Collaboration between Nature Conservation and Tourism: A concept to identify inter-sectoral actions to manage a protected marine area

- A case study about Curacao and its Marine Park -

Master Thesis - Vivien Christin Kochan
Environmental and Infrastructure Planning
University of Groningen

Colophon

Title: Collaboration between Nature Conservation and Tourism: A concept to identify inter-sectoral actions to manage a protected marine area

Subtitle: A case study about Curacao and its Marine Park

Author: Vivien Christin Kochan, BSc
                  S3837580
                  vivienchristink@googlemail.com

Study Program: Double Degree Water and Coastal Management, Environmental and Infrastructure Planning

Internship: Carmabi Research Station, Willemstad, Curacao

Thesis Supervisor: Dr Inês Boavida-Portugal, University of Groningen

Second Reader: Dr Leena Karrasch, University of Oldenburg

Third Reader: Dr Emma Puerari, University of Groningen

Version: Final Version

Date: 08/07/2019

Picture front page: Director's Bay in the Curacao Marine Park by V. Kochan (16/06/2019)

Acknowledgement

This Master Thesis has been written to finalise my Double Degree Master 'Water and Coastal Management' of the University of Oldenburg and 'Environmental and Infrastructure Planning' of the University of Groningen at the Faculty of Spatial Sciences. Starting with a Bachelor of Science in Geography with a thematic specialisation in Environmental Law and Planning in Halle/Saale, I was able to gain new insights, knowledge and valuable lessons for the next period of my life after studying in Oldenburg and Groningen.

This Master Thesis is focused on combining the major interests of nature conservation and tourism in planning, which caught my interest during the past two years, personally and professionally. Therefore, choosing this topic was an easy choice for me. Supported by the opportunity of conducting on-site research and an internship on Curacao, I was able to implement a recent planning-related project as a case study: The creation of a management plan for the Curacao Marine Park.

On this point, I would like to thank my supervisor Inês Boavida-Portugal for her support in a constructive and especially kind and motivating way. Furthermore, I would like to thank my internship supervisor Mark Vermeij from Carmabi for the opportunity to work and experience Curacao and its marine environment, which gave me the possibility for the local insights I gained. Last but not least, I want to thank my family, especially my mother and all my friends for supporting me during the past years, through the up's and down's and for all their positive energy I needed to finalise my thesis and my studies.

Please enjoy reading this Master Thesis!

Vivien Christin Kochan

Groningen, July 2019

Abstract

Different interests, promoted through different stakeholders and the need to reach their own goal, e.g. economic development or sustainability, provide challenges when it comes to planning in a collaborative way. Aiming for a holistic view and finding consensus in planning for certain areas, conflicts occur and can result in mismanagement or negative consequences for environment, economy and population. The following Master Thesis investigates into the combination of two major interests: tourism development and nature conservation in an island environment, particularly expressing its importance through a case study concerning the Curacao Marine Park. Through different methods like semi-structured interviews and focus groups as well as the development of a concept, a set of inter-sectoral actions and relevant actors to implement these could be identified. Combined with on-site research, an in-depth insight could be gained which helped to understand the challenging complexity of the theory-practice gap in planning. Curacao as a developing tourist destination with partially healthy coral reefs and outstanding ecological value is in need for a planning approach and management method to a) promote especially dive tourism as an economic incentive in the tourism industry and b) protect and conserve the nature which makes Curacao special as a tourist destination. Therefore, this research focusses on identifying those actions, which support a more sustainable development for Curacao, which are based among others on measures like raising awareness, education and enforcement. A crucial element is the development of the management for the Curacao Marine Park, which supports the current relevance to find a feasible strategy through an adequate set of actions to combine the major interests of nature conservation and tourism.

Keywords: Collaboration in Planning, Combining Interests, Inter-sectoral Actions, Island Tourism, Marine Protected Areas, Nature Conservation in Planning

Table of Contents

List of Figures

List of Tables

List of Abbreviations and Acronyms

Cartagena	The Convention for the Protection and Development of the Marine Environment in WCR
CMP	Curacao Marine Park
DoC	Degree of Collaboration
MPA	Marine Protected Area
(M)GMN	Ministry for Public Health, Nature and Environment (Ministrie van Gesondheit, Milleu en Natuur (Curacao)
(M)VVRP	Ministry of Traffic, Transport and Urban Planning (Ministrie van Vekeer, Vervoer en Ruimtelijke Planning (Curacao))
NGO	Non-Governmental Organisation
SES	Socio-Ecological Systems
SoE	State of Environment
SPAW	Specially Protected Areas and Wildlife – Annex of the Cartagena Convention
TALC	Tourism Area Life Cycle
TMP	Tourism Master Plan (Curacao)
UNEP	United Nations Environment Programme
WCR	Wider Caribbean Region

Chapter 1 – Introduction

A preliminary part will help to understand the research question and its relevance in planning. The focus here lays upon sharing an overview before diving into the theoretical framework of related concepts.

(Picture: Piscadera Bay in Curacao, by V. Kochan)

1.1 The Relevance

The increasing importance of collaboration, communication and stakeholder involvement in planning (e.g. Brand & Gaffikin, 2007; Healey, 1996; Hytönen, 2016) leads the attention from the bigger holistic picture increasingly towards smaller projects and very particular areas (Restemeyer et al. 2016). Researching the effects of certain approaches in planning, simultaneously develops the urge to identify crucial factors and features for managing and implementing smaller plans as well, which may not have an international character at first sight where influences are more locally detectable.

Therefore, focussing on local developments can lead to interesting insights for very specific and detailed planning along with management approaches and measures, ideally allowing the possibility to draw conclusions for other relevant and similar cases. Here, the goal is to draw the attention from a holistic perspective in planning (see figure 1), with its origin in the very dominant and important tourism sector and the worldwide goal in achieving a more intensive nature conservation, towards the current state of the art of one particular protected marine area as a case study: The Curacao Marine Park (CMP) in the Dutch Caribbean.
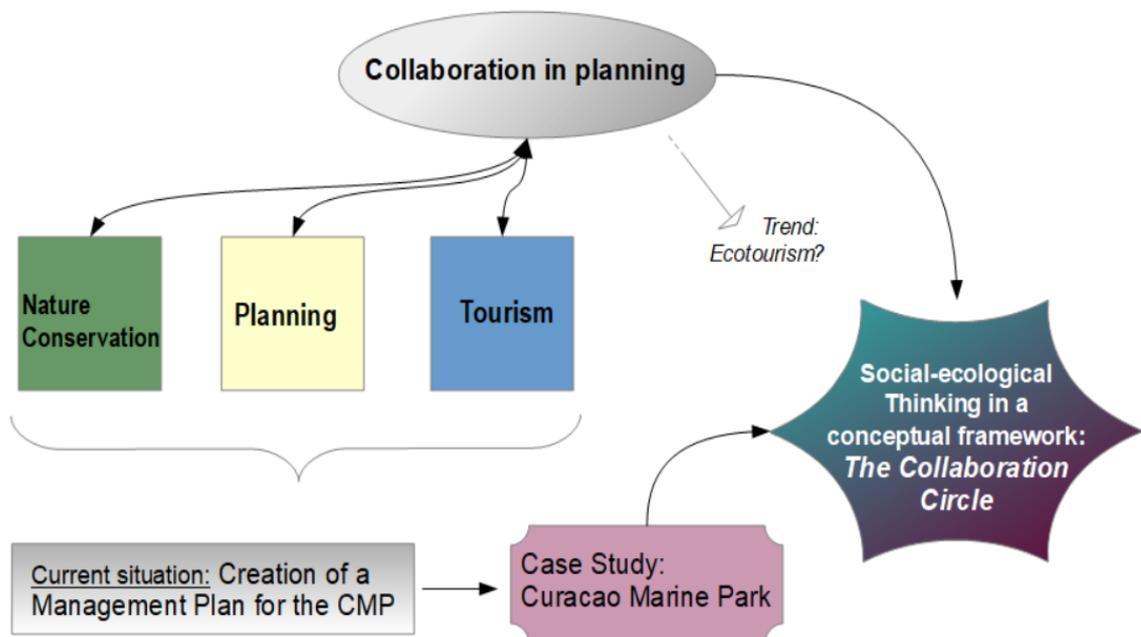
Figure 1: Framework of the Master Thesis

The development of a management plan is necessary to provide an effective administration and management of their objectives and goals. Executed by the Carmabi Research Station, which is located in Curacao, the set-up of the management plan gives room and reason to invest into the local circumstances, aiming to develop a context-dependent and tailor-made management plan. The opportunity for on-site research is given by different institutions due to the closure to the CMP, which additionally allows the management, monitoring and protection of the marine park and its valuable environment. Taking the creation of the management plan as an recent opportunity, the focus here lays upon the combination of different interests while aiming for the same goal. Questions appear regarding the CMP and its usage, especially in terms of its twofold purpose: the function as a tourist attraction, among others as a snorkelling

and dive-site, as well as its ecologically value which is worth protecting, supported through the nomination as a SPAW area (Specially Protected Areas and Wildlife in the Caribbean). Having these two perspectives in mind, two questions arise; 1) to what degree can a marine park actually deal with the stress produced by tourism and, most importantly, 2) what kind of actions can support the marine environment and its environmental status? Depending on the area, answering these questions is made possible due to different concepts as an often-used research topic, regarding negative impacts on ecosystems (e.g. Butler, 2006; Hawden et al. 2003; Niu & Cheng, 2019). Local and national governments do accept the pressures of tourism on nature and work towards more sustainable procedures - to keep the growth of the economically important tourism sector on the one hand, but also protect the natural environment, which is mostly the reason for tourism and visiting this particular area at all. Later in this thesis the concept of sustainable development in the tourism sector will be further explained under the specific term and trend of ''Ecotourism'' and its feasibility for the case study.

One of the most relevant reason for this chosen research topic is the creation of a management plan for the CMP in order to obtain protection and adequate planning to enforce a structured management. Its origin lays in the recent nomination to a potential designation as a Specially Protected Area and Wildlife (SPAW) under the Cartagena Protocol in the Wider Caribbean Region (WCR) in 2018 (Publicatieblad No 74, 2018), with its main objective of protecting the valuable marine environment within this particular area. A highly important factor is the nomination as a World Heritage Site in combination with the Bonaire National Marine Park, hence, according to its Outstanding Universal Value (OUV) description report (Wageningen Marine Research, 2017) both parks combined offer a unique area worth protecting and sustaining through an international status and adequate conventions as well as regulations. Having this in mind, the urgent need for a professional and tailor-made management plan and performing adequate planning is given, which will be a necessary component in reaching the potential designation given through UNEP in the future. This window of opportunity seems like a unique occasion in identifying and analysing the necessary actions and challenges for the future planning and the combination of their interests according to Curacao's context.

1.2   The Research Question

To draw the reader's attention towards a more planning related and important issue, stakeholder involvement and managing different interests on a governance level is a key element in planning in general. In the case of the CMP two major domains come together: Tourism and nature conservation. To further elaborate and work on a potential answer, the following research question creates the central outline of this master thesis:

> *How can the degree of collaboration between nature conservation and tourism of protected marine areas on islands be assessed to identify inter-sectoral actions?*

Answering this question will be supported by using several techniques and sub-questions regarding the combination of interests and the collaborative approach for the CMP. Five sub-questions will be used to recuperate a broad and opinion-rich answer towards the research question. Answering these sub-questions will be performed via interviews, literature review and on-site research in Curacao. An internship at the future managing authority of the CMP, the Carmabi Research Station, provides a sufficient view on the topic from different perspectives, both from officials and scientific experts, as well as relevant stakeholders.

The following sub-questions will play a crucial role in presenting the results illustrating the findings, summarised into five questions addressing a different topic under the umbrella of the central research question:

1. *What are the challenges that occur whilst managing the CMP aiming for nature conservation and a stable, even growth of the tourism sector?*
2. *To what degree are these sectors able to combine in order to lead to an effective planning and management in the case study of CMP?*
3. *Why is a collaboration of conservation and tourism a relevant factor to reach successful planning in a marine park?*
4. *What are the challenges while cooperating with many stakeholders and what role has the local government and ministries as well as other organisations had in this collaboration?*
5. *Is, and why is tourism and nature conservation hard to combine as an outcome of combined interests in an island marine park and what actions are potentially feasible?*

Chapter 2 – Theoretical Framework

Planning, explicitly planning in a collaborative and combining way will be the central topic of this chapter under the broader theoretical view of socio-ecological systems. A deeper view into planning will be given from two perspectives which need to be combined to reach a particular goal in a short- or long-term view, as well as on different levels. Focussing on recent trends in collaboration between the two domains will eventually lead to a feasible conceptual model, based on the current theoretical knowledge and the need for a compact and simplified way to illustrate actions and actors.

(Picture: Playa Lagun in Curacao, by V. Kochan)

2.1 Tourism

As one of the major industries worldwide, the tourism sector proves its importance on all different areas, either on an academic, public, governmental or industrial concern (Hall, 2008). The broad applicability of tourism brings positive and negative impacts to local, national and international levels, though highly dependent on the used perspective and point of view.

Tourism, an international dynamic force and an important part in the development process around the globe, is in itself sometimes understandable as contradictory and unequal. The benefit of tourism development is often visible in transnational stakeholders and investors, while especially local businesses are often lacking behind with bigger corporations (Reid, 2003). A first step towards analysing further on this topic is to clarify the meaning and characteristics of the term tourism. According to Williams (1998), tourism underlies the problem of being a subject with a variety of interpretations and meanings; perspectives and backgrounds of the term's usage do affect its meaning as well. Hence, difficulties do arise while labelling it into one singular definition. The United Nations World Tourism Organisation (UNWTO) provided through international communities work a conceptual framework which contains international definitions and classifications. Defining certain terms is essential to provide a clear understanding about the scope concerning tourism in this thesis. The following terms and definitions will give further insight into its meaning:

- *Tourist:* ,,A visitor (domestic, inbound or outbound) is classified as a tourist (or overnight visitor), if his/her trip includes an overnight stay.''
- *Tourism sector:* ,,The tourism sector, […] is the cluster of production units in different industries that provide consumption goods and services demanded by visitors. [...]''
- *Tourism:* ,,A social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes. These people are called visitors […] (tourists or excursionists) and tourism has to do with their activities, some of which imply tourism expenditure.''

Tourism and the travel industry can be seen as a system consisting of dynamic components and indefinite boundaries (Baggio, 2007). Especially tourism as a destination-based industry moves in form of a non-linear relationship and creates a complex system on its own; as Baggio (2007) describes it: a complex adaptive system. According to De Roo (2007), this complexity opens the need for communication and interactions with for instance other subjects and requires certain actions. Tourism can be categorised as a complex, socio-economic system (Darbellay & Stock, 2012). The role of complexity underlines the importance of seeing tourism and the tourism industry as a system on its own, in which roles and influences of other elements need to be clarified (Anuar et. al, 2012). Unfortunately, the understanding of inter-relationship between tourism and components is rather limited and sector-specific (McDonald, 2009), which makes the actual collaboration and connectivity to other sectors uncertain in this system. The role of uncertainty stressed by e.g. De Roo (2007), is an indicator for complexity and therefore also an important part when it comes to tourism and tourism development. This goes along with findings of studies in terms of tourism development and trends, which includes for instance ''alternative tourism'' in form of offering niche destinations for tourists (Anuar et. al, 2012). Unclear on this point is, after clarifying the need for inter-connectivity due to complexity of the

system, to what extent the collaboration and incorporation of other components and sectors is of relevance in practice.

2.2 Nature Conservation

Increasing environmental pressure due to e.g. excessive growth (Hughes, 2005) require the need for protecting and conserving natural resources. Firstly, the term can be further defined as all measures and investigations regarding the preservation of natural areas and resources as well as wildlife and its restoration (e.g. National Geographic Resource Library, 2019; IUCN, 2019). Instruments for certain protecting actions is needed, just as for instance identifying and designating a particular natural area and to coordinate land-use, including environmental geographies and its function as well as boundaries set by local and national government and politics (Richardson et al. (2016). Eventually, more authors stress about finding solutions to address the cause of a degrading effect in form of political actions and adapting institutional design to reach for instance an ecological modernisation (Jänicke, 2008; Warner, 2010; Jordan et. al, 2013). In relation to planning, the need for protection led to a form of control the physical environment in an absolute way and resulted in a high degree of top-down planning around the 1950's (De Roo & Porter, 2007). A paradigm shift changed this worldview. The need for control and certainty transformed towards systematic planning and the realisation, that certain areas need to be protected and conserved (Margules & Pressey, 2000), other areas are used for production, among others urban development which requires at the same time taking responsibility for the ecosystems and nature that is drastically changed (Hughes, 2005).

Since the application of nature conservation cannot be seen as a short-term instrument, the development of a strategic framework can be used to create a holistic view of the situation and corresponding measures. To find these measures and actions, an identification of the problem scope is necessary, which might be able through incorporating sustainable development into policy frameworks to address environmental concerns in all sectoral activities (Lafferty & Hovden, 2003). Key words are usually able to find within these frameworks, like 'resilience of natural areas', 'well-functioning ecosystems', 'community capacities' and 'connectivity' as written in the Nature Conservation Strategy 2013 – 2023 for Canberra (Australian Capital Territory, 2013). They create clear objectives what a particular framework and its strategies is aiming for and provide context-related goals according to local circumstances. According to Lindenmayer and Hunter (2010), 10 fundamental ideas can be presented as concepts for biological conservation (table 1):

Concepts for biological conservation	Theoretic planning approaches
conservation management needs goals and objectives	Goal-orientation
biodiversity management for maintaining or restoration	Ecological thinking
need for a holistic approach	Holistic thinking

a diversity of approaches to management to mitigate risk	Holistic thinking, multi-approach usage
use of nature's template is important	Ecological thinking, ''Building with nature''
focus on causes not symptoms is more efficient	Context-dependency
every species and ecosystem is unique to certain degree	Context-dependency
threshold responses important but not ubiquitous	Feedback learning
multiple stresses have critical effect on ecosystem	Holistic thinking, scenario planning
human values shape conservation efforts and are dynamic	Willingness and ability

(Table 1: Conservation concepts as theoretic planning approaches)

These concepts can be seen as a general guideline for objectives in terms of ecological complexity which need to be considered, but here the importance lays specifically on the local context, the capacities in terms of financial and human resources as well as the willingness and ability to change towards a more sustainable development and future. Many authors, among others Lafferty & Hovden (2003), Jordan (2007) and Warner (2010) do underline the importance of politics and to address ecological concerns in a critical way into policy frameworks. Within the same line of arguments, it becomes clear that the rather theoretical approaches are hard to realise due to different challenges. As concluded by Laffertey & Hovden (2003), the need to integrate environmental concerns in an inter-sectoral manner is given but changing the usual way of politics and governance structure is not yet accepted. I would argue that the need for more sustainable and conservational efforts are indeed realised, but as stated and concluded by authors like mentioned above, the practical struggle is given and harder to implement then it seems in theory due to context-dependent circumstances, complexity and uncertainty.

2.3 Collaboration in Planning

Collaborations in planning occur in a many-fold way; different sectors are connected, multi-level government in vertical and horizontal dimensions and governance approaches work in conjunction or contradictory interests to combine their visions and to reach an overarching goal, benefiting both of their actions. One of planning's' main aims is to combine interests and to work collectively towards a broader ambition (e.g. Healey, 2006; Goldstein, 2011). The purpose of this part is to further analyse the role of tourism in planning in a general context as well as their capability of collaboration regarding conservation aspects of the environment as well as to create a deeper meaning behind the term collaboration according to its compatibility with other major interests.

Communicative planning developed as the contradictory rationale to a functional-rational approach. The focus of collaborative or communicative planning lays upon the interactive relationship between the subjective, hence, the actors and stakeholders form the central component for planning (De Roo, 2007). Within an increasingly dynamic and therefore complex

society and development, the context in which planning and collaborations take place do increase, too. Interaction as a goal itself in planning (De Roo, 2007) raises questions at the same time, how the form of communication and collaboration should be conducted to understand and realise the complex dynamics of the environment (Healey, 1996). Important to mention is here, that the theoretical approaches for communicative approaches and collaborations do vary from the different national context and legal systems as well as the institutional design of the planning arena (Hytönen, 2016), which might be in my opinion an essential component when it comes to identifying challenges and benefits of one planning approach or another. The ,,reality of planning'' (Brand & Gaffikin, 2007, p. 282) needs to be considered, which is in favour to both the complexity of interactive planning and involved stakeholder range as well as the theory-practice gap. Apart from theoretical challenges which might differ from the complex reality, issues can occur regarding power-relations and information exchange while involving and collaborating with a certain number of stakeholders. The role of the planner is therefore of importance as well and how he or she is perceived in regard of social and political constructions (Forester, 1982). These kinds of unexpected behaviours and interpretations which go along with carrying on mis-information or struggles in power relations can create a barrier in performing a planning approach (De Roo, 2006). As many different and especially fundamental challenges occur in the theoretical approach of collaborative planning, I support the opinion of Goodspeed (2016) and his conclusion of making use of the normative and analytical insights derived from the communicative rationale in planning theory to research on theoretical weaknesses, which can be further developed as a basis to combine it with practical, context-dependent actions.

2.3.1 Inter-sectoral collaboration and actions

Apart from working together to a common goal with experts from the same or similar background e.g. within a company or interest group, collaborations do exist between sectors, which will be briefly explained by an example: The World Health Organisation and its inter-sectoral contribution to health and well-being. Impacts and influences which do affect the health sector are not necessarily located within the health sector but rather outside its exclusive jurisdiction, therefore a collaboration with other government sectors and the society is essential to apply required actions and to implement them into the system (WHO, 2019). According to WHO (2019), inter-sectoral action (ISA) is referring to "actions affecting health outcomes undertaken by sectors outside the health sector, possibly, but not necessarily, in collaboration with the health sector.'' (WHO: Social determinants of health, 2019).
The instrument of including other sectors and aiming for a common, overarching goal goes along with the concept of implementing environmental concerns into other sectors as well.

2.3.2 Socio-Ecological Systems

The theory behind SES can be seen as a highly relevant concept for further research in this study based on collaboration between the economically important tourism sector and environmental protection for nature conservational matters, which builds the foundation for the investigation on actions and strategies across domains. SES as a theory and concept has
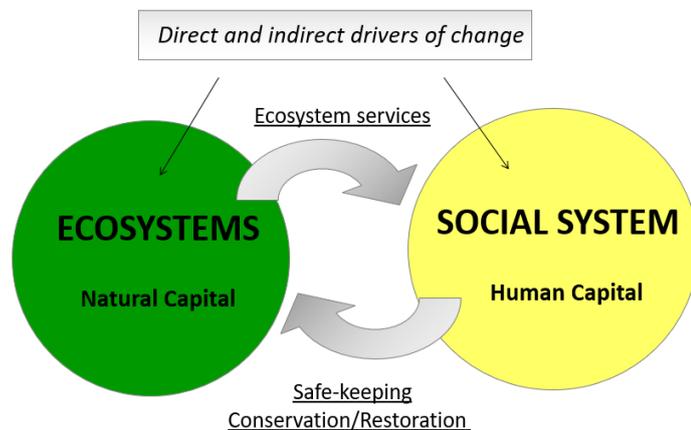

Figure 2: People-with-Nature

various definitions, Berkes & Folke (1998) describe SES as systems consisting of people and nature which are linked, where humans need to be seen as a part of nature instead of apart from it. The two domains or systems are essential in understanding the basis of interaction and the meaning of people-with-nature within the SES theory (figure 2). Redman et al. (2004) defined it more precisely as a complex system which is perpetually dynamic through ongoing adaptation. Relevant strengths of SES were identified due to the application of the SES concept by Pérez-Soba and Dwyer (2016) and can be taken into relation of combining interests of two domains: the collaboration across sectors and disciplines is given through SES due to a participatory approach, hence stakeholder involvement. The collaborative ability makes it a useful instrument in stakeholder communication, especially through the supportive function of analysing and assessing the specific context of public goods and ecosystem services and its relation to each other.

2.4 Collaborating: Tourism and Nature Conservation

Tourism as a booming industry means at the same time, that more space, more attractions, more unique experiences are needed to be offered to tourists, to stay attractive as a tourist destination– simply *more* is necessary nowadays. Almost every destination can be reached through different transportation facilities, which creates a competition within and between tourist destination on a national and international scope (Zirulia, 2011). This possibility for tourism to enter all kind of different natural highlights means at the same time stress for the environment. If there is a naturally occurring phenomena in a certain space, a transformation from site of a travel agency for instance will most likely happen to ensure the accessibility for tourism to make economic value of this local special feature. Here as an example can be mentioned the bioluminescence in the sea and on land. Bioluminescence occurs due to living organisms which create in response to physical movements and disruptions a flickering, bluish light (The Conversation, 2018). This spectacular natural phenomenon can be experienced through special tours, in e.g. islands like the Maldives or Jamaica, but also depending on the location it is accessible by self-organisation. As an example, in Jamaica is offered the 'Glistening

Waters Luminous Lagoon' tour (figure 3), a tour of about 45 minutes by boat through a small lagoon where the Caribbean Sea meets the Martha Brae River. In this lagoon, a natural occurrence of the microorganism dinoflagellates in the mixed fresh and salt water layer can be observed and physically experienced due to the possibility to swim in the warm and shallow water which enables the glow and bright colours (Glistening Waters, 2017). This example demonstrates the use of nature by human activities in the tourism sector, which does add an economic value on naturally occurring local specialities through the arrangement of a tour for easy and comfortable access to it and the right advertisement, since existence of the 'glowing waters' are nowadays a globally known fact.

Figure 3: Bioluminescence in Jamaica

2.4.1 Sustainability – a Development in Planning

Sustainability in planning can be generally seen as an overall development. In different fields, for instance water management, a shift to incorporate sustainable goals through for example ecosystem-based approaches is more and more desired (e.g. Schoeman et. al, 2014). Sustainable development – a term especially relevant for environmental politics, goes hand in hand with concepts like transition management and energy transitions. The shift towards more sustainability in governance is topic of different researches focussing on urban development, governance development and how to implement environmental concerns. In this sense, Broto (2017) stresses the difficulty to translate a certain policy action to achieve sustainability impacts. What is an essential component here, is that sustainability should be seen as a long-term goal. This opinion is supported by Lemos & Agrawal (2006), which focus on environmental governance and the hybrid models of, among others, co-management. Throughout the literature and the concept of sustainability, the innovative character was highlighted, especially through the combination with e.g. energy transition. Therefore, it should be kept in mind that sustainability is a new concept, which is by far not easy to implement and should be seen as a long-term goal. At the same time, the interrelatedness with environmental governance creates a high possibility to incorporate other sectors like tourism to form a development towards sustainable tourism.

2.4.2 Sustainable Tourism Development

Combining interests relates to incorporating specific aspects into e.g. one sector or another. Tourism development with a focus on sustainability aims as a new tourism form to consider environmental, economic as well as socio-cultural aspects into its management and planning strategies (Florek, 2012). To introduce it more into detail, the concept of carrying capacity will support the basic idea of calculating how much tourism an area can sustain, followed by Butler's concept of tourism development related to its interaction with its environment.

Tourism Carrying Capacity

The potential impact of tourism due to a certain number of visitors aims for a concept to ideally calculate and identify how much tourism a particular area can take, with other words, a carrying capacity. Originally emerged as a concept in the 1970s and 1980s, it resulted from the concern about tourism and its consequences for the environment they're surround themselves in and eventually, how to assess it (Mason, 2004). Zelenka & Kacetl (2014) investigated into this topic and describe it as a rather theoretical and pragmatic, even intuitively way of bringing sustainability within tourism into context. On the other side, it provides potential especially for protected areas and attractions in nature and its potential as a tourism destination. If a destination has no estimations about its number of visitors it can sustain, problems and challenges for future development can occur. This can happen due to miscalculation and no adequate control especially in developing countries which results in overcapacity, hence, destruction of valuable sites and nature in the developed tourist area (O'Reilly, 1986). The importance of calculating and estimating the capacity an area can take seems important, especially while focussing on the vulnerability of certain places. The question appears on this point, to what extent the described rather theoretical concept is an adequate tool. The major focus here should be laying upon its implementation in tourism planning at all, while keeping measurement challenges in mind (O'Reilly, 1986). As Butler (1996) argues, there is a need to implement techniques within planning and management to identify a number which is feasible for a destination to handle and to sustain, without destructing it. Within the last decade, the concept of identifying carrying capacities for tourist destinations was applied or further investigated, which shows a certain interest and importance of this model.

The problem of over-tourism and overcrowding, describing the effect of a fall in quality because of too many visitors to an unacceptable level (Goodwin, 2017), is acknowledged. This gives evidence through the application of the concept of carrying capacity in a social context for e.g. the coastal destination Costa del Sol (Jurado et al., 2013). As the main problems around this concept are identified as a lacking definition and lacking application structure, adapted versions with more clear visions can and were applied; of essential support here was the European Commission Special Project, aiming for defining measures & evaluation for carrying capacity in tourist destinations in Europe. (Mason, 2004).

Tourism Area Life Circle

As a further analysis of tourism and its potential to collaborate with nature conservation, Butler's concept will be briefly introduced.

The tourism development is illustrated in different
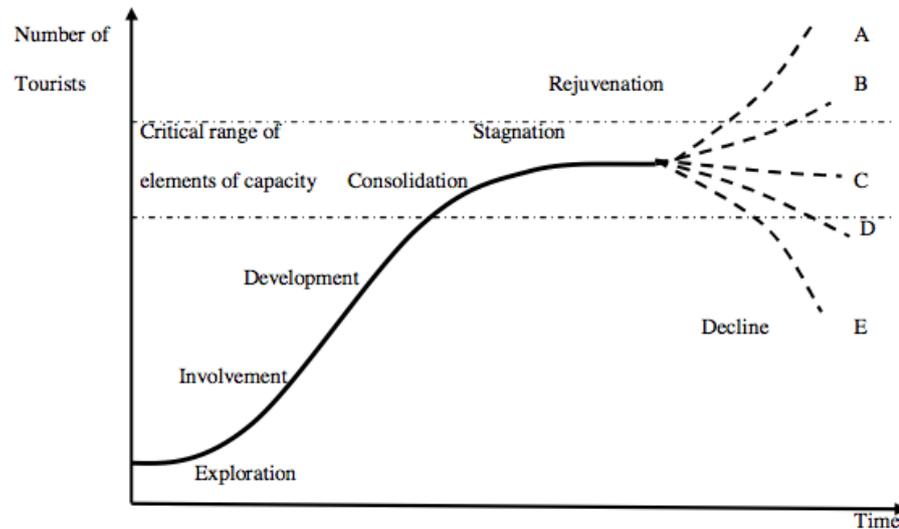
Figure 4: Butler's TALC

phases (figure 4), which eventually lead to different scenarios of development, indicated through the letters A – E as a final stage. His work started in 1980 with a debate about carrying capacity of tourism and sustainability, which concluded in a need for a careful management to avoid destruction of tourist resources (Butler, 1980). According to Butler (1980), the scenarios as the final stage can lead to the following developments:

- A = redevelopment with renewed growth & expansion
- B = continued growth due to minor modifications and adjustments to capacity levels
- C = stable level of visitation enabled through readjustments on all capacity levels
- D = market decline due to resource overuse and decreasing competitiveness
- E = intermediate decline due to disease, war, catastrophe

According to Uysal et al., 2011, the resources of an area and tourism do create an interaction which both affects the tourist as visitors and the nature as the visited environment. As described in Butler (1980), essential for tourism development is the carrying capacity and reaching of certain levels, which are able to identify according to environmental factors just as quality of water and air, social factors like areas being too crowded, but also ''physical plant'' which are for instance limits in accommodation. The focus here in context of marine parks and protected areas lays dominantly therefore on environmental factors which do interact with the number of tourist and the impact they have on the environment.

This interaction is an essential statement for further analysing the development of tourism through the TALC model and the impact on the state of the art of nature and environment of these areas.

Ecotourism

As a promising concept towards a sustainable development and integration of environmental protection aspects within the tourism industry, ecotourism provides an incentive for change towards combining sustainable travelling, conservation and communities (TIES, 2019). The United Nations designated 2002 as the year of Ecotourism, in 2003 existing essential challenges were already identified, among other a lack of clear definitions and the correct meaning behind

13

the term 'Ecotourism' (Garrod & Wilson, 2003), as well as the used criteria and its scope, additionally essential aspects regarding operationalisation and planning (Diamantis, 2010). A definition provided by The International Ecotourism Society (2019), can be given by ''responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involved interpretation and education''. Generally, ecotourism provides three components regarding travelling and how it 'should' be: sustainable, educational and natural-based (Diamantis, 2010; Fennell & Weaver, 2008). Hence, it is addressing a rather broad field of actions needed to implement and apply the concept. Theoretically, the idea and aim of the concept shows a desirable direction with the focus on learning about nature and minimising impacts to it (Tourism New South Wales, 2013); but according to Diamantis (2010) attention has to be paid to not overuse the term through overmarketing for instance. This could be seen as a reason for its rather unclear definition and limitations in understanding, what ecotourism is and how it will be applied in certain destinations. Fennell & Weaver (2008) understand the need for a concept which is more comprehensive according to the soft dimensions (e.g. larger groups, short and multi-purpose trips) and hard dimensions (small groups, long and specialised trips) of the ecotourism sector. This brings up the idea about a development on international network based, inter-disciplinary and complexity addressing method: Ecotourims.

Based on the networking on an international level of protected areas to promote a change in a socioeconomic way for maintaining and improving protected areas (Fennell & Weaver, 2008), the concept basically develops from the fundaments of ecotourism. Here again, addressed are the core elements of research and education, ecological health as well as a participatory development, partnership and community.

2.5 Combining Interests

Combining interests does not always proceed in a positive way and free from conflicts. Natural areas are dealing with differing, major interests. In this context, Laing et al. (2011) identified the number of outcomes relevant for the natural-resource management and the tourism sector through partnerships for protected areas. This can result in e.g. local community engagement and benefits for them as well as an improved biodiversity conservation, which leads to the outcome of an increased visitation (Laing et al. 2011). As mentioned above, the concept of inter-sectoral actions (ISA) can be seen as an instrument to combine sectors through actions to reach a goal for the common good. But the question appears, to what degree the interests are contradictory when it comes to tourism and its economic importance and its adaptation to provide sustainable management to ensure environmental protection.

The interests of different levels, sectors are represented through stakeholders. According to Adimu et al. (2017) a division of stakeholder groups can be done in threefold way:
• government: central & local
• private groups
• local communities

Additionally, the roles of the stakeholders can be divided depending to each case into subjects, key players, crowd and context-setters (Adimu et al., 2017). A major step is the stakeholder identification and its classification regarding each case; in this work relevant is the role in nature

conservation and tourism, which will help to understand the relationships.

Management

To implement ecological aspects into tourism or economic aspects into nature conservation, planning and management gain an overarching role. Budowksi (2009) for instance is promoting a broad relationship in a rather symbiotic way, which can result in a number of beneficial and advantaging effects for a country or area. It requires that the tourism industry is more based and focussed on its natural resources and therefore an ecological perspective within economy should be included and considered in an effective way. Project outputs show that especially adaptive management combined with local information collection forms a basis for this relationship (Goodwin et al, 1997). Other investigations built on the natural resource management and its linkage to tourist satisfaction in Australia's Great Barrier Reef, based on the view that a positive tourist experience is based on nature conservation and its value to create partnerships (Coghlan, 2011). Especially for management, the option to incorporate adaptive capacity should be taken seriously to be able to cope with uncertainties for long-term planning. The concept of adaptive management is a component based on experimentation and a cycle of planning, doing, monitoring and evaluating which eventually results in a structured learning process (Schoeman et. al, 2014). In the same line, this concept needs to be seen critically, since it requires the ability to experiment and to implement innovations. As Hasnoot et. al (2013) state, uncertainty in planning and management call for the need of dynamic actions over time. This indicates the need for providing long-term solutions based on the actual ability and resources of an area for instance, to cope with adaptive management and develop step-wise approaches.

2.6 The Conceptual Model

The existing situation does show a number of important key elements which play an essential role in combining tourism with nature conservation. The focus of this master thesis lays upon the challenges occurring in planning and management while working collaboratively with actions on an inter-sectoral basis, aiming to combine different interests, stakeholders and multi-level governmental activities. Here important are the three key elements: Nature conservation, planning and tourism, which will play the major role in the continuing research.

2.6.1 Degree of Collaboration

To create a basis for describing, assessing and analysing the current situation in Curacao, a conceptual model was created. It allows to apply certain actions due to e.g. suitable governance on corresponding and adequate levels to create a desired outcome, ideally improving the collaboration level. As previously introduced in the theoretical framework, a crucial foundation has been built upon Butler's Tourism Area Life Cycle and the theory behind tourism capacity as well as the concept of ecotourism and sustainability. To actually combine these elements, the focus was directed towards the theory of socio-ecological systems and combining interests through collaborative planning and ISA. Since the used conceptual model consists of two parts, the first stage to identify the current state of the art in form of a ''Degree of Collaboration'' (DoC) will be used as a starting point for further analysing which actions are feasible, based on the existing DoC in the case study.
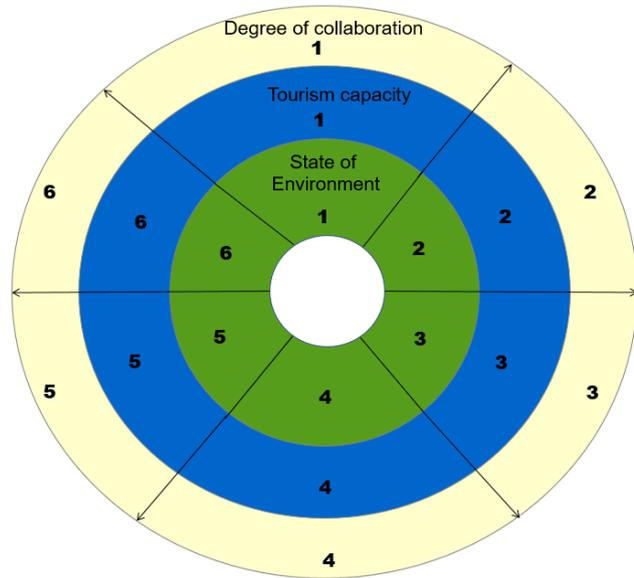
Figure 5: The 'ideal' case model of the Degree of Collaboration

Figure 5 illustrates the 'ideal case' model of the Collaboration Circle, which will give insight in the possible collaboration between nature conservation and tourism. Additionally, the meaning behind each degree of each section of State of Environment (SoE), Tourism Capacity (TC) and the DoC will be explained. All three sections are divided into the degrees 1 till 6. 1 is generally describable as low in degradation and low in numbers of tourists; 6 contradictory shows a high degradation as well as an intensive amount of tourism. The goal of this concept is to draw conclusions in form of a ''Degree of Collaboration'' in three steps:

1.) If the environment in a particular place shows according to table 2 certain characteristics after assessments by experts, it can be classified as an environmental degradation Type $1-6$

2.) If the tourism capacity in the same place shows according to table 3 certain characteristic after assessments by experts, it can be classified as Type $1-6$ as well.

3.) As a final step to reach a degree of collaboration, both types need to be combined. Here is the ideal case, that both numbers are identical, for example: State of Environment and tourism capacity are identified as a ''Type 1'', the resulting degree of collaboration would be a ''Degree 1''.

If the numbers vary, which will be most likely the case in practice, both numbers will be added and divided by 2.

Example: SoE is a Type 6, TC is a Type 1; 6 + 1 = 7 : 2 = 3,5 and rounded up to Type 4 Collaboration.

In practice, this ''ideal'' case model doesn't apply as simple as illustrated theoretically. The environmental degradation is in most cases higher than expected and therefore suffers more from the tourism capacity, which was expected to be manageable for the local nature. For this

16

case, the collaboration model is applicable for the current state of the art to give an assessment and a simplified overview for the current damage the tourism capacity is creating and most importantly, which actions are adequate to apply. As a step after defining the current DoC, the conceptual model to identify ISA will be introduced and applied for further research on the case study.

DoC	Classification	Description
1	Very good	State of environment is very good – good combined with a low number of tourists
2	Good	Tourism capacity and nature are in a good overall state
3	Feasible	Nature can cope with tourism, still buffer; **actions needed from this point on**
4	Insufficient	Nature not capable with (growing/developing) tourism, damage starts
5	Bad	Nature is damaged by too many tourists and activities
6	Very bad	Tourism too intense, environment is irreversible destructed

(*Table 2: Degree of Collaboration*)

State of the Environment, degradation and conservation efforts

A fundamental part of the circle and a major interest this research is dealing with, is the current state of the environment, which will give further insight into measures necessary to provide nature conservation and protection as an overarching goal. Therefore, chosen here is the term ''state of the environment'', which will be identified through adequate experts. Scientists and researchers which are working in this environment were interviewed and asked particular questions via semi-structured interviews and focus groups, as well as on-site observation (see Chapter 5: Analysis and Findings) through an internship. The six categories were chosen to create a coherent relation in six stages together with the classification for tourism capacity (see below). An effect of the DoC is to provide a comprehensive and easy-accessible overview as an outcome of the concept, the classification aimed to include key words which derived from scientists and researchers and how they assessed the environment in a simplistic way. Aim was to bring the complexity of current environmental issues, its well-being and degradation into a classification, which allows to provide a starting point for the further application of the second part of the conceptual model. The scope to include a full environmental assessment analysis for instance would be out of range for this master thesis, therefore I decided to create a classification based on different sources of qualitative data and literature as well as report review, to provide an easy-accessible overview to continue working with the current state of the environment.

SoE	Classification	Description
1	Very good	Healthy environment, fully functioning ecosystems
2	Good	Good overall state, sensitive systems are slowly affected
3	Acceptable	Ecosystems do function, thresholds partly reached soon for sensitive systems
4	Inacceptable	Party lack of functioning ecosystems, limited ecosystem services
5	Bad	Damages, loss of functions and ecosystem services
6	Very bad	Irreversible destroyed ecosystems and nature

(*Table 3: State of the Environment, including environmental degradation*)

Tourism Capacity

The used term tourism capacity will give in this context insight into actual numbers of tourists an area contains. If concrete numbers are unavailable for a certain region, an estimated number will be used based on the annual arrival number. Fundamental for these data are annual reports or analysis by experts from corresponding tourism organisations or economic bodies. As described in Part 1 – Carrying Capacity, an exact identification of tourism capacity is challenging and out of scope for this thesis, therefore will be used an individual estimation based on the data collection to create a broad overview about the tourism situation.

TC	Classification	Description
1	Very low	Very limited hotels and touristic activities but dominated by local people
2	Low	Touristy areas, tendency to more development, still a niche market
3	Middle – low	Raising economic dependency, increasing development, growing visitor numbers
4	Middle – high	Economy dependent on tourism, many hotels and activities, much advertisement
5	High	Overcrowded sites and areas, tourism main economic profit
6	Very high	''Mass-tourism''

(Table 4: Tourism Capacity)

2.6.2 The Collaboration Circle

The conceptual model contains two parts; the first step is to identify the current Degree of Collaboration as described previously, the second part (figure 6) enables the current DoC to take further long-term steps within a collaboration circle and a feedback-loop to eventually change governance patters towards a better combination of the objectives of the two sectors. The feedback-loop provides adaptive capacity and a learning-opportunity as an identification process to reach long-term feasibility. The first part is mainly based on previous research and analysis from an economic and ecological perspective and will not be further changed in this chapter.

Essentially here is the second part to make the Collaboration Circle context-dependent and tailor-made for the case of Curacao. Therefore, the case study needs to be investigated into these 5 steps, to make the Collaboration Circle work as a conceptual model:
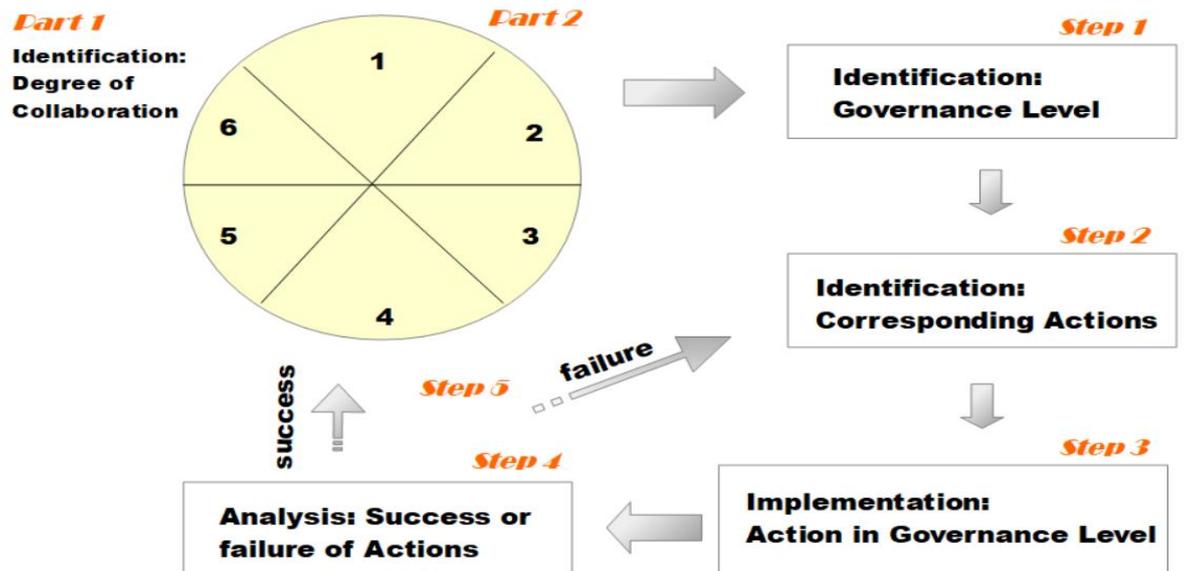
Figure 6: The Collaboration Circle with a feedback-loop

This model was used as a robust guide to conduct the research and to identify corresponding and appropriate actions. This was done through five steps, which will be explained further. The model was necessary to structure the research and data collection and to provide an overview of what is necessary to incorporate, e.g. which governance levels should be considered, and what is feasible and possible in this context, e.g. what are the corresponding actions based on each governance level.

Steps:

- **Collaboration Circle: Part 1**, identifying the Degree of Collaboration (DoC). The identification process is based on reports, assessments etc. by experts of the relevant sector, as well as a primary data collection through interviews and focus groups. Resulting from this first part is a DoC in one of the degrees between 1 and 6; this will be used as a starting point for the conceptual model to start with as a strategic step-by-step model to further identify inter-sectoral actions.

- **Collaboration Circle: Part 2**. DoC as a starting point to analyse required governance levels and action based on the current state of the art in terms of collaboration. In the second part of the model, the focus lays upon providing context-dependent elements, on the one hand through the actual current degree of collaboration as well as questioning the possibilities for this context. Hence, the result will provide a tailor-made overview for the specific circumstances in the case study area.

- **Step 1: Identifying governance level**. At first, necessary levels of governance and responsible bodies outside the government need to be identified. This happens based on the DoC, the logic behind it is as following: a lower number, e.g. a Degree 2, requires less governmental and top-down forces and actions than a rather critical DoC, e.g. a Degree 4 or 5. Therefore, based on the DoC, a tendency of who to involve should be given, to find the responsible levels and bodies for the following actions.

- **Step 2: Identifying corresponding actions to governance level**. Similar to step 1, the DoC creates the starting point of how urgent actions are needed, e.g. also if it has to be a short-term, immediate intervention or a long-term strategy adaptation due to a stable environment and slowly increasing tourism number for instance. Important is here, that the actions are inter-sectoral. This means, both sectors need to be equally addressed, either through support sustainable planning in the long-term or to find short-term solutions for immediate reactions, depending on the current state of both interests.

- **Step 3: Implementation of actions in governance body.** After responsible bodies, actors and actions are identified, the information of who and what need to be implemented into a strategic plan. Therefore, an in-depth knowledge is essential to find windows of opportunities of how to incorporate such inter-sectoral actions. This can result in either a new strategy or an existing document for instance.

- **Step 4: Analysis of action**. For long- and short-term actions, an identification within a certain time frame has to be conducted which identifies if a certain action or strategy lead to success in form of a better DoC and therefore better collaboration between the interests or a failure, which means no improvement or even a worsening. Different assessments can be conducted to analyse the strategies' development, although it is highly dependent on the decided set of actions and the actors involved.

- **Step 5: Success/Failure, depending on step 4**. A feed-back loop was incorporated into the conceptual model to provide adaptive capacity and to enhance the opportunity to make direct changes if a failure was identified. If that is the case, the feedback-loop will lead to step 2 and to another chance of finding adequate actions and actors on an inter-sectoral basis. Based on the analysis and its result, the ability to assess the actions used will additionally lead to a learning process and the greater good to draw conclusions of ISA; basically, addressing the question of what can work in this certain situation on the long- or short-term.

This 5-step approach within the second part of the Collaboration Circle aims for a potential change in governance strategies, particularly in their choice of actions, its feasibility to combine actions in an inter-sectoral manner as well as its implementation. To proof the applicability of the conceptual model, a case study will be held supported through on-site research and interviews with relevant stakeholders. Due to an internship and project-related work with the case study area, field observation will bring deeper insight into the current actions and actors involved for the relevant area, which will be introduced in the following chapter.

Chapter 3 – The Case Study

This chapter will give an overview about the on-site data collection as well as the chosen case study: Curacao and its Marine Park. The focus lays upon the current situation of tourism, nature conservation and collaborative efforts in Curacao's planning.

(Picture: The coral reef at Director's Bay in the CMP by V. Kochan)

3.1 Marine Protected Areas & Marine Parks- General

Protected Marine Areas

Marine Protected Areas (MPA's) provide protection and management of a certain natural marine area, aiming for preservation of the natural state of these environments as a management tool supported through regulations, to mitigate with impacts like development, overfishing and natural events (Mayr et al., 2010). Human-induced disturbances to the nature are here central, major challenges are created through coastal development, fishery, pollution and tourism (Claudet, 2011). Conserving a certain area as a MPA differs in its reasoning: economic resources, special biodiversity conservation or species protection can be named here as incentives to create a MPA (IUCN, 2019). Different zones are implemented which either identify a permitted or non-permitted use of certain behaviour and actions, e.g. fishing. Since the reason of establishing such a MPA varies, it is essential to include experts in analysing and

setting up of zones and the area itself, to clarify ecological aspects just as dynamics within species for example. These dynamics should be considered (figure 7), to set up an additional measure for protection: the buffer zone. MPA's can be seen as a multidisciplinary approach, since it involves ecology, fisheries science, sociology, genetics, statistics and economics (Claudet, 2011). To ensure that the MPA as a measure for protection and management will be successful, a collaboration of different actors is indispensable. Support should be ideally given to provide surveillance, monitoring and enforcement (IUCN MPA,

Figure 7: Dolphins in Curacao. Marine animals don't stay at the same place, this needs to be considered while designing protected areas and buffer zones.

2019) of the created objectives in form of a management plan and a designated body for necessary actions.

Marine Parks

A marine park is a form of marine protected areas, short MPA as explained above, which can be described as an ocean area with governmental restrictions on human activities. As this case study is particularly dealing with marine parks, the dimension of human usage and activities needs to be clarified and further explained. Generally, marine parks can be seen as a MPA section with a multiple-use, including a number of zones in which different activities are allowed to execute (National Geographic Society, 2019). Activities performance here can be summarized as recreational activities; boating, diving and snorkelling as well as sport fishing are typical exercises.

Typical uses and activities within a Marine Park can be generally identified as:

- Fishermen: fishing activities from either boat and therefore located in the MPA itself, or from shore
- Ships: Import and export of products and material
- Navy/Military, Coast Guard: attack and defend the area
- Hotels, Resorts: coastline is used for tourist services and construction of

accommodation
- Tourists, Locals: recreational activities, swimming, using the beach etc
- Surfers: access from the beach for water sport
- Divers, Snorkellers: Water sport and recreation
- Scientists: conducting research and monitoring

(National Geographic Society, 2019)

3.2 Curacao and its Marine Park

The Curacao Marine Park is located on the eastern part of the island and measures 21,7 km in length and 100m wide from the low water level until off shore (figure 8). It covers a coral reef, particularly a fringing reef of about 217 hectares. Worth mentioning here is the original version of the 'Marine Underwater Park' from 1983 was not able to sustain by Carmabi due to limited funds. In

(Figure 8: Map of the CMP)

2015, the Curacao Government decided to renew the Marine Park and shift its boundaries to incorporate the newly discovered reefs with a coral cover of 60% and excluded areas which were highly degraded by coastal development, e.g. the tourist area 'Jan Thiel'. The high value of this area makes it worth protecting to ensure the functioning of the ecological network, including five habitat types: coralline algae, mangroves, seagrass beds, seaweed fields and coral reefs with about 68 coral species (Debrot et. al, 2017). The currently ongoing coastal development requires a form of compensation, therefore the Curacao Government decided to designate this renewed version of the Marine Park and to protect their species and habitats by law. This compensation was mainly the reason because of a construction of a new mega pier on Curacao's south coast due to the importance of shipping activities. The international protection through the SPAW nomination would bring the conservation and protection efforts on another stage in terms of practicability in the long-term. Enforcement of rules and guidelines were not taken seriously due to, among others, cultural unacceptance; this additionally requires adequate actions on the short-term.

3.2.1 Tourism in Curacao

The tourism sector in Curacao made in 2017 18% of the islands economy (Tourism Master Plan, 2018; Blue Halo, Waitt, Sustainable Fisheries Group, 2016). A strong dependence on other sectors and markets nationally as well as internationally is given and therefore has an impact on Curacao's development due to close connectivity. Here important to mention is that Curacao's marine resources having a substantive contribution to its economy, providing an estimated value of Marine Tourism (figure 9) of 373,5$ million USD to the annually economy (Blue Halo, Waitt, Sustainable Fisheries Group, 2016). As main trading partners can be identified the United States of America and the Netherlands (Central Bank, 2017). Around 23% of jobs are directly or indirectly connected to tourism on the island (Annual report 2017), which increases the dependency on a stable tourism sector from the perspective of the local people. The local population can benefit from a stronger development within the sector in terms of job growth, which is among others a reason

(Figure 9: Public beach in Curacao)

the local population supports this development. To ensure a stability after disturbances in the recent years due to differing reasons, like extreme weather hazards, the Tourism Master Plan was developed and approved in 2015 as the main concept for tourism development. The Annual Report of 2017 was of big help here, it enabled a re-evaluation of the TMP in 2018: current circumstances could be identified, readjustments on time frames took place, as well as new assessments on visitor arrivals, budgets, marketing goals and contingencies could be conducted. These adjustments did leave enough flexibility in the planning process for urgently needed adaptations given to current local changes. Positive facts are the perspective from a bottom-up research and an intensive stakeholder involvement, which goes along with collaborative planning and a communicative approach. Problems where identified particularly on a micro-level due to soft component deficits in form of, among others, human capital development, service delivery and institutional support; this leads to an insufficient performance.

When it comes to tourism planning in Curacao, the main strategy is based on the Annual reports as well as the TMP. Therefore, the content will be further explained as a promising base for a further analysis of the situation in terms of tourism in Curacao and the possibilities to combine nature conservation.

The target markets – solutions through dependency

The tourism sector relies on its target markets; this is not only an essential step in analysing measurement points (see figure 10) which gives insight into where the tourists actually come from, more to identify strategies to cope with the needs, wishes and expectations of tourists from a certain country or even continent. The main target markets for Curacao are as following: North America, Europe, Caribbean, South America. The Annual Report 2017 identified the top countries providing the most visitors in 2017 for Curacao (table 5), by far as the first to name is the Netherlands. Since the information are based on an

(Figure 10: Measurement point for improvement in the tourism sector)

analysis from 2017, it is important to mention that Venezuela cannot be seen as a key market anymore in 2019 due to given circumstances within its economic and political situation. A report from 2018 would be needed to express the most recent changes or even actual statistics, which is right now work in progress and therefore not available (CHATA, 2019). A further development together with the Venezuelan market is therefore uncertain and at this moment it cannot be further considered.

The main and most promising instrument to ensure a growth in the tourism sector in Curacao is the Tourism Master Plan and its context-dependent strategies (figure 11). Widening the market after losses in the sector was necessary, also to realise the high dependency on airlines. KLM contributed e.g. with 5 more flights on a weekly basis as well as more airlines and countries

(Figure 11: Strategies of the TMP for tourism Improvement)

included Curacao as a destination in the recent years, partly as an aftermath of good communication and negotiations (Annual report, 2017; KLM, 2019).

A major challenge for the sector is funding which created a bottleneck for all the ideas developed. Another problematic situation for the islands' economy is the political situation in Venezuela as mentioned above, also cancellations of ''Insel Air'' flights, airline strikes and schedule changes. Other reasons which affect the tourism sector are broadly spread, just like bankruptcies and simply avoiding travelling to Curacao because of misinformation in hurricane seasons, which does not affect the island as it is lying below the hurricane belt in the Caribbean. Positive developments were created due to a collaboration with the Curacao Hospitality and Tourism Association (CHATA). Communication and collaboration are accepted as important techniques for development, therefore discussions with responsible bodies in Aruba were arranged about possibilities in the future regarding destination management. Another milestone can be seen in a creating a stronger connection with stakeholders and the including of them in the TMP committees.

To face challenges which are present even though positive changes were already made, mitigation is essential to promote Curacao as a destination. The mitigation strategies vary from continent to continent and differ between the countries, summarized in table 5.

Key market	Focussed countries	Influence	Mitigation strategy
North America	United States of America, Canada	Efforts in regional offices & local travel agents	Marketing campaigns, interaction, local training
South America	Venezuela, Colombia, Brazil, Ecuador	Critical economical & political situation, increase & growth potential	Media plan, collaboration with tour operators
Caribbean	Aruba, Surinam	Limited budgets, events as incentive	Promotion of events
Europe	Netherlands, Germany	KLM increased flights	Interconnectivity Dutch islands

(Table 5: Key markets and development in 2017)

For North America, efforts were mainly made in terms of advancing regional offices and training local travel agents to introduce Curacao as an attractive destination, combined with marketing campaigns and interactions to reach out to potential consumers. In Europe, having the Netherlands as the main market contributor, is highly dependent on interconnectivity between the other Dutch islands and connecting flights as it is now increasingly provided by the Airline KLM. Also, Germany has shown a notable growth, studies show that the Amsterdam connection has a positive effect for German travellers (Annual Report, 2017). The situation in South America can be described as diverse. Critical economic and political situation, as it is e.g. now to a very high degree in Venezuela has a huge impact which does not allow to perform a mitigation strategy at all. Fortunately, Colombian travellers increased, a media plan for Brazil was developed which includes famous social-media influencer and a potential growth for Ecuador was analysed as well, having an increase of already 40% from 2016 to 2017, enabled through successful collaborations with tour operators.

Other Caribbean countries, just like Aruba and Surinam, depend their arrivals on events in Curacao which offers a reason to visit. Here to name are e.g. the Curacao North Sea Jazz Festival. An ongoing challenge for the Caribbean market though is the limited budget and the travel costs between islands.

The analysis provided through the Annual Report 2017 and the setup of the TMP gave insight into the important role of research to analyse aspects just as spending possibilities by tourists from a certain area and effectiveness of promotional efforts and impacts. But mainly as adequate mitigation strategies the tourism sector in Curacao relies on digital marketing, communication, strategy development and product planning. These kinds of measures are important to reach potential consumers and to raise awareness about the potential of Curacao. As an outlook, it can be concluded that a maintenance and upgrading of tourists' areas is essential through co-operations and collaborations on the national and international scale; as mentioned above the provided service capacity is not optimally fulfilled and could be improved. As a critical point to mention here is the lack of coordination, which is still a major problem when it comes to government institutions. This also includes tourism safety and to raise more local awareness. A first update was made in terms of finances. The tourism development relied

on government subsidies and supplements with funds from room taxes. Here, the government changed its policy and the room tax was replaced with sales tax.

3.2.2 Nature Conservation in Curacao

As a key element to support environmental protection and nature conservation in Curacao, a variety of reports, analysis and assessments is provided, dealing with the important habitats of coral reefs, mangroves and sea grasses as valuable marine ecosystems (Blue Halo, Waitt, Sustainable Fisheries Group, 2016). From a scientific point of view, this analysis does result from partnerships, like e.g. Blue Halo Curacao, in raising awareness about its development. Assessing and identifying these important ecosystems and its value does ideally contribute to nature conservation on the one hand and economic benefit on the other trough for example ocean zoning. Comprehensive ocean zoning is therefore seen in the context of Curacao as a potential strategy to preserve marine resources while promoting economic growth, which needs to be continually incorporated into a national zoning plan (Blue Halo, Waitt, Sustainable Fisheries Group, 2016).

The political situation as Curacao being an autonomous country within the Kingdom of the Netherlands cover a number of key international instruments, aiming for environmental protection (Environment Law Institute, 2016):

Title	Explanation
Cartagena Convention	Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region
SPAW Protocol	Specially Protected Areas and Wildlife Protocol (Cartagena Convention)
CBD	Convention on Biological Diversity
Ramsar Convention	Convention on Wetlands of International Importance
Sea Turtle Conservation	Inter-American Convention for the Protection and Convention of Sea Turtles
Bonn Convention	Convention on Migratory Species of Wild Animals
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
Oil Spill Protocol	Protocol (Cartagena Convention) Concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region
OPRC	International Convention on Oil Pollution Preparedness, Response and Co-operation
MARPOL	International Convention for the Prevention of Pollution from Ships
London Convention	Convention on the Prevention of Marine Pollution by Dumbing of Wastes and Other Matter
UNCLOS	UN Convention on the Law of the Sea

(*Table 6: Conventions regarding Curacao's natural protection*)

The number of international conventions stresses the importance of Curacao's nature. Special attention should be given to the area Eastpoint located within the CMP, an uninhabited area of

60 km² with an ecological diversity of inland bays, coral reefs, sea grass and mangroves, which is owned by one single person. As mentioned above, partnerships are available, the international importance is given, but a lack of access and development in terms of enforcement seems to be problematic, since proposals for protecting this unique and special area were presented in the last years (Sustainable Fisheries Group, 2015).

3.3 Collaboration – Management, Planning and Partnerships in Curacao

An example based on on-site observation in Curacao does show impacts of degradation due to, among others, tourism in a certain area. This example is for comprehensiveness of the local situation according to collaboration and is not located within the CMP, neither is the concept applied fully, hence it only functions as an illustration.

The Piscadera Bay, located centrally in Curacao's south coast, shows a relatively high coastal development. The small bay provides an interesting ecosystem: mangroves and coral reefs with for instance sponges are here inhabited. Attractiveness of this area was the reason for development in this bay, nowadays at the bay's entrance located are several restaurants, the Carmabi Research Station, a dive shop as well as the Hilton Hotel. Site-observation did offer the impression of extensive usage of this rather small location of about 500m. A closer look into the existing ecosystem, especially the coral reef, clearly shows a high degradation. As it will be explained later in this context, environmental degradation and therefore inactive or unhealthy reefs has more than only one reasoning. Tourism can be seen as a major incentive for coastal development, like construction or artificial beaches. As coral reefs are important and essential parts of marine parks and therefore MPA's, the dynamic synergy between coastal development in form of sectoral improvements, e.g. construction of hotels directly located at the beach and easily accessible coral reefs, has to be clarified. A correlation is in a broader context visible between the decline of the local reef at Piscadera Bay and the extensive development.

The current situation in Curacao can be described through figure 12 in form of synergies. Having the management of the CMP in focus between the two domains nature conservation and tourism, it revealed the tight interrelatedness in the Curacao context. Economic

development and its socio-economic attractiveness are major incentives to make nature more attractive due to its valuable natural phenomena.
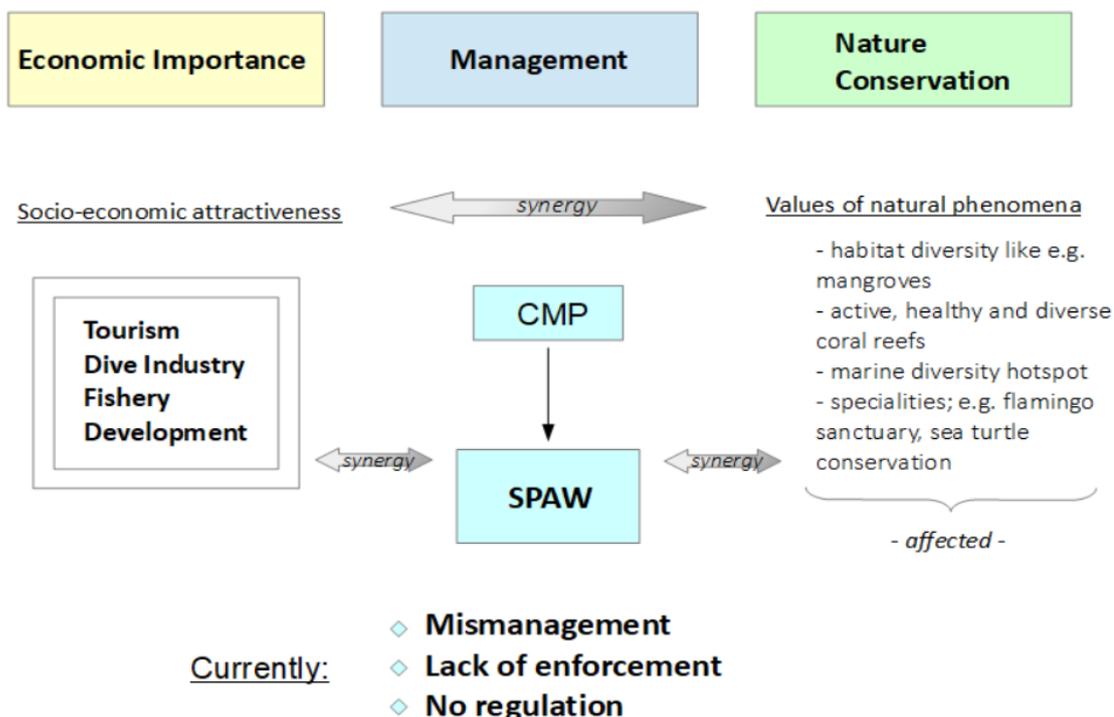
(Figure 12: Overview of the inter-sectoral synergy in Curacao)

As the economic importance and development stands in a contrast to nature conservation and preserving natural values, the CMP tries to combine the aspects with and incorporates it in the new management plan. This reveals also the prominent issues on Curacao: mismanagement, a lack of enforcement of existing rules and regulations or the absence of adequate regulations to protect the environment while promoting tourism.

When it comes to managing two domains with major importance on national level, planning can bring dilemmas and reach limits, especially using a communicative approach. Additional challenges occur due to a lack of enforcement. As described beforehand, regarding conservational efforts for Curacao's nature, national and international conventions are existing, as well as local guidelines, for instance for fishery. An essential body is missing currently to enforce new ideas and developments. Partially, not at all available, not adequate or not anymore feasible regulations are challenging the management of natural and especially marine areas around the island.

Partnership – Blue Halo Curacao

The partnership between the Government of Curacao and the Waitt Institute work collaboratively since 2015 towards a sustainable ocean management as an outstanding project for coastal management. Within a 5-year period, the creation and implementation of the 'Curacao Sustainable Ocean Policy' is processed and based on knowledge from different domains just like science as well as social and economic data to realise this policy. The incorporation of MSP, fisheries management as well as stakeholder engagement and

community stewardship do support the holistic picture. Aiming for a restoration of the ocean through empowering communities, the initiative mainly bases its power on ocean laws and policies which are actually enforceable (see table 6). The partnership is currently in its implementation phase; it includes activities to support in different areas: management, enforcement, capacity building as well scientific monitoring. Another key activity are community engagement activities (Blue Halo Curacao, 2017).

3.4 Who is involved – the Stakeholders: Curacao vs general groups

The following table 7 will answer the question of who is involved in the relevance of nature conservation and tourism in the context of Curacao and the general classification of stakeholder roles. This information is based on literature and online research and will be used as an overview to possible stakeholders to collaborate with on an inter-sectoral basis. The number of possible stakeholders should be introduced here and kept in mind to visualise the complexity of such a combination of sectors and its scope. A more specific list of stakeholders relevant for the case study will be explained in the next chapter.

Stakeholder group	Explanation Curacao context	Role classification based on NC/T
Government	Island Government of Curacao (Gobiérnu di Kórsou)	Promotion of nature & tourism, execution & legislation
Government Ministries and departments	Curacao Tourism Board; MVVRP; MGMN	Development of solutions to conservation, management & tourism issues, TMP
Tourism	Curacao Hospitality and Tourism Association, collaboration with CTB	Tourism Master Plan (TMP), Annual Reports
Local Watersports	Dive operators, wind/kite surfers, kayakers, sailors, power boaters, fishing etc.	Tourism supply; industry-site of nature conservation due to education e.g.
Tourists	Visiting tourists	Visitors role in NC & T, e.g. spending money, support economy
Volunteers	Local, international volunteers	Involvement & activities; feedback
Research Institutions	International e.g. DCNA; regional e.g. CARMABI Marine Research Station	Management orientated research based on issues & interests
Private sector	Companies, individuals, business associations	Creating value & fundraising
Islanders/locals	Special interest groups e.g. fishermen	Stimulate interests, educations, support for management decisions
Funders	Current & future investors, foundations, individuals	Donations
International conservation	international institutions e.g. Pan American Health Organisation; international NGO's	Promote conservation activities, building international networks

	e.g. SECORE Foundation	
Regional conservation and consultancy	Regional institutions e.g. EcoVision	Adapt activities to local circumstances, local network
Non-governmental organisations	NGO groups, e.g. Sea Turtle Conservation	Execution of activities apart from official management plans
Local education	Schools & school children; Carmabi Marine Education Center	Education about facts and every-day activities for conservation

(Table 7: Stakeholder overview and role classification)

Chapter 4 – Methodology

The data collection was held in a threefold way: the previously performed literature study; the interviews as a method while being on Curacao to gain particular knowledge about local processes; and on-site observation, a tactical relevant measure to reach a better understanding of cultural dynamics. Especially on-site observation can be seen as a promising measure that allows to draw conclusions in a highly context-dependent way; places, traditions, behaviours etc. are highly differing. Therefore, understanding of local dynamics is important while investigating in a case study abroad. All collected data will be analysed to unravel its connection to each other. Statements and opinions will form a basis to create a variety of answers.

(Picture: Colourful houses in Otrobanda, Willemstad, by V. Kochan)

4.1 The Case Study

As an adequate method to find answers for the research questions and to gain an in-depth knowledge, a case study seems to provide appropriate opportunities. This goes along with the opinion of Bent Flyvbjerg (2006), who examines on the misunderstanding of case studies, among others does he argue about the wrong perception, that theoretical knowledge is of greater value than practical knowledge.

The case study method enables the possibility of observation and analysis of certain phenomena as a single case in an integrated whole (Gagnon, 2010). Exploring the single case provides an understanding of its unique character (Simons, 2018), which will create the foundation for a further analysis. As the collected case will function the Curacao Marine Park, short CMP, and its current creation of a management plan. Its local and international relevance as an area containing natural phenomena like a functional coral reef makes its management an essential measure to provide conservation and protection of the marine park in the Wider Caribbean Region (WCR). Curacao, with its beaches, nature and activities counts as a potentially increasing tourist destination. It underlines at the same time that especially the nature which makes the destination special is in need for conservation to keep its attractiveness. Hence, based on the economic relevance, environmental features and the current process of the CMP management, the case was selected as highly feasible and relevant for an investigation on possible inter-sectoral collaboration and the identification of adequate actions for protected marine areas on islands.

4.2 Literature Review

As a first step towards creating adequate questions and to find potential answer to them, literature study is essential. It is a helpful instrument to gain general and specific knowledge to a particular issue based on summarising, describing and evaluating the previous theoretical work which invests in the research problem (Fink, 2014). It can be done independently from e.g. on-site observation beforehand as a preparation towards in-depth knowledge. Hence, primarily studying and reviewing literature according to the keywords collaboration, tourism and nature conservation in Curacao can be seen as necessary, to broaden the perspective of each topic. After gaining an overview, key elements from literature can be considered on a later stage to verify or falsify according to the collected data through other methods. The term method describes the process of using certain procedures and approaches to gain information of the topic of interest (Onwuegbuzie & Frels, 2016). Including a literature review seems essential for different reasons, among others to create an overview on what has been written so far on a particular topic, for the identification process of development research questions based on limits in existing theory and as a basis for new concepts (Paré & Kitsiou, 2017).

4.3 Interviews

To gain a topic-specific and relevant amount of qualitative data, interviews will be used to gather a combination of value-adding as well as critical statements from several selected people with relevant background for this research. Interviews, in social research seen as a key

method for qualitative data collection, enable the possibility to collect information on a highly detailed and personal level, which offers the possibility to reach further insight into the topic or question of relevance for research (Madziwa, 2016). Through a personal interaction, the possibility to permeate deeper into the matter is given to explore beliefs, views and experiences of the participants (Gill et al., 2008). Hence, direct communication seems as an adequate method for consulting official stakeholders to gain insight into the topic apart from official documents and strategies (e.g. ''Strategic Tourism Master Plan Curacao 2015-2020'', Curacao Tourist Board, 2019). The usage of semi-structured interviews allows a window of opportunity through flexibility. Compared to structured interviews, a discovery process can happen due to an elaboration on information the interviewer has not been thinking about at the beginning (Gill et al., 2008). This flexibility and ability to reach in-depth knowledge seems therefore as an adequate method without losing structure – this will also be provided through a rather broad way of raising the questions during the interview. The goal is to let the interviewee answer in an open and honest way to reveal his opinions about tourism, nature conservation and its collaboration, therefore the choice was made to use an interview outline with a limited number of questions in a broader context, which can be used for the three central domains (Tourist and environment officials, researchers of the CARMABI station) and to be able to compare its outcomes efficiently.

Classification of interviewees

The following table 8 will provide an overview of the interview partners, which were available for conducting an interview between the 25/04/2019 and 30/05/2019 in Curacao. The originally contacted potential 16 interviewees were reduced to 6 due to different reasons. An overview about all contacted stakeholders is available in Appendix 2. In most cases, no response was the reason for reducing the number of interviews; in two cases a lack of time and lack of appropriateness as an interviewee was another reason after receiving a reply. Nevertheless, it was possible to collect opinions, statements and knowledge from different perspectives; most importantly from the tourism and economic perspective, ministry officials and scientific and local experts.

Interviewee	Profession	Background	Relevance
Crystal Willems	Marketing and research at CHATA	Tourism	Tourism management and planning
Yaír Stokermann	Consultant for environmental impacts	Environmental Consultancy on Curacao	Local environmental knowledge
Dr Ben Mueller	Marine Scientist	Marine Biology	Local environmental & scientific knowledge
Endirah Palm	Site Manager Curacao	Environmental management	Waitt Institute, Blue Halo Curacao
Faisal Dilrosun	Director Department of Agriculture and Fisheries	Civil servant; environment, agriculture and fishery	Ministry GMN
Miriam Jonker	Policy Director	Policy-making	Ministry VVRP

(Table 8: Overview of interviewees)

Following, the broader topics which were addressed in the interviews will be introduced. The outline was chosen to be semi-structured, to create space for a rather unique path of each interview according to the field of specialisation of each interviewee. Figure 13 shows the general interview guide and its topic brought up during every interview. The questions asked do vary between the interviews, therefore it is important to create a general guide with topics which should be addressed and to adapt the question during the interview.
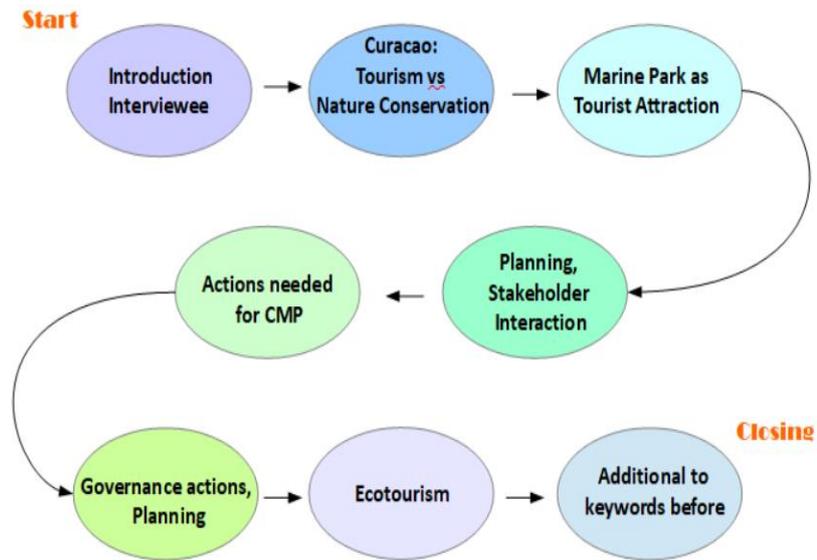
(Figure 13: Interview guide)

Analysis – colour coding

Every interview was recorded and transcribed. Meeting with focus groups were not transcribed due to its scope and the rather partial relevance, instead notes were taken about essential answers related to the investigation and transcribed as well. The transcription of both interviews and focus groups have been analysed through colour coding. Specific key words according to each question were identified with a certain colour and marked within the answers, see below. This allows a visualised overview according to the keywords and creates the possibility to extract relevant answers and statements from the amount of transcribed text. Afterwards, the data corresponding to the keyword will be analysed – compared to its main statement of the different interviewees. Ideally, a variety of statements regarding each question will be made available through this way and results in a representative answer of each interviewee. One important note on this part is the decision related to the coding outline for the transcription: the theoretical frame was based on existing, partly highly theoretical approaches which differ greatly from the situation in terms of planning in the case study area. Therefore, the in theory addressed concepts like for instance carrying capacity were not addressed in the interviews. To gain a good and deep insight into their opinion on certain topics a rather broad coding outline in form of keywords was chosen on purpose. This prevents also a too theoretical way of answering questions which won't be relevant for the case study area in any way, since practical solutions and opinions are desired on this point in the real-life context.

<u>Coding outline for transcription according to topics:</u>

- <mark style="background:#808000">Tourism & Development</mark>
- <mark style="background:#00FF00">Nature Conservation & Environmental Degradation</mark>
- <mark style="background:#00FFFF">Marine Park</mark>
- <mark style="background:#008080">Planning & Stakeholder interaction</mark>

- <mark style="background:#FF0000">Actions (for Curacao & general)</mark>
- <mark style="background:#FFFF00">Government/Governance (Curacao)</mark>
- <mark style="background:#FF00FF">Ecotourism</mark>
- <mark style="background:#C0C0C0">Additional</mark>

4.4 Focus Groups

This master thesis was combined with an internship at CARMABI Research Station and therefore the task of setting up a management plan for the CMP. Hence, meetings with stakeholders, authority officials and experts were planned. The meetings, which focussed on several different topics like implementation, challenges, objectives etc., enabled the possibility to dig deeper into the broader level of finding the right actions, feasibility and context-dependency. Therefore, the decision was made to include these talks as a primary qualitative data collection strategy, as they provide an intensive insight into the actual need for Curacao's enforcement towards a sustainable management of a marine area. According to Gill et al. (2008), these expert-led group meetings can be classified as focus groups, a group organised for one particular topic on a research purpose, in this case the investigation of the management plan. The meetings will be seen and treated like an interview, since most of the questions were addressed or additionally asked to complete the interview guide.

4.5 Field Observations

The presence in Curacao facilitated to conduct another research method: field observation. Rather hardly measurable data in social sciences, like cultural aspects as well as behaviour and reactions in certain ways are able to recognise while observing the actual area of investigation (Kawulich, 2011). One major intention behind field observation lies in understanding dynamics, roles, actions as well as behaviour which might be differing from what is written in literature or even generated through the interviews. As Ewing et al. (2012) conclude, qualitative data collection in an observational way contributes to the understanding of processes and structures and can be consulted as an explanation for certain processes. The goal is to step back from what is written in literature, especially in regard of collaborative planning. The main interest here is to gain insight into actual, local dynamics and to find explanations, why certain situation and results are shaped as they currently are in terms of collaboration and ISA

Chapter 5 – Analysis and Findings

To analyse the collected data, the conceptual model will be applied to structure the data and eventually lead to the desired outcome: identify ISA for a protected marine area, based on the case study area particularly for the CMP. The analysis and findings are structured as following: First of all, a discussion will be made based on the argumentation of the interviewee's and the outcome of focus groups and field observation to identify the context-specific actions for the CMP. This will eventually lead to the identification of ISA as a result of the analysis of the conceptual model, companied by answering the research questions in form of a discussion. The findings will be presented through the current challenges and improvements in Curacao and a set of actions which seems to be feasible for protected marine areas based on the previous analysis.

(Picture: Diving in Curacao, by V. Kochan)

5.1 Context Curacao – Actions for the Curacao Marine Park

The following table 9 will provide an overview of the main findings, which are summarised into key statements according to the seven addressed categories during the interviews and expert talks and meetings regarding the CMP and its management. To make the table easily understandable, the interviewee's names were abbreviated, and each key statement is now linked to the interviewee. The table aims to give insight into 1) similarities in their statements, 2) crucial differences, 3) tendencies on what topic was addressed by more interviewees. Importance was paid to bring the key statement into appropriate categories; this gives already first indications into the importance of a certain category. Compared for example to the category ''Marine Park'', the key statements about ''Ecotourism'' provided a higher number of statements and therefore responses and opinions about the topic. An interesting result so far on this point is also the high accordance between (almost) all interviewees for actions required as an essential component to draw further conclusions and to analyse feasible ISA for the CMP and eventually for marine protected areas. Contradictory gives the table a good insight into the lack of coherence in some perceptions. E.g. was an increased tourism only mentioned by Mrs Willems from CHATA, also the key issue of a lack of communication and coordination was only addressed by Mrs Palm as a site-manager for Curacao and limited capacities in planning just mentioned by Mrs Jonker from the Ministry VVRP. This represents their professional field and role in Curacao, which will give at the same time the option to find concrete solutions on where collaborations could be conducted based on the professional backgrounds and outreach-possibilities in different sectors or governance bodies.

(Table 9: Comparison of key statements of the interviewees)

Category	Key Statement	C.W.	Y. S.	B. M.	E. P.	F. D.	M. J.
Tourism & development	Increase tourism	X					
	Dive tourism	X	X		X		X
	Trends by tourism	X					
	Coastal development undeveloped areas for tourism		X	X		X	X
	Development brings issues		X	X		X	X
	Economic importance		X		X	X	
	Diving brings damage			X		X	
Nature Conservation & Environmental Degradation	Sustainability: awareness & education	X	X	X	X	X	X
	Partly good state		X	X		X	
	Nature is highlight & needs protection	X	X		X	X	
	Restrictions & excluding necessary		X	X		X	
	More attention to reefs		X	X		X	
Marine Park	Protection through regulations			X	X		
	High value			X		X	X
Planning & Stakeholder Interaction	Motivation	X	X				
	Good collaboration	X			X		
	Need for Improvement	X	X			X	
	No sufficient interaction		X				
	Collaboration/interaction essential	X	X	X	X	X	X
	NGO's important next to			X	X	X	

Category	Item						
	government						
	Communication difficult				X		
	Coordination essential				X		
	Tension between sectors					X	
Actions	Awareness raising	X	X	X		X	
	Sustainability efforts	X	X	X			
	Collaborations	X	X	X	X	X	
	Education	X	X	X	X	X	
	Recycling	X	X	X	X		
	Conservation efforts		X	X	X	X	
	Enforcement		X	X	X	X	X
	Restrictions		X	X	X	X	X
	Assessments		X	X		X	
	Focus local stress		X				
	Zoning, planning		X		X	X	X
	Mooring buoys		X			X	X
	Monitoring		X	X			
	Identifying right measures, success		X				X
	Short- & long-term		X				
	Rules, regulations, guidelines	X	X	X	X	X	X
	Communication, meetings				X	X	X
	Physical presence						X
	More involvement: awareness etc	X					
	More enforcement	X	X	X	X		
	Need steady-hand	X		X			
	Actions take time	X			X		
	Top-down		X				X
	Development focussed		X	X	X		
	Financial independency		X				
	Tourism important				X	X	
	Aware of nature protection				X	X	X
	Collaborations					X	
Ecotourism	Starting trend	X					
	Direction is going towards it	X			X		
	Generally good		X				
	Need something to distinguish from other islands/diversify		X		X	X	
	Growing awareness		X				
	Difficult to implement in Curacao		X	X	X		
	Rather eco-friendly		X	X	X		
	Not going to happen/shouldn't		X	X	X		
	Promotion of environmental awareness		X	X	X		
Additional	Role of recycling	X		X			
	Different priorities	X			X		
	More sustainability	X	X				
	Need sewage system		X	X		X	
	Industrial impact		X			X	
	Venezuela		X		X		
	Drainage/Run-off		X	X			
	Potential in Curacao				X	X	
	Limited capacities						X

The table above gives indication about similarities and differences for different key statements. The 6 interviewees got a different background: Ministries, tourism, environmental consultancy and research, which gives the possibility to analyse the statements from various perspectives. Firstly, based on the comparison of table 9 derived the shared opinion of all six interviewees on three key statements: a) the need for rules, regulations and guidelines as a central component in terms of actions, b) in planning and stakeholder interaction in Curacao, collaboration as well as interaction is essential, and c) sustainability together with its education and awareness raising is of importance to promote nature conservation and protection. Here, the intensity and perception of sustainability varied slightly. Mrs Willems, working in Curacao's hospitality and tourism association (CHATA), stated: ,,I noticed lately a lot of students as well, doing different studies or thesis towards that direction of sustainability and conservation.``, which indicates the importance of tourism, researchers and especially mentioned here students from abroad bringing trends with them. ,,It [Curacao] is at the moment transitioning``, as described by Mr Stokkermanns, an environmental consultant, leading to the impression that a window of opportunity is currently available for new trends and concepts, as it is for instance the case for sustainability. Especially for the tourism and economic sector, the TMP can be seen as a winow of opportunity as well, in combination with the trending sustainability a new direction could be implemented on this point. The importance of new mechanisms and innovations can be generally seen as a positive development, important here is although to pay the necessary respect to all different components which might be affected while working for example towards sustainability and incorporating actions related to a more nature conserving aspects. As highlighted by Mrs Palm: ,,we cannot move a stone if we do not put culture into consideration.'', the perspective and addressed components in an area's strategic planning brings up a number of important aspects that need to be taken seriously when identifying and implementing actions, especially on an inter-sectoral range. A challenging factor in planning, which comes with a high uncertainty is the local perception of land development. ,,We also have land owners, people, families that own a lot of land and in some cases, people are not happy with the designation given to their property.''; land-use and the responsibility of it, as well as the decisions based on the institutional design as described in the theoretical framework is proved on this point. This identified problem by Mr Dilrosun from the Fishery's Department brings insight into the issue of local laws, regulations and how they are perceived. The need for a strong and enforced set is desired, but it is challenging to implement a balanced way of doing so, which goes also along with in theory stated power and role of a planner and how he/she is perceived. Mrs Jonker from the Ministry of Traffic, Transport and Urban Planning also supports the local restrictions on a broader planning area and calls for an avoidance of complicated approaches and language which is not feasible to realise on the island due to limited capacities and resources, and to rather implement a ,,common sense approach''. This way of thinking supports the conceptual model and the easy-accessible and understandable steps it does incorporate into a strategy to analyse ISA. To substantiate now a number of feasible actions based on the results of the interviews in combination with the impressions and observations form the on-site research as well as the insight from the internship, the analysis will focus on the following particular actions identified: Zoning, enforcement of rules and regulations, awareness raising, waste management, monitoring & the impact of small measures – a context-dependent and tailor-made mix of sector-overlaying actions for Curacao and its marine park.

As an introduced concept, the Collaboration Circle will be now applied as a basis for an analysis and a way of presenting the results in an overall way, before explaining the specific actions into more detail. Important is the focus on the all three parts: (1) the governance level and bodies, (2) the actions feasible, (3) the implementation and the (4) analysis; throughout the data collection the importance of the steps was often realised and helped the structure.

5.2 The Application – The Collaboration Circle in Curacao

As a final step in developing a conceptual model, data collection and analysis, the application of the identified information in form of an identification of feasible actions will be done in this part to organise and structure the collected data and represent the results in the words of the model. Previously, actions were acknowledged according to the context-specific situation in Curacao and its marine park. Based on expert opinions and observations, these actions seem to be success-promising for combining the two domains, which basically implement tourism activity within a protected area with its major aim of conservation and preserving nature. Here an essential note is, that the following described actions and measures implemented in the concept should be treated as recommendations, since the management plan as a major instrument for the marine park is still in progress and best-solutions for possibly occurring challenges are not available yet. Additionally, a concrete number of visitors is not accessible at this moment either, which complicates the identification process of classifying the type of tourism capacity in the CMP.

1. Part – Identification of the Degree of Collaboration

The first part of the conceptual model identifies the DoC, based on tourism capacity and environmental degradation of a certain area. The selected area of interest is the case study area: The Curacao Marine Park.

Tourism Capacity

Tourist Number in total (2017): 399,000 visitor arrivals in Curacao, Aruba: 1,070,500 (The World Bank, 2019). Based on interviews; identified as a **Type 3: Raising economic dependency, increasing development, growing visitor numbers.**
This goes along with the statement of Mrs Willems, working in the tourism sector, describing a recent increase of tourists in Curacao. Mrs Palm also mentioned the importance of tourism in terms of development on the island besides shipping activities. The general observations in Curacao does show a high interest in being ''attractive'' for tourisms; the town of Willemstad for instance invests in keeping areas clean and offering activities, bars, restaurants as well as festivals and other events. The importance of these kind of activities was stated as well in the Tourism Master Plan, since certain kind of festivals or music events are an incentive for island neighbours to visit Curacao. To describe it in the words of the model of Butler's Talc, Curacao would be therefore located in stage ''B'' (= continued growth due to minor modifications and adjustments to capacity levels).

State of Environment

Based on interviews, partially very healthy and growing coral reefs, partially very degraded nature and marine environments. Identified as a **Type 3: Ecosystems do function, thresholds partly reached soon for sensitive systems.** According to marine researcher Dr Mueller, there are some really good or healthy parts, and some really degraded parts. This goes along with the statements by Mr Dilrosun, therefore the general functioning of the ecosystem is currently the state of the art, which is also described in different assessments and reports (e.g. Debrot et. al, 2017). As coastal development is according to Mr Stokkermanns and Dr Mueller one of the main threats, this definitely harms the environment and on heavily developed areas, e.g. the Piscadera Bay, the thresholds are partly reached and especially the marine environment is irreversible degraded.

Resulting from the first part of the conceptual model, the DoC for Curacao is equal to a Type 3 collaboration: _Feasible_ - *Nature can cope with tourism, still buffer;* **actions needed from this point on**. Especially the focus on dive-tourism was mentioned during the interviews by e.g. Mrs Willems, Mr Stokkermans and Dr Mueller. The dependency on dive tourism does show the importance to invest into nature conservation to protect the environment which creates an incentive for tourism to visit Curacao. This is an important component in the current DoC, since the tourism industry is therefore highly dependent on the state of the (marine) environment in Curacao. Interesting during the analysis was the difference in opinions according the threat of diving to the environment, which seems to be an essential component that needs further research: Does diving harm the environment? The scientific director of Carmabi Research Station for instance stressed the degradation that inexperienced divers have to e.g. corals, the same stated scientist and researcher Dr Mueller. Contradictory, Mr Stokkermanns e.g. did not share this opinion. Investigating deeper into this topic could bring up a better understanding if a more in-depth dive training is necessary for tourists as an conservation-effort for the local reefs.

The second part of the conceptual model will now, based on the DoC, create the overview of the actors and actions involved. The information is extracted from the collected data and summarised in the words of the concept.

2. Part – Identification of Actors and Actions through the Collaboration Circle

Based on the acknowledged DoC, the Collaboration Circle can now be applied to further elaborate on a set of actions and corresponding actors to realise these for the context of Curacao. Therefore, the following five steps explain the application of the conceptual model and its outcome concerning the case study:

1. *Identifying and using corresponding level for governance and non-governmental work:*

   Local level: CARMABI Foundation as the Management Authority, including scientists, researchers and experts, NGO's collaborating with the Management Authority
   National level: Ministry GMN, Ministry VVRP
   International level: Potential designation as a SPAW Area according to the Cartagena Protocol of the UNEP

   The actors involved for the case study area, the CMP, are mainly designated by a mandate

from the Curacao Government (Dutch: Landesbesluit). During focus groups with the Ministry of VVRP and GMN, the importance of having a more independent body apart from governmental actors was stressed, hence, the NGO Carmabi Foundation is the main managing body for the CMP on the local level. According to Mrs Palm, NGO's have an important role on the island. Mrs Jonker also supports the capacity they provide in being available to physically represent the authority by having patrols e.g., which eventually leads to identify illegal actions and to intervene immediately. Of importance here as well is the role of knowledge. Especially researchers and scientists working for NGO's can provide the knowledge needed to identify certain actions, hence, they need to be incorporated as actors, which is now the case through the Carmabi Foundation.

2. *Identifying required governance actions:*

Local level: Monitoring, assessments, outreach, education, communication, awareness, measures and instruments like mooring buoys. Work schedule based on the Management Plan with annual activities, core activities and daily activities.
National level: Enforcement of rules and regulations, surveillance, communication
International level: Laws to protect and conserve the SPAW Area

Analysing the collected data does show a high tendency and agreement from the interviewees to the same set of actions: Monitoring, education, awareness raising, rules and regulations and their enforcement. For instance, during the interview with Mrs Palm, she argued many times about the importance of planning and regulations: ,,[...] we need regulations in place, again marine spatial planning. One thing we really need is to have laws in place for marine protected areas and to manage it.''. As the former development of the previous Marine Underwater Park did show, just designating an area as a Marine Park will eventually fail, due to the circumstances that it results in a ''Paper Park'' – no adequate management, maintaining and enforcement cannot sustain a protected area, especially without feasible resources. I argue, that the current strategy, an intensive collaboration between NGO and Island Government is a realistic and acceptable way of realising a successful management to implement the actions identified for a long-term success in planning.

3. *Implementation of action in corresponding level:*

All identified necessary action are implemented in the Curacao Marine Park Management Plan, which will be used as a robust guide on how to manage the CMP effectively. Therefore, one Park Manager and two Park Ranger will be hired to apply all measures and actions described in the plan and are relevant for execution of actions, together with corresponding Ministry or Coast Guard in certain cases. The set-up of the management plan, which was based on a high number of reports, assessments, stakeholder involvement and simply experience from researchers and scientists in Curacao does built a strong basis for management in long-term planning. This window of opportunity was optimally used and resulted in a feasible set of actions and tasks to lead to a successful sustainment of the CMP.

4. Analysis of action:

As Curacao is a part of the WCR, the DCNA (Dutch Caribbean Nature Alliance) will play an essential role. A programme to measure its success, as well as failure in particular fields will be identified in a broad and detailed range. This includes for instance the time staff spent on particular projects, maintenance etc.

5. Depending on outcome of step 4:

5.1 *Success* → Assessment if the DoC changed towards a higher positive number in the long-term, which requires a long time of successful management and positive development.

5.2 *Failure* → Start of feedback-loop: back to step 1 and change the tactic and actions. A failure in current activities can be addressed and implemented through in the annual review of the Management Plan. This gives adaptive capacity to react ''immediately'' on a yearly basis if an instrument, measure etc. seems inefficient after a certain period of time.

Based on the results of the data collection and the application of the conceptual model to extract the necessary information, the following six actions were identified as adequate measures for a collaboration of nature conservation and tourism in the CMP:

Zoning

During data collection and analysis, the importance of zoning and a clear zoning plan was extensively stated by Dr Mueller; also, Mrs Palm stressed as mentioned above the need for protected areas but on the other hand it is important to have shipping lanes etc. because of industrial dependency of the island. Here essential is to find the balance between economy and conservation, which could be implemented in form of a zoning plan as an strategic approach in marine spatial planning. This also requires assessments; here again it is important to include NGO's and their capacities in conducting research to identify what actually needs to be preserved and what can be preserved with the given resources. For the context of Curacao and the CMP, Mr Stokkermanns and Mr Dilrosun mentioned the importance of one particular part of the CMP: Eastpoint as a special area. Besides the ecological aspects, Mrs Jonker stressed here also the high profile and the political importance next to the ecological. A zoning plan could be here an adequate measure to find common ground in nature conservation and economic development, especially also to identify tourist hot spots.

Enforcement of Rules and Regulations (Coast Guard)

Basically, in Curacao every enforcement on water is dominated by the Coast Guard. They are needed for every action, rule, law to be actually enforced, as described by Mrs Palm. During the meetings with the focus groups, the essential collaboration got often clarified, since a lack of enforcement was one of the major points that led to a fail of the former Marine Park.

Especially illegal behaviour needs to be realised to avoid direct harm to the marine environment and to prevent irreversible degradation. Hence, a strong relationship is necessary. Here mentioned Mrs Palm the cultural importance, that Curacao is a 'People island', coming together during the weekend for instance strengthens the teamwork. Important is, that plans, strategies etc. are feasible and within the ability of the Coast Guard, e.g. time for patrols. This was identified during meetings with the focus groups with the Ministry VVRP and GMN. This also brings up the need for coordination, which was mentioned by Mrs Palm but also addressed during the theoretical framework concerning tourism development. A coordinative body which reacts both on the tourism- and the environmental-site would here be an opportunity to enforce ISA in both sectors towards a sustainable development in policy frameworks or strategies.

Awareness Raising (Education, e.g. Marine Education Center Carmabi)

Education should start during young age in school already, as described by Dr Mueller: ,,Education takes time.''. This was identified by Carmabi Foundation as well, hence, programmes are provided like the ,,Terrestrial Programme and Marine Programme``. Additional events, e.g. ''Shark Week'' with reportages and movies are used to raise general awareness, which also did show a positive perception due to a high number of visitors (~200 people). A part of school courses is to visit Carmabi, which is located directly at the beach and to implement fun-activities to make it interesting. Carmabi offers a Marine Education Center, in which the Marine Park gets a allocated space to raise awareness, why it is so special and valuable. Here it is also important to explain on a simplistic level, why such a park was developed and why it needs to be conserved. The role of education and awareness is in my opinion an essential measure. it is possible to form people's behaviour when they are confronted with facts; illustrating what e.g. the CMP has to offer can therefore lead to a long-term solution, even for children in a more simplified way.

Waste Management (e.g. Campaign by TUI)

As stated by Mr Stokkermanns and Mrs Palm and Mrs Willems, waste management and a lack in recycling is a major issue in Curacao. But first collaboration efforts are made between CHATA and TUI Travels to promote recycling; it helps to raise awareness about the local behaviour in terms of recycling and pollution. The island is in need for waste management – this is one of a main result of the field-observation and was stressed by all interviewees in terms of environmental conservation and current threats. Also, the implementation of a sewage system and treatment in an island-wide scope is necessary. The current collaboration provides international support through campaigns, which is a is a great effort and is supported by Carmabi for instance as well.

Monitoring, Registration of Activities (especially NGO)

The amount of NGO's and their activities is generally a good action to for example support the local coral reefs or protect and conserve sea turtles. Problematic and challenging is the uncoordinated development. As coordination is a major component which is needed for Curacao and desired to reach and to simply have as an organisational factor as mentioned by Mrs Palm, a form of coordinating the projects needs to be found. An approach which needs to be implemented as a feasible action is registration, to create an overview for managing and governmental bodies what and where actions, projects etc are happening as suggested by Dr Mueller. He also mentioned that monitoring is an essential activity to measure progress, development and change; hence, there should be an adequate focus in every planned activity. Therefore, it is important that the tourism sector as well as scientists and other groups or environmental bodies have ideally access to relevant data, to share knowledge and also to create an educational instrument for concerned or interested stakeholders.

Small Measures – Big Impact

The local context resulted in a high importance for instance in using mooring buoys to avoid damages of the reef. Anchoring is illegal, but an adequate alternative has to be provided. These kinds of smaller actions can lead to a big impact; Dr Mueller and the focus groups stressed about its importance. Throughout the island it is observable that a certain amount of awareness raising is tried to implement through different signs. Having plain, very colourful or eye-catching signs, paintings etc. can help to lead attention for example towards the problem of littering and should be taken seriously for instance as an alternative method to provide educational aspects or simply inform. This would address the tourists as well as the local population. As tourists bring the trends in some situation to the island, as mentioned by Mrs Willems, people will notice that Curacao pays attention to e.g. littering on public beaches and combine it with a positive perception and ideally a more sustainable behaviour on the island. I argue, that small instruments and measures are a feasible way of raising awareness, educate or just highlight important aspects which would support a more sustainable development in tourism to conserve Curacao's nature on the long-term. The need for simple actions due to limited capacities and a lack of enforcement for top-down initiatives does call for simple but effective and especially noticeable instruments; maybe even promoted from NGO's or non-governmental actors due to the limited respect of official rules. As stressed in theory about power-relations, changing the institutional design with the people instead of controlling them might be a strategy that is due to the cultural importance more adequate and maybe respected as a form of collaborative planning.

5.3 The Research Question – An Answer

As a final part in this analysis, the initiating research question will be answered, following with an explanation for the supporting and more detailed sub-questions. As the leading, main question of this investigation prevailed:

How can the degree of collaboration between nature conservation and tourism of protected marine areas on islands be assessed to identify inter-sectoral actions?

Mainly, this question can be answered in a two-fold way. Firstly, the assessment of the different interests was supported due to the first part of the conceptual model: Part 1 – Degree of Collaboration. It presented a foundation where to start while focussing already on the combination of three major elements: State of the Environment, Tourism Capacity and the resulting DoC. Identifying this degree was based on investigating into reports, assessments and analysis of the particular area, created and provided through experts (table 10). Secondly, an answer based on the conceptual model, the DoC, was used for the analysis and a basis for the conceptual model. It was clearly supportive to characterise the situation in a simplified overview. From this point onwards, the steps used to create an appropriate set of actions and corresponding actors to implement and enforce it helped to lead the analysis through the collected data. The collected data, especially the interviews were not confronted with the conceptual model. The estimations made to identify DoC and the identification process was therefore based on a number of different sources, without the influence of the opinion of e.g. one particular interviewee or experts. This helped to stay neutral and objective while finding an appropriate degree of the state of the environment, the tourism capacity and to eventually identify the DoC to further analyse the collected data.

Tourism Capacity	Environmental Degradation	Collaboration/ Management
CHATA	WAITT	Ministry GNM
Tourism Board	Carmabi	Ministry VVRP
Literature & websites, e.g. The World Bank	Literature & websites, e.g. assessment reports	Scientific literature, e.g. Journal of Sustainable Tourism
On-site observation	On-site observation	On-site observation

(Table 10: Essential sources for identifying Degree of Collaboration)

The Sub-questions – More Details

1. *What are the challenges that occur whilst managing the CMP aiming for nature conservation and a stable, even growth of the tourism sector?*
   Special attention needs to be paid to culture and history. Curacao is currently transitioning from an industrial country to a tourist destination, which brings issues. Challenges in culture can be summarised as things are going generally rather slow and they are used to their business as a form of path-dependency (e.g. Fishery, they don't understand why certain techniques or equipment is bad and this requires education, awareness and outreach as major actions). This problem statement is in line with the described issue by Schoeman et. al (2014) in terms of

implementing adaptive management. Cultural barriers challenge the implementation of this concept, which goes hand in hand with an overall misunderstanding of the specific term. The range of problems need to be considered, it's neither only tourism nor only nature conservation which provides negative impacts to the environment. Major threats are e.g. sewage and waste management which is drastically lacking and influencing the environment. Especially for tourism, competition and diversification of tourism is desired to ''be different'' than the neighbouring islands. Since Curacao is not in the same stage as for example Aruba or Bonaire when it comes to tourism and visitor numbers, as mentioned by Mr Stokkermanns (and e.g. World Bank, 2017), the role of development and its speed has a major role. To sustain a larger number of tourists and become on the same page eco-friendly, a major change in its sewage system, waste management and coastal development needs to take place. Especially in terms of tourism, a change towards becoming eco-friendlier is desired instead promoting ecotourism as it is the case in Bonaire as described by Mr Dilrosun, Mrs Palm, 2019 and Dr Mueller. An opportunity therefore could be the implementation of certain measures and approaches to transform the existing hotels into more environmental aware and promoting accommodations to make use of present businesses, which was recommended by Mrs Palm and Mr Dilrosun. A holistic approach should be considered since Curacao's nature, especially the marine environment, suffers not only from tourism but from a number of complex threats as described by Dr Mueller. This calls for an holistic approach or strategy, which is on the same page with feasibility for the islands' context, capacities and resources and its possibility to implement, apply and enforce.

2. *To what degree are these sectors able to combine in order to lead to an effective planning and management in the case study of CMP?*
   The desire to collaborate and combine environmental protection into tourism is given and the trend goes towards sustainability, which was especially highlighted by Mrs Willems, working in the tourism sector. Important is here to mention, that a combination in that sense would be possible: rather eco-friendly tourism instead eco-tourism due to feasibility, capacity and circumstances of the local context in Curacao should be reached for. Another important point is the assessment of strategic planning in tourism sector: what are the trends, what are recent changes and developments etc.; at the same time assessments for environment needs to be provided, especially the marine environment needs to be scientifically monitored. A recent challenge is the number of projects conducted by different bodies & NGO's, which are not registered currently and therefore are not obliged to inform officials about their work. The introduction of the Tourism Master Plan does show the possibility to adapt to trends and circumstances and to identify concrete measures to enhance tourism and visitor numbers and attractiveness in Curacao's tourism sector. This can be seen as a solid, potential way to incorporate more eco-friendly and sustainable measures. Here interesting is the result of the interview with Mrs Willems, which stated the increasing awareness of sustainable efforts which is brought by tourism and the need to adapt to it. The desire to become eco-friendlier and environmentally aware within the tourism industry is also shown by campaigns like recycling initiatives to adapt to wishes by international visitors. With an increasing trend towards protecting the nature to 1) conserve what tourism and visitors are seeing as a major incentive to visit and 2) the tourism industry accepting the desire of their visitors due to economically

importance, a good basis can be created to work a possible good collaboration to execute and implement inter-sectoral actions in the future.

3. *Why is a collaboration of conservation and tourism a relevant factor to reach successful planning in a marine park?*
   Special for Curacao is that the dive industry is a major stakeholder; dive tourism is one of the major advertisements and potential sectors. Implementing a strategy or component which is adequate and feasible for the marine park and its environment and the dive sector is essential to promote Curacao as a dive destination. It is clear, also accepted by the government which was confirmed by Mr Dilrosun and Mrs Palm, that environmental protection and nature conservation is important and needs to be done on a large scale, because an attractive nature is the reason for tourism. Therefore, the relationship can be described as symbiotic: if the nature is degraded and loses its value, a major reason for tourists to visit Curacao will be lost. On the other site, the important role of nature conservation will be supported through the need for tourism and therefore reaches importance economically.

4. *What are the challenges while cooperating with many stakeholders, and what role has the local government and ministries as well as other organisations had in this collaboration?*
   As problematic and challenging can be described especially the component 'enforcement'. The role of communication and the perception of a good current collaboration between stakeholders vary. I argue that there is the impression, that NGO's have a rather separated role in their work. An improvement to involve NGO's more into planning activities can be generally seen as beneficial, but the concern was raised that these efforts and activities need to be coordinated. Without proper coordination additional pressure and challenges may be created, because it results in a loss of overview, as it currently appears in coral restoration-related initiatives, according to Dr Mueller. Separation was also an important factor during field observation. As described by Mr Stokkermanns, especially big hotels are ''separated islands'', which challenges the ability to collaborate. Especially during talks, meetings and interviews with government related persons, the perception came up that stakeholder involvement in general is a good method and needs to be done, but it is also a complicated process and will be tried to minimise on more complex plans. As speaking about the management plan for instance, the primarily suggested and, in the draft, implemented 'Stakeholder Platform' was critically noted as not feasible, as it will rather create more problems and will reveal too many complaints and negative aspects.
   In my opinion, a very limited and well-chosen number of stakeholders are the key-players for certain projects in Curacao, especially regarding the Marine Park. Many people make plans complicated, and what the island needs is structure, coordination and comprehensiveness during its transition from an industrial island towards a potential tourism destination, or something in between. Attention should be paid here, as it was my experience, towards the balance of compact, basic structures and being too simplistic, which can in the worst case without proper input result in a lock-in or deceleration of a developing process.

5. *Is, and why is tourism and nature conservation hard to combine as an outcome of combined interests in an island marine park and what actions are potentially feasible?*
   The current situation in Curacao's planning and management seems twofold: on the one hand,

it is accepted by the government that nature has to be protected that the marine environment has high importance, both economically and ecologically. On the other side, fundamental problems in coordination, communication and collaboration are visible; finding a common ground for adequate solutions is more complicated. As the interview's with e.g. Mrs Willems, Mr Stokkermann and Mr Dilrosun show, the awareness is given, also the motivation to work towards more sustainability and a more collaborative, inter-sectoral way to combine tourism and nature conservation, the reality and the actual action do show less effort in realising it. Therefore, both sectors are currently rather separated and develop separated at the moment. Essential measures are here, from the experience on Curacao, interviews and expert talks are that a lot of effort needs to be put into awareness raising, education of people of all age-ranges and to find coordination within the system. Coordination seems important in a morefold way: the 'why'- question needs to be addressed to increase information sharing and education, therefore an educational programme is necessary; rules and regulations, as well as guidelines need to be feasible, acceptable for the local population and simply able to execute by the enforcing body, which is in the case of the CMP the Coast Guard, supported by the Police in particular cases; and planning and management needs to take place on a neutral ground with proposals, ideas and possible strategies which incorporates tourism and coastal development in a conservational, protecting way. Generally, identifying actions especially inter-sectoral is always context-depend. For the context of Curacao is clear, that a simple, comprehensive strategy needs to be found. The applied conceptual model could be used as a basic foundation and is in my opinion of course improvable in some parts, but a concept or strategy which clearly shows the direction certain actions should lead to, is incremental. Also, important is that some countries, areas etc. need to be aware of where they stand and what their state of the art is, which can be illustrated in a very simplified way through the DoC in terms of tourism capacity and the state of the environment. As it was the case in Curacao, a high number of reports, assessments and analysis is available; extracting information is therefore possible to draw conclusions and enables the possibility to develop such a Degree of Collaboration.

5.3.1 Challenges in Curacao

Based on the data collection methods an overview could be constructed to summarize the main findings (table 11). The findings are generally concerning 6 major issues which were addressed by the interviewees throughout the interviews, expert talks and on-site observation in terms of Curacao's situation what actually matters when it comes to planning and management on the island. Especially during the interviews, the importance of pollution, coastal development, management, fishery, awareness and enforcement were repeatedly named by the interviewees in terms of planning, collaboration, tourism and nature conservation in Curacao.

- Pollution
- Coastal Development
- Management
- Fishery
- Awareness
- Enforcement

(Table 11: Main findings in key words)

Additionally, a number of seemingly effective solutions came along the problem statement, as well as a rather in-depth description of the problem cause and why it is challenging which is illustrated through table 12. The benefit of this overview is to understand the reason of the problem; also, what is desired as a contradiction to what is required to find an adequate solution. The collected information were companied by a positive or negative effect based on the current state of the issue in Curacao, which gives insight into a possible way how to address the challenges. A simplification of the complexity contributes to the understanding of it; as it was stressed by Mrs Jonker and Mrs Palm, approaches and strategies should avoid of being too complex and too complicated.

Problem	Reason	Required actions	Desired solutions	Effects pro/con
Pollution	Mismanagement, waste dumbing, washed up by sea	Government restrictions and campaigns for recycling	Waste management	First signs towards more awareness from local society
Development	Construction	Less coastal development and construction; better monitoring and ''taking care''	Restrictions for construction sites	Dry season: limited run-off
Mis-management	Lack of enforcement	Experts, experience, support, collaboration	Management plans enforced through adequate bodies	Coast Guard very effective
Overfishing	Uncontrolled fishing	Existing laws need to be updated, zoning, stock-check fish	Fishery law enforcement, more specified	Traditional work/business for local society
Lack of awareness	No efficient education for certain topics like conservation & recycling	Campaigns, implementation schools, advertisements, etc	Awareness raising: communication, collaboration, education	Individual actions partially visible, e.g. supermarket or food trucks use paper packaging
No overview of NGO, esp. coral projects	NGO's start working, no need for permission or registration	''label check'' for appropriateness of project and registration	Clear, detailed overview for all projects (where, what, when, who)	Beneficial in general, but side-effects uncontrollable
Law enforcement	Not taken seriously – cultural importance of e.g. fishing	Stricter reactions e.g. fines, more controls, ''visible authorities''	Maintain and follow rules and regulations	e.g. Coast Guard very effective for assisting in coast enforcement

(Table 12: Overview about the main findings)

5.3.2 Current Improvement – Curacao Marine Park

A recent major improvement with a promising beneficial outcome is the potential designation of the Curacao Marine Park as a SPAW area. Figure 14 will provide a simplified overview. Essential here is the protection-aspect which will be underlined with its designation and the restricted usage for the economic sector. The setup of the management plan for the CMP as a SPAW nominated area is here an indispensable instrument to realise the objectives defined for the Marine Park. Additionally, crucial will be its enforcement. At this point it is not yet possible to make any further statements about a positive impact it will have in the future, but the fact, that the designation ensued, and a management plan is in progress will definitely be a step forward. In terms of historical development, it can be seen as an improvement, since the former Marine Underwater Park of Curacao lagged crucial parts, e.g. funding and the ability to manage it in an adequate way with given resources (Debrot et. al, 2017).
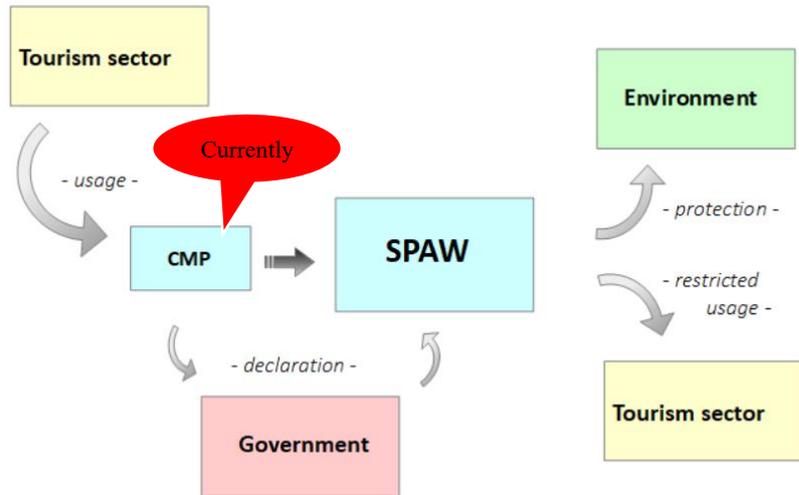
(Figure 14: Simplified potential development of the CMP)

5.3.3 The Actions – Inter-sectorial for a MPA

The following table 13 will give an overview of possible ISA depending on the circumstances and capacity of the local context of a MPA. Important here is that a broader field is addressed with specific actions: The tourism sector, scientists and research, conservation and management, governance as well as general fields which can be executed by different stakeholders like NGO's or volunteers. It addresses the holistic situation in an inter-sectoral manner and provides one of the main findings in relation to the research question for general conclusions, apart from the local context in Curacao and the case study. A comparison of ISA, corresponding actors and the categorised possible DoC shows that the most feasible actions seem to be available in the Degree 3 – 5. This could be explained through the need and increasing urgency to find actions and to promote its implementation; a lower Degree would be lacking in necessity to find adequate solutions and a Degree 6 calls for strong, short-term and immediately effective measures which wouldn't be capable off collaborating with other sectors or many stakeholders. A critical effect of it is that a degradation and negative impact needs to be visible and recognised to activate a collaborating and proactive behaviour. This goes along with e.g. Butler's TALC and the scenario of a decline of tourism due to resource overuse – the overuse, in this case describable as degradation of the environment leads to a tourism-decrease and is therefore

a visible negative impact; this will lead to a change in strategy eventually. As an essential component in each field of action, adaptive capacity should be taken into consideration. If for instance 'Tourism & visitor experience' leaves room for adaptation, a possible window of opportunity could be created to implement education and awareness-raising by for example marine scientists. At the same time, the field of 'Marine science' could create such adaptive capacity for providing knowledge about users and tourists of the CMP to the Mark Park authority to help them understanding certain behaviours and trends. This form of information exchange would contribute to address the ,,why-question´´ as a major goal in inter-sectoral planning and understanding challenges from different perspectives.

Field	Explanation	Actions	Collaborating Actors	Possible DoC
Communication, education, awareness	Action to improve awareness, understanding, support for marine parks & park management	Outreach; Stakeholder communication; collaboration between stakeholders; education in school, museums etc.; campaigns and special events (e.g. ''Shark Week'')	Schools & Education Programmes from e.g. Carmabi Research Institute	1 - 3
Tourism & visitor experience	Actors promoting & providing range of environmentally appropriate, high quality recreation experiences	Guided tours; education before activities within MP; 'sustainable' and non-destructive activities	Marine scientists & tour providers	4-5
Marine science	Actions to provide necessary scientific knowledge & understanding	Research of all kinds; monitoring; projects; NGO work; data collection	Marine Park authority, researchers & NGO's	1-5
Assessment & authorisation	Efficient, effective, transparent & accountable assessment, authorisation & monitoring processes	Monitoring; analysing and assessing of data; finding of adequate actions; trend analysis	Ministries & Marine Park authority	1-5
Park protection & management	Preventive & restorative actions to prevent natural, cultural & heritage values from impacts of tourism	Park management through management plans; patrols; collaboration with executing body; adequate resources (e.g. funding, staff)	Coast Guard & Marine Park authority & Ministries	3-5
Compliance	Appropriate & high levels of compliance by MP users with rules set by plan as well as executing bodies	General agreement within users, stakeholders; convincing structure of guidelines; adequate information/education available	Ministries & Tourism Board/CHATA & Marine Park authority	3-5
Governance	Legislation, rules and regulations to enforce strategies and policies	Law-, rule-, regulation-development; enforcement; adequate resources; zoning; conventions; restrictions; fees and taxes; MSP	Ministries & Tourism Board/CHATA & Marine Park authority & Scientists	3-6

(Table 13: Inter-sectoral actions for a MPA)

Chapter 6 – Conclusion and Reflection

(Picture: Beach at Piscadera Bay, by V. Kochan)

6. Conclusion

As a final statement, the analysis and results presented provide a robust guide on how to find a set of ISA for planning in a collaborative way. Eventually, what came across through my research and also was addressed in many situations during conversations with different experts is the role of reality in planning. Finding actions which are appropriate for an economic relevant sector on a transitioning, developing island like Curacao is a complex story to tell on its own; combining these with the challenge of conserving and protecting nature provides a problem scope which seems hard, often rather unrealistic to combine. Tourism brings development – this development affects the environment and is therefore hardly able to place under the broad concept of sustainability, which reflects a critical light upon the concept of sustainable tourism development for instance and leaves me questioning its applicability on the long-term in reality. Many of these identified actions were able to incorporate into the local context; especially the role of enforcement, education and awareness raising gained my special attention for further management and planning of this marine area. As a major result and worth mentioning again here is the importance of answering the ,,why?''-questions. If the local society does not understand, _why_ such rules and regulations are implemented as it is the case for the CMP, a change in behaviour and willingness to adapt will be limited and does not seem success-promising from this point of view. The previously described ,,reality in planning'' (Brand & Gaffikin, 2007, p. 282) was in my opinion clearly able to experience; cultural denial of laws and regulations and the big impact of small measures were components the theory is hardly addressing in the context of combining interests. One important fact is the role of complexity and the applicability of planning approaches. The complex situation of combining sectors or interests was not able to label under for instance an approach like adaptive management; although it was one of many components which needed to be considered. A highlight was the simplicity of my conceptual model and its successful implementation to find a set of actions on an inter-sectoral base, which helped me extremely to carry out this research and provided a structure under real-life conditions. Based on the results from this research reflecting on the literature review and the theoretical framework, I argue that planning theory and especially practice needs to fill the gap between a high number of good and helpful approaches and how the reality in planning actually is. My attempt to simplify the complexity of ISA into a 5-step concept resulted in concrete answers and feasible actions for the CMP, implemented into a management plan for my internship organisation. Therefore, the theoretical framework in combination with data collection and the guidance through a simplified model is possible even in a complex situation. A major insight for planning as well is the realisation of labels, which seem to make a certain situation more complicated than complex. Here to name is the term Ecotourism. The collected data and the general observation about Ecotourism shows the clear wish to become eco-friendlier from all interviewee's, but creating this label provides more of a challenge than an actual benefit. A similar situation was created through the wish of managing in an adaptive manner. A misunderstanding of the term adaptive management into the CMP led to a lot of challenges and confusion, even though a closer look into the created management plan revealed a lot of adaptive capacity which was not even recognised.

All in all, I argue that one of the main findings and enlightenments for planning is still the huge theory-practice gap, which challenged the data collection and the analysis partially on a higher level. Nevertheless, the results are in a context-dependent manner and could in the long-term lead to a successful management and hopefully conservation of the CMP and its beauty, maybe even creates insights for further development into a more collaborative and holistic, inter-sectoral way of planning.

7. Reflection: The Good and the Bad

The Good Part

Focus Groups

Expert meetings were compared to the interviews a more enlightening form of data collection, because the topic and issues brought up were way more detailed and of a different range. The interviews were more guided; topic, keywords etc. were named from the interviewer, the meetings on the contrary left room for all kind of different thoughts, which the participants found important and worth mentioning according to the CMP and its management. It enabled the possibility to include more ideas in terms of feasible actions for the CMP, which are for example not made a subject in literature, so a higher in-depth knowledge was given due to the experts.

The Conceptual Model and the Management Plan

The application of the model seems during the on-site research sometimes a bit too vague, sometimes a bit too specific. Eventually, the methods gave me enough insight into how a strategy should look like, which I could 'practice' with the creation of the Management Plan for the CMP. It helped a lot to identify which parts, aspects and components need special attention in the Curacao context and partly for overall applicability.

The Internship – Carmabi Research Station

The overall experience was extremely helpful – even though it is a marine research institute, working together with so many international experts helped to broaden the holistic view on problems and challenges in Curacao and worldwide, which was not only beneficial for the thesis and the internship, also personally. The practical, simple and 'on-point' way the Management Plan should result in was challenging due to the fact, that theoretical knowledge, approaches, etc. which work in the world of planning and for instance in the Netherlands, does not seem feasible to any point. The theory-practice gap was incredibly high in Curacao and brought up personal limits in form of finding creative or proven, good-working planning measures. All in all, I still find it as a very valuable experience, to see and work with such a different context and challenges and to practice how theoretical approaches are perceived in reality.

The Bad Part

Changes due to on-site observation

The planned survey did not happen due to many issues in terms of e.g. accessibility of the CMP. Also, reaching out to certain tourism service providers was very difficult or they were even located in the Netherlands, therefore they couldn't be included as well. A major confusion at the beginning was

that the current CMP changed from the original Underwater Park, which resulted in many changes due to misinformation. Also, the newly designation as a SPAW area was unclear and needed to be communicated at the end.

Theory vs practice – the island reality

The most challenging issue was the island-reality for planning: new complex approaches are not desired at all and very obviously rejected. A reason here might be the struggles in the institutional design on the island and the attitude of ''don't make things even more complicated''. It resulted in making planning as simple and basic as possible. On Curacao, comprehensiveness is essential, which means that one should stick to the things that are really necessary and nothing more, give concrete examples for better understanding and see how other Marine Parks handled it. Comparative studies are important for comprehensiveness, in my opinion unfortunately not feasible for Curacao and its capacities. Another challenge at the beginning was reaching the government bodies, because actions do happen through contacts and ''knowing people'', which was especially the case for interviews and communication. The heavy lack of enforcement was a big issue in planning certain activities. Especially in terms of data collection for the thesis struggles did occur: everyone was very busy, not available at all or not willing to help. Hence, the time management completely different in the end, much more time would have been needed especially for the management plan and discussing the actions.

References

Adimu, Hasan E.; Boer, Mennofatria; Yulianda, Fredinan; Damar, Ario (2012): the role of stakeholders in marine conservation areas in Wakatobi National Park, Indonesia. In: *AACL Bioflux*.

Anuar, Ahmad Nazrin Aris; Ahmad, Habibah; Jusoh, Hamzah; Hussain, Mohd Yusof (2012): The roles of tourism system towards development of tourist friendly destination concept. *Asian Social Science 8(6).*

Australian Capital Territory (2013): Nature Conservation Strategy. Canberra, 2013. https://www.environment.act.gov.au/cpr/conservation-strategies/nature_conservation_strategy/nature_conservation_strategy 16/05/2019

Berkes, F.; Folke, C (1998): Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience. *Cambridge University Press, New York.*

Butler, R.W. (1996): The concept of carrying capacity for tourism destinations. Dead or murely buried? *In: Progr. Tourism Hospit. Res. 2 (3-4), S. 283-293.*

Broto, Vanesa Castan (2017): Urban governance and the politics of climate change*. In: Word Development, 2017, vol. 93 issue C, 1-15.*

Claudet, Joachim (2011): Marine protected areas. *Cambridge University Press, Cambridge 2011.*

Coghlan, Alexandra (2011): Linking natural resource management to tourist satisfaction: a study of Australia's Great Barrier Reef. *In: Journal of Sustainable Tourism.*

Curacao Tourist Board – Annual Report 2017. Consulted on 26/04/2019 via https://www.curacaoinfo.org/en/

Curacao Tourist Board (2019). Strategic Tourism Master Plan 2015 – 2020. Consulted on 24/04/2019 via https://www.curacao.com/en/

Darbellay, Frederic; Stock, Mathis (2012): Tourism as complex interdisciplinary research object. *Annals of tourism research volume 39, Issue 1, P. 441-458.*

Debrot, Dolfi; Langley, Josephine; Vermeij, Mark; Slijkerman, Diana; Jongbloed, Ruuf; Van Beek, Ingrid; De Freitas, John; Pors, Leon; Jak, Robert, Rockmann, Christine; Cremer, Jenny (2017): Description of the Outstanding Universal Value (OUV) of the Proposed Marine Nomination properties of the Bonaire and Curacao Marine Parks (BCMP). *Wagening Marine Research*, Den Helder, December 2017.

De Roo, Gert (2007): Shifts in planning practice and theory: From a functional towards a communicative rational. In G. Roo de, & G. Porter (Eds.), Fuzzy Planning - The Role of Actors in an Fuzzy Governance Environment (pp. 97 - 108). *Aldershot, UK: Ashgate Publishing.*

De Roo, Gert; Porter, Geoff (2007): Fuzzy Planning: The role of actors in a fuzzy governance environment. *Ashgate: Ashgate Publishing.*

Diamantis, Dimitrios (2010): The Concept of Ecotourism: Evolution and Trends. *In: Current Issues in Tourism, Volume 2, Issue 2 -3.*

Environmental Law Institute (2016): Sustainable Fisheries & Coastal Zoning in Curacao. Legal & Institutional Assessment of Authorities & Approaches.

Ewig, Gail; Walshe, Catherine; Griffiths, Jane (2012): Using observation as a data collection method to help understand patient and professional roles and actions in palliative care settings. *In: Palliative medicine 26 (8), S. 1048 – 1054.*

Fink, Arlene (2014): Conducting Research Literature Reviews: From the Internet to Paper. *Fourth edition. Thousand Oaks, CA: SAGE.*

Florek, Iwona (2012): Sustainable Tourism Development. Consulted on 04/07/2019 via https://www.researchgate.net/publication/236108688_Sustainable_Tourism_Development

Flyvbjerg, Bent (2006): Five misunderstandings about case-study research. *Qualitative Inquiry (2016), 12(2):219.*

Garrod, B.; Wilson, Julie (2003): Marine ecotourism: issues and experiences.

Gill, P.; Stewart, K.; Treasure, E.; Chadwick, B.: Methods of data collection in qualitative research: interviews and focus groups. *BDJ 204, 291-295.*

Goodspeed, Robert (2016): The Death and Life of Collaborative Planning Theory. *Urban Planning, Volume 1, Issue 4, P. 1-5.*

Goodwin, Harold (2017): The challenge of overtourism. *Responsible tourism partnership working paper 4.*

Goodwin, H. J.; Kent, I. J.; Parker K. T.; Walpole, M. J. (1997): Tourism, Conservation & Sustainable Development: *Volume 1, Comparative Report.*

Goldstein, Bruce E. (2011): Collaborative Resilience: Moving Through Crisis to Opportunity. *The MIT Press Ser.*

Hasnoot et al. (2013): Dynamic adaptive policy pathways: A method for crafting robust decisions for a deeply uncertain world. *In: Global Environmental Change, Volume 23, Issue 2, P. 485-498.*

Healey, Patsy (2003): Collaborative Planning in Perspective. *Sage journals Volume: 2, issue: 2, P. 101-123.*

Hughes (2005): Global Environmental History: The Long View. *In: Globalisations 2 (3), S. 293-308.*

IUCN National Committee of The Netherlands (2019): Nature Conservation. Consulted on 16/05/2019 vihttps://www.nationalgeographic.org/encyclopedia/conservation/

IUCN MPA National Committee for The Netherlands (2019): Marine Protected Areas. Consulted on 16/05/2019 via https://www.iucn.org/theme/marine-and-polar/our-work/marine-protected-areas

Jänicke (2008): Ecological modernisation: new perspectives. *In: Journal of Cleaner Production 16 (5), S. 557-565.*

Jentoft, Svein; Pacual-Fernandez, Jose J.; La Cruz Modino, Raquel de; Gonzalez-Ramallal, Manuel; Chuenpagdee, Ratana (2012): What Stakeholders think about Marine Protected Areas. Case Studies from Spain. *In: Hum Ecol 40 (2), S. 185-197.*

Jordan, Wurzel, Zito (2013): Still the century of 'new' environmental policy instruments? Exploring pattern of innovation & continuity. *In: Environmental Politics, Volume 22, 2013 Issue 1.*

Jurado, Enrique Navarro; Damian, Ionela Mihaela; Fernández-Morales, Antonio (2013): Carrying Capacity Model Applied in Coastal Destinations. *In: Annals of Tourism Research, Volume 43, Pages 1-19.*

Krawulich, Barbara (2011): Collecting data through observation. In book: Doing Social Research: A global context. Chapter: Collecting data through observation. *Publisher: McGraw Hill*

KLM Koninklijke Luchtvaar Maatschappij N.V.: Flight offers. Consulted on 03/05/2019 via https://www.klm.com/.

Lafferty, William; Hovden, Eivind (2003): Environmental policy integration: towards an analytical framework. *In: Environmental Politics, Volume 12, 2003 – Issue 3.*

Laing, Jennifer; Lee, Diane; Pfueller, Sharron (2011): Tourism Partnerships in Protected Areas: Exploring Contributions to Sustainability. *In: Environmental Management, 48:734.*

Lemos, Maria Carmen; Agrawal Arun (2006): Environmental governance. *In: Annu. Rev. Environ. Resour. 31 (1), S. 297-325.*

Lindenmayer, David; Hunter, Malcom (2010): Some Guiding Concepts for Conservation Biology. *In: Conservation Biology Vol. 24, No 6, pp. 1159-1469*

Madziwa, M (2016): Interviewing as a data collection method. Consulted on 24/03/2019 via https://www.linkedin.com/pulse/interviewing-data-collection-method-munyaradzi-madziwa/.

Margules, C. R.; Pressey, R. L. (2000): Systematic conservation planning. *In: Nature 405, 243-253*

Mayr, Floyd B.; Upton, Harold F.; Buck, Eugene H.; Vann, Adam (2010): Marine Protected Areas. *New York: Nova Science Publishers, Inc. 2010.*

McDonald, Janine Robyn (2009): Complexity science: an alternative world view for understanding sustainable tourism development. *Jounal of Sustainable tourism, volume 17, 2009 – Issue 4, P. 455-471.*

National Geographic Society. Create a Marine Protected Area. Consulted on 03/05/2019 via: https://www.nationalgeographic.org/activity/create-a-marine-protected-area/

National Geographic Resource Library (2019): Conservation. Consulted on 16/06/2019 via https://www.nationalgeographic.org/encyclopedia/conservation/

National Geographic Society (2019). Resource Library: Marine park. Consulted on 18/04/2019 via https://www.nationalgeographic.org/encyclopedia/marine-park/

Onwuegbuzie, Anthony J.; Frels, Rebecca (2016): 7 steps to a comprehensive literature review. A multimodal & cultural approach. *Los Angeles, London, New Delhi, Singapore, Washington DC: Sage.*

O'Reilly, (1986): Tourism carrying capacity: Concept and issues. *In: Tourism Management, Volume 7, Issue 4, Pages 254-258.*

Paré, Guy; Kitsiou, Spyros (2018): Handbook of eHealth Evaluation: An Evidence-based approach. *Victoria (BC): University of Victoria, 2017 Feb 27.*

Pérez-Soba, Marta; Dwyer, Janet (2016): The social-ecological system concept. *DG AGRI Workshop, Wageningen University, CCRI.*

http://ec.europa.eu/information_society/newsroom/image/document/2017-1/3-4-_socio-ecological_concept_-_marta_perez-soba_and_janet_dwyer_41127.pdf 20/05/2019

Redman, C., Grove, M. J. and Kuby, L. (2004). Integrating Social Science into the Long-Term Ecological Research (LTER) Network: Social Dimensions of Ecological Change and Ecological Dimensions of Social Change. *Ecosystems Vol.7(2), pp. 161-171.*

Richardson, Douglas; Castree, Neol; Goodchild, Michael F.; Kobayashi, Audrey; Liu, Weidong; Marston, Richard A. (2016): International Encyclopedia of Geography. *Wiley.*

Schoeman, Jess; Allan, Catherine; Finlayson, Max (2014): A new paradigm for water? A comparative review for integrated, adaptive and ecosystem-based water management in the Anthropocene. *In: International Journal of Water Resources Development 30(3).*

TIES The International Ecotourism Society (2019): What is Ecotourism? Consulted on 25/05/2019 via: https://ecotourism.org/what-is-ecotourism/

Tourism New South Wales (2013): Defining 'Nature Tourism': meaning, value and boudaried. Understanding nature-based tourism – no 2. Consulted on 01/06/2019 via: https://outdooreconomy.com/wp-content/uploads/2013/08/Tourism-New-S.-Wales_defining_nature_tourism.pdf

United Nations World Tourism Organisation: Understanding Tourism: Basic Glossary. Consulted on 06/06/2019 via ehttp://cf.cdn.unwto.org/sites/all/files/docpdf/glossaryenrev.pdf

Uysal, Muzaffer; Woo, Eunju; Singal, Manisha (2011): The Tourist Area Life Cycle (TALC) and Its effect on the Quality-of-Life (QOL) of Destination Community. *In: Handbook of Tourism and Quality-of-Life Research.*

Warner (2010): Ecological modernisation (EM) theory: towards a critical ecopolitics of change*? In: Evironmental Politics, Volume 19, 2010 – Issue 4.*

WHO World Health Organisation (2019): Social determinants of health: Intersectoral action. Consulted on 17/05/2019 via
https://www.who.int/social_determinants/thecommission/countrywork/within/isa/en/

Zelenka, J., Kacetl, J. (2014): The concept of Carrying Capacity in Tourism. *Amfiteatru Economic, 16(36), 641-654*

Zirulia L. (2011) Competition Between and Within Tourist Destinations. *In: Matias Á., Nijkamp P., Sarmento M. (eds) Tourism Economics. Physica-Verlag HD*

Appendices

1) Inter-Sectoral Actions for the Degrees of Collaboration

Degree of Collaboration	Actions	Level	Aim
Type 1 + Type 2	Path-dependency	L	Preserving good collaboration
	Adapting to trends	L	
	Focus on annual assessments	L, R	
	Continuing maintenance of measures	L	
Type 3	Annual assessments, analysis	L, R	Need for improvement
	Identification of problematic areas, ''hot-spots''	N	
	Focus on impacts	L, R	
	Adapted strategy: Management Plan, Development Plan, etc.	R, N	
	Education, awareness raising, outreach	L, R	
Type 4	Zoning	N	Specific addressing of problem
	Update of regulations/guidelines concerning tourist environment	N	
	Intensify collaboration: NGO's, scientists, other stakeholders	R, N	
	Adaptive management and monitoring of short-term measures	R, N	
	Education, awareness raising, outreach	R	
Type 5	No-take-zones	N, I	Immediate effective actions
	Visitor limitations	N	
	Restricted activities in natural areas	R, N	
	Short-term actions, long-term developments	N, I	
	Outreach, education, awareness on National Agenda	N	
Type 6	No-take-zones	N, I	Drastic change
	National visitor limitation	N	
	Visitor-fee for activities in nature e.g. diving	N	
	Restrictions for recreational activities or visits in certain areas by law	N	
	Immediate actions, short-term measures, long-term development	N, I	

Levels
Local (L): Local authorities; NGO's; Research Institutes
Regional (R): Regional authorities; NGO's; Research Institutes
National (N): National Government, corresponding Ministry, e.g. Nature/Environment/Economy
International (I): International conventions, e.g. UN

2) Overview of potential interview partner:

Body?	Who?	Response?	When?	What?	Level?
Curacao Tourism Board	/	No	/	Tourism	Department
CHATA	Crystal Willems	Yes	25/04/19	Tourism	Business, Collaboration Tourism Board
EcoVision	Yaír Stokkermans	Yes	26/04/19	Environmental Consultancy	Business
Sea Turtle Conservation Curacao	Sabine Berendse	Yes	Not possible, lack of time	Nature conservation	NGO
Curacao Nature	/	No	/	Nature conservation	Business/ NGO
Milieau & Natuurbeheer	/	No	/	Nature conservation	Department
Tourism Management Curacao	/	No	/	Tourism	Business
Yellow Tourism solutions	/	Yes	not appropriate because not located in Curacao	Tourism, service provider	Company
Ministry of Economic Development	/	No	/	Tourism management	Ministry
Carmabi Marine Research Station	Mark Vermeij	Yes	Expert Talks, multiple times	Research Marine Biology + MP close collaboration management; Scientific Director	Research Institute
Ministry of Traffic, Transport and Urban Planning*	Miriam Jonker	Yes	02/05/19	/	Ministry
Waitt Institute*	Endirah Palm	Yes	30/05/19	Site - Management	Waitt Foundation
Department of Fishery & Agriculture*	Faisal Dilrosun	Yes	31/05/19	Civil Servant	Ministry GMN
Carmabi Marine Research Station	Dr Ben Mueller	Yes	12/05/19	Research Marine Biology	Research Institute

3) The Interview-Guide

1. *Introduction, background of the interviewee*
2. *Situation in Curacao: tourism vs. nature conservation*;
   - growing tourism number?
   - environmental pressure?
   - good/feasible combination on the island?
3. Based on answer above..
   → *marine parks as tourist attraction*
   - marine park adequate tourist attraction?
   - enough guidelines etc. how to behave in these kind of environments and does (orga) pay attention to the potential harm?
   - need more regulations/enforcements to secure NC though tourism?
4. *CMP: situation*; adequate for tourism?
   - anything outstanding about it (e.g. tourists really like it, nothing to do with it,..)
- need for more actions/guidelines/restrictions?
5. *Planning & stakeholder interaction*: focus CMP; challenges? Specialities?
   - communication (sectors, ministries, organisations)
- overarching guiding body tourism?
6. *Governance & planning*: more actions (e.g. monitoring, negotiations etc) or even less? Better collaboration?
7. *Ecotourism* – opinion
- feasible Curacao? Or already in planning/thinking about it?
8. Anything you would like to share, *keywords*: collaboration in planning, tourism, ecotourism, environmental protection, marine parks/MPA's?

The background of each question

1. Introduction, who is the interviewee, where is he/she located in governance & sectors

2. Getting an overview about the situation in Curacao according to tourism and nature conservation and its collaboration. Is it combined to some point or very contradictory? Is the number of tourists increasing again and is that desired? How is that affecting environmental pressure? Is this increasing as well? Is the situation describable as a good/feasible combination on Curacao

3. This builds up on question 2, now with a specific focus on the CMP. The marine park is here used as a tourist attraction (diving, snorkelling, public beaches, hotels, etc.). From the different sector-perspectives: is the MPA an adequate area/location to be a tourist attraction? Does exist a number of guidelines, recommendations etc. how to behave in these areas without degrading the ecosystem? Does the organisation, company etc. pay attention to these guidelines or is there a desire for more awareness about potential harm? Is there a perception about the need for an increased number of regulations/enforcements to secure the nature even though the number of tourism is growing?

4. The situation & opinion about the CMP in terms of past and future. Is it an adequate environment for tourists? Is there a need for more actions/guidelines/restrictions from higher levels of governance, like more enforcements?

5. Challenges and perspectives of planning and stakeholder interaction as the actual collaboration with the focus on the CMP, what are the challenges? What is special? What works good/bad? How is the communication structured and functioning between sectors & levels? Is there an overarching guiding body for tourism/nature conservation or is it collaborative?

6. What does each sector think about actions from the island governance? Is there a need for a better collaboration to actually combine interests on a multi-level perspective in an inter-sectoral way? Which actions are hear talked about most? Some new ideas?

7. Is Ecotourism a concept which can be implemented to the context, situation, circumstances etc. of Curacao?

How does different sectors differ here in their opinion? Is it realistic for the future?
8. Any information the interviewee might find interesting to mention in this context.

4) Overview findings – interview analysis

KEYWORD	INTER-VIEWEE	STATEMENT
TOURISM & DEVELOPMENT	Willems	Increasing number of tourists, more tourists; more attention dive tourism and marine live, often tourists doesn't know what Curacao has to offer; tourist bring 'trends' like sustainability etc
	Stokker-manns	Hotels want to establish itself in undeveloped areas; coastal development to develop areas as tourist areas; building-process brings run-off; tourism impact not as big as others, its manageable; development should be ecologically and it requires good infrastructure; diving tourism is big currently and growing; some hotels good with environment, others have other priorities; hotels take initiatives themselves for costumer satisfaction; development leads to problems (degradation); its better to build with a distance from the sea; undeveloped areas bring more opportunities (like cycling); tourism as good/important for economy and developing
	Mueller	Coastal development includes tourist, local people, money and finding a balance in this development is essential; damage by divers or people in the water; ideally no-entry-zones and no development but not going to happen; tourism is not all the same; development is never sustainable; ecotourism brings a lot of restrictions otherwise it doesn't work; ecotourism brings inequality in benefits for the local economy and community; analysis & measuring of tourist and their activities;
	Palm	Culture & history are important for current development & geopolitical situation; change Curacao from oil refinery industry to attractive tourism destination; promote tourism & diving; hotels should be more linked, also to environment; Curacao's potential is diving;
	Dilrosun	Challenges due to location close to the sea, artificial beaches & palm trees; environmental impact like pollution, sewage, development of hotels; diving damage; curacao wants to diversify tourism; need for other options then just beach and ocean
	Jonker	Finding adequate solutions to promote tourism; avoid big developments like e.g. on Eastpoint or Klein Curacao

KEYWORD	INTER-VIEWEE	STATEMENT
NATURE CONSERVATION & ENVIRONMENTAL DEGRADATION	Willems	Advocating sustainability & environment through seeing the actual environment while diving; more people means more waste; tourist come for Curacao's nature, so conservation & caring is important;
	Stokker-mans	Excluding people for protection is good; Eastpoint easy to protect because of good state & no development; development doesn't always consider coral reefs & environment; mangrove park; Curacao has a lot of biodiversity; conserving nature benefits tourism
	Mueller	Coral reef good state, growing reefs; oceanic island & benefits from topography; less of the issues in Curacao which face other Caribbean islands; getting fish stocks back; protection of buffer zones (inland-bays) important because it effects whole life-cycle & needs to be considered; tourism should be less destructive; actions are important for status of the reef next to economic terms
	Palm	Protecting areas; areas open for diving because no stress/damage; people more

		& more interested in protecting the environment;
	Dilrosun	Situation is intermediate, bad & good spots; environmental assessment; overfishing problem; pollution issues; decline coral cover; diseases & invasive species; coastal development
	Jonker	Avoid illegal behaviour as major challenge for environmental matters

KEYWORD	INTERVIEWEE	STATEMENT
MARINE PARK	Willems	-
	Stokkermanns	-
	Mueller	Eastpoint as a very vulnerable & special area; need for protection & regulations for vulnerable areas; feasible as tourist attraction if there are no big facilities build
	Palm	People don't care if it's a Marine Park, because they don't see it; only care if they have a stake, e.g. ownership
	Dilrosun	Designation as a Marine Park because of high value in an ecological sense
	Jonker	Eastpoint has high profile & development is political topic

KEYWORD	INTERVIEWEE	STATEMENT
PLANNING & STAKEHOLDER INTERACTION	Willems	Motivation and a common goal can speed up processes or slow it down; good collaboration with government & organisations; respect their work; always room for improvement; good collaborations with partners;
	Stokkermanns	No sufficient interaction; government improving stakeholder engagement through contacting but often they just make decisions; but more collaboration recently; neighbourhood associations; stakeholders engaged in projects; should be more collaboration
	Mueller	Need people to project and pay for projects; think collaborative how to do something with the least damage; interaction and collaboration should go together with experts to find customised strategies; role of NGO's besides government and researchers; coordination and collaboration for combined work effort and not working against each other
	Palm	Communication is difficult; work with ministry in a committee, legal drafting; investment in sustainable projects & management; collaborations important for funding; structure is important, who does what; ongoing organisation & procedure (funding & sustainable management); NGO should do the coordination; coordination essential and very concise & precise; set strict guidelines, who is doing what, when, agreements, meetings, have the culture in mind; communication & meetings, also informal; a lot of people & culture come together here
	Dilrosun	Balance of nature conservation & tourism is big challenge combined as a whole; working together very important; management authority, NGO, government & sectors should be very close & joint forces; planning as a big issue; pressure to change spatial development plan; desire to develop because of benefits; tension between NC & T
	Jonker	A platform, provided for communication & exchange; polluter pays; carrying capacity; physical presence for control, enforcement; common-sense approach

KEYWORD	INTERVIEWEE	STATEMENT
ACTIONS	Willems	Dive Force: cleaner waters, awareness about Curacao as a dive destination; sustainability efforts: collaboration with TUI travels, special recycling bins, during events promote to use less plastic & awareness about consuming; coral restorations; awareness raising of dive opportunities; message to care about nature, conserve it; restrictions; local awareness; no plastic bags in supermarkets; switch to carton boxes instead Styrofoam; awareness of effects of plastic & waste; supermarkets offer sustainable

		alternatives to plastic cups etc; food trucks going biodegradable
	Stokkermanns	Recycling initiatives, especially big companies, also some hotels; plan for conservation efforts; enforcement of rules (through coast guards); promotion of ecological sunscreen; fishing methods; current lacking enforcement; business (maybe for hotels an idea) platform for sustainable development; guidelines & rules for hotels to be environmental responsible; start thinking about environment; environmental impact assessments, draw conclusions, apply certain measures; sustainable building processes; awareness raising; other type of assessments; limited tourist numbers & hotels (Bonaire); consider impacts from land for e.g. Marine Park; rainwater usage & drainage;
	Mueller	Good general condition in Curacao but not due to actions; reducing local stress (local level); local interventional to support reef recover; zoning & a good plan; finding right balance for development; zoning & designation of buffer zones; provide mooring buoys; No-Take-Zones; rules & regulations which are able to enforce; provide trash bins & emptied every day; regulations/permits for diving & divers, e.g. certain skills/knowledge; awareness about special nature supported through strict regulations; ''ownerships'' for areas to be responsible for it; adequate facilities (like buoys & trash bins); financial system so actions/regulations can sustain itself economically on long-term; education; awareness & education even for harder to enter marine environment; immediate & short-term measures; recommendations by scientists; monitoring; measure of success; using the right measure; monitoring & a right system for it; coordination
	Palm	Financial mechanisms; domestic fisheries law; marine sanctuary; national marine spatial planning; implementations like dive fees e.g.; software to identify where to have protected areas; inputs from political, geopolitical, socio-economical, environment, culture, past, now & future site; funding; one responsible organisation for funding, management, ideally a NGO; communication; regular personal meetings; MSP; promotion for less littering & use of less chemicals; dive company efforts like clean ups; regulations & laws for MPA's
	Dilrosun	Strict rules & regulations for users & activities within Marine Parks; combination of communication, education; understanding why protected & why these measures; educational programmes; spatial development plan; leaving nature how it is & promote that; education & outreach so people know facts;
	Jonker	Short, practical organisational frameworks; physical presence ''eyes & ears'' within the park; use of mooring buoys; hotline to report suspicious behaviour; user platform for stakeholders

KEYWORD	INTER-VIEWEE	STATEMENT
GOVERNMENT & GOVERN-ANCE	Willems	Government needs to introduce recycling system; should be more involved in awareness & conservation; local laws & regulations better enforced otherwise gets lost; steady handed need; law adjustments etc take time
	Stokker-manns	Environmental impact assessments not obligatory on Curacao; ministries are responsible for giving permit & enforcing it; top-down; big hotels have more collaboration; government likes development because helps economy, creates jobs; guidelines & regulations are there but not used or enforced, not always applied; government has a lot of flexibility, makes own rules
	Mueller	Avoid extra costs, sustain expenses so no dependency on government budget; government makes the rules in the end; research permits, but unclear how it is handled if its not research but just making money, unsure about how law system works;
	Palm	Legal aspects important; government promtes tourism; collaboration with tourist board; government knows environment needs to be considered; government not against nature conservation; ministry leading but government should not lead everything; national decree describes what is allowed/prohibited for everyone; projects

		government approves; coast guards important for enforcing
	Dilrosun	Closely working together with other bodies, ministries, stakeholders, NGO's
	Jonker	Not much consulting; rules & regulations will be created especially for the SPAW area

KEYWORD	INTERVIEWEE	STATEMENT
ECOTOURISM	Willems	A starting trend; going towards, tourist speed up process through bringing knowledge and awareness from their home countries; maybe in 2 – 3 years with a younger generation and more studies
	Stokkermanns	Ecotourism is good; in Curacao would be good to distinguish from other island and its own value; growing awareness ecotourism; Bonaire a lot ecotourism;
	Mueller	Difficult in Curacao; really desired?; maybe not really feasible for Curacao but rather eco-friendly; pure ecotourism would be difficult;
	Palm	Doing more for Ecotourism; not expected to become an ecotourism island; more promotion & education about environmental protection for hotels; existing hotels should become more eco-friendly; Curacao not eco-friendly but aware of protection and working towards it; won't get to ecotourism
	Dilrosun	Sounds good but big challenge; creates opportunities for competition, distinguish; recommendable; curacao promotion for nature management & sustainable use of resources; shouldn't become ecotourism but should create some eco-friendly opportunities; money, people pay more for ecotourism and natural areas
	Jonker	- Not addressed during conversation -

KEYWORD	INTERVIEWEE	STATEMENT
ADDITIONAL	Willems	More awareness about sustainability; how much trash they produce & try to recycle & use more sustainable plates; sustainability as a recent trend; different priorities; lately many students with studies & thesis about sustainability & conservation; more recycling;
	Stokker-manns	Sewage waste; no functioning sewage system everywhere; waste discharge into the sea; trash dumped at dump-site; oil-refinery & big industrial impact; climate change; pollution in general; not aware of e.g. sustainable building plans; transition from industrial island to tourism; inefficient drainage also bad for groundwater supply; economy depended on situation in Venezuela as well
	Mueller	Main threat is situation of sewage treatment facilities & run-off from land, grey-water coming from the streets
	Palm	Curacao conditions make financial mechanism report/advice a challenge; cultural considerations are essential; stakeholder meetings should be informal (e.g. a BBQ); shipping etc as main financial source but MSP is necessary; a lot potential in some areas in Curacao
	Dilrosun	Problems with land-owners, dissatisfaction about designation of their property;
	Jonker	Broad & complicated approaches not feasible for Curacao, limited capacities & resources

5) Transcription of the interviews

I = Interviewee
V = Interviewer

➤ Tourism & Development
➤ Nature Conservation & Environmental Degradation
➤ Marine Park
➤ Planning & Stakeholder interaction
➤ Actions (for Curacao & general)
➤ Government/Governance (Curacao)
➤ Ecotourism
➤ Additional, like pollution, sustainability,..

1) Curacao Hospitality And Tourism Association (CHATA) – Crystal Willems 25/04/2019

V: First, it would be nice to hear a short introduction about yourself.
I: Okay, to introduce myself, I do marketing and research here at CHATA and besides the data collection of hotels and stuff and the marketing part, we also have many different task forces within our organisation of which the dive task force, sustainability task force, we have a culture and heritage task force, wellness and luxury task force and I am missing two, there are a lot. But basically, what we do is to coordinate the whole task forces, every task force does everything for the most part on their own, they discuss on a monthly basis, most of them meeting monthly. And they discuss common goals, issues and things they wanna work towards etc. etc. The dive task force, just to give you,.. I am in charge of the dive task force, my colleague is back next week from the sustainability task force, if you still have time or still have questions we can schedule a meeting with her as well. But within the dive task force, one of the most independent task force, if I may call them that, besides just dive shops, that are members of the task force, they also advocate for sustainability and especially for environment, everyone is diving and seeing all the mess. So together with the tourist board of Curacao they also do their own marketing if I may call it like that, since the one dive entity promote and market Curacao as a dive destination, so they are in charge of that as well. That's why I call them as more independent, since they all have one more common goal they work towards. As other task forces they have also different members with the same goal but at the same goal they all have they independent goals and things you want to reach. The dive force they want to have at the end of the day the waters to be more clear and at least people being more aware of Curacao as a dive destination. With that being said, they do a lot of, advocate a lot about sustainability especially for waters and the ocean and they do as well a lot of cleaning, sea cleaning, ocean clean up and that kind of stuff. And I think if you're staying with Carmabi for the underwater marine park maybe they can also be of help, and they can assist in the process.
V: good, then I would start with the first question, so this is also before we start, this is more about getting a general insight, there is no right or wrong. This is just about getting a feeling about how is the situation in Curacao, to make a little assessment about the situation and the current collaboration. So, the first question: how is the situation in Curacao if you compare the situation about tourism and nature and conservation, is there at the moment a growing tourism number visible and does that affect environmental pressure or is there a trend visible?
I: well, what we are seeing is definitely that there are more tourists in Curacao. We see an increase a number in tourism, if we talk about number we talk about 2017, but there is definitely an increase in that. I am not sure if, just to answer the question if it puts more or less more pressure, I am not sure about that. Of course, it is, to go to the trend part, I would not say it's a trend but people becoming more and more aware about sustainability and how to be more sustainable. And that translate back to tourist visitors we get on the island that they also see that we are aware of the situation and maybe not every but at least we are trying, and we

are trying to contribute as well in that part to make everybody involved in being more sustainable. Maybe in hotels, restaurants or just local businesses, but we try to contribute to that awareness so that everybody eventually hopefully becomes more sustainable, so I am not sure if the increase in visitors on the island really affects the environment in such a way but yea. It is kind of automatically when we speaking about more people we have more waste and that's kind of normal, but then again it is very good to see that there are a lot of people are aware of how much trash and waste they consume and how they try to recycle and use more sustainable plates and less plastic. So that's kinda of a trend.

V: you were saying something about awareness raising, is that a major action you are trying to propose to e.g. hotels and accommodation

I: there is not like a campaign or a general campaign in that sense, but CHATA is for example the sustainable task, we try as much as we can to contribute towards the sustainability affords. One example I can give you that we collaborate with TUI Travels. We have now in one of the hotels, its a project of TUI, but since we have all the members here, we try to get more hotels and members involved to do e.g. recycling. Now we have at some of the hotels here on the island you have special bins for recycling. That's one way as well to get the visitors more involved in recycling and being sustainable. I think that's definitely one big effort. For that matter, all our members they are practically very aware about the sustainability situation, we try to cooperate in all our events to use less plastic and to make them aware of what they are consuming. So I think that is one big effort we are doing and I think that is something they can take back to whatever their business is and apply that as well. Its not like we have one official campaign or anything, but it is something we really advocate for and make all our members aware.

V: Okay that is a good effort! Then I would go on with the marine park. First, is that something you have heard of, you have any stake of here at CHATA? Is that a topic here?

I: not really, no.

V: this is no problem, then do you know what a marine park is? A marine protected area?

I: no, maybe we can start there.

V: Okay, it is a particular part of the ocean, of the sea for example which has a particular value and this is usually managed by the government, they set up the regulations and they call it or designate is as a marine protected area. And a marine park is a part of it which allows through different zones different activities. You have zones where you can do fishing, or e.g. super restricted zones where you cannot do anything because there is a coral reef for example. Since we have a big marine park here in Curacao, they just started to make it a marine protected area. And what do you think of using this kind of protected as a tourist attraction more or less?

I: looking for it from my dive task force coordinator perspective. I think it is a very good idea, it gives nice additions to trying to get more dive tourist here on the island as well and to get more people involved in marine live in what we have to offer in marine live, because a lot of tourist, if I just speak generally, they now about Curacao but they like the white sandy beaches and adventure and the city with a lot of history but they are not really aware of what we have to offer in marine live. So I think it is a really nice initiative if I can call it that and it can be a very nice addition to the whole cause that we are trying to advocate. Like you mentioned restricted areas and stuff, if I just look back at a pretty new organisation,the coral restoration foundation and they do a lot of coral restorations and adoption and such things, so that they can eventually get the corals a better life and restore a lot of the reef underwater. I think that's maybe also one foundation organisation that you could contact, because they do a lot of good and its a pretty new and interesting project as well.

V: ye that is definitely relevant and interesting! Also very similar to what is Carmabi doing to some point.

I: yes I am not sure, its pretty sure and I am also now getting a little bit informed about, maybe they are working with Carmabi or at least they were in contact with them

V: I will look that up! So, having the tourist perspective on one site and having the tourist in mine, that it is good for the economy, do you think it is also very important at the same time to set up a proper guideline and to enforce for the tourist which are just here for the short time, or that they need to be guided how to behave in these areas?

I: definitely, because like I said, we are trying to make people more aware of the dive opportunities here at the island or at least the sea opportunities what they can do with water and most of the people come here for the beautiful beaches and stuff and they dont see what's underneath. Most of the time you don't really see it unless you are a diver. So you don't see what is underwater, so it sends out a message that the

community cares about the nature and we want to conserve the nature and everything we have to offer, because at the end of the day this is what Curacao is and people come here for the beautiful nature, like the trees and the green and blue sky and the ocean. It is very important to send out the message that we care about what we have. If you want to conserve some area, it has to be restricted.

V: maybe we can sum it up as awareness raising for each hotel etc. but at the same time you need to make clear that you can use it but under these conditions.

I: yes, definitely. But not only for the tourist, also for the local as well. It is unfortunate as well, but not all locals but, I think we take it for granted and for us its normal and the way we pay attention to it. You don't pay attention of how you do thing and then you affect the cause and the tourist come here and they get a whole different experience than you do. Its very important to the local to give them as well the awareness part that we have to conserve whatever, the beaches, areas and whatever it is for our tourist, so that people can see the united message that we really care about what we have

V: yes that's actually a big part as well, a general awareness raising, not just for the tourists. Okay, yes, the situation in Curacao about planning and stakeholder interaction. When it comes to a situation like here in this marine park and there are so many people involved and CHATA is cooperating with the tourism board. Is that really something that takes a lot of time or is that something people wanna get done as fast a possible?

I : well it depends on who you're working with. I dont wanna say its a slow process, if you're working with the government and such, some laws and whatsoever have to be adjusted, that can take a long time and it requires a lot of paperwork and a lot of back and forth, it doesn't happen over night. But I think in general if we are working towards a common goal, a lot of times it can happen very fast if you have very driven and motivated people that really care about the cause. That is working with any project that you're working on. If you have people which are very motivated and work towards the common goal, then it can speed up the faster. So, I would say that can go as fast as you want it to go, as fast as people are motivated to achieve that goal. But if you have to get officials involved, then it can take a longer time, especially as well because, like I said, we are trying to raise awareness, I call it a trend but people are now realising about sustainability and environment and stuff. Maybe not everyone is as fast on board and maybe for some people its not really a priority right now which can slow them down in the process because maybe they prioritise something different than this cause. This can slow the process but if you have really motivated people that really care about the cause, like the dive task force and the coral restoration foundation, they are really motivated and passionate about the cause and that can speed everything up.

V: Would you say that the government should do more in terms of conservation, monitoring, assessment and whatsoever or is it more like e.g. Carmabi as a research station is supposed to do, or is there more like a need for more enforcement from the top?

I: I think the government, there is always room for improvement and the government can definitely be more involved, especially when it comes to awareness and conservation and stuff like that. However, I'm not sure if Carmabi is an organisation that gets its funds from the government or parts, cause that's a good beginning, that's a good start. But however maybe I think when it comes to local laws, regulations that they maybe can indeed enforce a little bit more that also the local become more aware about what we have. Unfortunately, it shouldn't be that way but if it doesn't come from the top to enforce regulations and laws, most of the times the local... I don't want to say that they don't care but they have different prioritise and if you have groups like the dive task force or Carmabi or many any organisation that works towards conservation, the cause would get lost. I think it's a combined effort, it has to come definitely from the community as well as from the government. And I think the government should be a little bit more steady handed when it comes to that part. Maybe in just of the use of more sustainable products. They introduced a couple of years ago not to give plastic bags in the supermarket anymore and that's a good start. Maybe you can introduce like, I'm not sure if you know it but the food trucks here they use foam boxes and now of them, like I said they are more aware of the cause and they switch over to use carton boxes. Maybe that's another action you can take, is to kind of force every food truck to use paper boxes instead of foam boxes but I am not sure if that's even possible but little efforts like that they goal on a long way. That are little things that can contribute more towards the cause.

 V: small steps are better than no steps, yes. Okay, alright, that sounds actually pretty positive already, so you as a organisation or business would you wish for a better collaboration with for example NGO's or government bodies?

I: as a matter of fact we do have a pretty good collaboration with most of the organisation, governmental or not. I think they really respect what we do and for that reason they all want to get involved and they all want to do something and that's definitely positive and so I wouldn't say, so there is always room for improvement, but we do have a pretty good collaboration with all the stakeholders, members, partners.

V: that's really nice! And my last topic would be about ecotourism as a trend. Would you say that, besides the fact that there are small steps and improvement already in terms of plastic and more awareness raising, would you say that ecotourism is a feasible trend for Curacao? Or maybe something that is already in mind or maybe something for the future?

I: well definitely, like I said the trend is already starting here. But since we are a small island, usually trends happen before they come here and they usually happened a year before in the USA or whatever. I think its definitely something we are going towards, we are going in that direction. Tourism visitors that come here speed up that process as well. I mean, they contribute that process as well because they are brining whatever knowledge they have they bring it here, or not maybe and then makes us as well more aware about what we have and how we can one day reach that same level that tourists are used to in their home countries. I think definitely that helps us as well, it is an insight in more a more broader view towards where we want to get and how to get there. I noticed lately a lot of students as well, doing different studies or thesis towards that direction of sustainability and conservation and such things and I think that Is good as well, if you're contributing to you your cause it also contributes to us about how the trends are really getting over here to Curacao and gets us more involved about what we can do and achieve certain goals and get more people involved and get the country more aware. Not only tourists, also local. So I think definitely it is something that, maybe its going to take a while, its not going to happen over night and not in the next 2 or 3 years, but with the younger generation as well coming back to the island after studying and stuff we are going to that direction. Yesterday in the supermarket I noticed a separated shelf where you can buy sustainable cups and plates and party accessories and stuff. I thought that was really cool, while walking you see a lot of plastic bags and cups and plates. It was a little shelf, but I saw that people get more aware and give the option, so that other people can see and buy eventually, hopefully all the plastic is gone and buy degradable option. It is definitely something we work towards and its going to take a lot of awareness and a lot of effort, because, like I said its not only for the visitors and the tourists, its also locally. We have to make our people aware of what the effects are of plastic use and waste and such things. Just personally speaking, it takes a lot of effort, since I started working here I am more aware as well of how much plastic I use and how much waste I consume and stuff, cause like I said the whole organisation tries to advocate for that and maybe not in a very official big campaign kind of way but small steps. I'm also advocating within my friends now, and sometimes they really laugh if its just one plastic cup. But if everyone is doing it it becomes a lot. It starts locally and if it starts locally it starts to spread out and this is hopefully how we can reach the end goal. It is definitely something that I think is feasible for the island. I think we do have to ave more people that are, I would say, talking about waste management. People are now recycling more, not as much as they should but more than in the past and that means we have to do something with the recycled products. If we don't have the possibilities and right equipment.

V: yes, if the people already start to realise, I am using a lot of plastic, so I personally or my family or whatever starts to recycle but there is no place to put the material and further produce is, everything is kind of useless again.

I: The example like in the U.S. To separate from the beginning with different containers, that is something the government should implement here as well. Like I said, they cannot tell you, you have to do it, but they should give you the option and they you would see how many people would do it and want to recycle. Is a bit effort to recycle because there is no place to put your plastic, but if you do have a place we don't have the right amount of equipment and people to actually do something with that recycled glass, so we have all the plastic as well and then what? And then glass as well. I know people that recycle glass as well, but then you have to drive all the way to the place where all the trash goes, you have to drive all the way there to bring your separated glasses and its not really handy. So if the government introduces a more structured way of recycling and trash pick up so I think it would go along with the people.

V: so e.g. comparative research could be a good approach here. In Germany we have four different containers for trash, and if you put e.g. plastic and the container for paper, they pressure you with not taking the trash and then you are stuck with your trash kind of, for another week or so. And this is so effective. And this is just

is so common, and this is so positive. So it has to be in their minds, and also good to hear that in the supermarket for example just a little shelf, but that means its in their heads.

I: they start thinking about it. And it makes you more aware, if you were about to buy the plastic cups and you see, that this is also an option, and actually they were pretty cute as well. What I find cool as well, like I mentioned, the food trucks. Locals buy a lot of food, they eat a lot and the food trucks are very popular in here. It's really a thing when you go out, you go afterwards to the food truck and they produce a lot of trash. One of the food trucks, for the last 3 – 4 years, one of the best food trucks of the island, they started to go completely biodegradable. You cannot find one plastic cup in their place. That's really cool as well and raises more awareness and makes the locals more aware as well to what they use and some of them complain because they are maybe not as handy after a while. Its definitely great because they also sending out a message, like, you can have good food but still be completely biodegradable. Its more expensive but to a good cause.

V: and sometimes they need to see that it works somewhere else, that's a really good effect. Yes, the last note would be, do you have anything else you want to share according to the keywords collaboration, tourism and all that was mentioned before? Just to finalise it.

I: I think I mentioned everything I wanted to say already.

– *finalising, thank you etc. -*

2) EcoVision – Yaír Stokkermans 26/04/2019

V: My first question would be to introduce yourself a bit, about your background etc.

I: Yes sure, my name is Yaír Stokkermans, I work at EcoVision for now three years. I have a background in chemistry, I started Chemistry at the Hogeschool in the Netherlands and after that I studied industrial ecology, which is an environmental two years master course. After that, I worked in the Netherlands for 6 years, three years as an air quality specialist, later as a permit application official. At EcoVision at work now three years and EcoVision is a small consultancy firm on Curacao. We have 4 people employed, full-time, based on the projects we do, we hire freelancers. What we mostly do is we do help companies obtain environmental permits and we do environmental impact assessments, marine impact assessments, also we do a lot with water quality, air quality, soil quality and we do that mostly on Curacao, Aruba and Bonaire. Also on other island, St. Eustatius and St Maarten, so mostly the Dutch Antilles. At our company we have 4 people, two biologists, 1 employee with a technical background and myself. Any questions?

V: not so far actually! Good, then I would like to start with the first question according to Curacao. If you think about tourism and nature conservation, would you see that there is a growing tourism number, or increasing tourism in general? Would you say that or that you have not that much to do with that, you are not really concerned with tourism?

I: In our business, we are related to tourism, e.g. hotels are our clients as well. When a hotel wants to establish itself, it also requires environmental permits and very often it will be placed in an area that was not developed before, so there are some legal aspects. We do notice that there is an increase in tourism. So, on Curacao tourism at the moment is increasing each year, so yes, to answer your question there is an increase in tourism and also an increase in our work related to tourism.

V: Do you combine with it also, like during an assessment, which concerns environmental pressure and more degradation due to the increasing number of tourism?

I: Yes, yes, it has consequences. One of the big issues at the moment is coastal development, when areas are developed as tourist areas, then you get a run-off into the sea during the building process. Also, when they are running the hotels there is sewage waste which has to be disposed. On Curacao we don't have a functioning sewage system everywhere. On many parts on the island, houses, companies are depended on [sesspits?] and this has to be emptied periodically. Well, its supposed to or to treatment plants but they are not always fully functional, so a lot of waste is also discharged into the sea at the north coast.

V: Oh that's bad!

I: But its getting better.

V: Yes its getting better, yesterday I was talking to CHATA and they also said its really a need for a proper

recycling and waste management in general. So you would also support that?

I: Yes, most of the trash is dumped at a dumped site. There are recycling initiative, so it is possible to recycle plastic, aluminium cans, but not everybody does it. So there are big companies which recycles metal and plastic, but yes its voluntarily, and you do see for instance hotels which care about the ecological footprint. They do employ services to recycle plastic and aluminium cans. But most of the waste is dumped.

V: Okay, so apart from the waste management, would you think that the combination of tourism and nature conservation is still feasible and a good combination for the island? Or would you say that the tourism impact is very high at the moment or it could be even growing and there would be no crucial harm for the environment? What's your opinion about that?

I: At the moment I think the impact of tourism is not that big compared to the other impact on the island. Curacao has the oil refinery and other industry which has a far bigger impact i think. But the impact is there and I think it is manageable. So if you think about how you want to develop an area it is very feasible to do it in a very ecological sound. You do require a good infrastructure to help with that.

V: Okay alright, then I would start about the topic about the Marine Park.

I: Yes, I know it has been developed or going to be developed, I don't know, at the east coast and the south side of the island?

V: Yes, exactly. Recently they decided that they make from this marine park a MPA so more protection would be enforced. And what do you think about this marine park or MPA's, is that feasible as a tourist attraction or is it more like a bad idea because there is more harm or would it be something that is more for awareness raising?

I: Oh I think I am more proponent of conservation. So I think it is good to exclude to protect a certain area. And I think the coral reef at Eastpoint is very easy to protect because it is in a good state and there is no development on that side of the island which makes it easier to protect. That said, its very easy protect and designate as a protected area, especially at sea, but after that you will have to manage it. And that's a little more difficult, you will have to have a plan, I don't know if its allowed to fish there.

V: Yes there are different zones and according to the value of the area, you are allowed to fish or activities like diving, snorkelling or it is strictly protected so there is no access for snorkellers, fisherman whatsoever.

I: Yes then somebody will have to enforce the rules, maybe the coast guards.

V: yes exactly that is the idea!

I: Okay! But diving tourism is big on Curacao and its growing, so I think it is a good idea in general.

V: Ok, so yea, you would think tourist should be still able to visit the park and to use the park to dive and for sports activity.

I: yes.

V: yes, alright. Do you think it is also for tourists which are here for a limited time, that they also should be introduced to some guidelines or some ideas how to behave in this sensitive environment? So that it is not just guidelines for fishermen, but tourist should be more confronted how to behave in these environment?

I: Well, I think it applies for both tourists and local people. That there are some actions you can take, you could promote the use of ecological sunscreens and so forth, but I think diving itself is, when you learn how to dive you also learn how to take care of the coral and coral reefs, so is generally not considered good to grab things at the sea floor. So I think for divers that's not really a problems, they will behave themselves. I think its mainly and the method of fishing used. Not fishing but I do think the fishers on Curacao they are not really fishing in a very dangerous way. They are not using explosive or anything, or big big boats, so its quite limited.

V: so even the fishery industry is not making that much of a degradation or harm to the actual coral reefs for example? So they take more care because of their measures they use its not that harmful?

I: Honestly I don't know. I don't know how they fish, but if its for example with a line it is less damaging than using the big nets which goes along the ocean floor which can damage quite quickly, maybe deeper in the ocean.

V: Do you think that there should be a bigger amount of regulations or guidelines according to nature conservation, especially for the tourism sector? Or in general?

I: No, I think the guidelines are there, so there are certain laws and they are well written, so they are able to be used, but they are not always used. So, you do have instances that people start building without permits or without doing an assessment and the laws are there, but they are not always applied.

V: So its more a problem that there is a lack of guidelines or rules, its more the enforcement that is lacking? I: exactly. and while there are little rules, the government has a lot of flexibility to do a case by case basis to make their own rules. So for instance, if a company applies for an environmental permit, the government has quite some flexibility to say 'I want you to do this and this and this' to show me that something will be done in a sustainable way. But then they have to ask, they have to enforce the permit laws.

V: Okay so, again to the marine park, actually what is more interesting is planning and their interaction. If you think about an area like the marine park, do you think that there is a good interaction between stakeholders, which are here e.g. the government, different businesses which are concerned with tourism and hotels, NGO's which are trying to protect the area. Do you think there is a good interaction on the island?

I: specifically related to the marine park or in general?

V: yes both!

I: let me start with in general, east point has a special background. No I don't think that there is sufficient interaction. The government likes development because it helps the economy and that gets promoted, everything else is second. It is changing, so it is getting better but very often you see that people, most people have the perception that development somewhere is good, because it creates jobs but the impact on the coral reefs or the environment is not always considered. You also see that with other development, for instance neighbourhoods on Curacao there are a lot of low rise buildings, a lot of houses. Now when there is need for more housing, people build a new neighbourhood and that's not necessarily always good on an island, because you have limited space and you have to consider building up. So I think that is something that can be improved.

V: so the communication should be better on different levels, that its not just the government who has to decide but also other levels, like businesses, should have more stake into it, suggestions like we build up and not just broad?

I: Okay the question is related to the government now. So the government, I think if the question if stakeholders are engaged efficiently, I think the government is improving that. So they do contact stakeholders and you have NGO's who get to give their saying but very often it is after they have made a decision to do something somewhere, then they realise, we have to ask other people about their opinion, too.

V: yes okay interesting! So, and for nature conservation, is there like an overarching body, so is it like one of the ministries who has the final say in all the assessments or is it something this company is doing in decision making e.g.?

I: we don't make decisions, but you have the Ministry of Environment, Nature and Health, so they are the competent ministries which goes about this. And then you also have the Ministry of Traffic, Transport and Urban Planning, so the infrastructure aspect falls under their jurisdiction. So those are the two Ministries which deal with this.

V: And this company is having for example communication, collaboration with these two ministries or is it more like they are ruling from above and say what to do, or not to do?

I: I think the second, they are mainly responsible for giving the permit and enforcing the permit. But not more than that.

V: so there is no collaboration, more like top-down?

I: Yes, unless you are a very big hotel. Then there would be more collaboration.

V: Yes that is probably also dependent on the development, because big hotels have an impact on the economy.

I: yes and you do have hotel associations like CHATA for example which are more engages with the hotels.

V: Ok, yes when it comes to governance, would you say there is a development towards governance, so multi level and different levels, NGO's, these kind of voluntary actors or businesses and yes, and of course the ministries working more together. Would you say that is maybe more developing here or is it still the classical government?

I: I think it is the second part, so there is more collaboration. The system here resamples the Dutch system. There are neighbourhood associations, stakeholders, you do have that. For instance in Otrobanda there is a mangrove park, maybe you've seen it, its next to the mega pier. They want to develop that and there are plans to build hotels there and to develop the mangrove park into a clean mangrove park where people can walk, with path and so on. And a lot of stakeholder are engaged in that, so you have the Otrobanda neighbourhood

association, Carmabi, the government, harbour companies, NGO's and there are meetings where they all come together.

V: oh that is really good!

I: I would say its not the classical system.

V: yes that is definitely more like cooperation and collaboration. And in your opinion, do you think there is the need for especially for example EcoVision, there should be a better collaboration between this company and the tourism sector or the government or any other sectors, that they should be collaborate and communicate more, is that the case or is it good already? Enough?

I: communication to what end?

V: to reach objectives in general.

I: I think that can be improved. Yes, hotels are now in my opinion islands on themselves, you have hotels which want to be very good for the environment for instance ''Eco Morena Resort'' but you also have the all inclusive resorts at the beach. Then they have other prioritise. But I think that could be more collaboration. I can mention for instance EcoVision is a member of a business platform for sustainable development and it would be nice if the hotels have the same platform. They do have platforms but mostly to see how many tourists are staying where and those kind of things.

V: so there is especially for the bigger hotels, there is like a lot of room for improvements to become more sustainable and more aware about the environmental impact?

I: there is improvement, yes. But I think hotels, very often they take the initiative themselves because it is asked by the costumers. So you have many hotels here which have a norm which they have to certified for, an economic. And that's because people want to know that they are staying at an environmental responsible hotel. And I think the big chains like Hilton etc. they certainly have guidelines and rules which they have.

V: especially in front of the Hilton hotel, the coral reef is very degraded. That's very sad.

I: that's a very old hotel also.

V: so you can see it. They are associations, if there is a very big hotel and a very big degradation, would you say its because of the hotel, the degradation?

I: not necessarily, because at Carmabi you also have the Piscaderabaai and there you have a sewage treatment plant. I don't want to say, I don't know how they operate but they do have fluent which goes into the bay. So they have problems and this can also cause pollution.

V: so its always a combination of impacts and not just to blame a hotel, there are always more reason which cause the degradation of a reef?

I: yes definitely. You also have climate change, pollution in general, so its not always the hotel. But it is the case where you see that places are developed, after that you have degradation.

V: ah that's always the case?

I: I think there is a good correlation, development leads to problems.

V: And how would you think or suggest, that could be due to enforcement, regulations whatever, could be an improvement, that this development in these areas are less harmful for the environment? What could be done?

I: you have to start by thinking about, to think about it in general. To do for example an environmental impact assessment. If you do that you can draw conclusions, you can apply certain measures to limit the impact and there are sustainable building protocols which can be used to limit the impact during the building process.

V: and they exist for Curacao and they are for hotel building and so on, they have access to it? They could potentially use it?

I: They don't know about it. So, the building industry in Curacao, I would describe that as classical. So its putting blocks on each other and making it look nice. But you have to start there with the building process because that can already do a lot of damage. And yea an environmental impact assessment is one way to tackle that and that is not always done, also not obligatory on Curacao.

V: so do you think if that would be more promoted due to awareness raising that these impact assessment are available and that these guidelines for sustainable building that these are available, that this would make a change and people would use it more?

I: definitely yes. There is one site, if you do an environmental impact assessment or do another type of assessment you might conclude you may not want to build on certain places. And on Curacao we like to build very close to the sea and that's not always good its better to keep some distance.

V: I think that's also the problem about the tourism industry especially for Caribbean islands, because people from Europe or whatever place because they like to come for the turquoise water and the beaches and if they have hotel which is like 2 km away from the beach the mission is failed somehow. They pay a lot of money so there is a big contradiction with fulfilling their objectives an the objectives of the nature conservation. I think this is the challenge to combine these and to compromise.

I: yes but I think tourists understand that.

V: I think actually the trend is more towards, we see that there is not the possibility that every hotel can be build directly at the beach, and if I want to have that I have to pay more. I think the trend is already going there I think.

I: I think its also a very classical form of tourism. Nowadays people want to be special, they want to sleep in a tent or do their own cooking and so on. They are more picky what they want.

V: also the whole development about hostels, AirBnB, this is very a trend more or less which is developing and yes, this is very, I would say, beneficial because then, of course not all the hostels and houses are not at the beach, so people already realise that travelling is more than being on the beach, which is nice though. So, and, according to this, what is your opinion about ecotourism, the concept of sustainable travelling?

I: I think its better than normal tourism. Definitely. I think yes, if you come to Curacao, you have to come by plane most likely so then most damage is done already I think, but once you are here its best to do it in a sustainable way. So I think ecotourism is very good.

V: would you think that this is feasible, especially for Curacao? Or that it is something that is in the mind of the tourism sector or for businesses, because in other countries its more like a trend which is slowly developing. Do you think that this would be something that Curacao can handle or could apply in the future?

I: yes, that would be good to Curacao to distinguish itself from other islands. It has a lot of biodiversity and I think that's very good and I think it would be good for people to be aware that ecotourism also has value. That when people want to develop the area, its good to think twice. Maybe its better to live in an undeveloped area so they can go cycling for example. And so, yes. The awareness is growing for ecotourism. Its more than for instance Aruba. Aruba has a lot of beach and a lot of hotels.

V: and its also smaller than Curacao right?

I: yes its smaller.

V: interesting.

I: and in Bonaire they do a lot with ecotourism. They have limits how many people can stay there and how many hotels can be build.

V: oh really? So compared, Bonaire is the island which is already going with the trend?

I: yes they promote that. They have a popular dive location and a marine park which is located next to the city. They do take that into account. They also have a sewage treatment plant quite modern and build land inwards.

V: Why do you think is Bonaire already developing in that direction and Curacao not?

I: I think because of history. Curacao has been an industrial island, so in the past there was very little tourism and then most money was generated with the oil industry, the ship yards and less with tourism and then Bonaire and Aruba were more depending on the tourism industry.

V: so Curacao has a transition from an industrial island to a tourist destination?

I: yes its at the moment transitioning.

V: still at the moment or is that something that happened 50 years ago?

I: I was not around 50 years ago, but I think during my youth I did notice its increasing each year. We have now for example the second mega pier which was recently build and when I was in high school the first mega pier was build. Its quite recent but I would say the last 20 years.

V: maybe, would you say that is also a window of opportunity, if its still transitioning or still in development, also to compete with the other two island to make a change towards ecotourism or to more sustainable development or is that something that is already very settle?

I: no there is still room for improvement.

V: very interesting. Also compared to the other two island, so Curacao is doing less enforcement in terms of nature conservation?

I: well, maybe less than Bonaire, the rules are a little more strict. Aruba I don't know, it does have a national park but they rely mostly on tourism and mainly American tourists. So all-inclusive hotels at the beach.

Curacao has a large fraction of Dutch tourists, its more Europe oriented.

V: yea I think over 30% is Dutch already. Also Bonaire has a very well developed management plan for their marine park and actually the whole island surrounded, or its water body around, is protected.

I: and that's very good, when you start for instance a marine park, you have to think about what happens on land. A lot more impacts are from land.

V: also what I came across, is that a lot of impact, of course there is the pollution in the ocean which got in from the sea which is very hard to avoid because of the current and all the factors, but a lot of damage is made from land-inwards to the sea. Do you think there should be more actions made to avoid that?

I: yes, yes. You see on the infrastructure on Curacao, you see a lot that people build it in such a way as to get rid of the rainwater as soon as possible. So it lands on the road, they build drainage systems, preferably concrete, so everything goes to the sea. That's not very good for the sea and also not for the land because you deplete your groundwater supply. So there is room for improvement to better manage how we use rainwater.

V: especially during dry season like right now. What I observed during the time I've been here now, there is so much area which is literally, looks like burned down. There would be so much room to make room of the rainwater which is coming with the wet season. So many things could actually been done to improve the environment, right? Like rainwater harvesting? That would already improve during the dry season and during the more wet season it would be possible to avoid building these short-term measures with the concrete drainage. This could be already a measure for more sustainability right?

I: the funny thing is, before it was an industrial island, everything was agriculture. So we have a lot of dams in Curacao to collect rainwater.

V: oh, really? What happened to them?

I: they still exist. They are very old from the plantation era. And It was very important that you have them, because Curacao has no groundwater, so they took very good care of collecting rainwater. Now they focus on, that they want to build something

V: so they don't think about that system. And they are still in use these dams?

I: they still work, many of them. But they are not maintained well. I dint believe they do take care of them, because sometimes I see in the news if a dam doesn't work and there is a lot of rain, the people get problems due to all the incoming water through their neighbourhood.

V: alright interesting! So, I think I am done with my questions. is there anything else you want to add?

I: I can say that it goes not very well with the economy, but with tourism its going good. Its developing and getting more popular each year and its good if there is awareness that tourism is good but that its also important to conserve nature because that also benefits tourism.

V: yes, if they destroy the nature what the tourists are coming for, they wont be more tourism.

I: exactly.

V: so, the problem with the economy, why is that?

I: that mainly has to do with the situation in Venezuela.

V: so Curacao is that heavy affected by the situation?

I: yes, the finery in Willemstad is operated by Venezuelan. And due to the situation they are unable to get oil. The refinery is currently not operation. And by the end of 2019 the lease will end and the government is now looking for a new operator. Because the government owns the refinery, before that it was a Shell refinery.

V: okay well, also for the tourism sector, Venezuela was a big market. Which is now lost at the moment at least.

I: Venezuelan were know to spend a lot more than Dutch people for example. But that is the culture.

V: yes that's funny.

I: what you also notice is that American choose mainly all inclusive, and Dutch use the houses where you cook yourself and so on.

V: yes and rent a car and go around. True, that's what I noticed as well. Okay, good, then I think all my questions are answered!

– *finalising, thank you etc.* -

3) Carmabi Research Station – Dr Ben Mueller 12/05/2019

V: Okay, good, then my first question would be, if you could give a short introduction, your background and your position.

I: Yes, I am a marine biologist, my name is Ben Mueller, I am working as a post doctoral researcher for the University of Amsterdam and I am doing research here on Curacao. First for my PHD from 2010 to 2014 but also since then basically for the past 9 year I continued to work here, I spent close to 5 years since then on Curacao and working mainly on the role of dissolved organic substances on the reef, they are produced by corals and algae, how they affect interaction between corals and algae, what the role of sponges are in driving these ecosystems. So its rather ecological and broad approach I would say, because it includes algae, corals, cyano bacteria and multiple areas. And before working at Carmabi I was working on many other projects, like coral restorations and other researches.

V: great! So from this research and scientist perspective, how would you describe the situation in Curacao in terms of nature conservation and degradation of the marine areas, very broadly?

I: very broadly, in general, I would say that the coral reefs around Curacao are in comparison to the Caribbean are in a very good state, they are still growing reefs, there are actually are reefs and coral covers up to 30 - 40 % in some areas. The question is, is that because of good management plans that are in plans or is it by pure luck, and I think in terms of Curacao it is rather the second one. Curacao being an oceanic island for starters, which means there is the water coming from the open ocean, so basically you get less nutrients and less pollution as an oceanic island, that's number one, number two is the topography of the island. It is an arid island, there is very little rainfall. There are no rivers, no high mountains, so sedimentation and agricultural run-off, which is an issue on other places in the Caribbean on the mainland and on island is less of an issue here on Curacao. So, again, in general the conditions here are better than in other places, mainly I think that is not because of action that were taken, but just to be lucky, but it is never too late. So now there is still something and now it would be important to make intervention and to try to keep what you have or maybe even getting it more growth by reducing local stresses, what can be done on local level. Of course there is all the global stress like climate stress and there is not much you can here. Even if you wouldn't have any cars or would have 0 CO² emissions on Curacao, that would not change anything on the global co2 budget. But there are many things, local interventions where you can help the reef to recover. When you ran a lot of stress, lets say you have to work a lot and don't get much sleep, you can maybe deal with having to work a lot but if you don't get enough sleep and there are many other things coming together, and there is someone around you with a flu and you will get the flu. Why, because you cannot deal with so many stress and less strong is your immune system and one of these things is going to damage you, that is the situation with the reef.

V: so you said, there are some threats for example, what would you say are the main threats or challenges, issues, the reef has to face on Curacao?

I: on Curacao I would say one of the main situation is the sewage treatment facility and run-off from land. That is really basically that a lot of water, I know they are working on it, but there is still a lot of households where the water is directly going to the reefs. Plus also grey-water coming from the streets. You get still a lot of water in there which would be number 1 and really important to work on. Secondly would be coastal development and that is of course a really tricky thing, because there are local people here, there is tourism and money involved and you have to find a right balance of the one hand developing and allowing people to come here, but on the other hand you should also make sure that you do proper zoning and that you make a good plan. What are the most valuable areas here and how are areas also connected. We know now for example that some of the snappers and economically important fish species reproducing in the inland bays. It is nice and fine if you protect the reefs where the fish are, however if you don't make sure that the other areas which are connected, so they can make it from the nursery which are the inland bays, you would still not get anymore fish, because the whole life-cycle needs to be taken into account. That is one of the things that is important. You can also say, Eastpoint or Klein Curacao is a very vulnerable or very special area, then you can also say, okay, that is something you want to minimise the anthropogenic input as much as possible and then you can rather say, there are other area where already over a very long period of time there is coastal development or other things, in this area its fine to continue now working now since it is now happening. But for example the second mega pier, the humans would building there, doing things there, if I

could choose I would be say there is no development but this is not happening. It has to be a trait of area where you want to develop and where you don't to find the right balance there.

V: so you mentioned, when it comes to actions you already mentioned zoning and the designation of buffer zones which are for example Caracasbaai or the marine park, what would you maybe think about other action to actively protect the reefs besides zoning and buffer zones, what could help?

I: what could help, I think in the zoning it is a broad chance where you can also do development but there are many other things to. e.g. get fish stocks back which is also in interest of the fisherman here, then you can have no take zones, I know they are now already in the making and will be soon implemented or soon, I don't know where we are there but this is of course an important thing. Another thing is also to add places where a lot of people are going with their boats to provide more moorings, so they don't use their anchor and to implement moorings. It is always nice to have rules and regulation but you have to make sure that you also can enforce them. A rule or regulation is rather not happening if its not enforced and no one is hearing to it. Tourism I guess you also want to into that direction, the damage divers or people in the water, tourists in the water there is one issue, but they are doing a good job with garbage that people bring. At all beaches, also in the Bokas in the west, it's really nice I think that the trash bins are emptied every day and that there are trash bins, that is already a good part. If you have an area like Eastpoint then the question is, if you make it a marine park and there should be also certain regulation, how many people can go for diving, how can they dive there and also having some area where diving is allowed and some you need permits to actually enter. I think it's also important to make sure, in vulnerable areas that you have a certain skill set for people going there for diving and it doesn't mean they have a certain certificate, because that doesn't mean someone is actually capable, unfortunately that's not always the case.

V: Reality is always different in the end! You said for example, for Eastpoint which is located within the marine park, one of the things we implement in the plan right now for example to make like a yearly or monthly number allowed for dives. Do you think for planning in these areas, there should be a better collaboration between for example researchers which actually work in the environment and government who do the regulations and guidelines?

I: it is difficult for me to say something about it because at this point I don't know how much there is already collaboration is going on. I now Mark (Vermeij) is working closely together with Faisal (Department of Fishery & Agriculture) and other people in the government so I don't have enough insight that I can say something if it should be differently or better. What I can say is that I think it is very important. That happens, if it's happening right now, is difficult to say.

V: yes, that's perfectly fine! When it comes to tourism, most people especially from the tourism business say that implementing a MPA with the main aim to protect the area, is seen as a tourist attraction. Would you say that using such an area or promoting is as a tourist attraction is feasible for island or in general?

I: I think it's feasible, if you take the Great Barrier Reefs for example, they do it too. But then you have, here back to the zoning, where you want to do that. And in an ideal world, of course, you want to shut off and make the whole of Curacao a park with no entry zones whatsoever, that's not going to happen. You have to be smart about it, you also need people to pay for it and protect it, if they know it, you have to show them and then find ways to make it with the least damage. On the one hand let people see how special it is, but on the other hand that it is very localise and with strict regulation. Something that you have in the Great Barrier Reef, there you can get as a dive shop a certain area for diving, but then you are also responsible for it. So, making this kind of ownership also, that these dive shops or snorkelling whatever it is, that you basically have the feeling of ownership that they also feel responsible for it. They can look in for example using reusable cups if they take people it, instead of plastic cups which will end up in the wind in the water, but if it's their water or area they want to keep it clean, so if they go to another place every time its different. Also; you have to make sure about facilities, e.g. mooring, that if people go to shore, I don't know if they go to shore, but if they go having there trash bins and others. You have to think about what to do with trash, what are you doing with bathrooms. I mean, it really depends what area you are talking about, if it's like in the beginning of the Marine Park I think it's feasible, you don't want to put the big facilities as e.g. Oostpunt. There are just certain areas in which it makes more sense and less sense. Also, it depends on what kind of tourism you want to have, if you want to have people on jet-skis etc., I don't think that would be a smart thing anyway. You have to think what kind of users you want to have and what services you want to provide, and which is the best area. Some have more impacts than others and then you have to think a little bit of how you can bring that in a way that

you can everything with the least damage because something like sustainable development is something like a unicorn. Development is never sustainable. ´

V: that's actually true, so you would say this whole process of zoning and designation of certain areas should go very closely with the development of tourism strategies?

I: yes, because also I mean, to be very frankly, if you want to protect a certain area, and implement certain rules, it costs money. So, ideally despite you kind of make certain regulations and restrict certain things, you might still ideally get money out of that so that you can at least pay for the costs that are there. Maybe you can even make revenue, but at least pay the costs and don't have extra costs which has to come from the central governmental budget. When the economy is strong, it's all nice and fine but if it's not strong these are the first things that are get closed down. But if we talk about that, we have to keep in mind and you see differences, and you have to think about decades. It's not something for one or two weeks, you have to think about at least 20 years, 30 years, that's when you see differences. You want to make it as economically as possible, so it works for a very long time.

V: okay so when it comes to sustainability which is always like in the minds of people and more and more people do talk about it, also on a government level as well, there is the trend more or less going on about ecotourism. Do you think this is something that would be adequate for Curacao to go in that direction?

I: I think it is difficult in Curacao. I think it would be possible, but the question is, do you want to have that. Because in order for ecotourism to work here you really have to have something incredible, which you kind of have with Eastpoint and Klein Curacao so you could do that, but that also means you have to be restricted in that way. A large area would only be available for a very small group of people because otherwise ecotourism doesn't work. It means also that you have very restricted with the impact that you have there. So my question is, if the pure ecotourism, what you have in many other areas, I don't really see that it is feasible necessarily to do it in that way. You could say you make a small ecotourism resort at Eastpoint, really at Eastpoint but everyone could also go there. It could be, but the question is, how many people would go there and are enough coming and are they willing to pay that much that it actually pays off. So maybe instead of moving completely towards ecotourism, I think I would rather say that all tourism should become more eco-friendly. So rather than making it very restricted, I mean its like with many other things, the ideal way is neither the one extreme nor the other extreme, its somewhere in the middle. I would say, rather trying what we have now, to make it less destructive and having rather that in a way and implementing it there than purely going for ecotourism, because I think it would be difficult. Also the type of people coming here are very different and another problem is, you want to have the island benefit from it. If you would have one of these resorts at east point and another one at Klein Curacao, the local economy would not benefit from it. It would be a big hotel chain which would earn that, coming people from I don't know where, people wont go into town because its very far, it would be very few people that are coming, so the impact for the community would not be large enough. I mean its different in Costa Rica, they have the rainforest and they are doing it for a very long time, but I am not sure if ecotourism per sé is the best solution for Curacao, also because its very inhabited already. You have a lot of people living here, a lot of other industries that are here, if there would be similar to Bonaire or even less than in Bonaire, it would be a different story, but here on Curacao it is just more difficult.

V: okay, yes, so you were talking about the community and well, according to the community and the local people, do you think that besides regulations and restriction and more soft measures should be implemented like education and awareness raising?

I: yes it should always go hand in hand. The problem is, yes, the education should be done and it should be done, I mean like here at Carmabi, which is education for the terrestrial part, I think there is now for 3 or 4 years the marine part of education, it makes much more difficult, because many people cannot swim and its also legally difficult to take people for snorkelling so its more difficult to make the people aware to show what are the treasures underwater and this is something that should start with really really young children but it should go all the way up to adulthood and even elderly people its just as important. The only problem we are facing here is that education takes very long. So it will take 10, 20, maybe even 30 years to see results there, that's the problem what you have there. You should still do it but its also important to have regulations and measured that are enforced immediately, because we don't not have 20 or 30 years to wait. If we do not take actions in the coming 5 – 10 years then it might be to late, so it has to be both, back and forth, but education is definitely important also on the long run.

V: For sure! So, when you where talking about measures and soft measures, you think monitoring and research activities should be more enforced due to measures, e.g. it should be more implemented in strategies or actions plans or is that something the scientific community is more doing on their own to make their own regulations in terms of when and how?

I: strictly speaking, as scientists we don't come up with any rules. We look how things work and based on what we see there we might give certain recommendations, in the end it is up to the government and other organisation to make the rules. I think its important that it is very closely related and goes hand in hand and makes of course sense if you have e.g. research institutes that have the qualification, like people doing here the monitoring and also talking about what is the best way to do it. On paper there are many different options but every place is different so you need customized strategies, what is feasible here is not feasible there. But monitoring in general is very important, if you do not monitor which means strictly, you don't know how many corals are there or here. If you don't monitor you cannot relate certain actions which either do improvement or not. You want to see how effective your measures are. If you do not have a way to show the effectiveness, its useless because in one point people will question like why should we do that, nothing has changed. So you have to find a way how to measure success. If there is no success, then you have to find a way and revalue, why don't we see success and how can we do it differently. Is it because measures we took are wrong or are there other ones that might be better or if there is something like hurricane that destroys everything what you had before with one hit, that can be overshadowed by that. So it is very important and not just for the status of the reef but also economical terms, how many people do you have coming here, how many people of them coming here for going to the beaches, going for diving, using these resources. So everything what you do should also be measured that you can say, If your going in the right direction or not. If you don't do it, its like what I am doing now while talking about what I saw and what I observe, its very subjective. And you need to have it objectively. If you have measures which many people are unhappy and you have not many results its very difficult to defend these measures. You should see measures are just as a tool, so you have to make to sure that you use the right tool for the right problem.

V: and basically the background of the question was, what we observed that it gets more and more a problem of NGO's doing their own thing on the island, like for example planting corals and yes, this is for the government e.g. something, especially NGO's are more and less independent and they do their own work. Is it the case, e.g., that it gets problematic on one point when you do your research or when it comes to monitoring in terms of success? Because you don't know in which direction their working to?

I: firstly I don't know a lot about the law system, I just find it mind bubbling if I want to take a piece of algae I need a research permit for it and ask officially and it needs to be approved and other people can just build things, move things around just because they don't do it for research but they are actually making money out of it. So I think its really important that you keep that in mind and why, because I think its good that there are research permits and it shouldn't matter as your here as a researcher or a NGO or a foundation or whatsoever. It needs to be monitored, there has to be a system in place, who is going to decide, if something is allowed or now that is a different story. It is important that it is monitored and that we know what is actually happening. e.g. with these out plants, we know where our plants are coming from and we know if that is an out plant or is it something that came naturally. Certain corals are coming back because the general conditions improved and they can back or is it that people brought it here. To assess it properly you need to know what is happening. My question is a little bit, what is the qualification of the NGO's in decided, where to put which corals for example. I am not saying they should do it, they just need more thought about coordination, where to do it, when, how and what. If that is properly coordinated, it does really help. So all of that should go in the zoning. All these things have to work together. If they don't go and work together, then it is just a big confusion and potentially even a disaster. So you want to be sure that you know what is happening.

V: alright yes perfect, thank you for answering the questions, that was actually it so far. Is there anything else you would like to say according to the key words: collaboration, degradation, nature conservation or anything else?

I: I think I'm here now on the island for not too long, only always a couple weeks. So I don't know enough about the NGOS so I don't want to do a judgement about the things I hear and I don't have enough insight to give a good statement here. I just think its important to not just have the government and the researchers but also NGOS but I think coordination and collaboration has to be combined because in the end you work to the same goals and you should see where are synergies and look where it works instead of working against

each other before taking actions which are unwillingly for the involved people.
- finalising, thank you etc. -

4) Site-Manager Waitt Institute, Endirah Palm 30/05/2019

V: So first, a bit of information about yourself and your background, maybe about Waitt.
I: About myself, I am Site-Manager at the Waitt Institute, so my function, I'm contracted as a site manager and why they choose me, ok. I'm working now since November 2017 at Waitt and I started my passion for the environment 1990 something like that. I just came back from Holland, I studied there, came back and was wondering why they aren't doing more for the environment and especially the waste. I'm a social worker first of all, I need to help people and have the capacity to get into the soul of someone and structure it. But when I came back to Curacao it was not was I thought, in Holland everything is structured and is subsidised and when you come here it is not like that and you have to do so much paperwork, I wanted to talk to them and help them, so I got frustrated. Then I got into the direction of management and project management and went to the university to study project management and consultancy site, I really liked that. Then I did one-year Dutch Law in Amsterdam University with a lot of back of forth, I worked for notary and lawyers, which I really liked. Then again, I wanted to do with environment, I drafted a business and started to do research and went back to Holland, there I got some investors to invest into a recycling company, I came back, started the company which doesn't exist anymore. When I came back to curacao I also did consultancy, but I didn't know what my niche market was, I did recruitment of internationals, professionals and a lot of international companies and intern. Now I am working a lot with the government, for the government, a lot of people here know me in that area and I have a passion for the environment itself, knowing that a lot can be done and that it is fairly simple without having a lot of knowledge, but it is the communication part that is difficult. Then you have the legal aspects. Then there was the advertisement from the Waitt institute and people asked me if I wanted to apply and I was unsure, because I am not a marine biologist, but they needed someone who stands their ground and knows all the procedures here and know a little bit of law and so yes, I gave it a try and it worked. There are a lot of challenges, not only here but there and in between of organisation. And now we invest in Curacao as a site, with a lot of marine research and assessments happen here. We describe the targets for each year we want to reach, for this year we want a new domestic fisheries law, an office marine sanctuary passed and also a national marine spatial planning for the government in order for them to know in which direction they need to go and also other activities with other NGO's. That's seems like not much, but you can imagine how much I have to push and pull everyone, especially because we work very close to the minister of environment and health, and we work in this Blue Ribbon Committee with the Ministry of Infrastructure and Ministry of Economic Affairs. It all has its structure, we give advice to the minister and she will use these rationales for the law, while producing the legal draft. It's a steady-fast procedure. We have an agenda, what we want to apply and achieve each year. If Mr. Waitt continues to invest into Curacao, this would enable a mechanism to enhance sustainable projects like management plans and the managing of these areas because the marine protected areas are set by law, but who is going to manage them? That's why we need the management plan, but they need to be executed, which needs to be funded, but by whom. That's what we would like to have as a financial mechanism. So, we are going to present it to the government, at the end of the road we will have organisations in place which will be very challenging to get the government with a new organisation in place which is going to implement e.g. a diving fee. But they need to decide first what they want in terms of fees, taxes whatever. We are going to present a financial mechanism report or advice and then they can get started with it, but it will be a challenge especially in the curacao conditions. So that's what I am doing.
V: ok this is a lot I would say! So okay, you mentioned already management and a lot of laws, different activities which needs to go together, how would you say is the situation in Curacao when it comes to nature conservation or protection and tourism? Would you think that if you focus on nature conservation when it comes to set up laws or policies or regulation, is tourism something that is something, already within this thinking or is it something that is more economic affair and out of range here?
I: I think, first of all, I tell them at Waitt all the time, before you start with any law or any whatever, maybe it's

because of my psychological background, you need first to take a look and go a little bit further, at the economic history of Curacao. Economic development, where were we, where are we right now and where do we think we may go? Then, you take a look at the culture of Curacao and the geopolitical situation in Curacao. You really need to put all of that in place, like we have this software, when we need to determine the offshore sanctuary, we put all this data in our software and it will give us the area that should be protected. We give the area, the northern area of Curacao, for 30% of our EEZ show us, where is the best area if we give all the input, like here we have cables, here we have pipes, here we have military activities and it will give us an area, we have that already though. To do whatever you want on Curacao, in whatever area you want, you need to have these inputs. Political, geopolitical, social economical, past, now and what we expect for the future, then you go to the environment. What do we have, what we can offer, what needs to be protected and by whom and what are the challenges. We know if we want to protect the areas, we need funding, we need someone to monitor, to coordinate, all for that. So, we need funding. The basic question is, where are we going to get the funding to do whatever we want to do? What are the challenges and the risks right now? If we have finance we can go there, if we don't, we look for possibilities. So, you see, I am telling you a lot of things before. I don't have an answer for you, I just have a guideline for you how we can get to an answer. The answer is, researching all of these areas, that's my answer for you.

V: Yea it's a really complex situation!

I: To make it basic, you need to have several inputs, especially geopolitical and social-cultural, otherwise it will be very difficult, to put it simplistic.

V: ok good! Then I would go on with the next question or topic. So, having all these challenges and input and many perspectives you have to take in mind while setting up the laws and regulations...

I: Especially cultural! We cannot move a stone if we don't put culture into consideration.

V: Also, the cultural aspect for example fishery, how is the situation for example like right now, that you want to develop a marine protected area. Is this for example something that is easy to implement or actually to apply, would people accept it?

I: People don't care and don't know, they don't see the marine park. If they are not on a boat, which 99% are not doing, they don't even know what this is all about. The only family concerned is the X Family, which owns Eastpoint, but they are already included. Nobody else cares.

V: So, this is not of a public concern. But what does it mean for the tourist industry, is a marine park like this, which is supposed to be a protected area, is it feasible as a tourist attraction that you advertise, we have this marine park, so it is more addressed to tourism?

I: Yes, it is definitely more internally relevant, also for tourism. So, the government can then promote it more that we are doing more on ecotourism and protecting the areas. That's what the government and tourist board is aiming for, changing curacao from an oil refinery industry, shipping and cargo industry and we are also good in international services but due to laws we don't have to many profits out of that. So, changing curacao to attracting tourism, the government knows that they need to put the environment, you know, keep saying that we take all that in consideration. So, they know, again, the structure needs to be in place. Who is managing, who is funding, who is monitoring, but the government is not against it as all and you will not get any type of other people against this and yes, the promotion will basically be more for tourist or the diving sector or other people.

V: And having this in mind, and here you mentioned again for example management and government and actions, what would you describe as essential that this is actually going to work as for example with advertisement for tourism, that it is not going to far from being a protected area but rather economic development. What is a necessary to actually, still keep it as a protected area? Apart from the management plan.

I: the funding of the management and having the organisation in place. Having one organisation in place which is going to get funding for the management of all the marine protected areas, and it should be a sustainable thing, and ongoing procedure so this organisation should be able to plan all to receive the funding for the upcoming years and work on that, maybe even from Europe. So, there should be a sustainable mechanism in place and then you can approach to set up a NGO maybe to manage all the area. This is the most important thing that should be happen and the ministry of the environment should be the leading Ministry, but I don't expect the government to lead all this, it should be an NGO.

V: So, the NGO would be more like the execution of the planned activities for example?

I: yes.

V: do you think it is necessary that the government sets up guidelines, regulations, laws for the use by tourists like dives etc.?

I: yes, they are working on it already. If you look at the national decree, in that it is already described what you can do and what you can't. So, it is already written in there, for tourists or not, what is prohibited and what not it's all in there.

V: Also, especially for diving, like Curacao is very advertised as a dive destination, that limited dives per year?

I: it is open for diving, not limited because its not making any stress on the corals or damaging them or whatever. It is not precisely always like that, but for the protection, not only management for divers.

V: When it comes to planning and stakeholder interactions, how would you describe the situation in Curacao? Is this something that is rather complicated or something people are really focussed on and motivated, working towards the goals, or...?

I: I'm a different person, for me, everything is possible. The thing that you need is to settle strict guidelines, who is doing what and when. You need to have this structure in place to deal with the stakeholders. You need to use a lot of psychology, and other things, a lot of things. Then make agreements with them, monthly meetings and so forth and don't be frustrated if they don't come, keep on and have your plan very concise. So, keep on moving, have respect for everybody but again have the culture in the back of your mind that you cannot expect a lot but expect from yourself that you have to keep on moving. I think for sure that people here are more and more interested in protecting the environment and they accustom to work like that on a daily basis. So, I think stakeholders are open to do a lot of things right now, its just the coordination, it should be concise and precise.

V: and the coordination for example is that something that is more like a governance action or by the government?

I: I think it should be a NGO, but working together with the government, like we do it in a committee. Approved by the government that we are going together on this topic, otherwise you are hanging here and the government is hanging there.

V: And what would you think of would be a leading action, what should be conducted by either NGO, committees, government. What would be effective to enhance a better collaboration between NC & T?

I: Communication! Have regular, personal meetings. Just have a meeting like this, sitting at the beach on a monthly basis, again the culture comes into this, with a bit of BBQ, maybe organise a family gathering with the family of the stakeholders to have the meetings, whatever. Curacao is really people. Whatever you want to accomplish, people and their family, the social gathering, yes. To have this bound with the people.

V: so, it's not just about enforcement but rather creating a relation to see if we see to go into the right direction?

I: whatever you want to do you need the coast guard to enforce it. So, invite them as well, have the marine security and other NGO's, its again about communication and regular meetings and social gatherings whatever. If you have to set up, it can move easier like this.

V: What do you think about ecotourism?

I: Curacao is special, in the sense that it is not Bahamas or Hawaii. Saying so, I mean I'm not expecting Curacao to be an eco-touristic island or being promoted as such, because again, related to our economic activities, which are more related to shipping activities, oil refinery, basically related to shipping activities. And for marine spatial planning we need areas which, where we have larger docs, shipping repairs, cargo etc. We need those areas and they are getting larger. We are getting our money out of these activities and I think there is no problem with that, but again for marine spatial planning it is very broad. As ecotourism as I would like to see is, some hotels are promoting. For me eco-tourism is more the promotion and education about protection of the environment. I would really like to have the hotels, which we already have, promoting against littering and using less chemicals and doing all of this to protect the environment by itself. The diving companies and organisations are doing a lot already, they have dive festivals and monthly dive clean ups. I want them to promote it further like this and I think perhaps, have them more being linked together with the hotels because they are like separate island, I'm not feeling that there is this bondage with the hotels. I think because they think that hotels are only about money but on a certain point they need to think about the environment. And this is how I see ecotourism. I'm not expecting to have more hotels, the ones we have I would like them to change to a more eco-friendly way.

V: so, it's rather not really feasible or trend because of its situation? Maybe it could be more like a transition within the hotels which are here already, and they go more environmentally friendly?

I: yes. We can promote Curacao not directly eco-friendly island but more, an island aware of the protection for its areas and they are working together to become more eco friendly. But again, we cannot see it as a tourist attraction because of its ecotourism. They come for its historical buildings, and its sea and different cultures we have and activities you can do here. But as a ecotourism island as that we won't get to that point. We need to be structured though with a good marine spatial planning, and I think we are getting to a good direction and the dive industry is pushing it a lot.

V: Yes, okay very nice! That was actually the last question, is there anything else you would like to share?

I: Curacao has a lot of potential in some areas. Its name means heart and is based as a heart of doing business. They used Curacao, to come from Europe, Africa, America. Curacao has this potential, we should make use of it, again, we need regulations in place, again marine spatial planning. Curacao has potential as a dive area, cargo shipping activities, work activities, cruise ships activities. One thing we really need is to have laws in place for marine protected areas and to manage it. But again, you need funding and structure in place for that. If you see Curacao, it's a very diversified island and you cannot only see environment, you need partners and others, but environment is very important otherwise other sectors would also fail. This maybe as a last advice about its potential.

–   *finalising, thank you etc. -*

5) Ministry of Health, Environment and Nature – Faisal Dilrosun 31/05/2019

V: The first question would be to just introduce yourself a little bit, tell me please a bit about your background and what are you doing here in Curacao?

I: My name is Faisal Dilrosun, I am the acting director of the department of agriculture and fisheries within the Ministry of Health, Environment and Nature of Curacao. I am an agronomist and acting for the government for 5 years already, I also have done some environment and nature related work and of course the fishery sector has also a lot of nature related aspects.

V: Ok! So, from your insight into the situation in Curacao, how would you describe right now the state of the environment, in particular the marine areas? Is it in a rather good state, is it in a bad state or is there a lot of impact and negative factors that maybe lead to environmental degradation?

I: I would say it is in an intermediate situation, so you have bad spots that have been degraded but you also still have some good spots. A scientific and environmental assessment was carried out in November 2015 that backs that up. We have an overfishing problem in the coral reefs, so overfishing is a big problem, also we have pollution issues and a lot of, over the last decades, a lot of decline in coral cover, diseases, invasive species, coastal development. So, all in all, we have some serious challenges we have to deal with.

V: Ok and does that have anything to do with growing or declining tourism? For example, coastal development is usually based on for example, sometimes, building hotels close to the water or yes, building restaurants and tourist attractions, is that something that is present here?

I: I think that most of these challenges have also to do with tourism, because the hotels like to be close to the sea or close to a lagoon and then they will need a nice beach with palm trees. So, if there is no beach, they will make a beach with artificial brake water and artificial beach. If it is in the lagoons, you will lose mangroves areas and they have to be marinas and as such. So, of course, tourism brings a lot of environmental impact as well. Like, pollution, a lot of sewage is also produced by the tourist sector. Also, to develop the hotels, you have a lot of environmental impact. You have the tourist that are out in the sea, some of them are not advances divers, they touch stuff and such. If you look at it as a whole, it is a big challenge to balance nature management and tourist development.

V: When it comes to particular areas, the marine park for example which aims for protection and conservation for the marine life and the environment itself, do you think this is feasible as a tourist attraction? Or is it more like, they can advertise it, but only under certain circumstances like having a particular set of rules or more education, how to behave, how to dive in this environment?

I: yes of course, the marine park has been designated as a marine park especially because of its high value. With value I mean in the sense of ecological value, so of course there should be strict rules and regulations for the people that use it. Not only the tourist but also fishing within the park or actually all activities in the

park.

V: What would you think about particular measures or simply actions which need to be done for tourist for example or local people which use the park, to protect it or make sure? Is it based on more education, more communication or maybe more signs or…?

I: I think a combination of all these factors. Of course, it is very important if you protect an area that the habitants of curacao understand, why these measures are necessary. So, communication is very important, and it starts at school at the young age but also people of older age can learn and need to learn. Educational programmes are very important as well as implementation of rules and regulations.

V: so, and for setting up these measures and actions and so on, would you wish for a better collaboration with stakeholders or maybe NGO's?

I: yes, that is very important to work together. We have the same role, we need to work closely together with the management authority, with the government, with NGO's, with the tourism sector, yes. We have to join forces in order to achieve our goals.

V: And, when it comes to, for example in the context of Curacao and the situation, would you think that for example ecotourism is a feasible concept? Or promoting Curacao maybe in the future as an island which is based on more sustainable travelling or more ecological friendly measures within the tourism sector to become more into this direction?

I: it is a big challenge, it sounds really good but it is of course hard but it will also give opportunities because we have to compete with other islands here in the Caribbean, so we have to distinguish ourselves from the other in order to get a niche market for the tourist to choose for Curacao. So, for sure, it is recommendable for Curacao I think to promote itself as an island where nature management and sustainable use of the natural resources is a place that is being practiced.

Mark Vermeij: Curacao wants to diversify tourism. I wouldn't say, it should go there, it shouldn't become an ecotourism place, but it should be offered the opportunity for those who want it.

V: it's not as promoting it as a label, but more for those who want it, giving the opportunity?

Mark Vermeij: If you think about Bonaire for instance, but if you think like this, curacao has partly that as well, so it is possible. But to brand curacao with ecotourism is a bit far.

V: okay, so that was actually my last question. Is there anything you would like to share according to the keywords planning, collaboration in nature conservation and tourism which is more unique or very problematic or anything else?

I: As for planning, that is already a big issue. Because, we have a spatial development plan, we also have land owners, people, families that own a lot of land and in some cases, people are not happy with the designation given to their property. So, I mean, for example if your property in part has been given the designation ''conservation area'' then if course it means for the owner, that he has low value property instead of it would have been ''touristic development area'', then of course he could sell his properties for a top dollar. So, we have planning in Curacao and there is a lot of pressure to make changes into our national spatial development plan. So, I would say, this is an big issue.

V: okay, so these persons tend to not cooperate that open, they are not that much into it like for example businesses or other stakeholders?

I: yes, other stakeholder will also, they want, desire touristic development like the construction sector, the banking sector, if certain areas are allowed to be developed, of course, other sectors will also benefit from it. There is some tension between nature conservation and tourist development on the other site and the challenge is to find the correct balance between the two of them.

V: And how would you think right now at this moment, how would you think would this balance look like? How can this be achieved?

Mark Vermeij: For instance, by showing people, to leave nature how it is. With ecotourism you can also make money. People think if you don't develop it, you would lose a lot of money, which is not necessarily true. People have to realise that the ecotourism people pay actually more, so that the natural areas bring also money. And then, as a consequence you still can make a lot of money, but this switches the whole thing, that a lot of people think in terms of development, we have the beach and the ocean that's it. But that is actually the form of tourism which is most likely to decline, people want nowadays something cool and they not going to sit in a 7th floor building.

I: I think education and outreach is also very important because a lot of people don't know some facts. An

economical study was carried out a couple of years ago about how much money the sea, the ocean generated for curacao. It is a significant part of our economy, is being generated from the ocean related activities. So, it is important for people to know those facts.

V: Okay, so good, I think I'm done with my questions so far if you don't have anything else you would like to share, I've got all information I need.

– *finalising, thank you etc. -*

Notes from Expert Talk with Miriam Jonker from the Ministry of Traffic, Transport and Urban Planning (VVRP)

Notes:
- Meeting for the set up of three different management plans for Curacao: Fish reproduction zone, Klein Curacao, Curacao Marine Park
- The organisational framework needs to be short, practical and on point, rather than broad and complicated language and approaches, which are not feasible to realise on the island due to limited capacities and resources. Instead, implement only useful parts in a smart way in a "common sense approach"
- The Eyes & Ears forum will be created as addition to the patrols through the Coast Guards
- Carmabi has a special role and forms an entity (Eyes & Ears) → indicator for urgent need of physical presence of an entity to control, since enforcement and illegal behaviour and action is a major challenge for environmental matters
- strategies should be implemented like: polluter pays, carrying capacity and the use of mooring buoys
- creating a "hotline" for noticed issues can help to support the (Eyes & Ears) method, so users like divers have platform to declare suspicious actions
- the implementation of a "user platform" for stakeholders makes sense to provide a tactic to involve relevant stakeholders and give the change to hear their feedback about how things are going, therefore the plan needs to encourage space for adaptation regarding future or upcoming challenges on which the stakeholders can react with e.g. ideas
- no need for much consulting, since rules and regulations will be created, which is especially relevant for the SPAW area. A platform will be provided for communication and exchange
- Especially East Point is of high profile and its development a political topic, which needs to be taken into account while creating the management plan and the following management
- the plan will be addressed to the two ministries and to UNESCO for the SPAW protocol