2.3.2. Sustainable development and Green Economy

In the light of possible limits to the growth (Meadows et al, 1974) and emerging ecological problems, several visions were created to address these issues. The well-known WCED 'Our Common Future' or 'Brundtland' Report defined sustainable development as "development that meets the needs of the present without compromising the ability of

future generations to meet their own needs” (WCED 1987, p16). According to the report, public and private actors should always aim for a balance of three pillars: the environmental, social and economic pillars. Other organizations, scholars and policy makers aimed for the implementation of a Green Economy (e.g. Law et al., 2016).

According to UNEP (2010, p2) Green Economy is
[An economy] that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities... In a green economy, growth in income and employment should be driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services.

Both approaches advocate a more efficient production and consumption that disconnect growth from environmental impact. However, Alexander (2014), amongst others, contradicts this theory. Despite technological innovations and efficiency gains, the ecological impact has only increased for it leads to an augmentation in production. Besides, according to Hall (2010), these approaches still rely on the belief of economic growth. As production of goods and services depends on natural capital, balancing all three pillars already becomes difficult. Sustainable development is to become a paradox of maintaining the ecological environment without affecting economy and capitalism because it still seems integrated within the prevailing Western DSP. As Alexander (2014, p114) states: “If growth itself is the issue that needs rethinking, then sustainable development may not be the banner under which to march”.

As the ideas of sustainable development and Green Economy lack expedience according to several scholars, there are reasons to believe that the paradigm of growth is no longer capable of dealing with the contemporary issues the environment faces (Hall, 2014). Kuhn (1970) argued that, when existing paradigms fail to resolve challenging issues, an increasing number of members of a social group or society would lose faith in the paradigm and starts to search for alternatives for that paradigm. The introduction of sustainable development seems unable to create this paradigm shift. Therefore, several scholars proposed a new vision that consequently comprises alternative values and behaviour.

2.3.3. The post-growth vision

Long before the contemporary issues of environmental impact, concerns about limits to growth have been expressed. Despite some theoretical shortcomings in his Essay on The Principle of Population (1798), Thomas Malthus already argued that an increase in population growth and consumption could lead to ‘catastrophe’. Less than a century later, John Stuart Mill (1848) was the first to mention ‘the stationary economy’ as a possible solution in case the economy of growth would no longer contribute to wellbeing. In this

situation, physical capital stock no longer grows but technology still continues to provide improvements for a stable population. Mill called it 'The Art of Living'. However, it was not until the post-world war II period that the desirability of continued economic growth was questioned more intensely (Alexander, 2014) which resulted in the 'The Limits to Growth' report in 1972. Simultaneously Mills 'stationary economy' concept was picked up by Daly who renamed it 'steady state economy' and interpreted it as an economy that develops new technologies but without evolving beyond the environmental limits of the planet (Daly, 1973). Moreover, the use of GDP as an indicator for wealth was criticized for "not making the distinction between activity that contributes to wellbeing and activity that does not" (Alexander, 2014, p107). Using other indicators, including social and ecological factors, would even demonstrate that the wellbeing of developed nations is stagnant or in decline, resulting in 'uneconomic growth' (Daly, 1999).

In response to existing environmental and social issues, the 'post-growth' movement has arisen, calling for a shift from the growth paradigm to a 'rightsizing' of the global economy. This implies a downscaling of production and consumption in countries with a large Ecological Footprint per capita and an opportunity for further economic growth in countries with high levels of poverty. Once this has led to an equal distribution of income and wealth, a steady-state economy should be maintained (Alexander, 2014). Although the French philosopher Alain Badiou believes that the end of the capitalist society as we know it is near (Badiou, 2019), the transition towards a new, alternative paradigm of post-growth faces raises many questions. Proponents of this vision endeavour to carefully define the concept of de-growth and the domains on which a contraction of the economy should be applied. One of these fields is the change of lifestyle, and in particular the energy-intensive 'Western' lifestyle that heavily exceeds Earth's carrying capacity. The application of a 'post-growth' paradigm encompasses a move towards simplicity and would undeniably affect conveniences that are often taken for granted in the developed society (Alexander, 2014). Therefore, a possible paradigm shift would not only deeply affect each detail of daily life but also of the entire tourism industry.

2.3.4. The influence of paradigms on tourism

The current state and impact of the tourism industry is a consequence of the norms, beliefs and actions within the prevailing neo-liberal paradigm. It was Becken (2016) who linked tourism with the paradigm of the 'Western world' in which neoliberal growth, on-going expansion and the belief in technological innovation is supported. In other words, through this view, it is expected that tourism grows and benefits from technological advances. However, despite the definition of sustainable development and the efforts made to become more durable, the undesirable impact of traveling has not declined (Millennium Ecosystem Assessment 2005).

In tourism, the implementation of sustainable development as proposed by the Brundtland report does not seem to respond completely to the contemporary environmental and social issues. Several scholars attempted to identify the gap between the definition of sustainable development and its practical outcome in tourism. Hall (2010) indicated that the concept of sustainable tourism development might be analysed and understood in a rather limited space and time. Although several destinations claim to have a small impact on the environment and provide eco-friendly infrastructure, critics believe that their impact might be significantly larger at a global scale. By only determining the impact of traveling locally, the global effect of a journey could be grossly underestimated. In this respect, tourism can locally signify a minimum treat but is likely to be very impacting from a global point of view. Besides, also Gössling et al. (2010) underline the issue of the narrow view on technology as a solution. Although significant improvements in technology have been presented, e.g. fuel efficiency of aircrafts, it is questionable whether these improvements are able to stand up against the rapid increase of travellers. In other words, stakeholders in tourism development tend to approach the concept of sustainability from a narrow, perhaps contradictory angle and risk to overlook the global effects.

Hall (2010) concludes his research by mentioning that the Brundtland report is an inadequate tool that will not be sufficient to change actions through a new vision and paradigm. Moreover, he states that: "consumption does not necessarily imply living better, even though most contemporary tourism marketing is geared to encourage increased consumption within a consumer society, and is embedded within both the ideologies and institutions of contemporary capitalism" (Hall, 2010, p140). In this respect, the conclusion of Hall relates closely to the vision of the 'post-growth' movement. Hoffman (2011) for example argues in his research about greenhouse gas emissions that a society will only achieve true de-carbonization if contemporary consumption patterns and lifestyles are changed thoroughly. According to Hall (2010) this would not mean the end of tourism. There would still be room for traveling in the new paradigm. The transition to a less impacting society as described by the 'post-growth' movement still lacks sufficient research. Numerous important questions about the destabilization of the contemporary growth paradigm and behavioural change have not been answered yet. However, as Alexander (2014, p122) argues that prefiguring possible alternatives will "help build resilience in anticipation for future shocks", it is recommended to explore the opportunities for tourism in an environment that would no longer embrace economic growth.

2.3.5. The Sustainable Development Goals as guidelines?

As stated above, a paradigm shift towards a more sustainable society doesn't come overnight. This process needs specific and clear actions that are able to display the advantageous outcome of sustainable behaviour. The Sustainable Development Goals might serve as valuable guidelines in this course.

In 2015 the United Nations General Assembly adopted a resolution that defines a framework for future global development for the period 2015-2030. This 2030 Agenda for Sustainable Development is created to stimulate actions "in areas of critical importance for humanity and the planet" (UN, 2015). The resolution was signed by all United Nations Member States in 2015 and provides a blueprint for improvement in five interconnected domains:

- **People.** The determination to end poverty and hunger and the aim to ensure dignity and equality in a healthy environment for all human beings.
- **Planet.** The protection of the planet from deterioration through sustainable production and consumption and through actions on climate change.
- **Prosperity.** The aim for economic, social and technological progress in harmony with nature.
- **Peace.** The aim for peaceful, just and inclusive societies free from fear and violence.
- **Partnership.** The aim for a Global Partnership for Sustainable Development for the implementation of the Agenda with a focus on the needs of the most vulnerable countries and people.

By acknowledging these domains and the indispensable link between poverty and environmental concerns, this Agenda goes beyond the previous eight Millennium Development Goals established by the United Nations in 2000. 17 new Sustainable Development Goals concretize the intention of the resolution (Figure 4).



SUSTAINABLE DEVELOPMENT GOALS



Figure 4. The 17 Sustainable Development Goals as part of the 2030 Agenda for Sustainable Development (UN, 2015).

- **Goal 1.** End poverty in all its forms everywhere
- **Goal 2.** End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
- **Goal 3.** Ensure healthy lives and promote well-being for all at all ages
- **Goal 4.** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- **Goal 5.** Achieve gender equality and empower all women and girls
- **Goal 6.** Ensure availability and sustainable management of water and sanitation for all
- **Goal 7.** Ensure access to affordable, reliable, sustainable and modern energy for all
- **Goal 8.** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- **Goal 9.** Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation
- **Goal 10.** Reduce income inequality within and among countries
- **Goal 11.** Make cities and human settlements inclusive, safe, resilient, and sustainable
- **Goal 12.** Ensure sustainable consumption and production patterns
- **Goal 13.** Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy
- **Goal 14.** Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- **Goal 15.** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- **Goal 16.** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- **Goal 17.** Strengthen the means of implementation and revitalize the global partnership for sustainable development

For each goal, several targets and indicators are created to make the overall aim understandable and more feasible. In total 169 targets and 230 individual indicators are listed by the 'Inter-Agency and Expert Group on SDG Indicators' (UN, 2016) However, Hickel (2019) states that the paradox of sustainable development remains unsolved by demonstrating that Goal 8, the call for a continuous economic growth of 3%, collides with the calls to achieve "harmony with nature". The United Nations still assume economic growth as a necessity for human evolution and the eradication of destitution and aims for a balance between the social, economical and environmental dimensions of development (Hickel, 2019). Nonetheless, as Alexander (2014) explains, one should strive for the 'rightsizing' of global economy as a first step towards a de-growth economy. Therefore, the SDGs might be the most useful and concretized guidelines available at this moment.

Tourism can be directly and indirectly linked with all SDGs. It is essential to consider its development within this framework in order to achieve a more sustainable and resilient destination. Therefore, this thesis also reviews the presence of SDGs within the process of Boracay's closing and future planning.

3. The Research Area: Boracay Island

The next paragraphs provide an overview of the area that is examined in this thesis. In addition to the geographical aspects of Boracay, a description of its evolution as a tourism destination, the consequential impacts of tourism and the governmental responses are delineated.

3.1. Location

Boracay is a small island in the Philippines and is part of the administrative Western-Visayas region. Within this region, Boracay belongs to the Aklan Province and the Municipality of Malay. The island comprises three 'barangays' or villages, Manoc-Manoc in the south, Balabag, and Yapak in the north. These three villages together hosted 46.829 inhabitants in 2017 (Enquirer, 2018). According to the 2015 census of population, two out of three barangays of Boracay are present in the top 10 of most populous villages of the Western Visayas (comprising 3.389 villages).²



Figure 5 The situation of Boracay. A: the situation of Aklan Province in the Philippines. B: the situation of Boracay in Aklan Province. C: the situation of Boracay in Malay Municipality.³

Boracay is approximately seven kilometres long and less than one kilometre wide on its narrowest point. The total surface of the island is 10.32 square kilometres. According to a 2006 Presidential Proclamation, Boracay is classified as agricultural land (628,96 hectares) and preserved forestland (400 hectares).⁴ The island benefits from a year-round temperature around 30 degrees Celsius. The rainy season, and

² <https://psa.gov.ph/population-and-housing/statistical-tables>

³ <https://www.google.com/maps>

⁴ <http://www.officialgazette.gov.ph/2006/05/22/proclamation-no-1064-s-2006/>

consequently low season, starts in June and ends in October. High season comprises April and May the hottest months. During these months temperatures can reach as much as 39° Celsius.⁵

Despite being an island, Boracay is easy to reach for it is only separated from the larger Panay Island by a very small strait. Jetty ports on each side connect the two islands and the crossing by ferry only takes 10 minutes. On Panay island, next to the jetty port, the airport of Caticlan provides connections with Manila, Cebu and Clark among others.

Boracay is famous for its white coral-sand beaches and its clear waters (Carter, 2007). The most famous seashores have names such as White Beach, Bulabog Beach and Diniwid Beach. White Beach is known as the main tourist beach, lined with tourism-related infrastructure. Bulabog Beach on the opposite site of the island is an area designated for windsurfing and kite boarding (Lonely Planet, n.d). Neither the destination nor the region are promoted through an official website of the tourism department. Some private initiatives provide information about the destination with sea and beaches as unique selling proposition (USP).



Figure 6 Boracay Diniwid Beach⁶ and the situation of beaches of Boracay ⁷

⁵ <https://weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine,boracay,Philippines>

⁶ <https://www.lonelyplanet.com/philippines/the-visayas/boracay>

⁷ <https://en.wikipedia.org/wiki/Boracay>

3.2. Evolution as a tourism destination

Boracay used to be the home of the local Ati people (Ong et al., 2011), a subgroup of the Filipino Negritos ethnic group who were the first inhabitants of the Philippine archipelago (Ong & Young-Dong, 2015). This group gained its income through fishing and the production of copra, the dried meat of coconuts from which coconut oil is extracted (Carter, 2007). However, cyanide and dynamite fishing techniques led to degraded coral reefs causing problems in the fishing industry. Moreover, the price of copra significantly declined, provoking a search for alternative income since the 1980s (Trousdale, 1999). Tourism was not a common activity until the 1970s, when the first visitors resided in small accommodations hosted by locals. During the 1980s and 1990s the island experienced rapid development of tourism-related infrastructure as it gained popularity through international marketing campaigns (Figure 7).

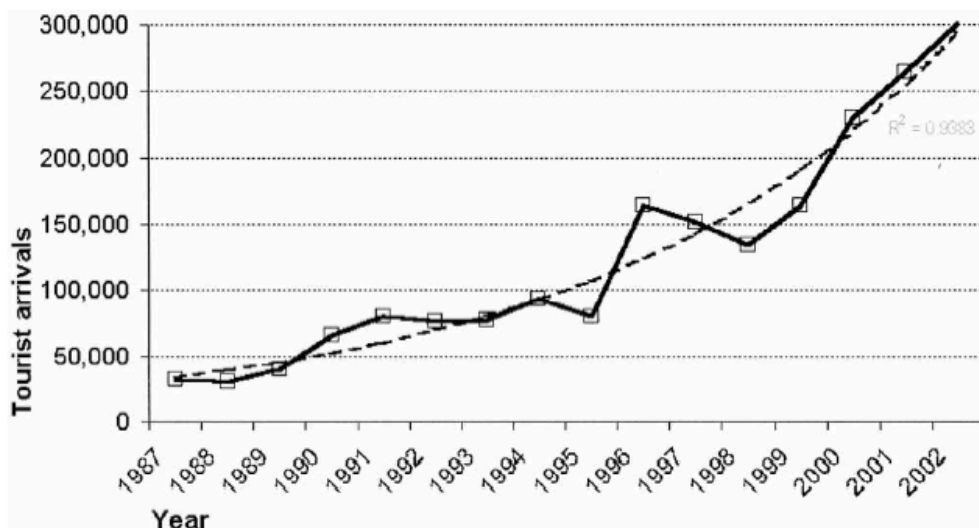


Figure 7. Annual Tourist Arrivals to Boracay Island, Philippines (1987–2002) (Carter, 2004:386)

Carter (2007) clearly demonstrated an increase in resort establishments, often with a foreign proprietor, and a rapid decrease in small-scale accommodation and restaurants. By 2000, 25% of the island was propriety of non-local investors (Goodwin, 2000, in Carter, 2007). According to Vanneste (2011) this influx of knowledge and co-operation of international actors might weaken the bargaining power of local stakeholders. Tourist arrivals quickly rose from less than 50.000 in 1978 to over an astonishing 2.000.000 in 2017 (Evardone, 2018). Simultaneously, the number of rooms increased from 2.200 in 1997 (Trousdale, 1999) to 7.684 in 2014⁸. However, already in 1997, Trousdale indicated that a daily maximum carrying capacity between 8.800 and 14.900 visitors or maximum 29.800 people (visitors and residents) must be maintained at all times.

⁸<https://www.foi.gov.ph/requests/aglzfmVmb2ktcGhyHQsSB0NvbnRlbnQiEERPVC02ODU2NjE2NzEwMzUM>

Boracay kept on receiving attention from reviewing websites, magazines and websites. In 2018, the destination even earned its place in the top five of “The World’s Best Island in Asia” according to Condé Nast.⁹ However, along with the overwhelming expansion of tourism edifices and services came issues of impact on the ecological and social environment.

3.3. Consequences of this development

3.3.1. Natural Impact

Islands in particular appear to attract visitors because of their coastal infrastructure and their particular geography. However, Smith et al. (2011) highlighted that smaller and more accessible islands tend to be very vulnerable for the impact on the natural environment. Smith (1997, in Ong et al., 2011) demonstrated that the sustainability of coastal tourism destinations is often managed insufficiently due to its rapid development and absence of long-term strategic planning.

Rufino (26 April, 2018) clearly visualizes the rapid changes on Boracay:

For the past 20 years, people have been talking about how it was slowly deteriorating. The beach was often littered with trash — cigarette butts, bottles and cans. The tangled seaweeds were strewn like discarded nets along the shore. . . We did not heed the warnings about how the sewage system flushed out into the sea. But we sensed it was true because of the occasional foul odor in the beach area facing the islet with the grotto. No wonder some people got skin rashes and E coli infections that needed strong antibiotics. . . It was long overdue. Greedy people have overbuilt, overdeveloped and abused the island. Pollution was a growing spectre.

a. Sea water contamination

As shown in Figure 7, the tourism industry on Boracay was confronted with a dramatic drop in tourist arrivals due to the pollution of White Beach with the coliform bacteria caused by insufficient wastewater treatment in 1997 (Smith et al., 2011). As the online archives of the Philippine newspaper ‘Business world’ reveal, these coliform crisis exposed the poor management and development of the island leading to economic standstill (Jalbuna, 1998). However, as Maguidad (2015) stated, the local community tends to believe that these green beaches are only the result of a natural process and that the appearance of algae are not related to seawater contamination.

⁹ <https://www.cntraveler.com/galleries/2014-10-20/top-30-islands-in-the-world-readers-choice-awards-2014>



Figure 8 Picture of blooming algae along Boracay's coastline. (Celis, 2018.)¹⁰

In 2006, the Department of Energy and Natural Resources or DENR (Ong et al., 2011) revealed that, thanks to the operationalization of the water treatment plant and its connection with a majority of private businesses, water quality had improved. The decreased levels of coliform and water pH were found within acceptable levels. However, according to Ong et al. (2011), the NGOs tend to be less positive on this topic as they mention the rapid growth of more recent and smaller businesses that are not connected to the central sewer system and discharge their wastewater illegally.

b. Floodings, beach erosion and degraded biodiversity

The rapid development encompassed severe consequences for the entire island. Ong et al. (2011) reported concerns about beach erosion on several beaches where the roots of coconut trees are highly visible. Although in their survey, many respondents believed this was the result of natural processes, Servando (2009) found that the cause of the erosion was to be found in the impact on the natural tide movements due to uncontrolled development and the unregulated construction of a seawall. Moreover, the DOT (2008a) claims that the whole island, including the forested areas and wetlands, suffers from the development leading to a decrease in wildlife and trees and an increase in floodings.

Ong et al. (2011) even demonstrate that air pollution becomes a serious issue on Boracay. The increase in tourist arrivals resulted in an increase of motorized

¹⁰ <https://www.eaglenews.ph/denr-to-update-existing-boracay-masterplan-demolish-illegal-structures-during-islands-6-month-closure/>

vehicles. Moreover, due to the small surface of the destination and the small amount of roads, traffic congestion appears to be very common.

3.3.2. Changing visitor profile

Trousdale (1999) demonstrated that the profile of visitors might cause a great impact on the destination. He stated that Boracay's visitor profile has changed over the years and even links this alteration of visitor profile to the rapid deterioration of natural and cultural assets. This new market seems to adapt easily to this diminution in environmental quality by seeking diversion in built attractions. Whereas European backpackers discovered the island in the 1970s and 1980s, today's international visitors mainly come from China and South Korea to spend their holiday in an all-in resort. However, according to Vanneste (2011), the success of sustainable tourism development (and pro-poor tourism¹¹ in particular) is dependent on the attitude of visitors and the way they comprehend their experience as well.

3.3.3. Social impact on the population of Boracay

Since the 1990s, several studies have described the negative impact of rapid tourism development on the local Ati communities of Boracay (Trousdale, 1999; Carter, 2004). According to Ong et al. (2011) up to 40 percent of the island's population are migrant workers coming from other islands in the Philippines. It is stated that the majority of these migrants are Muslims originating from Mindanao Island in the south. This island experiences severe conflict (at the time of research two explosions killed at least 20 people in a Catholic Church on this island). Ong et al. (2011) demonstrated that this group of workers mostly operates in the informal sector and is seen as a 'number one' social problem by the community leaders and administration.

McKercher (1993) stated that the rapid development of a tourism destination couldn't only be associated with the deterioration of environmental quality but also with a decline in cultural integrity. Boracay faces these problems as well according to Carter (2004). Nonetheless, he described the rapid shift towards a tourism monoculture and the quick acceptance of tourism on the island, despite the serious concerns for the unplanned development and the inequitable distribution of costs and benefits among the local and foreign stakeholders.

¹¹ "Tourism that generates net benefits for the poor" (Benett et al. 1999:iii; in Vanneste 2011)

3.4. Tourism Policy in the Philippines and on Boracay

The research done on Boracay as a tourism destination demonstrates a long history of environmental issues. Growth has very rapidly changed the view of the island. Moreover, Trousdale (1999) and Maguidad (2015) among others delineated the several attempts of the Philippine government on national and local level, of NGO's and other stakeholders to address these issues. Nonetheless, despite all actions, Boracay still suffered from a degraded natural environment that finally led to a six-month closure.

In line with the description of the evolution of tourism on Boracay, a short overview is given of the past government decisions that had an impact on today's issues on the island.

3.4.1. National tourism policy

Already in the 1978, Boracay was declared a Tourist Zone by president Ferdinand Marcos. Twelve years later, responsibility was given to the Philippine Tourist Authority, as part of the Department of Tourism (DOT), to manage and plan tourism on Boracay (Trousdale, 1999). Meanwhile, the lack of local control on tourism regulations lead to trespasses on a large scale. After the dictatorship of Ferdinand Marcos, President Aquino enforced a transition from centralized governance to empowering local governments through the Local Government Code of 1991 (Maguidad, 2015). Local authorities were assumed to have a better understanding of specific needs, although this shift in power was criticized, as many local governments did not feature sufficient expertise to handle decentralized government functions on the short term. Despite the fact that, over the years, local authorities, also in tourism and land use planning, have reinforced their expertise, Maguidad (2015) explains that there is still often a gap between the capabilities of planning officers and the needs of areas marked for tourism developments. Shatkin (2008) even argues that, as in many Southeast Asian destinations, governments provide the policy frameworks but the private sector largely serves as a key agent in development.

Enshrined in the Local Government Code of 1991 was the first National Philippine Tourism Master Plan, valid for 20 years (Maguidad, 2015). This enabled the authorities to designate and cluster several potential destinations that already possess existing infrastructure such as airports and harbours. However, as the country was experiencing difficulties in the transition from centralized to local

governance, the implementation of the plan did not meet the expectations. Therefore, a new plan was released in 2011 (Maguidad, 2015).

Meanwhile, in 2006, an overall strategy was enrolled based on the specific spatiality of the archipelago. Five superregions were identified according to their social, economic and environmental attributes. The Central Philippines would emphasize on tourism due to the numerous presence of small and paradise-like islands. This belt includes the province of Palawang, the Central Visayas and the Western-Visayas (Arroyo, 2006).

In an attempt to cope with the unplanned and rapid development of tourism, the Philippine Congress voted for a Tourism Policy Act in 2009. Within this law, attention is given to the reorganisation of the tourism department and its three agencies (DENR, Department of Tourism or DOT and Department of Interior and Local Government or DILG). Moreover, the new bill tends to embrace stakeholderism and collaboration with the private tourism industry (Maguidad, 2015).

3.4.2. Customized policy and regulations for Boracay

Ong et al. (2011) reported that authorities have attempted to address the negative impact of tourism on Boracay in the past. In 1990 the Boracay Development Master Plan was initiated by the DOT to cater for the rapid increase in arrivals and to control the fast development. However, this project seems to have failed largely to cope with the environmental and social issues on the island. Multiple initiatives for recovery such as the creation of a Solid Waste Management Master Plan in 2007, the protection of fruit bats to fight dengue fever and the production of an Environmental Master Plan failed as the power of the DOT on national level was transferred to the Local Government Unit (LGU), which lacked expertise and financial resources to ensure successful implementation (Ong et al., 2011).

Finally, in 2004 the tourism management shifted back to the DOT, at the national level through a mandate to exercise administrative control over the island (Ong et al, 2011). Since then a series of initiatives have been introduced for rejuvenation, cleaning up and greening, such as the operation of a sewage treatment plant and the development of the Boracay Environment Master Plan and the Comprehensive Land Use Plan in 2008. Ong et al. (2011) also mention the partnership with several NGOs (e.g. IFC, JICA and Greenpeace) for the setup and implementation of sustainability projects about environmental awareness and recycling. Moreover, civil society and private interest groups (e.g. the Boracay Foundation Incorporation or BFI) arose to actively develop workshops about environmental issues for businesses

and communities. Ong et al. (2011) even indicates that it was perceived that most businesses fairly implemented broad strategies to decrease their environmental effect. However, Trousdale (1999, p.851) states that “important local leaders and decision-makers hold very deep and disturbing perceptions about this destination's condition that will continue to impact management of the island long after the needed infrastructure has been put in place.”

Trousdale (1999, p. 842) values the concept of ‘governance’ on Boracay, referred to as “the critical issue in moving development towards sustainability”. Governance is occupied with “public involvement, institutional development, transparency of decision making procedures, interest representation, conflict resolution, limits of authority and leadership accountability” according to Frischtak (1994, in Trousdale, 1999). According to Trousdale, the island is threatened because the destination lacked a day-to-day and responsive management. Moreover, he mentions that, in 1999, Boracay faced many serious challenges such as the failure of the government to recognize the negative impacts of rapid development, the inability of local authorities to take in the shift of power to the local level and the consequences of the new composition of the fast growing population on Boracay.

4. Methodology

As the next chapter amplifies, several methods of research have been applied. First, the choice of methods is explained and displayed in a chart flow. The following paragraphs illustrate the process of data collection and analysis.

4.1. Research Methods

The situation of Boracay's environment may at least be considered complex and delicate. Hence, it is of great importance to define the determinants that influenced the decay of the island's environment and/or induced the closure and clean-up programme. In order to well understand the ravel of development, environmental effects and stakeholders, this research uses the 'triangulation' method. Denzin (1989) defines this approach as "the combination of methodologies in the study of the same phenomenon". According to Jick (1979) triangulation allows to broaden the knowledge on a topic through the examination of different viewpoints and therefore improve the accuracy of interpretations. For this thesis, a number of qualitative and quantitative research methods are applied, depending on the sub-questions and the groups involved.

After collecting the information retrieved from the literature review and the brief exploration of the research area, different approaches are linked to the sub-questions and stakeholders (Figure 9).

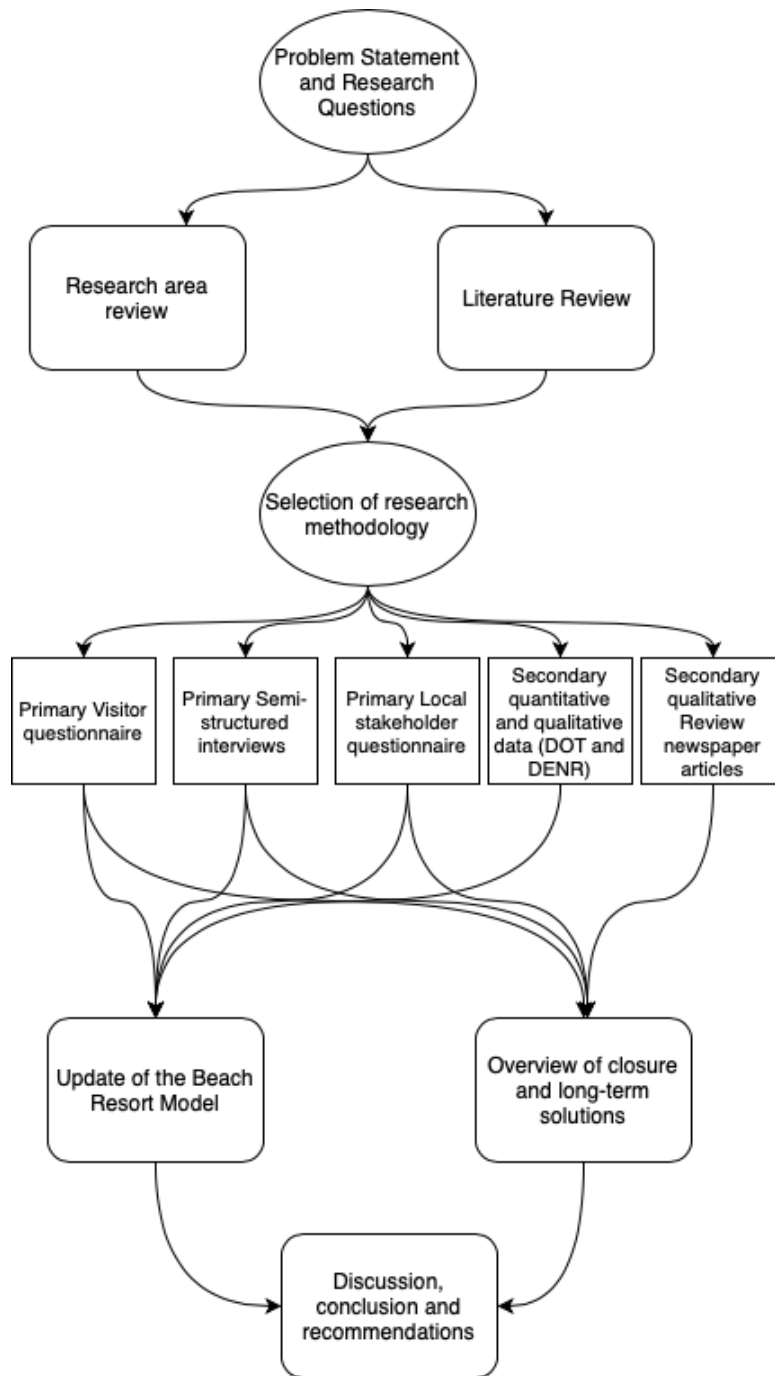


Figure 9 Research approach (own processing)

The updates of Smith’s Beach Resort Model (1991), before and after closure, predominantly encompass primary and secondary quantitative data that allow the insert of a wide range of information into a single model and to identify the concerns and opinions of residents and visitors on the state of the environment of Boracay. The analysis of the closure and planning requires more depth as it needs to give an

overview of the initiation of the closure, the clean-up project and the long-term vision. In this segment, the semi-structured interviews with a considerable amount of public and private stakeholders are of great importance.

4.2. Data collection

Given the necessity of both primary and secondary qualitative and quantitative data, the collection of information did not entirely occur in the field. From September 2018 until March 2019 much of the data was gathered during a desk research. The fieldwork itself took place on Boracay island from 25 January until 8 February 2019.

4.2.1. Secondary data

An important amount of secondary data used for Smith's Beach Resort Model could be found in the statistics provided by the government of the Philippines. The Department of Tourism (DOT)¹² and the Philippine Statistics Authority¹³ dispose of sufficient statistical information on their websites. However, since not all information was accessible on these websites, newspaper articles with references to DOT and DENR were sought to complete the information needed. The Philippine Geoportal website and the Google Earth Pro desktop program provided the maps needed to illustrate the land use on Boracay. Furthermore, existing research about Boracay conducted between 2011 and 2018 provided content for the model.

4.2.2. Primary survey data

Two types of questionnaires were composed before fieldwork. Whereas one focused on visitors, the other aimed at gaining insight in the perception of local residents on the closure and rehabilitation. Both questionnaires were created in December 2018. The visitor questionnaires were translated in Chinese (Standard Mandarin) and Korean since a significant amount of visitors originates from China and South-Korea. In Belgium, no translator could be found for the translation of the local residents questionnaire in Tagalog. For this purpose, the questionnaire has been translated by an employee of the Chillax Hostel on Boracay, the place of residence of the researcher, during the first week of fieldwork.

¹² http://www.tourism.gov.ph/tourism_dem_sup_pub.aspx
<http://www.visitmyphilippines.com/know-more.php?id=192>

¹³ <https://psa.gov.ph>

a. The visitor questionnaire

In total 192 visitor questionnaires have been conducted on paper. Their design can be found in appendix I, II and III. During the first days on the island this list of questions has been tested on travellers at the Chillax Hostel. Most of the questionnaires have been conducted on White Beach for several reasons. The overall amount of tourists on the island could be found on this side of the destination. Bulabog Beach on the other side of Boracay was much less populated and too windy to hold papers. Other beaches such as Puka Shell and Ilig Iligan were almost empty. Several attempts to approach possible respondents at other places were unsuccessful. On the busy Main Road and at D'Mall shopping centre visitors were not willing to participate. However, the response rate on White Beach was very high in most cases.

The aim was to use a stratified sampling method based on the arrivals on Boracay in 2018. Taking into account the figures on tourist arrivals mentioned in paragraph 3.3.2 and the restricted period of field work the goal was to gather 200 questionnaires of which 65 domestic tourists and 135 international tourists (54 from South-Korea and China).



Figure 10. The topics as a basis for the visitor questionnaire (own processing).

The questionnaire consisted of three parts: the characteristics of the visit, the appreciation of the environment and the personal profile. Tourists were asked about the organisation of their holiday, their type of accommodation, their length of stay and their activities on the island. Furthermore, visitors were requested to explain their perception of environmental cleanliness, to rate the environment at that moment, to rate statements about the environment, to share their knowledge about the closure and to indicate whether they had seen actions to lessen environmental impact. In the third section information was asked about nationality, age and gender.

Visitor sample: age distribution

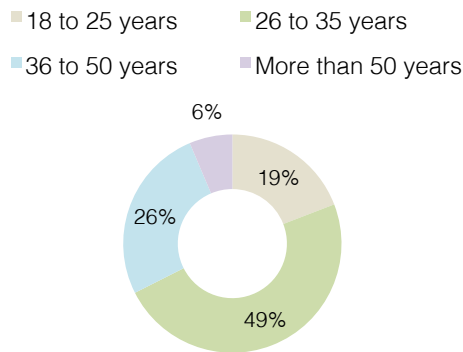


Figure 11 The age categories of visitor respondents (own processing)

The majority of the responding visitors is aged 26 to 35 years old (**Figure 11**). 65% of all respondents was female.

Visitor sample: origin of respondents

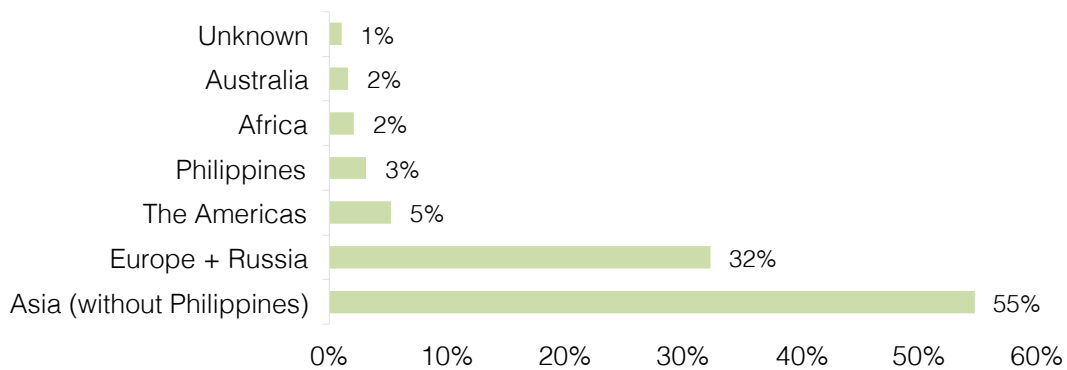


Figure 12 Origin of visitor questionnaire respondents (own processing)

During fieldwork, the distribution of origin has not been achieved as many Chinese visitors appeared to celebrate Chinese New Year on Boracay. At the end of the field trip, 192 questionnaires had been answered by only 6 domestic, 85 Chinese, 13 South-Korean visitors and 91 tourists from other countries. In total 32 nationalities were surveyed during research. In the group of European and Russian tourists 12 visitors originated from the UK, 12 from Sweden and 8 from Russia. Furthermore, 4 respondents came from Africa, 3 from the continent of Australia and 10 from Northern and Southern America.

Visitor sample: type of travel and accommodation

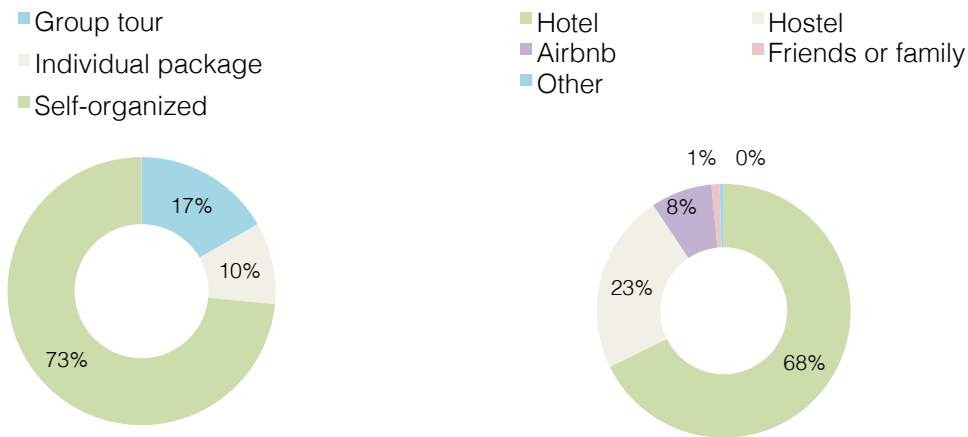


Figure 13 The type of travel and accommodation of visitor respondents (own processing)

73% of the respondents organized their trip to Boracay and lodging by themselves (Figure 13). Well over 68% resided in a hotel. 23% booked a stay in a hostel. It is worth mentioning that almost 8% of respondents stated to sleep in an Airbnb while this type of accommodation had not been found compliant by the national government at the time of research. Some further investigation revealed that it is possible to make a reservation on the Airbnb website although owners inform guests that they first need to book a room at a compliant hotel for one night in order to get a permission to enter the island. Visitors without a proof of reservation at a compliant hotel will not be permitted to set foot on the island.

Most respondents (61%) reside on Boracay for four to seven nights. 21% chose to stay one to three nights and another 18% stayed more than one week. Although respondents were given the opportunity to select the option of staying one day, no one gave this answer due to the regulations of reservations mentioned above.

Boracay is clearly a destination for relaxing (Figure 14). Activities such as shopping, (kite)surfing, a cultural visit, hiking and cycling attract less visitors. Other activities mentioned were diving, snorkelling, paddleboard, sailing, sunset cruises, island hopping and visiting restaurants and spa.

Visitor sample: activities on Boracay

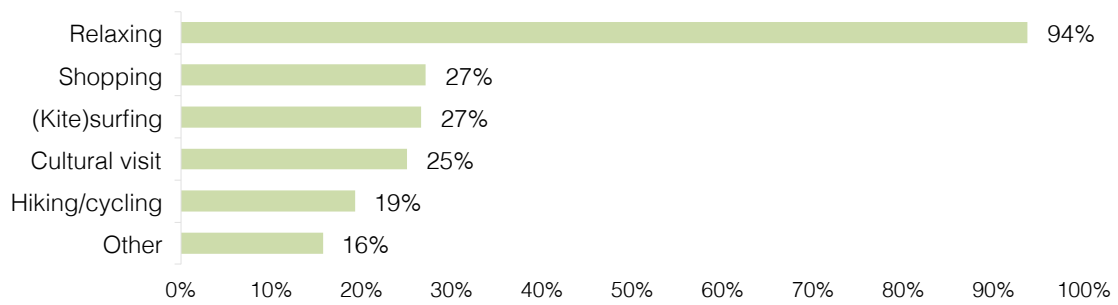


Figure 14 The activities of visitor respondents during their stay on Boracay (own processing).

b. The local resident questionnaires

82 questionnaires were conducted with the local population living on the island. The design can be found in appendix IV and V and in Figure 15.



Figure 15: The topics as a basis for the resident questionnaire (own processing)

As mentioned above, the questions were translated in Tagalog, the first official language of the Philippines. The employees of the hostel volunteered as testing audience. Before arrival on Boracay it was planned to randomly select 100 possible respondents on streets in the three barangays, starting with the Diniwid area close to the hostel. A large amount of respondents was found in the street between Diniwid Beach and the Main Road. After informing a shopkeeper about the research, she insisted to help by asking 13 of her relatives and acquaintances to fill in the questionnaire. Further down the road, a large group of residents gathered on a central place to play games. After finding some residents with sufficient knowledge of English, the questionnaire was handed over to approximately 20 respondents. One of these respondents introduced himself as a teacher at the Manoc-Manoc High School and proposed to distribute the questionnaires among colleges and some of the oldest scholars in return for a class of Dutch for 57 students. Another 30 questionnaires returned. Finally, a resident of the Diniwid area proposed to meet the Barangay Captain of Manoc-Manoc. After a short meeting, the Captain distributed

the last papers among his employees. Eventually 82 respondents filled in the questionnaire.

The questionnaire consisted of four parts: the appreciation of the environment, the experience of the closure, the experience of the rehabilitation and the personal profile. For the first part, residents could indicate which environmental issues they had experienced themselves and how they would rate the environment before the closure. In the second part, respondents were asked about the way they received the news about the closure, possible consultation, possible impact of the closure and their opinion about statements concerning the closure. The third part asked about their involvement in the rehabilitation actions, their opinion about the actions and how they experience the environment after reopening. Finally, the respondents were asked to share their gender, age, origin and employment status.

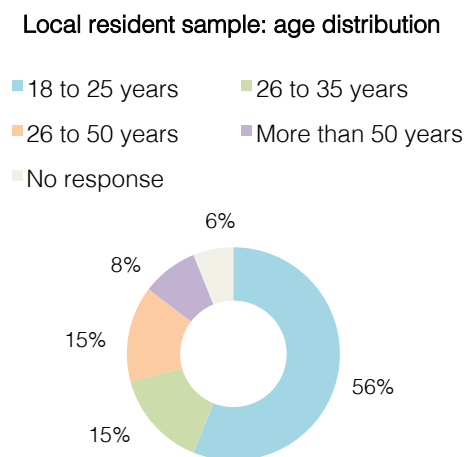


Figure 16 The age categories of local resident respondents (own processing)

The majority of respondents was 18 to 25 years old. 65% of the respondents was female (Figure 16). Most of the respondents are students or work for government as civil servants and teachers (Figure 17). Other jobs mentioned are caddy and also high-school teacher.

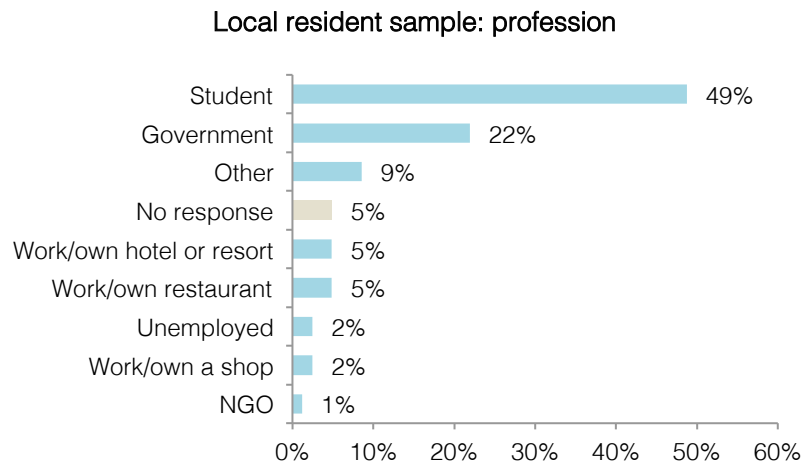


Figure 17 Overview of professions of local resident respondents (own processing).

4.2.3. Primary qualitative data: interviews with key persons

During the field research eight interviews (390 minutes in total) have been carried out. These conversations were planned to gain more insights in the initiation of the closure, the rehabilitation and the future planning of tourism development. A wide range of respondents was defined (local and national/regional level, government and private sector, environmental and corporative focus). After a desk research based on newspaper articles, social media and other websites, a list of four possible respondent groups was defined: government, tourism businesses (hotels, attractions, restaurants,...), private business interest groups and sustainable development/nature preservation groups. A list of their contact details was composed and an appointment requested by email, Facebook Messenger and telephone. Only one resort eventually responded the request by e-mail and allowed an interview as shown in Table 1.

Four interviews were set before arrival on Boracay. One appointment was made with a hostel manager upon arrival. The search for the other three respondents was based on the snowball method (Meuleman, 2014) during the interview with the Boracay Foundation Incorporation since this organisation relies on a large network of

local entrepreneurs and civil servants. Finally, these last respondents were contacted personally or by telephone.

The interviews were based on a semi-structured interview guide based on 10 topics: general information about the initiation of the closure, the role of the interviewee, the decision to close, communication, actions, rehabilitation planning, involvement and participation, future actions, future vision and long-term planning. Before starting the interview, the respondents received an informed consent (appendix VIII) and were asked whether they allowed the audiotaping of their responses.

Institution	Stakeholder group	Interviewee Job Title	Location	Non-response
Department of Tourism	Government	Secretary	Iloilo, Panay Island	
Department of energy and natural resources	Government	Forester	Iloilo, Panay Island	
Boracay Foundation Incorporation	Private business interest group	Executive Director	Balabag, Boracay	
Chillax Hostel	Tourism business	Owner	Balabag, Boracay	
The Lind Resort	Tourism business	HR Manager	Balabag, Boracay	
Dive Gurus diving club	Tourism business	Owner	Balabag, Boracay	
Friends of the Flying Foxes Nature Preservation	Sustainable development/nature preservation	President	Yapak, Boracay	
Society for Sustainable Tourism & Development Inc	Sustainable development/nature preservation	President	E-mail conversation	
Boracay LGU	Government	Sustainability Civil Servant	Balabag, Boracay	
Boracay Tourism Field office	Government	/	Balabag, Boracay	X
Shangri-La Resort	Tourism business	/	Yapak, Boracay	X
Movenpick resort	Tourism business	/	Yapak, Boracay	X
Fridays resort	Tourism business	/	Balabag, Boracay	X
Discovery Shores resort	Tourism business	/	Balabag, Boracay	X
Hennan resorts	Tourism business	/	Boracay	X
Villa Caemilla boutique hotel	Tourism business	/	Balabag, Boracay	X
The District resort	Tourism business	/	Balabag, Boracay	X
Nami resort	Tourism business	/	Balabag, Boracay	X
Zuzuni resort	Tourism business	/	Balabag, Boracay	X

Table 1. List of interview respondents and contacted organizations.

One organization, the Society for Sustainable Tourism and Development, was contacted before fieldwork as its name came up several times in newspaper articles about rehabilitation projects on Boracay. This organization has answered some of the questions by e-mail since there is no office near the Philippines or near Belgium. Table 1 provides an overview of interview respondents.

4.3. Analysis

4.3.1. Quantitative data

The data gathered during fieldwork were imported into an excel file in numerical codes and text. The English visitor questionnaires were processed in the Philippines. Chinese and Filipino students have translated the other responses at KU Leuven. All data were analysed through SAS using frequency counts. The analysis of the visitor and local respondent questionnaires can be found in appendix VI and VII.

4.3.2. Qualitative data

The interviews were transcribed (appendix IX), labelled and analysed in Nvivo. Eventually, 14 nodes were identified for further analysis and description (Figure 18).

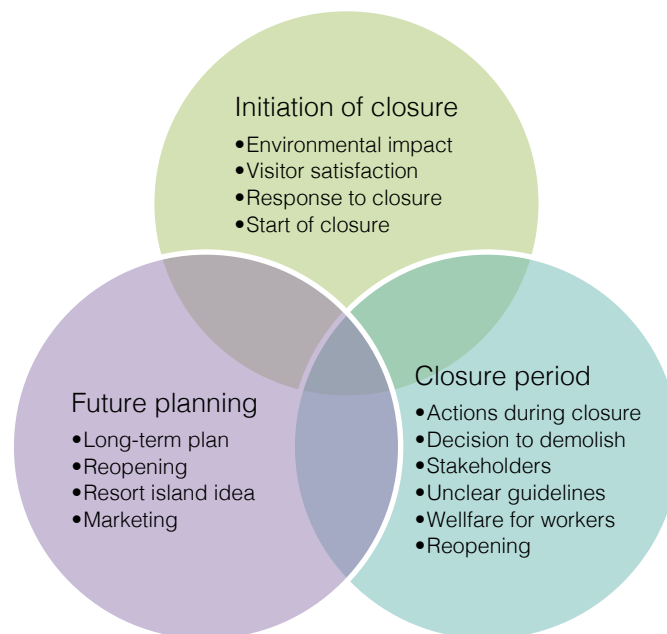


Figure 18: 14 nodes identified during Nvivo qualitative analysis of interviews (own processing).

4.4. Limits of research

Although prepared in detail, this collection of data contains some limitations. As explained before most respondents on both questionnaires were female. Despite the fact that both men and women have been asked to participate, men often referred to their female acquaintances to fill in the questions. As mentioned before, the sample differs from the population of visitors of Boracay since more South-Korean and Chinese tourist filled in the questionnaire. The domestic visitors are underrepresented in this research. Moreover, the amount of Russian visitors was underestimated. Since no questionnaires were translated into Russian, this group of tourists might be underrepresented. Another limit is the lack of information on the period of a previous visit to Boracay. As the island faced very rapid development, the date of the visit might be very important to correctly interpret the information obtained.

The success of a destination depends, amongst others, on the satisfaction of its visitors. For this purpose, it is important to examine the reciprocal influence of Boracay's discourse on the contentment of visiting tourists. Reviews on Tripadvisor would be a very interesting starting point to gather these data. As mentioned before, this indicator has not been integrated in the model. However, visitor satisfaction has been discussed during interviews.

A large amount of the local residents filled in the questionnaire without direct contact with the researcher. Therefore, there is less knowledge about the circumstances in which respondents have answered the questions and if they understood all questions. Moreover, it might be possible that respondents from the northern part of the island might be underrepresented since both the school and the barangay captain's office were both situated in Manoc-Manoc. Another issue that needs to be taken into account is the effect of the snowball method used during the search for local respondents. This approach might have influenced the heterogeneity of the group. An example is the large amount of students and civil servants (two groups that might have been affected differently by the closure than employees working in the tourism business).

Since no professional Tagalog translator was found in Belgium, the translation of the questionnaires relied on the knowledge of a local resident. Unfortunately, one question was not translated correctly which resulted in biased answers.

The researcher is very aware of the present social and economical effects of the closure. However, the limited scope of our research did not allow to thoroughly study all consequences. Therefore, this thesis predominantly focuses on the environmental issues on the island.

5. Factors contributing to the closure and rehabilitation

This first part of results provides an overview of the probable development stage at the start of the rehabilitation and the factors that supposedly contributed to the closure.

5.1. The updated Beach Resort Model (BRM) phase before closure

The BRM (Smith, 1991) serves as a guideline to determine the stage of development of the island at the moment of closure. Due to very rapid change of the destination it is essential to identify the exact starting point of the rehabilitation and to reveal the issues related to the development. This framework serves as a basis to derive the problems and aspects that specifically lead to the actual closure and rehabilitation. This information is based on data gathered from questionnaires during the fieldwork, literature published from 2012 to 2018 and newspaper articles. Smith et al. (2011) do not use the subdivision of aspects in their work according to the initial model of Smith in 1991. These aspects have been reapplied in this thesis.

The tables below complement the work of Smith et al. (2011) with more recent information. The first columns of each phase contain the circumstances according to Smith's initial model. Furthermore, an overview is given of the findings of Smith et al. (2011). The text in red describes the events that were not present or visible at that time of research in 2011. Finally, the more recent evolution between 2012 and 2018 is delineated in the last column and explained in detail on the pages following. Table 2 gives an overview of the physical and environmental aspects of the model as these aspects have a direct impact on Boracay's environs. Table 3 describes the economic, social and political aspects of the development on Boracay. These aspects predominantly encompass visitor and resident characteristics and political decisions.

As delineated in the conceptual framework, stage six, seven and eight of the Beach Resort Model of Smith are the three last phases of development. In stage six, hotels are being built away from the beach as the beach is already fully developed. This tourism-oriented evolution causes harm to the natural environment and beaches suffer from erosion. The seventh phase encompasses the construction of a secondary road parallel to the beach. Especially lower-grade hotels open and the destination becomes urbanized. In the last stage, recreational and commercial business districts are separated. The beach is polluted and master planning has failed.

		Stage 6		Stage 7		Stage 8		
		According to BRM	Boracay 2011	According to BRM	Boracay 2011	According to BRM	Boracay 2011	Boracay before closure (period 2012-2018)
Physical aspects	Circulation and transportation	Secondary roads extended	Road improvements underway, but limited by acute land availability	/	/	Secondary circulation	Limited improvements	Construction of private resort roads
		Road traffic flow changed to ease congestion	Main road converted to one-way traffic	/	/	Localized district network	Limited shuttles to hotels	Almost constant traffic congestion.
	Infrastructure	/	/	/	/	Sewage system failure	Sewers fail during downpour 2008	Severe sewage system failure
	Services and business facilities	Business areas consolidated	Major central business district	Business development inland	Limited scale with focus along beach	Well-defined central business and recreational business districts	No evidence of defined central business district	Central business district defined
						Strip development /secondary business nodes	No secondary business nodes	Secondary business district in 2017
Environmental aspects	Beach	Erosion or accretion problems	No erosion or accretion	/	/	Heavy beach congestion	No evidence	Evidence of beach erosion and overcrowded beaches
	Sea	Loss of wildlife	No data	/	/	Severe sea pollution	On-going marine pollution	Evidence of pollution of sea by solid and liquid waste.
	Land	Natural ambience transformed	Touristic landscape dominates	Attempts to restore natural ambience	Plans but as yet little implementation	Fully urbanized	Low scale, large village form	Fully urbanized centre
		Potential flood damage	Increased flood					Issues of regular floodings

Table 2. Physical and environmental aspects of the Beach Resort Model of Boracay in stage 6, 7 and 8 (Smith et al., 2011; own processing).

		Stage 6		Stage 7		Stage 8		
		According to BRM	Boracay 2011	According to BRM	Boracay 2011	According to BRM	Boracay 2011	Boracay before closure (period 2012-2018)
Economic aspects	Visitor accommodation	Accommodation erected away from beach	Accommodation not addressing the beach	Restructuring	Accommodation dominated by high and medium qualities	Restructuring with all classes of quality well represented	Dominated by high and medium qualities	All classes represented (inns, hostels, hotels, resorts, B&B's)
	Visitor structure	/	/	Change	Domestic exceeded international tourists	/	/	47% are domestic or overseas Filipino tourists.
	Visitor expenditure	/	/	Average expenditure changes	Rapid growth of expenditure since 1996 as visitor base changed	/	/	Fluctuating expenditure per capita on national level.
Social aspects	Resident accommodation	Rapid growth of new residential areas	Resident population expansion	/	/	/	/	Rapid population growth.
	Jobs and income	Steady expansion	Growth of tourism-related jobs in hotels and other businesses	Job market expands	Expansion of high-quality accommodation	/	/	/
	Social traditions and culture	Traditional patterns replaced	Imported hedonistic lifestyle prevails	Urban norms predominate	Retains a large village structure and operation	/	/	High concentration of "migrant" workers
Political aspects	Tourism planning	Resort master plan prepared	Comprehensive plans by DENR in 2006 and 2007	/	/	Planning failure acknowledged and new plan prepared	1990 plan not enacted with more plans prepared later on	Planning failure acknowledged and state of calamity declared
	Power base and formal resort administration	Private enterprise	Entrepreneurs drive development with little regard for earlier master plans	Local resort government fails	Central government initiated in 1992 moves to exert authority and development ban imposed 2007	Shifts to higher level, local authority curtailed	Central government exerts authority and development ban imposed 2007 though not enforced	Closure initiated by central government.
	Private development funding	/	/	Transfer of some facilities to foreign ownership	Influx of Korean investors	/		/

Table 3 Physical and environmental aspects of the Beach Resort Model of Boracay in stage 6, 7 and 8 (Smith et al., 2011; own processing).

5.1.1. Physical aspects

New roads have been constructed after 2011, especially in the northern part of the island near Yapak (Figure 19) (Google Earth, n.d.). However, many of these roads are part of private resort property such as the Fairways & Bluewater Resort.

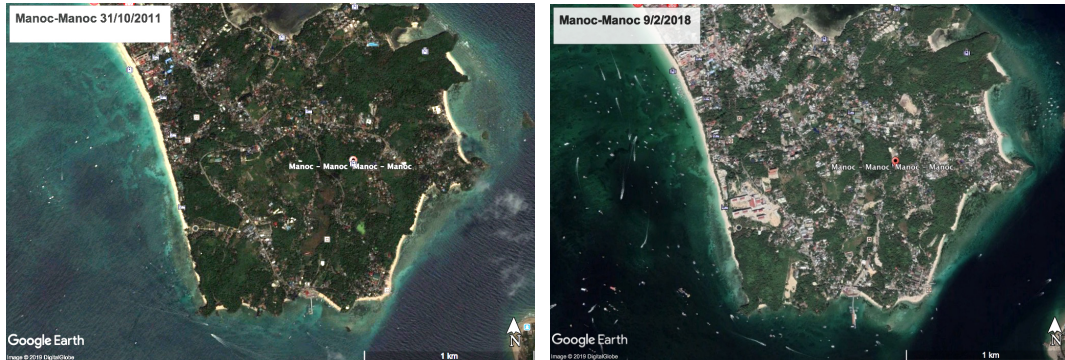


Figure 19 Satellite images of Manoc-Manoc in the south of Boracay in 2011 and 2018. (Google Earth Pro, n.d.)

The island of Boracay has undergone spatial changes since 2010. Built-up zones have increased between 2010 and 2015 while wooded grasslands, grasslands, perennial crops and mangrove forests completely disappeared (Figure 20) (Philippine Geoportal, n.d.). Maguidad et al. considered two of the Barangays, Balabag and Manoc-Manoc as urban in 2015.

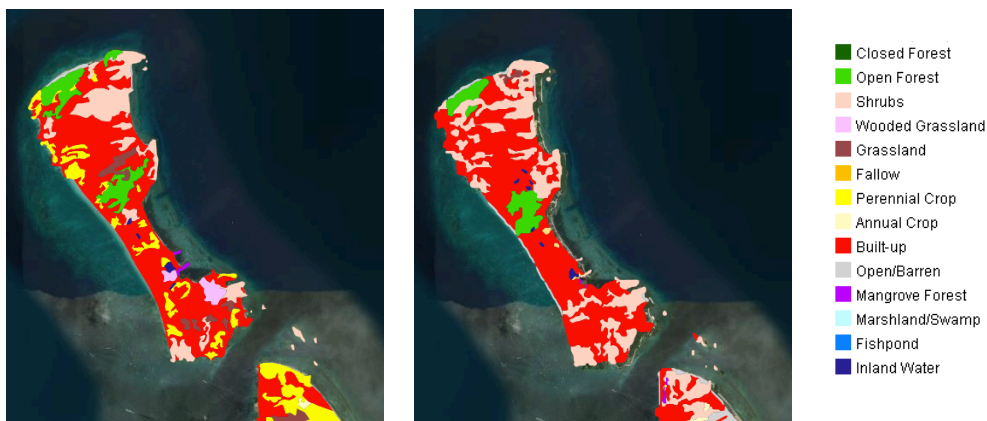


Figure 20 The 2010 and 2015 land use map of Boracay (Philippine Geoportal, n.d.)

Meanwhile, the Balabag area in the centre of the island has strengthened its position as a central business district characterized by the arrival of global brands such as McDonalds in 2013¹⁴. As described in the BRM, secondary business nodes are

¹⁴ <https://www.youtube.com/watch?v=Q8PeRaR1HKK>

created during the last phase, such as the new City Mall that opened in the north of Balabag in 2017.¹⁵

The BRM states that the transportation network of a beach destination is localized in stage eight. Given the limited surface of the island, this specific development does not occur. Instead, transport is focused on the intensive use of tricycles (Figure 21) and minivans touring around the entire island.



Figure 21. Motorized tricycle on Boracay's Main Road (own picture).

During fieldwork, local residents were asked what issues they have experienced in the period before closure. Concerning the mobility aspect of the BRM, 95% of the local resident questionnaire respondents indicates to have experienced issues with traffic congestion before the closure (Figure 22). Another 42% confirms to have experienced air pollution in the streets.

¹⁵ <https://www.rappler.com/life-and-style/travel/ph-travel/162536-new-mall-boracay-citymall-photos>

Local resident respondents: issues experienced before the closure

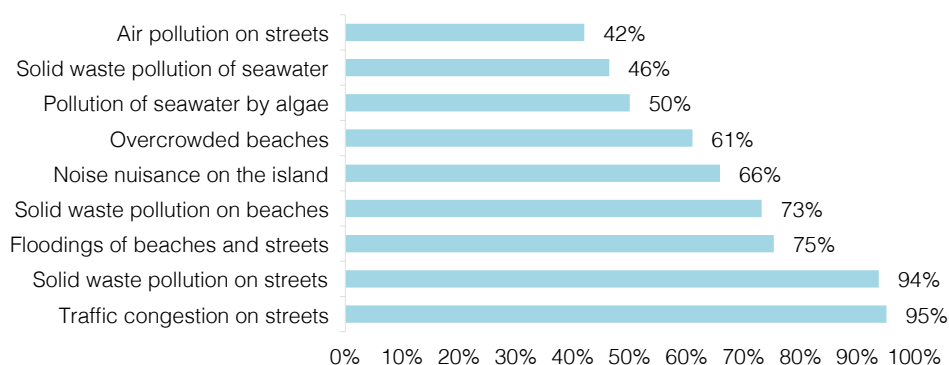


Figure 22 Issues experienced before closure by local resident respondents (own processing)

Although Boracay predominantly reached the sixth and seventh phase by 2011, some factors such as severe sewage system failure already entered the last stage at that point. However, whereas issues were only visible during downpours in the past, the failure was permanently present in the years after 2011 in the form of flooded streets and malodorous beaches in the Bulabog area (Maguidad, 2015). 75% of the local respondents has experienced floodings on streets and beaches before the closure (Figure 22).

More recently, the DENR found over 300 commercial establishments that illegally dump their wastewater directly into the sea or into the storm drain.¹⁶ The Science Technical Team of the Marine Environmental Protection Command could easily demonstrate the consequences of this violation as several algae species were detected in the surrounding waters of Boracay¹⁷

¹⁶ <https://www.bworldonline.com/boracay-water-to-accelerate-development-of-sewage-treatment-projects/>

¹⁷ <http://www.coastguard.gov.ph/index.php/districts/cgd-western-visayas/11-news/2021-pcg-marine-environmental-protection-coastal-survey>



Figure 23 Picture of illegal wastewater dumping on Bulabog Beach. ¹⁸

5.1.2. Environmental aspects

The impact of rapid urbanization and spatial change of Boracay on the environment has been described by several scholars. Maguidad et al. demonstrated the proof of beach erosion in 2015, while Smith et al. did not see these issues in 2011. Another beach-related issue of the BRM is the congestion of beaches. Whereas Smith et al. (2011) did not find proof of this issue, 61% of local respondents of the resident questionnaire states to have experienced issues of overcrowded beaches before the closure (Figure 22).

Although not discussed in the research of Smith (1991) and Smith et al. (2011) it is essential to be aware of the significant amount of solid waste produced on Boracay. The DENR (Mayuga, 2018) estimates that this figure reaches 90 to 115 tons each day while only 30 tons are shipped out to landfill areas on other islands, leading to a mounting garbage problem and related environmental issues. Figure 22 indicates that 73% of local respondents experienced issues of solid waste pollution on beaches before the closure. Another 46% encountered problems with solid waste pollution of seawater. 94% experienced the issue of solid waste on streets.

Smith et al. (2011) did not provide data on the loss of wildlife as an attribute of stage 6. Despite the lack of data, environmental secretary Roy Cimatu of DENR stated in February 2018 that critical habitats of turtles, flying foxes and corals have been destroyed due to overconstruction and that those species need urgent protection (Dela Paz, 2018).

¹⁸ <https://www.bworldonline.com/closed-for-renovation/>

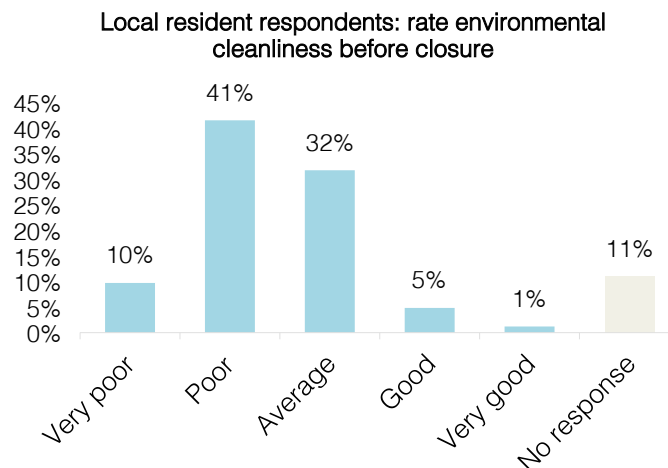


Figure 24 The rate of environmental cleanliness before closure according to the local residents questionnaire respondents (own processing).

According to the local resident respondents, the average rate of environmental cleanliness of Boracay before the closure was 2.39 out of 5. 51% of the respondents rated it as very poor or poor (Figure 24). Several aspects have been mentioned to motivate the rate. One positive aspect found was that not the whole island was dirty because some owners managed to keep their place clean. Furthermore, negative aspects have been mentioned such as the lack of discipline of the inhabitants to take care of the environment, the high number of people and boarding houses on the island, the great amount of garbage on roads, beaches, drainage and backland, the bad smell, the dirty seawater, the narrowness on the beach due to illegal constructions and beachside beds, the floodings due to lack of sewer system and the absence of implementation and monitoring of law by the LGU.

5.1.3. Economical aspects

As mentioned before, the island received over 2 million arriving visitors in 2017. In the same year 430 inns, hostels, bed and breakfasts, hotels and resort were accredited by the Department of Tourism (Personal communication, 6 February 2019). All together 14.456 were available for guests in 2017.

Figure 25 illustrates the major origin markets of international arrivals in the Philippines. Up to 2018, South Korea remains the largest international market with 22,28%. The Chinese market is growing since 2015 and has become the second largest market since 2017. In 2018 17,61% of all international arrivals originate from China. According to Cabag (2018) domestic visitors accounted for 32,5% of the total arrivals. This is in contrast with the change of visitor structure in stage seven as stated by Smith et al. (2011). Within the group of foreign visitors, 62,88% originated

from Asian countries in January 2018 on a national level.¹⁹ One might state that the visitor structure has changed to mostly foreign origin although this time with a Chinese and Korean background. Taking into account the carrying capacity calculated by Trousdale in 1997, the maximum amount of visitors is probably exceeded during peak season.

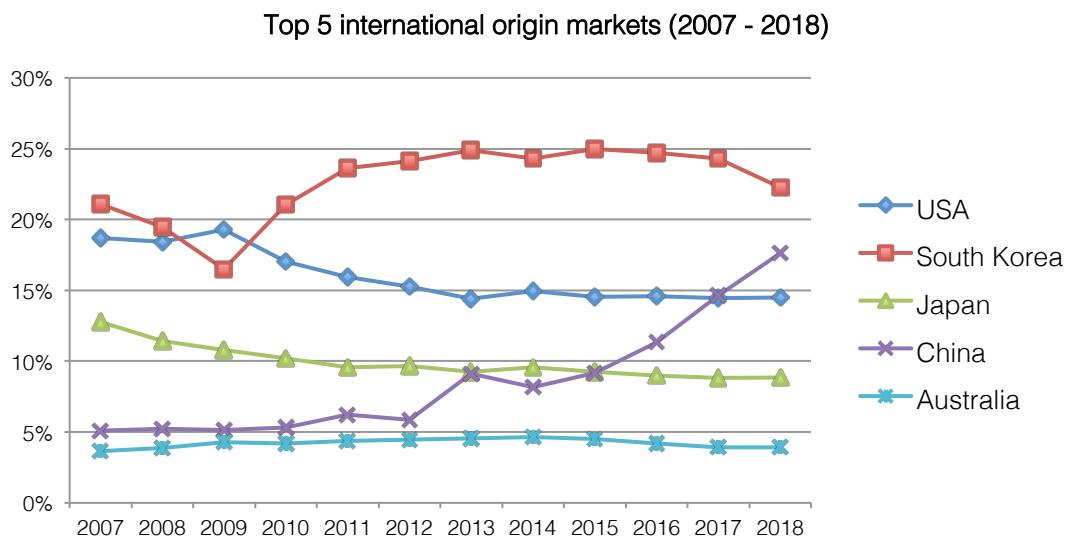


Figure 25. The Top 5 international origin markets from 2007 to 2018 (Department of Tourism, n.d.)

5.1.4. Social aspects

Not only the natural environment was impacted by rapid and unplanned tourism development. Tourism has led to a misbalance in the social structure of the Ati people on the island as this sector proved to be an attractive driver for attracting immigration. The perspective of job opportunities led to an increase of the number of inhabitants from 3.000 in the 1980s to over 46.000 in 2017 as stated above. Taking into account the arrivals on Boracay in 2017 the proportion of tourists to inhabitant (tourists/inhabitants) can be calculated. For each resident, 43,47 tourists arrived on the island in 2017.

Although Smith et al. (2011) do not describe the characteristics of population growth in the model, the tendency to urbanization might still include a rapid increase of residents. Maguided et al. (2015) illustrate a vast influx of “migrant” workers, often Filipino residents arriving from other islands. Reyes et al. (2018) pointed out that about 13.334 workers on Boracay (on an estimated population of 34.880) are directly involved in the tourism business such as accommodation, passenger transport,

¹⁹ http://www.tourism.gov.ph/industry_performance/january-2018/IndustryPerformance_Writeup_201801-page1.jpg

entertainment, retail trade for tourism and travel agencies. Another 1.466 workers are employed in banks, pawnshops, forex- and money transfer offices, laundry shops, parking space, space rental, etc. As environment secretary Roy Cimatu announced during the closure of the island, over 15.000 workers in total outnumber the carrying capacity of the island and need to be persuaded to move to the mainland of Aklan province (Rivas, 2018).

5.1.5. Political aspects

According to the BRM, stage eight is characterized by the acknowledgement of planning failure that leads to new planning. The main evidence for this characteristic is the declaration of the state of calamity by president Duterte in 2018. Moreover, the shift in responsibility from local to higher level, centralized government has taken place by the formation of the Interagency Task Force constituted of DOT, DENR and the Department of Interior and Local Government (DILG). Maguidad et al. (2015) demonstrated that Boracay is already co-managed by the national government before the closure although the aim of the Philippine government was to enhance the power of local governments. Nonetheless, the municipality of Malay admitted it needs all the help and expertise it can get from other government levels. One of the weaknesses of the municipality appears to be the lack of monitoring. One example is the tourist investment regulation. New tourism establishments are obligated to invest at least 20 million pesos. However, Maguidad et al. (2015) demonstrate that the monitoring of licenses is so weak that establishments proceed with their construction anyway as the return of their investment is worth the puny fines of the local government.

Maguidad et al. (2015) state that the emphasis on tourism development on Boracay even leads to exceptions regarding national regulations. Although the National Philippines Water Code enforced a 40 metres easement from the highest tide of the shoreline, Boracay has a 25+5 metres easement instead (25 metres from the highest tide + a 5 meter strip inland). This means that tourist establishments are allowed to construct their projects 30 metres from the point of the highest tide. According to the respondents in the research of Maguidad et al. (2015) this is the reason why the Comprehensive Land Use Plan for Boracay has never been approved by the provincial land use council. This might have led to an open conflict between the different governments on local, provincial and national level as no consensus was reached between all these stakeholders.

5.2. The aspects contributing to the closure and rehabilitation: opinions and perceptions

As mentioned before, the environmental aspects of development did not receive extensive attention in Smith's model. However, these environmental and physical aspects of the model appear to serve as considerable factors that lead to the closure. All information about interviewees can be found in Table 1 of the Methodology chapter.

All interviewees complained about the severe conditions on the island.

It seemed that there is a danger of too much exploitation of the island... pollution... too much pollution. Boracay is known for its blue waters and white sand. The water was becoming dark... black. And the white sand were becoming grey... maybe because of too much population. Its carrying capacity has become overdone. There are more people than the island can carry. So... if you look at the situation... solid waste management, water waste... of course, on the island, most of the water goes to the ocean and beach area. The guest or the tourists, everyday, they were not properly managed. It was overcrowded and congested the island (Government, Iloilo).

During interviews, one of the most cited impacts on the environment is the result of illegal sewerage connections to the drainage lines on the island. The majority of the respondents appointed this issue as the main source of pollution of Boracay. The previous drainage line, that was normally only used for the capture of rainwater, was not sealed. This resulted in illegal connections with sewage that lead to deterioration of seawater quality by human waste and wastewater. Some of the respondents explained to suffer from skin rashes after swimming in the sea. Moreover, all interviewees state that the hotspot of polluted seawater was found at Bulabog beach on the opposite side of White beach. The main drainage pipe with illegal sewer connections caused severe odour nuisance.

Although some respondents claim that the presence of algae was a sign of decreased seawater quality and that there were more algae than normally expected during the last few years, there is no agreement about this topic. Despite the scientific evidence of algae as an indicator of water pollution caused by human waste (Reopnichkul et al.,2009) many respondents believe that the appearance of algae is a natural phenomenon. It is believed that the algae end up on the beach making the sand whiter.

Another environmental issue is the impact of unregulated housing infrastructures on the island. According to the respondents, this is a problem with dual causes. Over the years, especially since 2005, the island has undergone rapid development of tourism infrastructures. Investors had the power to transform the view of the island by purchasing large pieces of land. Several interviewees state that some parts of the island transformed into 'slum areas' around the wetlands with solid waste and waste water ending directly in the water. Moreover, Yapak near Puka Shell beach is the natural environment of the flying foxes or Megabats, one of the world's largest flying mammals. Their roost sites are under continuous threat according to one interviewee as large areas are sold to investors.

Solid waste was another issue that is mentioned as plastic waste was visually present on all beaches.

Before the closure, during the rainy season, we picked up garbage from the beach with all my staff. Almost every day we picked up like 10 sacks (Tourism business, Boracay).

According to the national offices, DENR and DOT did not find decreasing numbers of tourism arrivals, despite the deteriorating environment of the island. Only in 1997 after the coliform outbreak, tourism arrivals shortly declined. After the approval of water quality, tourist arrival quickly rose again. Both DENR and DOT gave similar explanations for the increasing amount of visitors, saying that visitors on Boracay are probably not interested in the valuable and sensitive natural environment of the island.

I don't think they are that concerned. Who cares if the island is destroyed. They can try another island. I believe that tourist experience is portable. It doesn't have to be location-specific. So who cares if the location is destroyed. (Government, Iloilo)

However, some parties did tend to address the environmental issues of Boracay. DOT mentions an international water sports event that had been cancelled by the organization and transferred to another island because of the bad seawater quality. Furthermore, environmentalist groups attempted to raise the issues.

5.3. The closing

5.3.1. The process towards closing (from the interviews)

The national offices did receive the complaints of deteriorating environment. However, as tourists kept arriving on the island and contributed to the economy, it is said that the administration did not feel the need to be persuasive to implement environmental laws that might affect income.

This time, there was really the will of the government to pursue the rehabilitation of Boracay. The right time was actually long time ago. I was already involved in the forestation...During that time you would see that there was a need for rehabilitation. But it was a different administration at that time. They forgot the environmental problems... pursued economic values (Government, Iloilo).

The secretary of the regional offices of DOT states to be the first person who reported the fast deterioration of Boracay to the central government and to the DENR.

Close to a year before it's closure I already properly requested to the secretary of the DENR to have the President declare Boracay under environmental martial law. It's really fast deteriorating and some people there, businessmen, where doing things with impunity. . . . So it requires strong hand of leadership to really push the saving of Boracay. So, knowing the president and his political drive, he could be heavily criticized but he has the political will to correct wrongs, regardless of how unpopular the resorts will find his actions (Government, Iloilo).

After addressing the issues to the central government, several hearings at the senate and the House of Representatives took place. Eventually, the president declared the need for rehabilitation. By executive order, the Interagency Task Force was formed out of governmental offices, supported by some private stakeholders such as the Boracay water service providers.

However, the closure of Boracay appears to have gained momentum as a storm has affected the island and caused severe floodings that exposed underground cables and pipes on the beach in December 2017. Pictures of a deteriorated environment started to trend on social media. Several organizations reveal that an internal discussion about a rehabilitation of Boracay was happening at national level prior to the storm. However, the sudden media attention seemed to have accelerated a possible rehabilitation.

Interviewees mention that, although plans for rehabilitation were made, no clear decision about the closure was communicated.

. . . February came and the President spoke live on air and said that Boracay is a cesspool. So he said: "You have to fix that problem within six months or else I'll close it." So that's just the initial talk. Fix it within six months. So that was February. But then like March came. And suddenly they already talked about the island will be closed in April (Private business interest group, Boracay).

The fast approaching closure of the island was communicated among a series of local stakeholders, according to the governmental offices, in the form of weekly meetings with the Local Government Unit, the Barangays and occasionally other private stakeholders that would be directly affected by the closure. Some interviewees state that these meetings were mostly lead by the government without the possibility to give advice or comments due to the absence of time and staff to meticulously prepare the closure. However, one respondent pronounced his confidence in the knowledge and skills of the government to deal with the situation although these persons did not agree on the timeline given by the authorities in order to prepare and on the unclear communication about the closure.

So it was... it was more of like a lot of questions than answers. It was not clear to the people. The island was closed with no clear guidance. . . . Even if... example... we were asking like what if there's some birthday party or...or a wedding of someone from here. How about the relatives from another place. Can they be allowed to visit? So there were lots of questions at that time (Private business interest group, Boracay).

According to the governmental offices, the sudden decision for closure provoked many agitated reactions. Businesses started to worry about the management of staff and probable violations of building prescriptions.

... people were positive about the idea of fixing the problems because for years and years and years people have been complaining about the infrastructure, the sewage, corruption, all these issues. But nothing had been done. So it was great. Everybody is happy that finally Boracay was getting some focus. But yeah, no one expected that they would close the island and penalize the people on the island that were asking for help (Tourism business, Boracay).

Local interviewees mention the sudden introduction of the closure. Several actions were organized such as symbolic switch-offs of lights and marches on the front beach.

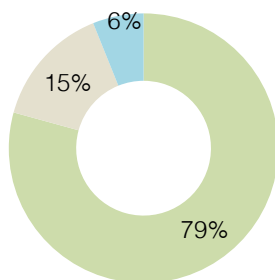
Several reasons were given to motivate the choice for complete closure. There was the urgent need to thoroughly repair streets and drainage pipes on a large scale. Combining infrastructural labour and tourism simultaneously would be detrimental for the small island according to several interviewees. However, some members of the Interagency Task Force claim that even this six-month period was not sufficient.

5.3.2. Involvement of the residents (from the survey)

79% of all respondents were informed about the closure more than one month before (Figure 26). The majority of them received the news through the media since the president announced the closure during a press conference. Friends and relatives and the government were the two other important sources of information.

Moment of first news about closure

- More than one month before
- More than one week before
- Less than one week before



Source of news

- Government
- Media
- Other
- NGO
- Friends or relatives

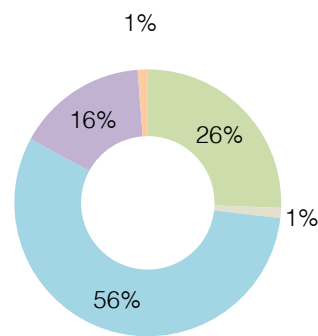


Figure 26 The timing of receiving the news about the closure and source of news indicated by local resident respondents (own processing)

In the local resident questionnaire, respondents were asked whether they were consulted about the closure by the government. Unfortunately the answers were probably biased due to incorrect translation. Nevertheless, the result about involvement in actions during closure gives an insight in the level of cooperation between government and residents.

91% of all responding visitors was aware of the closure of Boracay from April to October 2018. 79% claimed to know the reason for closure as well. According to this group, possible reasons for closure were sanitation problems, an overload of waste, safety issues, overcrowding, damage created by tourism, the island's party reputation, to have a break from tourism, demolition and rehabilitation, to restore order, to regulate hotels and manage sewerage/electricity or for future development. The reasons most mentioned were "environmental hazard" (20%) and "to clean up the island (23%).

5.4. Short term actions and improvements

5.4.1. The rehabilitation actions and local involvement: the facts

On 26 April, the state of calamity issued by president Duterte was the immediate start of the spread of notices for violation of spatial planning regulations signed by the mayor of Malay municipality. Violators were given 15 days to one month to partly or completely demolish their own establishments. In case owners did not follow this issuance, the government organized (less aesthetic) demolitions and charged costs.

Over 600 structures, both businesses and dwellings, have been partly demolished at the owners expense and there are many more to come. These infrastructures were built within the beach and road easements or in the forest- and wetland areas. The Main Road preserved its previous width. However, sidewalks have been cleared and partly paved.



Figure 27 Photos of drainage repair and installation during rehabilitation (Arban, 2018) and of a partly demolished edifice near Bulabog Beach (own processing)

It's often not the entire building because it's just half of the main building. Or it would be the swimming pool, or it could be the kitchen. The establishment is not really flattened to ground but just the portion that is included in the no-built zone of the beach area or the road (Government, Iloilo).

Next to demolition of illegal infrastructures, the Interagency Task Force planned other activities such as road reconstruction, renewal of sealed drainage pipes, beach cleaning activities, water quality monitoring and setting up inventories such as on the occupancy of forestland and wetland areas. Hotel businesses found to be compliant with the environmental laws were approved to reopen their business for tourism after reopening.

The Interagency Task Force remains in charge of the rehabilitation from April 26 2018 to April 26 2020. After this term, the Local Government Unit of Malay Municipality will become responsible for further development and monitoring.

52 or 63% of the respondents said to have been involved in actions during the closure (**Figure 28**). Participation in cleaning actions has been the largest form of participation. Through the many conversations with residents it became clear that the government paid workers to clean beaches, streets and construction sites during the closure as well. 19% says to be invited by the government for informative meetings. Giving an opinion or advice concerning the cleaning actions during closure both take 7%

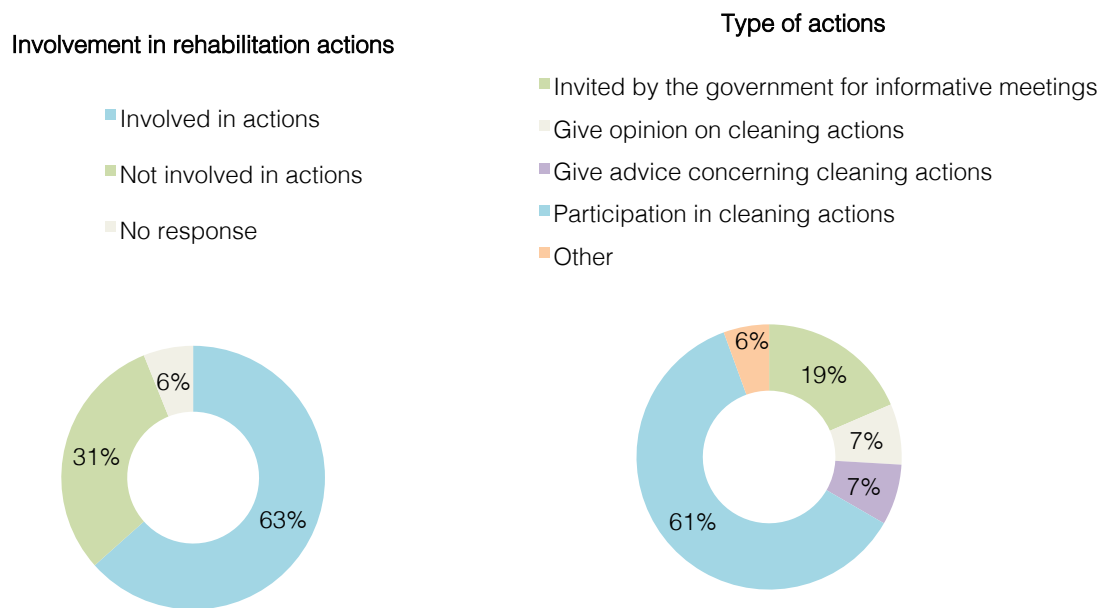


Figure 28 The local resident involvement in rehabilitation actions and the type of rehabilitation actions (own processing).

5.4.2. The closure and the rehabilitation: the perception

a. Perceptions of key persons

Boracay faced exhaustive demolitions and reconstructions in the presence of thousands of islanders. Similar to the perceived confusing communication about the closure, interviewees address the unclear guidelines during the rehabilitation.

People were demolishing but there was no one saying: "Okay, you demolished enough". . . . So that was the major concern. Who do we need to talk with to check if what they demolished was already enough. How can we be sure that at the time of the opening we'll be allowed to operate? We requested in one of the Senate inquiries if the government offices could probably set up like the help desk where people would be able to ask questions about what permits do they still need (Private business interest group, Boracay).

This one-stop-shop help desk was eventually set up at the city mall one month before opening. However, permits issued before were suspended resulting in hundreds of businesses needed to resubmit all permits needed only weeks before opening.

Another indistinctness mentioned was the required installation of a private sewer treatment plant. According to some interviewees these systems were obligated for establishments with over 50 rooms although the initial press release mentioned six rooms and above. Major expenses might have been made already by these smaller businesses by the time the guideline was modified. Moreover, one respondent indicates that according to existing law it is the responsibility of the government and the water supplier to provide the wastewater facilities for the water that they supply to the island.

There was one document that the government first didn't require and now it does. Now they say we were illegal but we were not because they never asked for it. They only implemented it now. It's a lot of stories like that. (Nature preservation, Boracay).

Despite the rapid outset of the closure, several respondents mention the late start midway closure and the uncoordinated progress of works along the Main Road resulting in batches of broken and muddy roads during rainy season only a few months before opening. This resulted in uncertainty about the deadline for reopening and agitation among local business owners.

Furthermore, the thorough rehabilitation directly affected a large amount of inhabitants and their living conditions.

A few days before the closure, then the Department of Social Welfare already set up a help desk or a help centre for people to get transportation allowance for them to get back to their provinces. So there was really a long line of people (Private business interest group, Boracay).

Despite the fact that a large group of residents was hired by the national government to participate in the rehabilitation process, respondents state that local islanders have been largely affected by the closure resulting in famine and migration to other islands and provinces. Moreover, it is mentioned that everyday life on the island was already inconvenient as prices inflated due to tourism development.

They're all being pushed out. All of them. If you walk down this road, there's 24 lots for sale. Because at the moment, after six months of no income they are trapped. But then they also see that there's no place for them in the new Boracay. They can see themselves being pushed out (Tourism business, Boracay).

Another respondent emphasizes the importance of limiting illegal construction and the role of the central and local government to provide proper housing. If not, the interviewee fears further development of slums all over Boracay.

As the rehabilitation process reached its deadline for reopening, interviewees did feel pleased with the works done so far and the improvements made although they acknowledge the great amount of works that still need to be done.

I can see improvements on the roads. It's not ready but I see it. It is happening. Going electrical, the water on Bulabog beach. I didn't enjoy that beach for the last years because of the smell. For sure they were not doing proper filtration there. It was disgusting. So that is fantastic (Nature preservation group, Boracay).

However, some local interviewees on Boracay state that for now only establishments are required to be compliant with the regulations about water quality while a significant part of this environmental impact is caused by the unregulated housing infrastructure of local inhabitants:

Other students have been doing a Google Maps study and they see all the people that are connected or are paying the fees for sewerage and then you see all the private houses that are not. There you can see where is the balance. Everything goes down in the soil but we are on an island so everything ends up in the ocean (Nature preservation group, Boracay).

b. Viewpoint of local residents

Respondents were requested to state how much they would disagree or agree with four statements about the closure (Figure 29) 90% agrees or strongly agrees with the statement that the cleaning actions were very useful to rehabilitate Boracay. Another 71% agrees or strongly agrees that the consequences for tourism were well thought through. 62% of respondents agrees or strongly agrees that the closure has been a good decision. The first statement about the duration of the closure reveals more duality. 30% did not agree with the statement that the closure was too long. However, 49% agreed that it was too long.

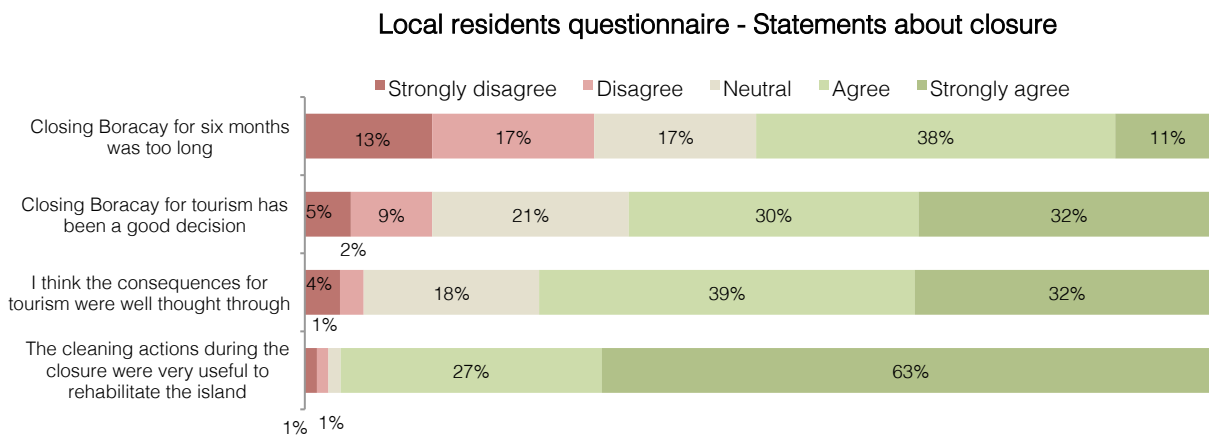


Figure 29 Local resident statements about closure (own processing).

Local resident questionnaire: perceived importance of actions during closure

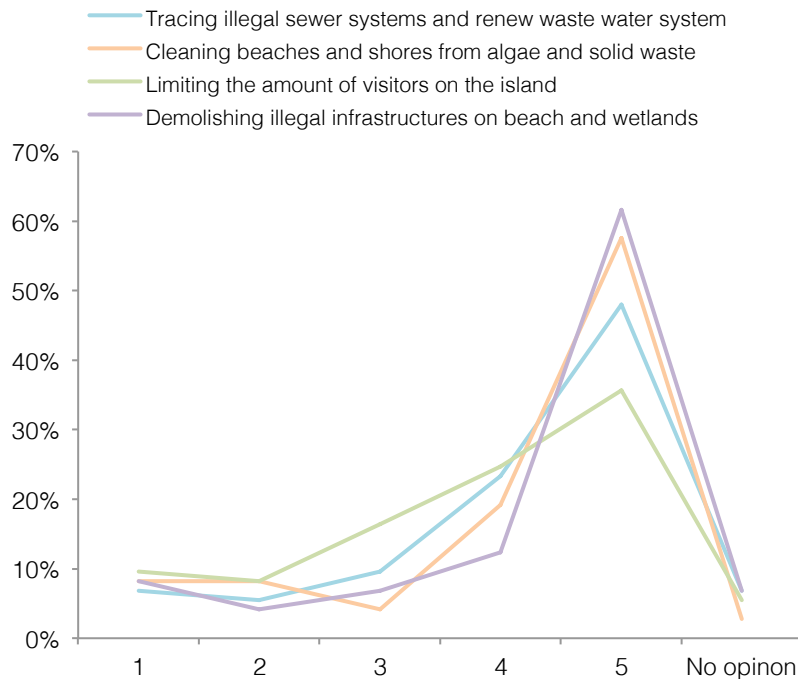


Figure 30 The perceived importance (1= not important, 2= less important, 3= neutral, 4 important, 5 = very important) of actions during closure by local respondents (own processing).

Four main actions were developed and implemented by the national government before and during the closure of the island (Figure 30). By asking the respondents about their perception of importance of each action, the demolition of illegal structures and the cleaning of beaches appeared to be the most essential ones. The least important action, according to the inhabitants, was limiting the amount of visitors on Boracay.

The local residents of Boracay have been affected by the closure on several levels. Most respondents claimed to have lost their jobs and being forced to search for job opportunities on other island or in other provinces. Many others mentioned a decrease in income, dependence on just one income, having no money to give to children for food at school or being dependent on food packages. Many business operations have stopped due to a shortage of customers. It is essential to mention that a large amount of respondents works for the government. This group states that they have been less affected since government work continued.

5.4.3. Short term improvements in BRM stage eight

The fieldwork results and additional fieldwork allow the final update of Smith's Beach Resort Model on Boracay of 2011 and to reveal possible short-term improvements.

a. Physical aspects

One of the specific physical aspects of phase eight of the BRM is the construction of secondary circulation. Despite the small surface of the island, a secondary road parallel to the Bulabog Beach has been installed by the time or reopening in October 2018. Although Balabag in the centre of the island already defined itself as the central business district, the local government revealed its plans to expand this area by transforming the adjacent wetland into a wetland park.²⁰

During closure, a sealed drainage system was installed and hotels with over 50 rooms are now mandatory to install their own sewage treatment plant.

b. Environmental aspects

Respectively 78% and 69% of all responding residents and visitors rated the cleanliness of Boracay's environment as good to very good (Figure 31). The average rate reaches 3.75 of 5 points for visitors and 3,94 for local residents. The visitors motivated their rating by mentioning positive and negative aspects about the environment of Boracay.

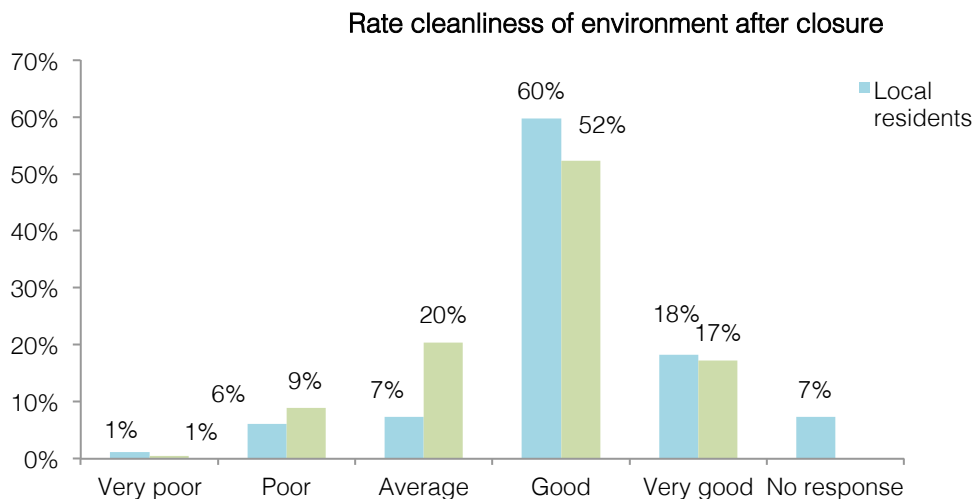


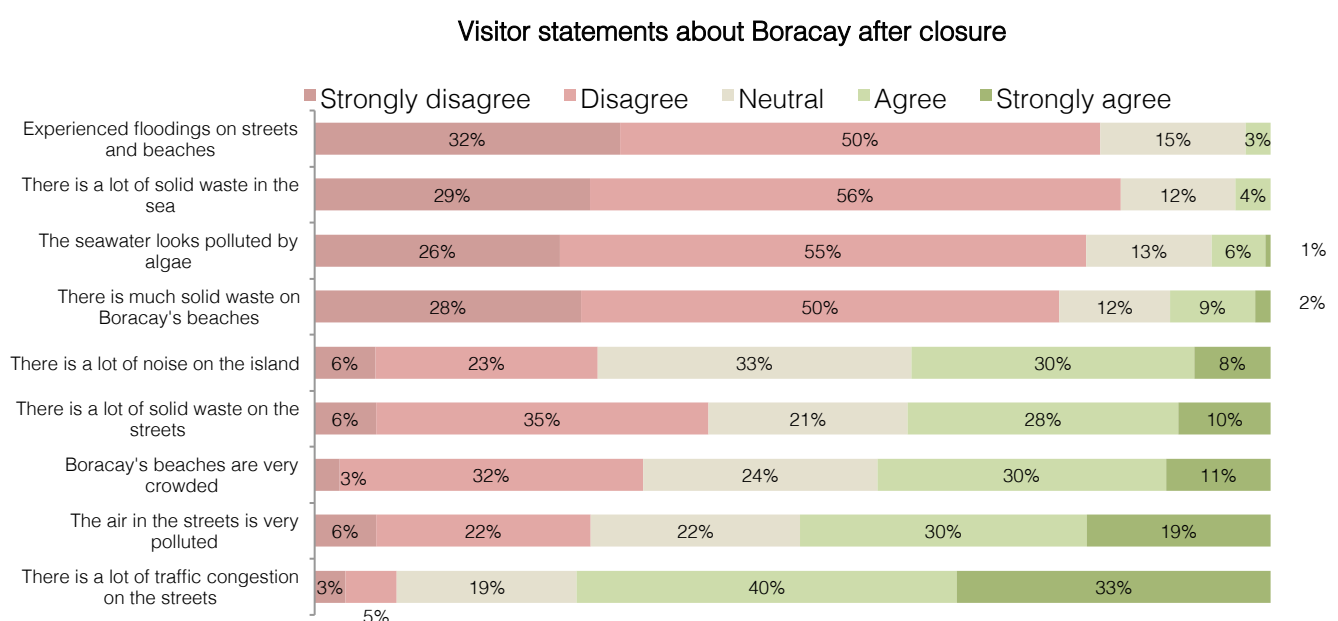
Figure 31 Local resident and visitor respondent's rate of cleanliness on the environment after closure (own processing)

²⁰ <https://www.youtube.com/watch?v=xdQNp5rKasY>

For the *positive side*, respondents found that the beaches, seawater and streets were clean and that a lot of effort had been done already to restore the island. Also the possibility to dispose of garbage properly, the regulation of tourist activities and the police watching violators were mentioned. Another topic mentioned is that the beaches or the entire island are cleaner compared to other (South-East Asian) destinations or that the beach is “surprisingly clean for a low-income country”. Furthermore, visiting respondents mentioned the participation of local communities in environmental actions as a positive aspect. Local respondents stated that the island and the seawater are cleaner, that the amount of space on the beach and streets increased, that stricter monitoring reduced illegal infrastructures, that the island is better organized and even that some animals, such as sharks have returned.

Nonetheless, visitors expressed *negative aspects* such as the pollution of back land nature and, contradictory to the positive aspects, the streets. Respondents stated that not all beaches were clean and that the intensive reconstruction process created poorly managed waste. Moreover, the crowdedness of beaches and streets was mentioned, along with the traffic jams and fossil fuel exhausts that are generated. Also the idea that people didn’t seem to care about the environment was expressed. Negative aspects mentioned by locals are the unfinished constructions and the presence of garbage. Moreover, not all residents on the island seem to follow the rules and respondents complain about the noise nuisance and traffic congestions. Other local respondents stated that cleaning is not enough and does not serve as a longstanding solution.

Figure 32 Visitor statements about Boracay after closure (own processing)



After the time of research in January and February 2019, the vast majority of visiting respondents did not experience much solid waste on the beaches or in the sea (Figure 32). Opinions were more divided on the issues of noise, solid waste on streets and crowdedness on beaches. Mainly the inland area of Boracay still suffers from solid waste pollution. More agreements were found in the last two statements. Almost half of the respondents felt that the air in the streets is polluted. Finally, well over 70% of respondents agreed or totally agreed that there is a lot of traffic congestion on the streets.



Figure 33 View of Boracay's Main Road, White Beach during sunset in January 2019, solid waste at the edge of wetland number 6 and a semi-constructed drainage at the border of wetland number 6 (own pictures).

Only 22 out of 192 respondents stated to have visited Boracay before. In this situation, 6 out of 22 visitors rated the cleanliness before as good or very good. 17 respondents rated the environmental cleanliness before as very poor, poor or average. According to this group of respondents, the average rate of environmental cleanliness of Boracay before the closure was 2.96 out of 5, which is 0,57 out of 5 more than average rate given by local respondents. Respondents motivated their rating by saying that the beaches used to be more crowded and full of beachside beds, that there was more litter and smoking on the beach, that it was too noisy and

congested and that the drainage overflowed when it rained. Notwithstanding, some respondents stated that the beach was already clean before since White Beach was always the most popular and best maintained spot of the island. Respondents were also asked more into detail about possible differences in the way tourism is handled after the closure. According to this group several aspects had been approved such as the increased availability of garbage bins, increased space on the beach, stronger regulations concerning littering, more disciplined tourists, more electronic tricycles, less infrastructures on the beach, improvements of drainage systems, more energy conservation and the perception of a decreased amount of people on the island. Previously, roads used to be flooded and more algae were found in the water. However, some respondents say that it still used to be less crowded years ago and that no big changes have been made so far.

67% of all 192 respondents answered that they had seen actions to create less environmental impact during their stay. As **Figure 34** reveals, the most visible action is beach cleaning, followed by recycling, the use of electric vehicles, limiting visitors and reusing towels at the accommodation. Other actions seen are for example water bottle reuse, fines for littering, non smoking areas, police watching violators, the presence of awareness posters, the use of metal and paper straws, the removal of beachside chairs and the usage of paper bags in shops.

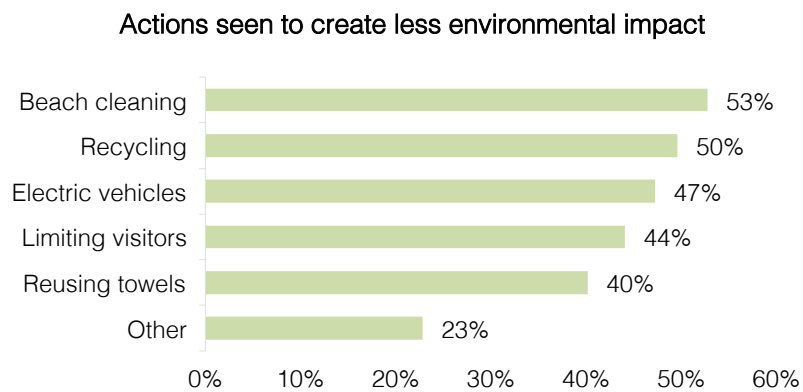


Figure 34 Actions seen to create less environmental impact by visiting respondents (own processing).



Figure 35 Beach regulation signs on Boracay's White Beach in January 2019 (own picture)

c. Economic aspects

After the closure from April 2018 till October 2018, 293 hotels with 10,076 rooms in total were accredited by the DOT to accept reservations in December 2018²¹. This number even increased up to 12,907 available rooms by May 2019²². After the closure, the proportion of international and domestic or overseas Filipinos has even shifted more towards the international market. In January and February 2019, only 11,9% of Boracay's visitors was domestic or overseas Filipino tourists.

A recent study of the University of the Philippines revealed that no more than 19,215 visitors are allowed on the island on daily basis and that no more than 54,945 persons in total can be on the island daily²³. This number largely exceeds the carrying capacity considerations Trousdale proposed in 1997 (with a total of no more than 29,800 visitors and inhabitants in total on daily basis). According to DENR Secretary Roy Cimatu, the total population of locals and visitors on the island exceeds the most recently calculated carrying capacity threshold by over 15,000 persons. Based on Trousdale's findings, the carrying capacity would even be exceeded by 40,981 persons daily.

²¹ http://www.tourism.gov.ph/files/DEC28_BORACAY.pdf

²² http://www.tourism.gov.ph/files/DEC28_BORACAY.pdf

²³ <https://www.pna.gov.ph/articles/1047750>

d. Social aspects

The rapid influx of migrant workers has had significant effects on the liveability and the natural environment of the island. Despite the declaration of DENR secretary Roy Cimatu, no plans are found so far to relocate the 15,000 workers that exceed the island's carrying capacity according to the DENR. This topic will be further discussed in paragraph 5.5.1.

e. Political aspects

Despite the plan for short-term rehabilitation until 2020, no evidence is found for a long-term plan for tourism development specifically for Boracay. The absence of this long-term vision for Boracay will be discussed in paragraph 5.5.1

5.5. Long-term planning for tourism

5.5.1. Perceptions of key persons (interviews)

a. The carrying capacity

According to the governmental offices, the soft opening in October 2018 was a first phase. In the months after closure the carrying capacity of the island proposed by the University of the Philippines is reviewed in function of the available rooms on the island by April 2019 and the beach-, road-, port- and airport congestion. However, one interviewee stated that the study couldn't be completely reliable since observations only took place during the closure of the island. No visitors were allowed on Boracay and many residents moved temporarily to other islands to seek for jobs. DENR official WPC states that the carrying capacity is monitored but that fewer tourists will visit the island anyhow since not all hotels will reopen. However, by the time of fieldwork, the compliant hotels on the island could already provide over 10.000 rooms in total. Other interviewees expect that this number will even increase as more accommodations will receive the allowance to operate as soon as they are compliant with the regulations of DENR, DOT and the local government. This means that there is no real stop of development in accommodation. Whenever a hotel is compliant with the regulations it can restart business. Moreover, questions are raised about the capability of monitoring. Several respondents emphasize the proper enforcement of the carrying capacity for visitors since it is seen as the catalyst of the influx of migrant workers and the increase of boarding houses and solid waste and wastewater issues.

b. The marketing of the destination

Besides the research on carrying capacity, a change in marketing is needed according several interviewees in order to change the perception of the island as a party destination. More effort will be put in the marketing of Boracay as a family destination and regulating possible causes of nuisance such as nightclubs and bars. Casinos are no longer allowed or granted although some interviewees state that the land has already been bought by developers eager to build their gambling establishment.

c. The resort island scenario

An often-cited scenario for Boracay's future development is the resort island idea. In this case, hotels and resorts remain on the island and residents are relocated to the

main island of Panay. The interviewees both mention the positive and negative aspects of this scenario.

At this moment there are two sides on the island. There are the hotels. Lots of them are big hotels who can afford proper sanitation and don't do too much harm. The other side is the one of the workers who own 280 pesos a day. They live in sheds, don't have sanitation. That is the part that the island cannot hold anymore". And that made sense to me. More hotels and resorts to be built on the island but no one living there anymore. All residents would have to move to the other island and that would actually be good for them. They would have a better living than they do right now, with schools, sanitations,... Unfortunately, the government is not setting anything up for them there. And that's a shame (Tourism business, Boracay).

The major concern in this scenario seems to be the transportation to and from the island. Although boats sail 24 hours a day, the major weather disturbances such as typhoons may completely paralyze traffic between both islands. Interviewees assume that most employees would still prefer to reside on Boracay to ensure their source of income. However, all respondents acknowledge the issues of overpopulation on the very small surface of the island. Residents often claim ancestral land rights on their property. However, the local governmental office states that nobody will eventually win his or her case.

d. Long-term vision

In April 2020 the national government will officially end the rehabilitation program on Boracay and leave command over to the Local Government Unit of Malay Municipality.

After two years, national government should have finished its task. . . . And it's up to the local government and the stakeholders now to sustain because rehabilitation could help them only once in the lifeline of Boracay. After that, [local] government should move on (Government, Iloilo).

Moreover, the DOT openly questions the importance of the island since it is only one piece of an enormous archipelago with over 7000 islands. Furthermore, the DOT states that visitor arrivals on a national level increased during the closure as well, making the island less relevant. Although the governmental offices claim to particularly emphasize on the enforcement of regulations such as the prohibition of smoking, both DOT and DENR regional offices state to have a long-term plan created by a Boracay Management Group, based on the Sustainable Development

Goals. However no agreement could be found on the existence of a long-term plan for the development of Boracay. Several respondents on public, private, local and international level counter this statement by mentioning that there has never been any communication about a long-term vision or the implementation of sustainable and community-based development goals.

To date, the Boracay Inter-Agency Task Force still has not adopted any global sustainable development tourism to follow for both public and private stakeholders. It is both politics (not enough political clout with the Local Government Unit) and also no "political will" on the part of the private stakeholders to espouse the Sustainable Tourism standards. In the "absence of a law" that will enforce all to implement sustainability practices, the hotels, resorts and business owners will not lift a finger to do their part unless LGU espouses first, by law (Sustainable development group)

Moreover, the Local Government Unit acknowledges the lack of a future vision and the need for a clear master sustainable development plan for the next 20 to 50 years in order to prevent further deterioration of the island.

Several interviewees mention the need for a plan supported by a large group of stakeholders united in a board. According to some of the respondents the board should be assisted by Filipino and international experts and their knowledge of sustainable development.

It [new projects...] should go through a filter with persons without money interest but with a genuine interest. Maybe we can handle more people but at the moment they have no filter so anyone comes in right now. (Nature preservation group, Boracay)

When asking whether the interviewees have faith in a sustainable future for Boracay, emphasis is placed upon the great responsibility of the local government, their dependence on the political will of the Mayor and their resistance against corruption and the power of private investors. The application of the environmental fee and the one-way terminal fee is discussed as an example. In order to enter the island a visitor must pay 75 pesos of environmental fee (€1,29) and a one-way terminal fee (€1,72). The island received over 150 million PHP or 2.5 million euro of environmental fee and over 200 million PHP or 3.4 million euro of terminal fee in 2017 (exchange rate of 5 May 2019). However, one interviewee claims that only 96 million PHP or 1.6 million euro of the environmental fee has been accounted for. Even the DENR acknowledges this issue saying that the fees are collected by the LGU but that it is unclear whether the revenues are used for rehabilitation and conservation of Boracay.

e. De-growth vision

As Boracay has undergone rapid changes over the years, some interviewees admit to long for the island as it was before its development with very few tourists, no big ships, no electricity and structures that were all lower than the coconut trees.

According to the DOT a return to the old Boracay would encompass a de-growth situation with some local residents resuming their old jobs as farmers and fishermen and with an island that is naturally well conserved. However, simultaneously this office mentions the complexity of the whole situation and the dependence on national economic policy since Boracay is a major contributor. Therefore, going back to a less impacting situation would remain a dream vision.

Nonetheless, several interviewees come up with very specific ideas for a more sustainable natural environment such as the establishment of marine and forest protected areas, limiting and removing constructions and educating islanders on the environmental issues.

5.5.2. Perception of the residents (from the survey)

51% of respondents perceive a different way of handling tourism on the island. Respondents say to see more implementation of regulations, a better organization of solid waste and more awareness about the environment. Another 22% states that there is no difference in handling tourism. According to this group, there is no change as politicians lack the political will to implement changes, that better law enforcement is needed, that tourists should be limited, that residents should be able to unite and that the government should focus on what makes Boracay better.

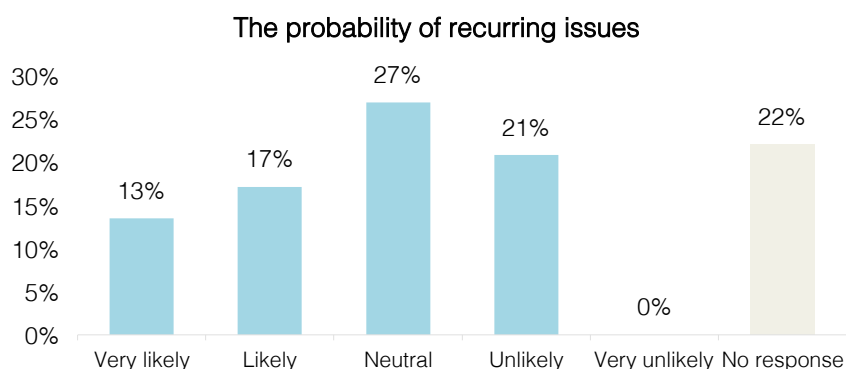


Figure 36 Local resident respondent's vision on the probability of recurring environmental issues (own processing)

30% of respondents feel it is very likely or likely that issues of environmental cleanliness might return. However, the high rate of non-response should be taken into account (**Figure 36**). Reasons mentioned are the lack of discipline for taking care of the environment, the inefficient waste management, the need to unite first or to appoint a person to manage the island, the fact that the island is still too crowded and noisy and that only a small part of the island has been cleaned.

When asking visitors whether they had ideas of their own to lower the impact on the environment of Boracay, these respondents mentioned a large variety of suggestions. They are illustrated in *Figure 37*.

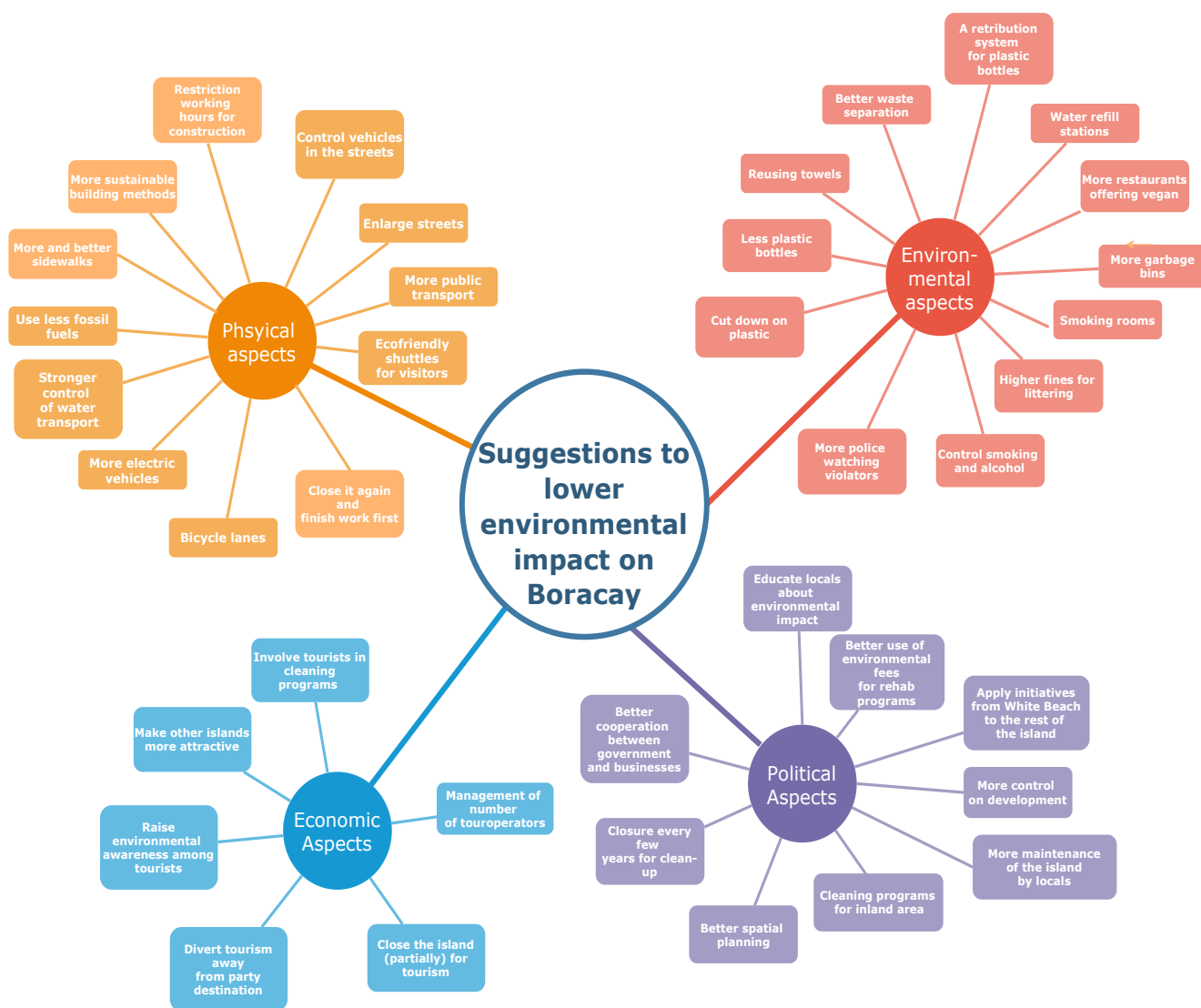


Figure 37 Visiting respondent's suggestions to lower the environmental impact on Boracay (own processing)

Among the many suggestions the most popular were the need to limit the influx of visitors (23 respondents), the installation of more garbage bins (10) and the need of electric vehicles (10). Although some of the ideas might face difficulties regarding management or monitoring, most respondents were able to envision possible very specific suggestions or solutions that corresponded with the statements about solid waste, crowdedness, mobility, air pollution and noise in Figure 32.

6. Conclusions, discussion and recommendations.

6.1. Factors contributing to the closure and rehabilitation

The main goal of this research was to find out whether the Boracay clean-up programme has led to a paradigm shift in tourism that is capable of preventing pollution of the destination on the short and on the long term. Firstly, an analysis was performed of the factors that have contributed to the initiation of the closure. As the island faced very rapid changes, the Beach Resort Model of Smith (1991) and the additional research of Smith et al. (2011) served as the foundation to determine Boracay's stage of development at the moment right before closure. Whereas Boracay did not yet reach stage eight in 2011, the island has by 2018. By the time of closure, the island is largely transformed in what Smith et al. (2011) refer to as a city resort; the fully urbanized environment with distinct central and secondary commercial districts, higher government power and severe pollution. This update allowed the full understanding of Boracay's situation before the closure and an overview of possible improvements or changes after the closure. Over the years, private roads are constructed, transport has intensified and beach erosion has occurred. Moreover, the local respondents confirmed the problems mentioned in the model. The issues found in the physical and environmental aspects of the model, such as illegal sewerage connections and rapid deterioration of natural resources, appear to be the main factors that contributed to the decision to close the island. The closure is the result of a very rapid and mostly top-down process that might have been accelerated by the attention on the media after the storm of December 2017. Notably, the interviewees express mixed feelings about the closure by saying that it was a good idea to cope with the severe environmental issues but that guidelines were unclear and that there was not enough time to prepare.

6.2. Short term actions and improvements

In order to detect possible improvements of the environment of Boracay, an overview of the actions during closure is created. Moreover, these actions are implemented in Smith's BRM. The most visible action performed during closure is the demolition of over 600 structures and the additional restoration of streets and sidewalks. Meanwhile, sealed drainage pipes have been installed to address the sewerage system failure. The vast majority of local respondents agrees or strongly agrees that these cleaning actions have been useful to rehabilitate Boracay and that it was a good decision to close the island although respondents also claim that a six-

month closure was too long. Moreover, interviewees mention the confusing guidelines, constantly changing permit regulations, the perceived uncoordinated process and the significant effect on living conditions that complicated the rehabilitation. Most visiting and local respondents rated the cleanliness of the environment after closure as good or very good. Positive aspects mentioned about the environment were the cleanliness of beaches and the absence of solid waste and algae in the seawater. However, persisting issues of back land pollution, crowded beaches, air pollution and traffic congestion were cited as well.

Despite the rehabilitation Boracay has shifted further into the eighth phase of Smith's Beach Resort Model by the time of reopening as secondary circulation parallel to Bulabog Beach has been constructed and plans are made to strengthen the position of Balabag as the central business district.

Trousdale has calculated the carrying capacity of Boracay in 1997. The University of the Philippines did a second calculation in 2018. Notwithstanding the differences in perceived maximum capacity, both thresholds have been exceeded before and after the closure when taking into account the availability of rooms on the island by May 2019.

On the question of possible short-term improvements, this study found that the rehabilitation has addressed some of the most urgent issues on Boracay such as the insufficient drainage system and illegal housing constructions along the Main Road, the beaches and on wetlands. The beach sides have reached a high level of quality to the satisfaction of both visitors and residents. However, the results of this research show that quick decision-making and the subsequent unclear guidelines might have impeded a thorough rehabilitation. Another important finding was that emphasis is predominantly put on Boracay's edges of white coral sands and less on its densely populated inside. The approach of half demolishing constructions raises some questions as well as the remains of these dwellings are still not connected to a proper sewer system. Moreover, as sewage treatment plants and sewerage connections are only mandatory for accommodations with more than 50 rooms, a significant amount of edifices that pollutes Boracay's soil is grossly overlooked. Boracay's issues have been addressed partially. However, it is questionable whether this repressive approach will prevent the recurrence of problems since emphasis is only put on solving effects of underlying environmental and socio-economic issues.

6.3. Long term planning for tourism

With the end of the rehabilitation by the national government in 2020 in mind, it is essential to determine whether Boracay will set course to a more sustainable

development in the future. Whereas the regional government agencies claim that there is a plan for Boracay, no evidence for a long-term plan or vision is found among the majority of the interviewees. However, most of these stakeholders clearly express the need for a plan and a board of people with genuine interest in the island and with relevant expertise in destination development. They also emphasize on the need for transparency as the bulk of income through the environmental fee and terminal fee has an unknown destination and should rather be used for rehabilitation purposes. Furthermore, this board might be able to rethink the target groups that are welcomed on Boracay. The governmental offices explicitly doubt the capability of Boracay's visitors to respect the natural and social environment while scientific literature reveals the importance of the attitude of the tourist for the success of sustainable tourism development. One might even state that a mismatch exists between the host community and the guests that arrive on Boracay.

During the rehabilitation process much emphasis is placed on the improvements of water quality and beach, which coincides with the SDGs 14 (Life below Water) and 15 (Life on Land). Nonetheless, the actions can predominantly be perceived as aesthetic patchwork and do not address the issues on the inside of the island that is not reserved for tourism purposes. Moreover, the pressure of tourism on Boracay remains high as no true threshold of carrying capacity is respected. Most interviewees are well aware of the exceeded carrying capacity and they estimate that the influx of visitors and residents will even increase, as more hotels will become compliant with the regulations of DENR and DOT. According to this group it is essential to monitor and maintain the maximum of persons on daily basis in order to respect the natural environment.

The scenario of a resort island provokes mixed opinions among the interviewees as this plan might face practical inconveniences. At this moment no proper relocation is planned for the residents on Boracay. Moreover, the mobility aspect is an important reason for residing on the island. Nonetheless, this idea illustrates the old-fashioned governmental top-down approach and the lack of knowledge in further community-based sustainable social and environmental development.

Due to the very rapid change of Boracay, some interviewees still remember the island as it was before its development. They describe the destination as it was without electricity and with traditional housing as a dream vision although they mention it will always remain just a dream as a strict economic growth model is still chosen over social and environmental improvement. Nonetheless, both interviewees and visiting respondents did mention a large amount of creative ideas in order to reduce the impact on the environment on multiple aspects.

Another important finding was that no evidence was found for a long-term plan and vision for the island although the LGU retrieves its responsibility over Boracay in 2020. However, it is questionable whether this administration disposes of sufficient manpower, know-how and leadership to face Boracay's evolution. This study did detect the need among several stakeholders for the implementation of a bottom-up supervisory board with genuine interest that is able to create a vision for the further physical, social, touristic and economical development.

While calculating the possible revenues of Boracay through environmental and terminal fees, it is clear that the destination misses out on an important source of income that might be used for rehabilitation. This finding can be linked with the importance of the creation of a committee, as this body might be able plan and impose the transparent application of revenues for rehabilitation purposes.

Taking into account the unbridled influx of visitors and workers, the lack of manpower and knowledge of the LGU, the large amount of boarding houses and establishments that are not connected to a proper sewer system and the non-transparent administration of revenues it might be likely that environmental issues on Boracay will aggravate in the future. Moreover, since a large amount of residents depend on tourism, the improvements of their living conditions should be prioritized.

Although the government, residents, visitors and businesses on Boracay have become more aware of the current environmental impact on the island, a true paradigm shift is rather not in sight. Some of the most urgent issues have been addressed and several green washing practices, such as the use of metal straws and the prohibition of smoking on the beach, are implemented. However, the exceeded carrying capacity and the further developments on the island at this moment rather reveal that business predominantly continues as usual.

Boracay is in need of a profound and specific plan that not only focuses on growth in tourism development. Most importantly, the SDGs might serve as a guideline that links natural environment with improvements for the host community. A plan for Boracay might relate to many of the goals such as:

- Goal 11. Sustainable cities and communities. As research reveals, traffic congestion and air pollution remain key issues that locals and visitors experience on the island and that should urgently be addressed.
- Goal 12. Sustainable consumption and production. The inland of Boracay faces severe solid waste pollution and needs further attention from public and private stakeholders.

- Goal 17. Partnerships. This goal emphasizes on the improvements of domestic capacity for tax and other revenue collection, on the enhancement of policy coherence and on multi-stakeholder partnerships. Since the national government intends to give the local government full responsibility over the island, it is vital to strengthen the network of experts and stakeholders and to ensure sufficient revenues for sustainable development.

Moreover, Goal 1 that aims to end all poverty and is perceived as one of the key elements of the 2030 Agenda should become an important part of Boracay's future vision as the many residents on the island deserve much better living conditions.

6.4. Recommendations for further research

As mentioned before, visitor satisfaction before closure through the analysis of review data is not included in this thesis. However, it might be a very valuable contribution during further research on short- and long-term effects as each review mostly encompasses a date, a reason for the rating and the origin of the reviewer.

The situation of Boracay is very complex and needs the long-term attention of a large variety of experts in social, economical and spatial matters. Nonetheless, it is believed that there are opportunities for some quick-win solutions with a possible significant and positive impact on the environment of the island, e.g. projects to improve the mobility and avoid further traffic congestion and air pollution.

The large majority of visitors have always been situated at White Beach (Trousdale, 1997). One of the findings of this study indicated that tourists still perceive White Beach as overcrowded at the time of research. However, Boracay has much more to offer than only its beaches. Therefore, it is important to explore the opportunities of sustainable tourism development in the other parts of the island that might attract nature-, adventure and culture-loving visitors. Furthermore, Boracay's residents appear to be very welcoming towards visitors with interest in the islander's daily life. It is therefore essential to investigate how to involve these stakeholders in further tourism development and how to create ownership of their own future on Boracay.

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8. Appendices

Appendix I: Visitor questionnaire English



University Leuven
Belgium

Dear visitor of Boracay,

this questionnaire is for the purpose of a research project on the environmental status of Boracay. Your answers will be very valuable to better understand the perception of tourists on the environment of Boracay and therefore to improve the tourist experience. This survey will only take a few minutes of your time and the answers will be processed anonymously. No information will be used for commercial use. If you think a question is too personal or sensitive, you can skip it. Thank you very much in advance.

Firstly, allow us to take note of the kind of holidays or travelling during this trip.

1. How do you travel around?

With a group tour With an individual package Self-organized Other: _____

2. In which type of accommodation do you sleep on Boracay?

a hotel a hostel an Airbnb
 with friends or family other: _____ I don't stay on Boracay

3. How long do you stay on Boracay?

1 day 1 - 3 nights 4 - 7 nights > 1 week

4. What activities do you participate in? (Please tick all that apply)

- Relaxing on the beach or in a resort Kite surfing and or surfing Hiking and cycling
- Cultural visit Shopping Other: _____

Allow us to take note of the appreciation of the environment during your visit today.

5. This survey helps us to understand how tourists think about the cleanliness of the environment of Boracay. What is environmental cleanliness to your opinion?

6. How would you rate the cleanliness of the environment of Boracay at this moment?

- Very poor Poor Average Good Very Good

Because:

7. Please rate how much you agree or disagree on the following statements concerning your stay on Boracay at this moment.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
There is much solid waste on Boracay's beaches.	0	0	0	0	0
Boracay's beaches are very crowded.	0	0	0	0	0
The seawater looks polluted by algae.	0	0	0	0	0
There is a lot of solid waste in the sea.	0	0	0	0	0
I have experienced many floodings of seawater on beaches and streets..	0	0	0	0	0
There is a lot solid waste on the streets.	0	0	0	0	0
There is a lot of traffic congestion in the streets.	0	0	0	0	0
The air in the streets is very polluted	0	0	0	0	0
There is a lot of noise on the island.	0	0	0	0	0

8. Did you know that Boracay has been closed for six months?

0 Yes 0 No

9. Do you know why the island has been closed?

0 Yes. Reason:

0 No

10. Have you seen actions to create less impact on the natural environment during your stay at this moment?

Yes (go to question 11)

No (go to question 12)

11. If yes for question 10, what actions did you see or experience?

Recycling solid waste

Reusing towels in the hotel

Electric vehicles on the streets

Beach cleaning actions

Limits on the amount of visitors

Others: _____

12. Have you visited Boracay before?

Yes (go to question 13 and 14)

No (go to question 15)

13. If yes for question 12, how would you have rated the cleanliness of the environment on Boracay during your last visit?

Very poor

Poor

Average

Good

Very Good

Because:

14. If yes for question 12 and if applicable, to what extend do you experience differences in environmental cleanliness now and then? Please explain:

15. Do you have any suggestions to lower the impact on the environment on Boracay?

Finally, allow us to take note of some personal characteristics.

16. You are: A foreign visitor originating from: A resident of the Philippines

China

South Korea

Australia

USA

Other: _____

17. Age: 18 – 25 26 – 35 36 – 50 > 50

18. Gender Female Male

Thank you very much for your cooperation. Have a nice stay on Boracay.

Appendix II: Visitor questionnaire Chinese



比利时

鲁汶大学

尊敬的长滩岛游客：

本调查问卷是针对长滩岛环境状况的研究项目。您的答案在更好地了解游客对长滩岛环境的看法，从而改善游客体验等方面都具有非常高的价值。此调查只需几分钟的时间，答案将做匿名处理。所获取的信息也不会用于商业用途。如果您认为某个问题过于个性化或过于敏感，可以跳过不回答。谢谢！

首先，请允许我们关注您这次度假或旅行的类别。

1. 您是如何环游的？

跟团旅游 个人套餐游 自助游 其他： _____

2. 您在长滩岛的住宿属于哪一种类型？

酒店 青年旅社 Airbnb 民宿
 住朋友或亲戚家 其他： _____ 我不住长滩岛

3. 您在长滩岛逗留多久？

1天 1-3夜 4-7夜 多于一星期

4. 您参加了哪些活动？（请勾选所有适用的选项）

在海滩或度假村休息 风筝冲浪和/或冲浪 徒步和骑自行车
 文化观光 购物 其他： _____

请允许我们关注您在今天的游览中对环境的评价。

5. 此调查有助于我们了解游客如何看待长滩岛的环境清洁度。您如何看待这里的环境清洁度？

6. 您如何评价长滩岛此刻的环境清洁度？

非常不好 不好 一般 好 非常好

因为：

7. 以下关于您此刻在长滩岛逗留的陈述，请对同意或不同意的程度予以评价。

	非常不同意	不同意	无意见	同意	非常同意
长滩岛的海滩上有许多固体垃圾。	0	0	0	0	0
长滩岛的海滩非常拥挤。	0	0	0	0	0
海水看起来被藻类污染了。	0	0	0	0	0
海里有许多固体垃圾。	0	0	0	0	0
我在海滩和街道上经历过许多海水漫溢。	0	0	0	0	0
街道上有许多固体垃圾。	0	0	0	0	0
街道上交通拥堵严重。	0	0	0	0	0
街道上空气污染严重。	0	0	0	0	0
岛上有许多噪音。	0	0	0	0	0

8. 您知道长滩岛曾关闭六个月吗？

是 否

9. 您知道该岛为什么关闭吗？

0 是。原因是：

0 否

10. 您在目前入住期间是否看见过减少对自然环境影响的行动？

0 是（转至第 11 个问题）

0 否（转至第 12 个问题）

11. 如果第 10 个问题的答案为“是”，那么您看到或体验到哪些行动？

0 回收固体垃圾

0 在酒店重复使用毛巾

0 街道上行驶的电动车

0 海滩清洁行动

0 限制游客数量

0 其他：_____

12. 您以前来过长滩岛吗？

0 是（转至第 13 和 14 个问题）

0 否（转至第 15 个问题）

13. 如果第 12 个问题的答案为“是”，那么您如何评价上一次游览期间长滩岛的环境清洁度？

0 非常不好

0 不好

0 一般

0 好

0 非常好

因为：

14. 如果第 12 题的答案为“是”，而且可能的话，您现在和那个时候所经历的环境清洁度差

异有多大？请您解释一下：

15. 有关在长滩岛减少对环境的影响，您有何建议？

最后，请允许我们关注一些个人信息。

16. 您是： 来自以下国家的外国游客： 菲律宾居民

中国

韩国

澳大利亚

美国

其他：_____

17. 年龄： 18-25 26-35 36-50 > 50

18. 性别 女 男

非常感谢您的合作。祝您在长滩岛度假愉快。

Appendix III: Visitor questionnaire Korean



루벤 대학 (University Leuven)
벨기에

친애하는 보라카이 방문자 여러분께,

본 설문 조사는 보라카이의 환경 상태에 관한 연구 프로젝트 목적을 위한 것입니다. 보라카이의 환경에 대한 관광객의 인식을 보다 잘 이해함으로써 관광 경험을 향상시키는 데 있어 귀하의 답변은 매우 중요합니다. 귀하께서 본 설문 조사에 답변하시는 데는 수 분 밖에 걸리지 않으며 답변은 익명으로 처리됩니다. 어떠한 정보도 상업적 용도로 사용되지 않습니다. 질문이 지나치게 개인적이거나 민감한 것으로 여겨질 경우, 건너뛰셔도 됩니다. 미리 감사드리겠습니다.

먼저, 저희가 이번 방문의 휴가 또는 여행의 유형을 기록하게 해 주십시오.

1. 주변을 어떤 방식으로 여행하십니까?

그룹 투어 개별 패키지 직접 세운 계획 기타: _____

2. 보라카이에서 어떤 유형의 숙박 시설에 투숙하십니까?

호텔 호스텔 에어비앤비
 친구 또는 가족의 집 기타 _____ 보라카이에서 숙박하지 않음

3. 얼마나 오래 보라카이에 머무르십니까?

1일 1-3박 4-7박 1주일 이상

4. 어떤 활동에 참여하십니까? (해당하는 모든 것에 마크하십시오.)

해변이나 리조트에서의 휴식 카이트 서핑 또는 서핑 하이킹 및 사이클링
 문화 시설 방문 쇼핑 기타: _____

오늘 귀하께서 방문하시는 동안 환경에 대한 귀하의 평가를 저희가 기록할 수 있게 해주십시오.

5. 본 설문 조사는 관광객들이 보라카이 환경의 청결 상태에 대해 어떻게 생각하는지 이해하는 데 도움을 줍니다. 귀하의 생각에 환경 청결 상태란 무엇입니까?

6. 보라카이의 현재 환경 청결 상태를 어떻게 평가하시겠습니까?

0 매우 나쁨 0 나쁨 0 평균 0 양호함 0 매우 양호함

이유:

7. 현재 귀하의 보라카이 체재와 관련하여 다음 진술에 얼마나 동의 또는 반대하는지 평가해 주십시오.

	강력히 반대	반대	중립	동의	강력히 동의
보라카이 해변에는 고형 폐기물이 많다.	0	0	0	0	0
보라카이 해변은 매우 혼잡하다.	0	0	0	0	0
바닷물이 조류에 의해 오염된 것처럼 보인다.	0	0	0	0	0
바다에 고형 폐기물이 많다.	0	0	0	0	0
나는 해변과 거리에서 바닷물의 침수를 많이 경험했다.	0	0	0	0	0
거리에 고형 폐기물이 많다.	0	0	0	0	0
거리의 교통 혼잡이 심하다.	0	0	0	0	0
거리의 공기가 매우 오염되어 있다	0	0	0	0	0
섬에 소음이 많다.	0	0	0	0	0

8. 보라카이가 6개월 간 폐쇄되었던 것을 알고 계셨습니까?

0 네 0 아니오

9. **섬이 폐쇄되었던 이유를 알고 계십니까?**

0 네. 이유:

0 아니오

10. **이번에 머무르시는 동안 자연 환경에 미치는 영향을 줄이기 위한 조치를 목격하셨습니다가?**

0 네(11번 질문으로 이동)

0 아니오(12번 질문으로 이동)

11. **10번 질문에 '네'로 답한 경우, 어떤 조치를 목격하시거나 경험했습니까?**

0 고품 폐기물 재활용

0 호텔에서 수건 재사용

0 거리의 전기 자동차

0 해변 청소 작업

0 방문자 수 제한

0 기타: _____

12. **전에 보라카이를 방문한 적이 있습니까?**

0 네(13번 및 14번 질문으로 이동)

0 아니오(15번 질문으로 이동)

13. **12번 질문에 '네'로 답한 경우, 귀하의 마지막 방문 중에 보라카이의 환경 청결 상태를 어떻게 평가하시겠습니까?**

0 매우 나쁨

0 나쁨

0 평균

0 양호함

0 매우 양호함

이유 설명:

14. 12번 질문에 대해 '네'로 답하셨으며 해당하는 경우, 귀하께서는 지금 이후 환경 청결 상태의 차이를 얼마나 경험할 수 있습니까? 설명:

15. 보라카이의 환경에 미치는 영향을 줄이기 위한 제안사항이 있습니까?

마지막으로, 저희가 몇 가지 개인적인 특성을 기록할 수 있게 해 주십시오.

- 귀하의
16. 정보: 0 다음 국가에서 온 외국인 방문자: 0 필리핀 거주자
- 0 중국
- 0 한국
- 0 호주
- 0 미국
- 0 기타: _____
17. 연령: 0 18 – 25 0 26 – 35 0 36 – 50 0 > 50
18. 성별 0 여성 0 남성

귀하의 협력에 감사드립니다. 보라카이에서 즐거운 시간 보내시길 바랍니다.

Appendix IV: Local stakeholder questionnaire



Dear sir, madam,

this questionnaire is for the purpose of a research project on the environmental status of Boracay. Your answers will be very valuable to better understand the impact of the recent closure and clean-up programme on Boracay and therefore to improve the liveability for residents of the island. This survey will only take a few minutes of your time and the answers will be processed anonymously and no information will be used for commercial use. If you think a question is too personal or sensitive, you can skip it. Thank you very much in advance.

Firstly, allow us to take note of the appreciation of the environment of Boracay before the closure.

- ~~1. This survey helps us to understand how local residents think about the cleanliness of the environment of Boracay. What is environmental cleanliness to your opinion?~~

NOTE: This question has been deleted from the Tagalog translation as visitors, who have been questioned before the local residents, appeared to have difficulties with this question. Therefore, this question has been left out the final translated version of this questionnaire.

- Before the closure: did you see or experience the following issues on Boracay?**

	yes	no
Solid waste pollution on beaches	0	0
Overcrowded beaches	0	0
Pollution of seawater by algae	0	0
Solid waste pollution of seawater	0	0
Floodings of beaches and streets	0	0

Solid waste pollution on streets	0	0
Traffic congestion on streets	0	0
Air pollution on streets	0	0
Noise nuisance on the island	0	0

Other issues you experienced: _____

3. How would you have rated the cleanliness of the environment on Boracay before the closure?

- Very poor
 Poor
 Average
 Good
 Very Good

Please explain why:

Allow us to take note of how you experienced the closure of Boracay

4. When did you first hear that Boracay would be closed?

- More than one month before closure
 More than one week before closure
 Less than one week before closure

5. Who did you hear from that Boracay would be closed?

- The government
 The media
 Other: _____
 An NGO
 Friends, relatives or colleagues

6. Were you consulted before the closure?

- Yes (go to question 7)
 No (go to question 8)

7. If yes for question 6, what was this consultation about?

8. What impact did the closure have on you (on your business, family, ...) ?

9. Please rate how much you agree or disagree on the following statements concerning the closure of Boracay.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Closing Boracay completely for tourists has been a good decision	0	0	0	0	0
Closing Boracay for six months was too long	0	0	0	0	0
The cleaning actions during the closure were very useful to rehabilitate the island	0	0	0	0	0
I think the consequences for tourism were well thought through	0	0	0	0	0

Allow us to take note of how you experienced the clean-up program on Boracay

10. Were you involved in the cleaning up actions for a more sustainable environment on the island?

Yes (go to question 11)

No (go to question 12)

11. If yes for question 10, what actions were you involved in?

I was invited by the government for informative meetings about rehabilitation

I could give advice concerning cleaning actions

- I could give my opinion on the cleaning actions
 I have participated in cleaning actions
 Other: _____

12. How important did you find the actions executed on Boracay during the closure? Please rate between 1 (= not important) to 5 (= very important)

	1	2	3	4	5	No opinion
Tracing illegal sewer systems and renew the waste water system	0	0	0	0	0	0
Cleaning beaches and shores from algae and solid waste	0	0	0	0	0	0
Limiting the amount of visitors on the island	0	0	0	0	0	0
Demolishing illegal infrastructures on beach and wetlands	0	0	0	0	0	0

13. How would you rate the cleanliness of the environment on Boracay after the closure?

- Very poor
 Poor
 Average
 Good
 Very Good

Please explain why:

14. Do you have the feeling that tourism is handled in a different way compared to the time before closure?

- Yes (go to question 15)
 No (go to question 16)

15. If yes for question 14, what has, to your opinion, changed in the way tourism is handled?

16. How would you rate the probability that Boracay will face environmental issues again despite the closure and clean-up programme?

Very likely Likely Neutral Unlikely Very unlikely

Please explain why:

Finally, allow us to take note of some personal characteristics.

17. You are: A resident of Boracay An immigrated resident

18. Age: 18 – 25 26 – 35 36 – 50 > 50

19. Gender Female Male

20. What job do you perform on Boracay?

I work in/own a shop or rental office I work for the government
 I work in/own a restaurant or bar I am unemployed
 I work in/own a hotel, hostel or resort I am a student
 I work for an NGO Other _____

Thank you very much for your cooperation.

Appendix V: Local stakeholder questionnaire Tagalog



Dear Sir Madam,

ANG MGA KATANUNGANG ITO AY PARA SA ISANG MAKABULUHANG PROYEKTO NG PANANALIKSIK PATUNGKOL SA KALAGAYAN SA ISLA NG BORACAY. ANG INYONG MGA KASAGUTAN AY NAPAKALAGA PARA MAS LALONG MAINTINDIHAN KUNG ANO ANG NAGING EPEKTO NG PAGSASARA AT ANG PAGKAKAROON NG PROGRAMANG PANGKALINISAN SA BORACAY AT MAS LALONG MAPAUNLAD ANG PAMUMUHAY NG MGA TAOSA ISLA. ANG PANANALIKSIK NA ITO AY KAILANGAN LAMANG NG INYONG KAUNTING ORAS AT ANG MGA KASAGUTAN NINYO AY IPOPROSESO NG HINDI NAGPAPAKILALA AT WALANG IMPORMASYONG GAGAMITIN PARA SA PAG -AANUNSIYO. KUNG SAKALI ANG MGA KATANUNGAN AY MASYADONG PERSONAL AT SENSITIBO, MAAARI NINYO ITONG LAKTAWAN. MARAMING SALAMAT PO.

UNA, PAHINTULUTAN MO KAMING MALAMAN ANG HALAGA NG KAPALIGIRAN NG BORACAY BAGO ANG PAGSASARA.

1. BAGO ANG PAGSASARA : NAKITA MO BA O NARANASAN ANG MGA SUMUSUNOD NA

	OO	HINDI
MGA DUMI SA BAYBAYIN	0	0
MASIKIP NA MGA BAYBAYIN	0	0
MADUMING TUBIG DAHIL SA MGA LUMOT	0	0
MGA BASURA GALING SA TUBIG DAGAT	0	0
PAGBAHA SA MGA BAYBAYIN AT KALYE	0	0
MGA DUMI SA KALYE AT MGA KANAL	0	0
MASIKIP NA DAANAN SA MGA KALSADA	0	0
MADUMING HANGIN	0	0
MGA MAIINGAY NA NAKAKAISTORBO SA BORACAY	0	0

2. PAANO MO MAMARKAHAN ANG KALINISAN NG KAPALIGIRAN NG BORACAY? BAGO ANG PAGSASARA?

PINAKA-MABABA MABABA KARANIWAN MAHUSAY PINAKA-MAHUSAY

IPALIWANAG KUNG BAKIT: _____

PAHINTULUTAN MO KAMING MALAMAN KUNG PAANO MO NARANASAN ANG PAGSASARA NG BORACAY.

3. KAILAN MO UNANG NARINIG NA ANG BORACAY IS ISASARA?

MAHIGIT NA ISANG
BUWAN BAGO ANG
PAGSASARA

MAHIGIT NA ISANG
LINGGO BAGO ANG
PAGSASARA

KUMULANG NA ISANG
LINGGO BAGO ANG
PAGSASARA

4. KANINO MO NARINIG O NALAMAN NA ANG BORACAY AY MAGSASARA?

SA GOBYERNO

The media

IBA PA: _____

An NGO
SA NGO

SA MGA KAIBIGAN,
KAPAMILYA O KATRABAHO

5. KUMUNSLTA KABA BAGO ANG PAGSASARA?

OO(PUMUNTA SA TANONG 6)

HINDI (PUMUNTA SA TANONG 7)

6. KUNG OO ANG SAGOT MO SA TANONG 5 , TUNGKOL SA ANO ANG IYONG IKINUNSLTA?

7. ANO ANG NAGING EPEKTO NANG PAGSASARA NG BORACAY SA IYO?(SA INYONG NEGOSYO , PAMILYA,..)

8. PAKIMARKAHAN KUNG SANG - AYON SA MGA SUMUSUNOD NA PAHAYAG TUNGKOL SA PAGSASARA NG BORACAY.

	LUBOSANG HINDI SUMASANG-AYON	HINDI SUMASAN G-AYON	NEUTRAL	SUMASANG-AYON	LUBOS NA SUMASANG-AYON
ANG PAGSASARA NG BORACAY SA MGA TURISTA AY NAGING MAGANDANG DESISYON.	0	0	0	0	0
ANG PAGSASARA NG BORACAY SA LOOB NG ANIM NA BUWAN AY MASYADONG MATA GAL.	0	0	0	0	0
ANG PAGLILINIS NG KAPALIGIRAN SA PANAHONG PAGSARA NG ISLA AY SADYANG NAKATUTULONG PARA MAS MAPAGANDA AT LALONG MALINISAN ANG ISLA	0	0	0	0	0
SA TINGIN KO ANG KAHIHINATNAN PARA SA TURISMO AY NAGING MABUTI SA PAMAMAGITAN NITO.	0	0	0	0	0

PAHINTULUTAN MO KAMI PARA MALAMAN NAMIN KUNH PAANO NIYO NARANASAN ANG PROGRAMANG PANGKALINISAN SA BORACAY.

9. IKAW BA AY KASALI SA PAGLILINIS PARA MAS MAPANATILI ANG KAAYUSAN SA ISLA?

- 0 OO(PUMUNTA SA TANONG 10) 0 HINDI(PUMUNTA SA TANONG 11)

10. KUNG OO ANG SAGOT MO SA TANONG 9, ANONG KILOS ANG IYONG SINALIHAN?

- 0 INIMBITAHAN AKO NG PAMAHALAAN PARA SA ISANG MAKABULUHANG PULONGTUNGKOL SA PAG-AAYOS AT PAGLILINIS SA ISLA. 0 NAGBIGAY AKO NG PAYO TUNGKOL SA PAGLILINIS SA ISLA.
- 0 NAGBAHAGI AKO NG AKING OPINYON PARA SA PAGLILINIS ANG ISLA. 0 NAKILAHOK AKO SA PAGLILINIS SA ISLA
- 0 IBA PA: _____

11. GAANO KA KA IMPORTANTE ANG IYONG NALALAMAN NA KILOS NA NAISAKATUPARAN SA ISLA NG BORACAY SA PANAHOON ZGPAGSASARA?PAKIMARKAHAN 1(HINDI MAHALAGA) HANGGANG 5(PINAKAMAHALAGA)

	1	2	3	4	5	WALANG OPINYON
PAGSUBAYBAY SA MGA ILIGAL NA ALKANTARILYA AT ANG PAGBABAGO NG MGA DINADALUYAN NG MGA TUBIG NA MADUMI.	0	0	0	0	0	0
PAGLILINIS NG MGA DUMI SA DAGAT AT BAYBAYIN NA GALING SA MGA LUMOT AT BASURA.	0	0	0	0	0	0
LIMITADO NA PAGPAPAPASOK NG MGA TURISTA SA ISLA	0	0	0	0	0	0
PAG-GIBA NG MGA ILIGAL NA IMPRASTRUKTURA NA MALAPIT SA TABING - DAGAT.	0	0	0	0	0	0

12. PAANO MO BIBIGYAN NG MARKA ANG KALINISAN NG BORACAY NGAYONG PAGKATAPOS NA IPASARA?

0 PINAKA-MABA
 MABABA KARANIWAN MAHUSAY PINAKA-MAHUSAY

IPALIWANAG KUNG MAAARI AT BAKIT: _____

13.	SA IYONG KAALAMAN KAYA BANG PANGASIWAAN NG MGA TURISMO ANG PAGBABAGO KUMPARA SA MGA PANAHOONG BAGO ISARA?
<input type="radio"/> OO(PUNTA SA TANONG 14)	<input type="radio"/> HINDI(PUNTA SA TANONG 15)

14. PAG OO ANG SAGOT PARA SA KATANUNGAN IKA- 14, ANO ANG IYONG MAGIGING OPINYON, PALITAN ANG PAMAMARAAN SA TURISMO?

15. PAANO MO MAMARKAHAN ANG POSIBILIDAD NA MAGKAKARON ULIT NG ISYUNG PANGKAPALIGIRAN ANG BORACAY SA KABILA NG PAGSASARA NITO AT PAGKAKARON NG PROGRAMANG PAGLILINIS.

- NAPAKA- TIYAK MALAMANG NEUTRAL HINDI TIYAK NAPAKA- WALANG TIYAK

IPALIWANAG KUNG BAKIT:

PANG HULI, PAHINTULUTAN MO KAMING MALAMAN SA ILANG MGA PERSONAL NA KATANGIAN NG ISLA.

- 16. IKAW AY:** RESIDENTE NG BORACAY LUMIPAT SA BORACAY

- 17. EDAD:** 18 – 25 26 – 35 36 – 50 > 50

- 18. KASARIAN** BABAE LALAKI

19. ANONG TRABAHO MAYROON KA SA BORACAY?

- NAGTATRABAHO AKO/ MAY SARILING SHOP O NIRERENTAHANG OPISINA NAGTATRABAHO AKO SA GOBYERNO
- NAGTATRABAHO AKO/ MAY SARILING RESTAURANT O BAR WALA AKONG TRABAHO
- NAGTATRABAHO AKO/ MY SARILING HOTEL O RESORT ESTUDYANTE PA LAMANG
- NAGTATRABAHO AKO BILANG NGO IBA PA _____

MARAMING SALAMAT SA IYONG KOOPERASYON.

Appendix VI: Descriptive analysis visitor questionnaires

1. Place of questionnaire (not part of questionnaire)

- 1: Chillax Hostel
- 2: White Beach
- 3: Diniwid Beach

Place of survey	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	17	8.85	17	8.85
2	160	83.33	177	92.19
3	15	7.81	192	100.00

2. How do you travel around?

- 1: With a group tour
- 2: With an individual package
- 3: Self-organized

Way of travel	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	32	16.67	32	16.67
2	19	9.90	51	26.56
3	141	73.44	192	100.00

3. In which type of accommodation do you sleep on Boracay?

- 1: Hotel
- 2: Hostel
- 3: Airbnb
- 4: With friends or family
- 5: Other
- 6: No stay on Boracay

Accommodation Type	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	130	67.71	130	67.71
2	44	22.92	174	90.63

Accommodation Type	Frequency	Percent	Cumulative Frequency	Cumulative Percent
3	15	7.81	189	98.44
4	2	1.04	191	99.48
5	1	0.52	192	100.00

4. How long do you stay on Boracay?

1: One day

2: 1-3 nights

3: 4-7 nights

4: More than one week

Duration stay	Frequency	Percent	Cumulative Frequency	Cumulative Percent
2	41	21.35	41	21.35
3	117	60.94	158	82.29
4	34	17.71	192	100.00

5. What activities do you participate in?

0: No

1: Yes

5.1. Relaxing

Activity relaxing	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	12	6.25	12	6.25
1	180	93.75	192	100.00

5.2. (Kite)Surfing

Activity (Kite)surfing	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	141	73.44	141	73.44
1	51	26.56	192	100.00

5.3. Hiking and/or cycling

Activity hiking cycling	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	155	80.73	155	80.73
1	37	19.27	192	100.00

5.4. Cultural visit

Activity cultural visit	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	144	75.00	144	75.00
1	48	25.00	192	100.00

5.5. Shopping

Activity shopping	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	140	72.92	140	72.92
1	52	27.08	192	100.00

5.6. Other activities

Activity other	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	161	84.29	161	84.29
1	30	15.71	191	100.00

Other activities mentioned:

- Diving
- Snorkelling
- Restaurant
- Spa
- Paddle board
- Island hopping
- Sunset cruise
- Helmet dive
- Sailing
- Partying
- Sunset watching

6. What is environmental cleanliness to your opinion?

- Sustainability in energy, use of resources, manufacturing, farming and tourism
- Taking care of wildlife, oceans, air and beaches and keeping the environment clean from plastic and other garbage
- Good management of water, garbage and infrastructures

7. How would you rate the cleanliness of the environment of Boracay at this moment?

- 1: Very poor
- 2: Poor
- 3: Average
- 4: Good
- 5: Very good

Rate cleanliness now	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	1	0.53	1	0.53
2	17	8.95	18	9.47
3	39	20.53	57	30.00
4	100	52.63	157	82.63
5	33	17.37	190	100.00
Frequency Missing = 2				

Analysis Variable : Rate cleanliness now				
Mean	Std Dev	Minimum	Maximum	N
3.77	0.86	1.00	5.00	190

7.1. Reasons for rating the cleanliness at this moment

POSITIVE ASPECTS

- Clean beaches, clean streets, clean water
- A lot of work has been done to restore, infrastructures are being built to keep the island clean
- Properly disposed garbage, designated points for recycling, small changes to keep the place clean such as paper straws
- Heavily regulated tourist activities, police watching 24/7, regulation signs on the island, non-smoking areas on the beach

- It's better than in China, clean compared to other South-East Asian destinations, good relative to the GDP
- Locals actively participate in environmental actions

NEGATIVE ASPECTS

- Pollution of nature in backland, garbage on roads, Bulabog and other beaches are still dirty, not enough garbage bins
- Poorly managed waste from infrastructures, still work needed on the beach, too many construction works going on
- The streets are crowded, very crowded beach
- Traffic jams, too much exhaust of transportation
- People don't seem to care about the environment

8. Please rate how much you agree or disagree on the following statements concerning your stay on Boracay at this moment.

1: Strongly disagree

2: Disagree

3: Neutral

4: Agree

5: Strongly agree

8.1. Solid waste on the beach

There is much solid waste on Boracay's beaches	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	53	27.89	53	27.89
2	95	50.00	148	77.89
3	22	11.58	170	89.47
4	17	8.95	187	98.42
5	3	1.58	190	100.00
Frequency Missing = 2				

8.2. Crowded beaches

Boracay's beaches are very crowded	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	5	2.60	5	2.60
2	61	31.77	66	34.38
3	47	24.48	113	58.85
4	58	30.21	171	89.06
5	21	10.94	192	100.00

8.3. Polluted seawater by algae

The seawater looks polluted by algae	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	49	25.65	49	25.65
2	105	54.97	154	80.63
3	25	13.09	179	93.72
4	11	5.76	190	99.48
5	1	0.52	191	100.00
Frequency Missing = 1				

8.4. Solid waste in the sea

There is a lot of solid waste in the sea	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	55	28.80	55	28.80
2	106	55.50	161	84.29
3	23	12.04	184	96.34
4	7	3.66	191	100.00
Frequency Missing = 1				

8.5. Experienced floodings

I have experienced many floodings on the streets and the beach	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	61	31.94	61	31.94
2	96	50.26	157	82.20
3	29	15.18	186	97.38
4	5	2.62	191	100.00
Frequency Missing = 1				

8.6. Solid waste on the streets

There is a lot solid waste on the streets	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	12	6.42	12	6.42

There is a lot solid waste on the streets	Frequency	Percent	Cumulative Frequency	Cumulative Percent
2	65	34.76	77	41.18
3	39	20.86	116	62.03
4	53	28.34	169	90.37
5	18	9.63	187	100.00
Frequency Missing = 5				

8.7. Traffic congestion

There is a lot of traffic congestion in the streets.				
There is a lot of traffic conges	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	6	3.23	6	3.23
2	10	5.38	16	8.60
3	35	18.82	51	27.42
4	74	39.78	125	67.20
5	61	32.80	186	100.00
Frequency Missing = 6				

8.8. Air pollution

The air in the streets is very polluted	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	12	6.42	12	6.42
2	42	22.46	54	28.88
3	41	21.93	95	50.80
4	56	29.95	151	80.75
5	36	19.25	187	100.00
Frequency Missing = 5				

8.9. Noise

There is a lot of noise on the i	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	12	6.35	12	6.35
2	44	23.28	56	29.63

There is a lot of noise on the i	Frequency	Percent	Cumulative Frequency	Cumulative Percent
3	62	32.80	118	62.43
4	56	29.63	174	92.06
5	15	7.94	189	100.00
Frequency Missing = 3				

9. Did you know that Boracay has been closed for six months?

0: No

1: Yes

Knowledge of closure	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	17	8.95	17	8.95
1	173	91.05	190	100.00
Frequency Missing = 2				

10. Do you know why the island has been closed?

0: No

1: Yes

Knowledge reason	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	40	21.28	40	21.28
1	148	78.72	188	100.00
Frequency Missing = 4				

10.1. If yes, reasons for closure

- Sanitation problems, environmental hazard, too much waste, for safety issues.
- Overcrowding, because tourism caused damage, the island has been abused by people, too many tourists, for it's party island reputation, to have a break from tourists
- For rehabilitation, to restore order, to drive out crime, to modernize, to clean up the island, to regulate hotels, for demolitions, to reorganize waste management, for protection of the environment, to arrange the sewer system, to arrange the electricity, for future development

11. Have you seen actions to create less impact on the natural environment during your stay at this moment?

0: No

1: Yes

Actions to lessen impact	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	63	33.16	63	33.16
1	127	66.84	190	100.00
Frequency Missing = 2				

11.1. Recycling

Actions recycling	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	64	50.39	64	50.39
1	63	49.61	127	100.00
Frequency Missing = 65				

11.2. Reusing towels

Actions Reusing towels	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	76	59.84	76	59.84
1	51	40.16	127	100.00
Frequency Missing = 65				

11.3. Electric vehicles

Actions electric vehicles	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	67	52.76	67	52.76
1	60	47.24	127	100.00
Frequency Missing = 65				

11.4. Beach cleaning

Actions beach cleaning	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	60	47.24	60	47.24
1	67	52.76	127	100.00
Frequency Missing = 65				

11.5. Limiting visitors

Actions limiting visitors	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	71	55.91	71	55.91
1	56	44.09	127	100.00
Frequency Missing = 65				

11.6. Other actions

Actions others	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	98	77.17	98	77.17
1	29	22.83	127	100.00
Frequency Missing = 65				

Other actions mentioned:

- Reuse water bottles
- Fines for littering
- No smoking areas
- Less construction
- Police watching violators
- Awareness posters
- Use of metal and paper straws
- Removal of beachside chairs
- No plastic bags in shops
- Sewage treatment.

12. Have you visited Boracay before?

0: No

1: Yes

Visited Boracay before	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	169	88.48	169	88.48
1	22	11.52	191	100.00
Frequency Missing = 1				

13. How would you have rated the cleanliness of the environment on Boracay during your last visit?

1: Very poor

2: Poor

3: Average

4: Good

5: Very good

Rate cleanliness before	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	2	8.70	2	8.70
2	6	26.09	8	34.78
3	9	39.13	17	73.91
4	3	13.04	20	86.96
5	3	13.04	23	100.00
Frequency Missing = 169				

Analysis Variable : Rate cleanliness before				
Mean	Std Dev	Minimum	Maximum	N
2.96	1.15	1.00	5.00	23

13.1. Reasons for rating the cleanliness before

- The beaches were more crowded, full of beds and smoking was allowed.
- There was garbage everywhere, litter on the beach, not many bins available,
- There was more poverty
- The island was too congested, too noisy and with very bad air quality
- The drainage overflowed when it rained
- The beach was already clean before

14. To what extent do you experience differences in environmental cleanliness now and then?

- ASPECTS OF IMPROVEMENT
Bins are available now, more energy conservation, less people, more space on the beach, stronger regulations concerning littering, road works done, the beach and road cleaner, tourists are more disciplined now, more e-trikes, no infrastructures on the beach any more, improvement of drainage, roads used to be flooded, more algae in the water
- ASPECTS OF DETERIORATION
It was less crowded in 2006
- ASPECTS OF SIMILARITY
Still traffic issues, no big changes

15. Do you have any suggestions to lower the impact on the environment on Boracay?

- MOBILITY ASPECTS
More electric vehicles, stronger control of water transport, use less fossil fuels, control vehicles in the streets, enlarge streets, more public transport, eco-friendly shuttles for visitors

- **TOURIST RELATED ASPECTS**
Divert tourism away from party destination, raise environmental awareness among tourists, limit tourist influx, make other islands more attractive, involve tourists in cleaning programs, management of tour operator numbers, close the island (partially) for tourism
- **ENVIRONMENTAL IMPACT ASPECTS**
Cut down on plastic, less plastic bottles, reusing towels, better waste separation, a retribution system for bottles, water refill stations, More restaurants offering vegan, more garbage bins, smoking rooms, higher fines for littering, control smoking and alcohol, more police
- **CONSTRUCTION ASPECTS**
Close it again and finish work first, more sustainable building methods, more and better side walks, construction works for only a few hours per day
- **GOVERNMENTAL AND PLANNING ASPECTS**
Better cooperation between government and businesses, better use of environmental fees for rehab programs, apply initiatives from White Beach to the rest of the island, cleaning programs for the inland area, better spatial planning, closure every few years for a clean-up, more control on development, more maintenance of the island by locals, educate locals about environmental impact

16. Origin

1: Foreign visitor

2: Domestic

Foreign/resident	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	185	97.37	185	97.37
2	5	2.63	190	100.00
Frequency Missing = 2				

17. Distribution of nationality

1: China

2: South Korea

3: Australia

4: USA

5: Other

6: Philippines

Nationality	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	88	46.81	88	46.81

Nationality	Frequency	Percent	Cumulative Frequency	Cumulative Percent
2	13	6.91	101	53.72
3	2	1.06	103	54.79
4	6	3.19	109	57.98
5	75	39.89	184	97.87
6	4	2.13	188	100.00
Frequency Missing = 4				

18. Age

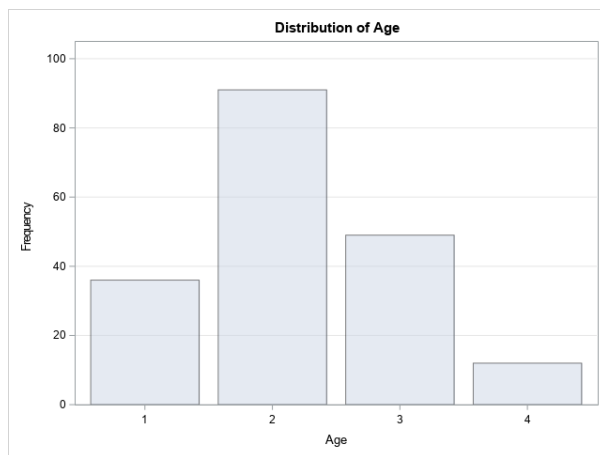
1: 18 to 25 years

2: 26 to 35 years

3: 36 to 50 years

4: More than 50 years

Age	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	36	19.15	36	19.15
2	91	48.40	127	67.55
3	49	26.06	176	93.62
4	12	6.38	188	100.00
Frequency Missing = 4				



19. Gender

1: Male

2: Female

Gender	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	67	35.45	67	35.45
2	122	64.55	189	100.00
Frequency Missing = 3				

Appendix VII: Descriptive analysis resident questionnaires

1. Before the closure, did you see or experience the following issues on Boracay?

0: No
1: Yes

1.1. Solid waste pollution on beaches

Solid waste pollution on beaches	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	22	26.83	22	26.83
1	60	73.17	82	100.00

1.2. Overcrowded beaches

Overcrowded beaches	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	32	39.02	32	39.02
1	50	60.98	82	100.00

1.3. Pollution of seawater by algae

Pollution of seawater by algae	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	40	50.00	40	50.00
1	40	50.00	80	100.00
Frequency Missing = 2				

1.4. Solid waste pollution of seawater

Solid waste pollution of seawater	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	44	53.66	44	53.66
1	38	46.34	82	100.00

1.5. Floodings of beaches and streets

Floodings of beaches and streets	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	20	24.69	20	24.69
1	61	75.31	81	100.00
Frequency Missing = 1				

1.6. Solid waste pollution on streets

Solid waste pollution on streets	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	5	6.25	5	6.25
1	75	93.75	80	100.00
Frequency Missing = 2				

1.7. Traffic congestion on streets

Traffic congestion on streets	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	4	4.88	4	4.88
1	78	95.12	82	100.00

1.8. Air pollution on streets

Air pollution on streets	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	47	58.02	47	58.02
1	34	41.98	81	100.00
Frequency Missing = 1				

1.9. Noise nuisance on the island

Noise nuisance on the island	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	28	34.15	28	34.15
1	54	65.85	82	100.00

2. How would you have rated the cleanliness of the environment on Boracay before the closure?

- 1: Very poor
- 2: Poor
- 3: Average
- 4: Good
- 5: Very good

Rate cleanliness before	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	8	10.96	8	10.96
2	34	46.58	42	57.53
3	26	35.62	68	93.15
4	4	5.48	72	98.63

Rate cleanliness before	Frequency	Percent	Cumulative Frequency	Cumulative Percent
5	1	1.37	73	100.00
Frequency Missing = 9				

Analysis Variable : Rate cleanliness before				
Mean	Std Dev	Minimum	Maximum	N
2.3972603	0.8120572	1.0000000	5.0000000	73

2.1. Reasons for rating cleanliness at this moment

POSITIVE ASPECTS

- Not the whole island was dirty. There were some places that were able to keep their surroundings clean.

NEGATIVE ASPECTS

- The inhabitants lacked the discipline and care for environment
- There were too many boarding houses, too many people on the island,
- A lot of trash was thrown on roads, beaches and backland giving a bad smell, dirty seawater, drainage full of garbage and air pollution
- The beach had become narrow because of illegal constructions and beach beds
- There was a lack of sewerage system and the roads flooded
- LGU didn't implement and monitor regulations

3. When did you first hear that Boracay would be closed?

- 1: More than one month
 2: More than one week
 3: Less than one week

Timing first news of closure	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	65	79.27	65	79.27
2	12	14.63	77	93.90
3	5	6.10	82	100.00

4. Who did you hear from that Boracay would be closed?

- 1: Government
 2: NGO
 3: Media
 4: Friends or relatives
 5: Other

Source news closure	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	21	25.61	21	25.61
2	1	1.22	22	26.83
3	46	56.10	68	82.93
4	13	15.85	81	98.78
5	1	1.22	82	100.00

Other: no answer provided

5. Were you consulted before the closure?

0: No

1: Yes

Request consultancy	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	68	89.47	68	89.47
1	8	10.53	76	100.00
Frequency Missing = 6				

Question biased through translation. Translated as “who the local residents consulted to gain information about the closure”?

6. If yes, what was this consultation about?

Question biased through translation. Translated as “who the local residents consulted to gain information about the closure”? Answers given to this question revealed that respondents asked their neighbours, colleges, friends and relatives whether the closure was really going to happen.

7. What impact did the closure have on you (on your business, family,...)?

- Less income, no money to give to children for food at school, no budget for food, dependence on food packages
- Business operations stopped, losing place to sell souvenirs, decreasing amount of guests in the resort, less e-trike passengers
- Loss of jobs, search for jobs on other islands and provinces, becoming dependent on home store,
- Not affected because government work continued

8. Please rate how much you agree or disagree on the following statements concerning the closure of Boracay.

1: Strongly disagree

2: Disagree

3: Neutral

4: Agree

5: Strongly agree

8.1. Closing Boracay completely for tourists has been a good decision

Closing Boracay completely for t	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	4	5.06	4	5.06
2	7	8.86	11	13.92
3	17	21.52	28	35.44
4	25	31.65	53	67.09
5	26	32.91	79	100.00
Frequency Missing = 3				

8.2. Closing Boracay for six months was too long.

Closing Boracay for six months	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	11	13.92	11	13.92
2	14	17.72	25	31.65
3	14	17.72	39	49.37
4	31	39.24	70	88.61
5	9	11.39	79	100.00
Frequency Missing = 3				

8.3. The cleaning actions during the closure were very useful to rehabilitate the island.

The cleaning actions during the	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	1	1.30	1	1.30
2	1	1.30	2	2.60
3	1	1.30	3	3.90
4	22	28.57	25	32.47
5	52	67.53	77	100.00

The cleaning actions during the	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Frequency Missing = 5				

8.4. I think the consequences for tourism were well thought trough.

I think the consequences for tou	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	3	3.85	3	3.85
2	2	2.56	5	6.41
3	15	19.23	20	25.64
4	32	41.03	52	66.67
5	26	33.33	78	100.00
Frequency Missing = 4				

9. Were you involved in the cleaning actions for a more sustainable environment on the island?

0: No

1: Yes

Involvement in actions	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	25	32.47	25	32.47
1	52	67.53	77	100.00
Frequency Missing = 5				

10. What actions were you involved in?

1: Invited by the government for informative meetings

2: Give opinion on cleaning actions

3: Give advice concerning cleaning actions

4: Participation in cleaning actions

5: Other

What actions?	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	10	18.52	10	18.52
2	4	7.41	14	25.93
3	4	7.41	18	33.33
4	33	61.11	51	94.44
5	3	5.56	54	100.00

What actions?	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Frequency Missing = 28				

Other: no answers provided.

11. How important do you find the actions executed on Boracay during the closure?

- 1: Not important
- 2: Not very important
- 3: Neutral
- 4: Important
- 5: Very important
- 6: No opinion

11.1. Tracing illegal sewer systems and renew the waste water system

Importance Tracing illegal sewer	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	5	6.85	5	6.85
2	4	5.48	9	12.33
3	7	9.59	16	21.92
4	17	23.29	33	45.21
5	35	47.95	68	93.15
6	5	6.85	73	100.00
Frequency Missing = 9				

11.2. Cleaning beaches and shores from algae and solid waste

Importance Cleaning beaches	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	6	8.22	6	8.22
2	6	8.22	12	16.44
3	3	4.11	15	20.55
4	14	19.18	29	39.73
5	42	57.53	71	97.26
6	2	2.74	73	100.00
Frequency Missing = 9				

11.3. Limiting the amount of visitors on the island

Importance Limiting the amount o	Frequency	Percent	Cumulative Frequency	Cumulative Percent
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Importance Limiting the amount o	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	7	9.59	7	9.59
2	6	8.22	13	17.81
3	12	16.44	25	34.25
4	18	24.66	43	58.90
5	26	35.62	69	94.52
6	4	5.48	73	100.00
Frequency Missing = 9				

11.4. Demolishing illegal infrastructures on beach and wetlands

Importance Demolishing illegal i	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	6	8.22	6	8.22
2	3	4.11	9	12.33
3	5	6.85	14	19.18
4	9	12.33	23	31.51
5	45	61.64	68	93.15
6	5	6.85	73	100.00
Frequency Missing = 9				

12. How would you rate the cleanliness of the environment on Boracay after the closure?

- 1: Very poor
- 2: Poor
- 3: Average
- 4: Good
- 5: Very good

Rate cleanliness now	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	1	1.32	1	1.32
2	5	6.58	6	7.89
3	6	7.89	12	15.79
4	49	64.47	61	80.26
5	15	19.74	76	100.00
Frequency Missing = 6				

Analysis Variable : Rate cleanliness now				
Mean	Std Dev	Minimum	Maximum	N
3.9473684	0.8147758	1.0000000	5.0000000	76

12.1. Reasons for rating Boracay after closure

POSITIVE ASPECTS

- The island became cleaner, the water is cleaner
- No longer vendors and beach beds on the beach, the beach is wider now, it is possible to walk on the beach during high tide
- Large effect of working together
- Roads are wider
- Stricter monitoring makes it cleaner, reduced illegal structures, better organization of the island and of White Beach
- Creatures such as sharks return because of cleaner water

NEGATIVE ASPECTS

- The construction has not yet completed
- The cleaning now is still not enough, there is still a lot of garbage on the island
- Not all are following the rules
- It is not a longstanding solution
- Still very noisy
- Still a lot of traffic

13. Do you have the feeling that tourism is handled in a different way compared to the time before the closure?

0: No

1: Yes

Different way of handling tourists	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	42	70.00	42	70.00
1	18	30.00	60	100.00
Frequency Missing = 22				

13.1. What has, to your opinion, changed the way tourism is handled?

- More rules and regulations, better organization of solid waste, more awareness about the environment
- It should still change. Government should focus on what makes Boracay better
- No change: politicians don't have the political will to really change, tourists should be limited, we need better law enforcement, we should be able to unite more

14. How would you rate the probability that Boracay will face environmental issues again despite the closure and clean-up program?

1: Very likely

- 2: Likely
- 3: Neutral
- 4: Unlikely
- 5: Very unlikely

Probability of issues	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	11	17.19	11	17.19
2	14	21.88	25	39.06
3	22	34.38	47	73.44
4	17	26.56	64	100.00
Frequency Missing = 18				

14.1. Reasons for rate of probability

- People here are stubborn, not disciplined enough for taking care of the environment
- Garbage is not picked up regularly, there is still too much garbage, tourists still generate a lot of garbage, the roads are still dirty
- We should unite first in order to keep it clean, we should appoint a person first that can manage the island
- It depends on the government to manage it
- It is only a small part of the island that is cleaned
- It is still too crowded and noisy

15. Origin

- 1: Resident
- 2: Other island or provinces

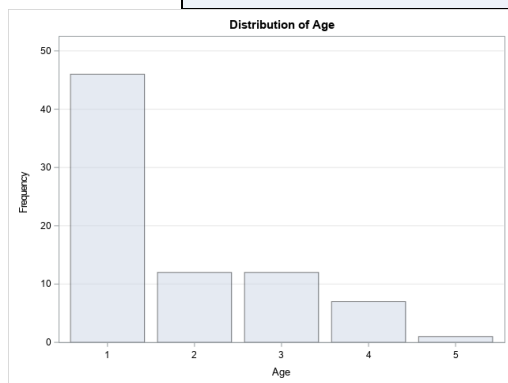
Resident or immigrant	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	62	91.18	62	91.18
2	6	8.82	68	100.00
Frequency Missing = 14				

16. Age

- 1: 18 to 25 years
- 2: 26 to 35 years
- 3: 36 to 50 years
- 4: More than 50 years

Age	Frequency	Percent	Cumulative Frequency	Cumulative Percent
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Age	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	46	59.74	46	59.74
2	12	15.58	58	75.32
3	12	15.58	70	90.91
4	7	9.09	77	100.00
Frequency Missing = 5				



17. Gender

1: Male

2: Female

Gender	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	26	32.91	26	32.91
2	53	67.09	79	100.00
Frequency Missing = 3				

18. Job

1: Work in or own a shop

2: Work in or own a restaurant

3: Work in or own a hotel or resort

4: NGO

5: Government

6: Unemployed

7: Student

8: Other

Job	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	2	2.56	2	2.56
2	4	5.13	6	7.69

Job	Frequency	Percent	Cumulative Frequency	Cumulative Percent
3	4	5.13	10	12.82
4	1	1.28	11	14.10
5	18	23.08	29	37.18
6	2	2.56	31	39.74
7	40	51.28	71	91.03
8	7	8.97	78	100.00
Frequency Missing = 4				

Appendix VIII: Informed consent for interviewees

KU LEUVEN

Consent for Participation in Interview

I volunteer to participate in a research project conducted by Marjan Nauwelaert, master student at KU Leuven University in Belgium. I understand that the project is designed to gather information about the closure and rehabilitation of Boracay Island. I will be one of approximately 10 people being interviewed for this research.

1. My participation in this project is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without penalty.
2. I understand that most interviewees will find the discussion interesting. If, however, I feel uncomfortable in any way during the interview session, I have the right to decline to answer any question or to end the interview.
3. Participation involves being interviewed by a student from KU Leuven. The interview will last approximately 45 - 60 minutes. Notes will be written during the interview. An audio tape of the interview and subsequent dialogue will be made. If I don't want to be taped, I will not be able to participate in the study.
4. I understand that the researcher will not identify me by name in any reports using information obtained from this interview, and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.
5. I understand that this research study has been reviewed and approved by the promoter of this research at KU Leuven. For research problems or questions regarding subjects, Marjan Nauwelaert may be contacted through marjan.nauwelaert@student.kuleuven.be
6. I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.
8. I have been given a copy of this consent form.

_____ My Signature

_____ My Name

For further information, please contact:

Marjan Nauwelaert – marjan.nauwelaert@student.kuleuven.be

_____ Date

Marjan Nauwelaert

Name and signature of the Investigator



Appendix IX: Interview questions

Interviewed participant:

Name _____
Function _____
Institution _____
Date _____

Collecting general information about the initiation of the closure and the role of the interviewee

1. The closure of Boracay by order of President Duterte has received worldwide attention in the media. However, by reading national newspaper online, it was clear that this decision was based on information from the DOT and DENR. If we would like to reconstruct the course of the period before closure, what would be the starting point of the initiation?

- 1.1. What stakeholders have been part of the initiation of the closure?

- 1.2. Who is/was part of the Task Force and what are its tasks and responsibilities?

1.3. What were the actual concerns that led to a recommendation for rehabilitation?

2. Boracay is a popular destination among tourists for many decades. It has undergone rapid growth and faced environmental problems in the past (ex. the coliform outbreak of 1997). What was the trigger to act last year?

2.1. Who was complaining about the environmental problems?

2.2. Did Boracay face declining tourism arrivals before closure?

2.3. To your opinion, why did or didn't tourist arrivals decline while the environmental issues were visible?

3. Finally, the decision for complete closure was made in a very short period of time. Could you tell me why the decision was made to completely shut the island for tourism? Were other solutions considered as well?

4. Communicating about the closure: Who of the local population and business has been informed about the closure?

4.1. Who communicated about the closure in what way? In what way?

4.2. How would you describe the overall reaction of the residents and businesses on Boracay? Did you feel there was a need and willingness among locals and businesses to close Boracay?

5. What actions were set up to prepare the island for closure?

6. Which budget was provided for the whole clean-up action?

Collecting information about the rehabilitation of the island and the role of the interviewee

1. Finally, the island closed on 26 April 2018. What were the first actions that were undertaken at that moment?

- 1.1. Where these actions part of a greater plan for Boracay?

- 1.1.1. If yes, what principles form the basis of this plan? Where they for example based on sustainable tourism criteria offered by the UNWTO?

- 1.1.2. If yes, did the planning include the opinion of organisations concerned with sustainable tourism development (such as UNWTO or Global Sustainable Tourism Council)? What opinions would that be?

2. Where local residents and businesses involved?

- 2.1.1. If yes, how were they involved? Could they give their opinion of advice?

- 2.1.2. If not, why not?

2.1.3. Did residents and businesses take actions themselves? What actions?

3. Did you feel the big resorts of Boracay voluntarily cooperated during the closure and rehabilitation?

4. At this moment tourist arrivals are restricted. Why did you implement these restrictions? Will they remain in the future?

5. The sewer system has been expanded and several illegal structures have been demolished. Do you think enough is done at this moment to guarantee the environmental quality on the island?

5.1. What was the reason of the increase of these illegal structures?

5.2. Who needs to control these structures now?

Collecting information about further actions

1. After six months of rehabilitation, Boracay has reopened for visitors. Do you feel tourism development has changed on the island now? Why (not)?

2. Where all planned actions completed before the opening? (Which ones did not?)

3. Which other actions are on the agenda?

4. Could you state that the environmental issues have been solved at this moment?

4.1. How big would be the risk that even more pressure is put on the environment in the future?

5. Boracay remains a popular destination. How does “the ideal” Boracay need to look like in the future?

5.1. Can Boracay still “grow” as a tourism destination? What kind of growth could that be? (economical, tourist arrivals,...)
