

MASTER'S THESIS ECO-EMPOWERMENT: STEPS TOWARDS SAFEGUARDING CURAÇAO'S CORAL REEF

UNPACKING ECO-EMPOWERMENT, EVALUATING SUCCESS CONDITIONS AND UNVEILING
OPPORTUNITIES FOR PUBLIC ENGAGEMENT IN CORAL REEF CONSERVATION IN CURAÇAO



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ABSTRACT

The coral reef in Curaçao is facing a critical threat, with consequences ranging from increased flood susceptibility to the collapse of the fishing activities and loss of marine biodiversity. Some of the local residents feel unheard by the inaction of the government, leading to the research question: *Which opportunities for stakeholders on Curaçao can be identified to empower the local community in the conservation of the coral reef?* This research aims to provide a comprehensive understanding of perspectives on coral reef conservation among Curaçao's inhabitants and various institutions. Through a discourse network analysis, which combines surveys for the local population and interviews with organizations, the study evaluates the identified success conditions based on literature to find opportunities for collaborative ecological empowerment within the community of Curaçao. The results reveal strengths and weaknesses which are identified through careful evaluation of the success conditions. Five opportunities emerged, with education being the most fundamental. Currently, coral reef conservation education predominantly targets the younger audience, excluding the adults. To address this gap, this research proposes an opportunity based on the condition peer influence by engaging widely respected public figures as ambassadors for coral reef conservation. NGOs or the government can take the lead in this initiative. In short, this research not only sheds light on opportunities in the success condition education but also emphasizes opportunities in the conditions: peer influence, culture, organization, and financial capability. In this way the study paves the way for a sustainable approach to eco-empowerment in coral reef conservation in Curaçao.

KEY TERMS

Eco-empowerment – ecological public mobilisation – awareness – public action – perspectives

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1. INTRODUCTION

1.1 INTRODUCTION OF THE SUSTAINABILITY ISSUE

Located in the Dutch Caribbean is the island of Curaçao. This island has been surrounded by coral reefs that have protected the land against hazards for centuries. Not only does the island benefit from the reef in matters of coastal protection, other ecosystem-services such as the provision of goods and services such as food (fishing), tourism- and recreation activities have also been provided by the reef. On top of that, coral reefs are home to almost one third of fish- and other organism species in the ocean (de Bakker, 2019). It has been estimated that the economic value of the reef surrounding Curaçao is over a \$445 million per year which is based upon the support of the fishing- and tourism alone (Waitt institute, 2017). This does not even include the non-monetary value such as the previously mentioned ecosystem services, or other enjoyment and beauties the reef brings.

However, coral reefs in the Caribbean are rapidly degrading. Summed up to almost 50% of coral reef loss in the last 40 years. Researchers forecast that, with no intervention of natural- and human impacts, the reef will degrade even further to a number of 95% loss in the next 30 years. Therefore, it is important to mitigate the impacts of runoff, pollution, tourism overuse, destructive fishing and climate change to save the coral reef in not only Curaçao, but also on other parts of the globe (Waitt institute 2017; Wilkinson, 2000).

Due to the high complexity of the marine ecosystem, it is of no surprise that with these numbers- and deterioration rates of the coral reef, some of the regular citizens, feel powerless in trying to mitigate the consequences of climate change on the reef (Kolandai-Matchett & Armoudian, 2020). Houtman (2022) has conducted several interviews in the particular area and found that some of laymen felt powerless in conserving the coral reef ecosystem, mainly due to the inaction of the government and fear for the struggle of survival. However, her sample size was too small in order to draw definite conclusions. Striving to never waste a good crisis, this worrying of the local population could be transformed in opportunities for public action, ultimately leading to ecological-empowerment (eco-empowerment): the ability of a community to make decisions, act on those decisions, set its own priorities, build capacity, secure resources and be sustainable (Skene, 2022).

1.2 SCIENTIFIC DEBATE

Only one study has been conducted on eco-empowerment in a marine context. The research on eco-empowerment that is most similar to this study's context is from Irawan, Esthi & Novitasari. In 2023 they investigated a mangrove ecosystem, in the Sayung district in Indonesia. They described that eco-empowered stakeholders in Sayung had five roles, namely: a) policy creator; b) coordinator; c) facilitators; d) implementers; and e) accelerators. However, this research argues that Curaçao is not yet eco-empowered in coral reef conservation. In last section, Houtman (2022) found that some of laymen felt powerless in conserving the coral reef ecosystem which points out that researching the roles of the stakeholders that feel eco-empowered would not be useful, as it is assumed that there is no perception of eco-empowerment in coral reef conservation in Curaçao.

The community in Curaçao is not the only one to experience eco-powerlessness. A research that is more similar in methodology but less similar in the discussed context, is that of Hernández (2021). She conducted a case study in Ecuador, in the marginalised neighbourhood 50 Casas, where an electric plant and a petrochemical refinery were located. The community was aware of the presence of toxins in the area but could not easily move out. Hernández described their perspective as, *“daily life is not about finding a way to leave their toxic space, but is instead about trying to stay in place even if that means heightened exposure to contamination.”* Despite feeling trapped in the situation, the community unified and continuously exercised public action to stop the toxics from entering their living area. Actual eco-empowerment has not been reached yet as the government did not improve the living conditions of the residents. On the other hand the community has unified in public action, which can be seen as the step before eco-empowerment. Similar to the situation in 50 Casas, Curaçao is experiencing high poverty rates (31% *Armoede Op Curaçao*, 2024). It is due to this phenomenon that it is not expected that the community of Curaçao has engaged in public action for coral reef conservation

Both the neighbourhood 50 Casas and Curacao have high poverty rates, but why has 50 Casas engaged in public action to stop the toxics from entering their living area and why is there no big community movement in Curaçao to save the coral reef? Kennedy & Johnston (2019) have studied the phenomenon on why some communities act in situations of injustice and why others choose to keep silent. In short, the answer is culture, as this values individual experiences and meaning of nature but also centralises the social and collective context that shape the individual actions. Some social groups are drawn more towards “saving the environment” as they work alongside material resources that shape who engages in the movement and what solutions are considered appropriate and acceptable. Besides, culture also provides conceptual tools to study the various perspectives on

environmental issues. Concluding, as culture can work to strengthen group boundaries, on the other hand, cultural barriers can discourage the sort of collective action that is required to transform institutions.

When the importance of marine life is more incorporated in the culture of Curacao, it is likely that this will have a positive influence on the reef's wellbeing. Catton and Dunlap (1978) claim that culture is the factor that differentiates humans from animals because, humans have the ability to adapt to change more rapidly than biology because of social differences which are culturally produced. Due to cultural accumulation, advancing in a process that stimulates public action and ultimately leads to eco-empowerment could therefore be achieved relatively quick. On the other hand, cultural barriers could also discourage the sort of collective action that is required to solve the problems in political and economic institutions. Negative associations with environmentalism and cultural perceptions that individuals who value nature protection may hold can potentially discourage future supporters from participating.

A knowledge gap lies in the situation why individuals don't come together and engage in public action when they feel powerless. Additionally, investigating how these individuals can be motivated to act and what potential role the institutions can play in this process needs further exploration (Kennedy & Johnston, 2019; Skene, 2022). Current research lacks the understandings on why eco-empowerment is absent and what possible success conditions, besides culture, could encourage the transition from a state without eco-empowerment to one where this form of citizen empowerment is present. Most research on eco-empowerment that has been conducted until now, was in communities that had already achieved eco-empowerment, or in communities that unified themselves in public action when enduring injustice. But there is a lack of research on neither contexts where there is not (yet) a form of eco-empowerment nor attempts for unification in public action. Additionally, there is a lack of research on eco-empowerment in the context of marine conservation, the research that has been done in areas with a coral reef, is mainly focussed on establishing eco-tourism (Sugito, Sulaiman, Faozanudin, et al., 2019), but research that is not directed on eco-tourism but rather on empowering the community in a marine context without monetary incentives seem to lack.

1.3. RESEARCH AIM & RESEARCH QUESTIONS

The goal of this research is to make a contribution to the field of eco-empowerment for marine conservation of island state communities. The aim of this research is to define the step before public action by gaining a comprehensive insight in perspectives towards coral reef conservation, among the inhabitants and various institutions of Curaçao. This will be established by conducting an evaluation of the extent to which success conditions, which will also be identified in the study, have been met. Opportunities will be identified for collaborative eco-empowerment within the local community. This aim has resulted in the following research question:

MRQ: Which opportunities for stakeholders on Curaçao can be identified to empower the local community in the conservation of the coral reef?

To help answer this question, the following sub-questions have been created:

SQ1: Which conditions conducive to eco-empowerment (in coral reef conservation) can be derived from the literature?

First, it is important to design an analytical framework that could be applied to the specific context to help identify the opportunities for empowerment of the community in the marine conservation scene. This analytical framework will be designed based on a limited number of key papers. The researcher herself added also a few conditions, that were not mentioned in the studies, but are also deemed essential for this study. The presence of these established success conditions will be evaluated based on the perspectives of the participants and respondents of this study.

SQ2: To what extent have these conditions been met according to members of the laymen population on Curaçao?

The analytical framework that has been created in the previous sub-question will be used to map the general perspective that lives under the community in Curaçao. The foundation of eco-empowerment is expected to be more enduring if it is based on the terms and conditions of the population (Skene, 2022). Therefore, opportunities that later will be identified will be based upon the reigning perspective under the population in Curaçao.

SQ 3: To what extent have these conditions been met according to different government officials, scientists, businesses and non-governmental organizations (NGOs) in Curaçao?

Without aid of the institutions, the public is not expected to gain eco-empowerment (Skene, 2022). Thus, it is important to involve the institutions in eco-empowering the public as they are not only important financial sources, but also in incorporating the goals of the public in decision making and might play a role in education that also could provide the public a set of skills. Understanding the interests- and perspective on the conditions of the institutions is vital for identifying the opportunities in eco-empowerment.

SQ4: What strengths and weaknesses can be identified based on the evaluation of conditions in SQ2 and SQ3?

The fourth step in this research is to identify the strengths and weaknesses that can occur due to differences and co-occurrences in perspectives on conditions between the different actors. When the strengths and weaknesses between the links in society of Curaçao have been identified, the strengths could be used in an advantage and weaknesses could be tackled to form the basis of the opportunities for empowering the community in marine conservation.

SQ5: Derived from the strengths and weaknesses, supplemented with relevant literature, what opportunities for institutions and citizens could be identified to empower the community of Curaçao in the conservation of the coral reef?

In the final sub-question, based on the set of diverse perspectives that have been identified in the previous questions, either opportunities will be identified that are based on the strengths of the success conditions that have already been met. Or opportunities will be identified on improving the weaknesses in success conditions that have not yet been met.

Figure 1 presents a schematic overview of this research project.

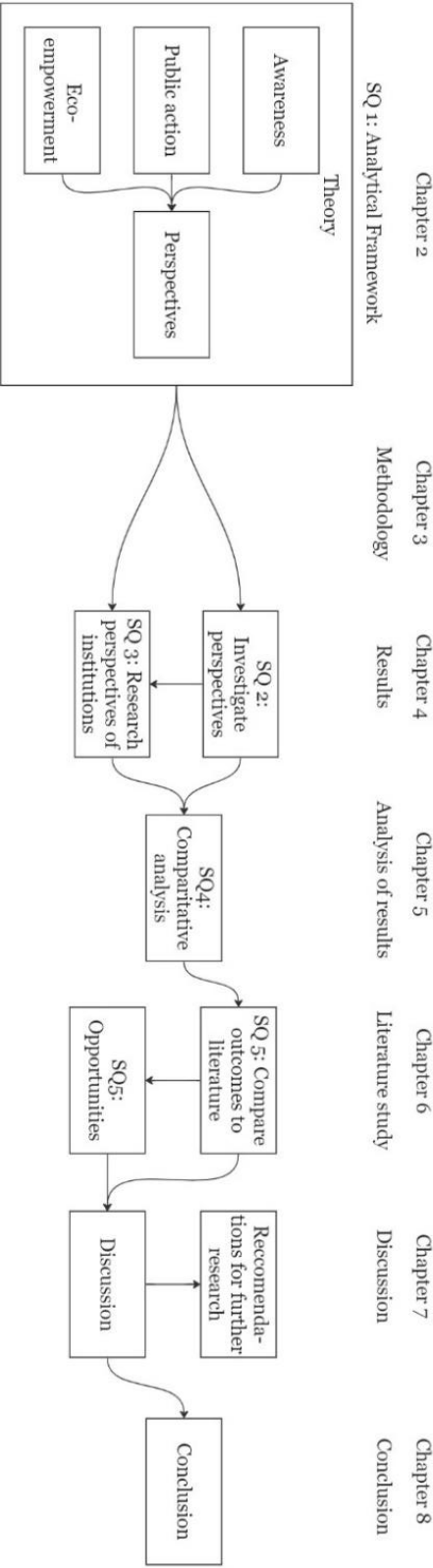


Figure 1: Research framework

1.4. SCIENTIFIC- & SOCIETAL RELEVANCE

To the best of the researcher's knowledge, there is not yet a study published that evaluates the process towards eco-empowerment in a marine conservation context. This will give this research an exploratory character. By addressing the previous research questions, not only will the context of empowerment in coral reef ecosystems be researched in more detail, also will the variety on perspectives of various stakeholders and the local population be mapped and evaluated. The discourse network analysis used for this, could function as a foundation of future research related to the social- & environmental field in Curaçao. Furthermore, this insight may prove to be of value to the SEALINK research group. This research programme has an active presence in Curaçao by integrating natural and social sciences across land and sea, this programme tries to produce comprehensive understanding of land-sea interactions in the coastal zones of the Dutch Caribbean. This research helps them from a social perspective in pinpointing areas where scientific-policy interfaces can be effectively established.

Next to the scientific relevance of this research, exploring strategies to engage and empower the residents of Curaçao in the conservation of coral reef, holds considerable societal relevance as well. As highlighted by Hernández (2021), public action initiatives alone could increase the social cohesion of the society, while fighting against injustices. Ultimately this can root deeply in a communities culture and create a feeling of stability, while the outcomes of these actions could result in a healthier coral reef ecosystem. Which on its turn offers protection against the ocean impact on land and continuing the provision of economic opportunities. Finally, the recommendations that will be presented as opportunities while ensuring eco-empowerment within the Curaçaoan society, could serve as example for similar island states. For example, the Dominican Republic is struggling with declining health in its coral reef as a result of coral reef fisheries (Cramer & Kittinger, 2021). This study has the potential to contextualize eco-empowerment within a wider context for the Dominican Republic.

2. CONCEPTUAL DESIGN

To identify the opportunities for eco-empowerment in Curaçao for marine conservation, the following research design will be presented. First the relevant theories will be identified for the conceptual- and analytical framework. This will be followed by the conceptual framework. Here the framework will be further developed, and the core concepts will be explained. Finally, the analytical framework will be presented which will be summarised in one figure, figure 3 the analytical model.

2.1. RELEVANT THEORIES FOR THE CONCEPTUAL FRAMEWORK

The introduction revealed that there is not much research done on eco-empowerment and certainly not in the context of marine conservation. Which is the reason why the conceptual framework will only be based on 2 papers and a master thesis, Starting with the research of Hernández (2021). To recap shortly, in her study she described the way to eco-empowerment of the marginalised neighbourhood 50 Casas in Ecuador, where a petrochemical refinery and electric plant have been located, that caused the presence of toxins. While actual eco-empowerment has not been reached yet, certain steps in the process have been identified. First, the neighbourhood became aware of the variety on toxins they were exposed daily. As the poorly maintained electric plant is owned by the state, there is not a higher institute where they could file their complaints, leading to the experience of eco-powerlessness. Resulting in collective struggle, organization, protesting and making demands to the Ecuadorian government. This public action has achieved small victories in making their place more liveable, in which the residents take much pride. Nevertheless, they are still exposed to the toxics.

The theoretical implications of Hernández's findings are that awareness may lead to a feeling of eco-powerlessness which could result in public action, which ultimately could transform in eco-empowerment. The three analytical concepts of this research are therefore: awareness, public action and eco-empowerment. As the two terms eco-powerlessness and eco-empowerment could be used in negative forms of each other, this research will only use eco-empowerment as a concept. The process whereby a community moves from awareness to public action to eco-empowerment, will bear the collective name: ecological public mobilisation, given by the researcher. These analytical concepts plus their conditions will be used to map and evaluate the nuances in perspectives on eco-empowerment of the local community in Curaçao.

Another paper that discusses the meaning of empowerment, more fundamentally is Skene (2022). He defines the concept as the ability of a community to make decisions, act on those decisions,

set its own priorities, build capacity, secure resources and be sustainable. Because of the central place of the community that should be connected to their surrounded environment, the definition that Skene gives to empowerment, will be given to eco-empowerment as well. Further, Skene (2022) emphasised that the liberation of the earth system is the goal. Meaning that the functioning of the earth will be optimised, and in turn, empower all levels of its organization, including societies and individuals. On a later point in his research he divides empowerment into two groups: institutional empowerment and social empowerment. He described that social empowerment cannot exist without the institutional eco-empowerment, as collaboration with stakeholders is needed to incorporate the goals of the public.

This is similar to the case study of Hernández (2021). She described that there were small victories established with the help of the government, however real eco-empowerment has not yet been established in the neighbourhood, as the poorly maintained state-owned powerplant is still in function as it used to be. This action prevents social empowerment because there is no institutional empowerment. The institution (Ecuadorean government) does not listen to the wishes of the public (residents of 50 Casas) to shut down the powerplant. Additionally, Houtman (2022) claimed in her master thesis that in the context of Curaçao, the participant felt the inaction of the governing organs. These are reasons why in this study, in order to map the expectations of each other, social eco-empowerment and institutional eco-empowerment will be studied separately from the perspective of both stakeholder groups. This study will replace the term that Skene (2022) has given to social eco-empowerment to public eco-empowerment. The term social is very broad and could be vague, while the term public on the other hand, could be appointed to a specific stakeholder group, the public, placing the term public eco-empowerment in context.

2.2. RELEVANT THEORIES FOR THE ANALYTICAL FRAMEWORK

In this section, the papers that are used in the analytical framework will be described. The first paper, that will foremostly be used in the analytical concept awareness, is that of Mees (2022). In her research, she makes a framework on why citizens engage in climate action, in which she describes the individual conditions for participation. Despite the extensiveness of her research that was put into the framework, it foremostly only describes why citizens engage in public action. The framework therefore lacks information on how the public action and eco-empowerment should be shaped. The second paper, on which the new framework is based, is that of Kennedy & Johnston (2019). This is an extensive literature review with predominantly focusses on the value of cultural approaches to understanding socio-natures, which will mostly be used for the conditions of public action and eco-

empowerment. The third article used is Skene (2022), where he examines the meaning of empowerment in social- and ecological perspective and further asks the question ‘what is the unit of empowerment?’ This article has been used to shape the conditions for eco-empowerment. The last article where only the eco-empowerment is based upon is that of van Aalderen, et al. (2023). The authors proposed a framework of considerations for the deliberate design of stakeholder engagement and how far their involvement should go. Furthermore, the researcher of this thesis herself has added conditions she deemed important but could not be found in the literature. These are mostly questions of the citizens perceptions of how they want to be involved, as they need to execute the public action. On top of that, ultimately the focus of eco-empowerment is on the population. If the process towards eco-empowerment is not up to their standards, the question can be raised if it even is eco-empowerment.

2.3. CONCEPTUAL FRAMEWORK

As mentioned in the section of relevant theories for the conceptual framework, in certain cases that are troubled with environmental problems awareness, is expected to lead to a feeling of eco-powerlessness, resulting in public action, which ultimately could transform in eco-empowerment. Skene (2022) proposed that the concept eco-empowerment should be separated in two parts: institutional eco-empowerment and public eco-empowerment

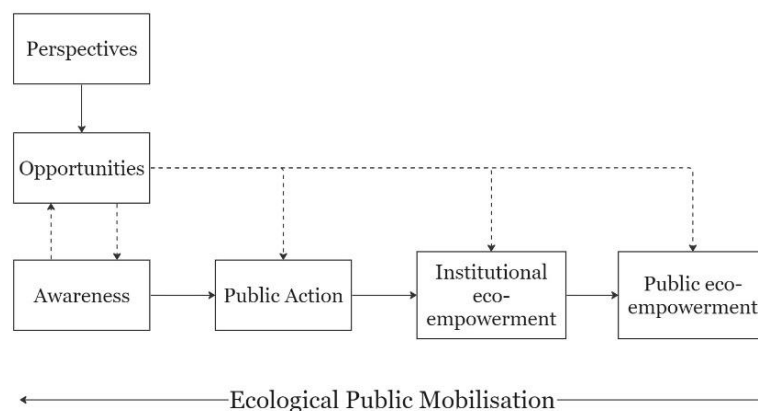


Figure 2: Conceptual framework

It is highly expected that this research will not establish eco-empowerment. Rather it will determine which point in the process of ecological public mobilisation Curaçao is now. Based the point in the process the opportunities are provided to advance in ecological public mobilisation. Houtman (2022)

interviewed a researcher from the SEALINK project, who said: *“The main goal is more, first to raise awareness about coral reefs and climate change. So, why should someone care about coral reefs to begin with? Then raising awareness for the fact that they're really in danger”*. This citation points out that according to this SEALINK researcher, Curaçao is not likely to be far advanced in the process, rather it is expected that Curaçao is in the first step of ecological public mobilisation, awareness. Which is the reason why the box- perspectives and opportunities, hovers above the box awareness in figure 2. The aim for this research is to discover the opportunities that lead towards eco-empowerment. Therefore it is important to map the nuances in perspectives about the meaning of eco-empowerment in this context based on the success conditions and adjust the opportunities on the reigning perspectives about eco-empowerment in Curaçao.

The opportunities will focus on the consecutive concepts depending on the outcome of sub-questions 2 & 3. The dotted lines go in both directions between awareness and opportunities. This is because the state of awareness will influence the opportunities but the opportunities could also improve the awareness. It is also likely that there are small collaborative public actions for marine conservation on the island, but is not expected to be on large scale, which is why only a dotted line from opportunities towards public action is drawn. It is not assumed that there is a feeling of eco-empowerment under the Curaçao population nor the institutions, therefore the dotted opportunity lines are on sided, and the opportunities should focus on establishing these concepts.

The first step towards eco-empowerment, is awareness. The definition of awareness regarding the environment is: understanding the environment, the impacts of human behaviours on it, and the importance of its protection. (*Environmental awareness*, n.d.). To measure the degree of awareness of the local population on coral reef degradation is of great importance, as this could affect the perspectives enormously. The most probable scenario is that on some conditions, the population scores higher for awareness than others, on which the opportunities could be adapted.

The second step towards eco-empowerment is believed to be public action. Which is defined as: an activity that either directly or indirectly, intentionally addresses an environmental need, hazard or problem. Important is that there will also be an expansion of assets and capabilities of the poor/ marginalised citizens to participate in, negotiate with, influence, control and hold accountable institutions that affect their lives (*Common measure: Environmental actions*, n.d.). For this research there is added that the situation is bigger than one person alone and therefore the action needs to be committed by the public.

The third step is believed to be institutional eco-empowerment. Skene (2022) describes that the way institutions impact a society is enormous as they have the power to influence, control and

hold accountable other institutions for practices that affect the people's lives. Institutions could also assist the public in participation, negotiation, expansion of assets and capabilities of people who feel unheard. Institutions could therein play one or multiple of the roles that Esthi & Novitasari (2023) described, in the section 1.1. the scientific debate, namely: a) policy creator; b) coordinator; c) facilitators; d) implementers; and e) accelerators. However first they need to be prepared to play such a role and adapt (to an extent) their institutional policy to the goals of the public. This research explores the status of the presence of institutional eco-empowerment in Curaçao by questioning the institutions as well as the public on how well they think the institutions perform in this concept.

The final step is public eco-empowerment. Skene (2022) again describes this concept as the enhancement of community control over resources. More specifically, he describes that empowerment at a community level, public eco-empowerment should include the ability of a community to make decisions, act on those decisions, set its own priorities, build capacity, secure resources and be sustainable. Further, he wrote that public eco-empowerment cannot exist without the aid of the institutions (institutional eco-empowerment), to incorporate the goals of the public in their society. Next to a role participating in decision making, for the public, it is also important that the community fosters a connection in order to value and share relatively similar goals towards more sustainable practices. Again, this research investigates the presence of conditions that fall under public eco-empowerment in Curaçao by questioning the institutions as well as the public.

2.3.1. CORE CONCEPTS

Figure 2 described the process of the first core concept: ecological public mobilisation, which is the process of reaching eco-empowerment while taking the steps of awareness, public action, institutional eco-empowerment and finally public eco-empowerment. When the success conditions of these analytical concepts have been met, it is assumed that eco-empowerment has been reached.

To measure the advances in the ecological public mobilization process, the second core concept: perspectives, from the public, NGOs, the government and private organizations, has been used. Above, the term perspective has fallen occasionally, without it being clearly defined, the meaning could be interpreted differently amongst users. The description of a perspective that the researcher found most suiting applied to this context was: a collection of ideas, concepts, and conditions that give social and physical phenomena meaning and are generated by a recognisable set of practices (Hajer & Versteeg, 2005). Meaning that separate perspectives give their own interpretation to phenomena resulting in the absence of one reality for all. Rather reality is based on the present knowledge, time, group, location, etc. (Mühlhäusler, 2006). Due to these difference in

interpretations of a phenomenon, it will also end in differences in actions. Think about behavior, demand and preferences etc. (Utrecht University. n.d.). For this research a discourse network analysis will be executed, to map the nuances on perspectives on the island. This is of importance because it is widely known how big the coral reef degradation problem is, but it is not known how the public perceives that problem and accredits importance to it. After all, the problem is only as big as the public perceives it (Gee, 2014).

The final core concept of this research is opportunities which is defined as a set of actions that make it possible to engage citizens in ecological public mobilisation. The outcome of the research determines the shape of the opportunities identified. However the aim is to provide opportunities for citizens as well as institutions to create public action which can lead to eco-empowerment for coral reef conservation on Curaçao.

2.4. ANALYTICAL FRAMEWORK

In this section the analytical concepts awareness, public action, institutional- and public eco-empowerment will be discussed and linked to their part of the analytical framework. This framework is designed to answer sub-question 1: *Which conditions conducive to eco-empowerment (in coral reef conservation) can be derived from the literature?* and it will be used as foundation for answering sub-questions 2, 3 & 4. Thus, all analytical concepts will be used to question the public as well as the institutions. Meaning the institutions will be questioned on public eco-empowerment, and the public will be questioned on institutional eco-empowerment as well. Ultimately the four parts of the framework will be united in the analytical model which is displayed in figure 3. The conditions for these analytical concepts have been identified by means of a literature review. As there is not (yet) a framework that applies to this context, four papers had been chosen to form the base of the analytical framework for eco-empowerment in marine conservation by the researcher. She made some additions that might benefit the research.

2.4.1. AWARENESS

The conditions of awareness have mostly been based on the paper of Mees (2022), where she identifies why citizens engage in climate action. She identified 8 conditions of which 7 are used in the framework and 5 are used in awareness. The first condition that Mees identifies is that of environmental values: what is the persons attitude towards the (marine) environment, does he or she respect it? The second condition she identified was subjective capacity, this condition focuses more on where the subject places itself toward climate protection, does the person think he or she is valuable in marine conservation? The third condition, education, is not identified by Mees, but by Kennedy & Johnston (2019), and connects well to subjective capacity. This condition is easier quantifiable, as it is easier to ask how much a person knows about the marine conservation, than asking whether a person thinks he or she is of value towards the cause. Back towards the conditions of Mees (2022), the fourth condition is perceived salience. This condition will indicate how much a poor function coral reef ecosystem will be of issue to the community. The fifth indicator by Mees (2022) is sense of own responsibility: how much is a person responsible for the degradation or conservation of a coral reef system? The last indicator has been mentioned by two authors, Mees (2022) and Skene (2022). Skene (2022) called it willingness to conserve coral reefs. Mees (2022) added the term of expected return of investment: could the investment be returned? if not, people are less likely to want to invest.

Table 1 presents a short overview of the conditions with imperatives and operationalisations of the concept awareness. The operationalisations in italics are direct quotes of the author mentioned in the condition.

Table 1: analytical framework awareness

Condition	Imperative	Operationalisation
Environmental values (Mees, 2022)	Environmental values of the public must be conducive to ecological public mobilisation.	- <i>“Do I want to protect the environment? Do I care about climate change?”</i>
Subjective capacity (Mees, 2022)	The public must feel that they have the capacity to contribute to ecological public mobilisation.	- <i>“Do I/my initiative have sufficient resources to provide a public/climate service?”</i> - <i>“Do I think my/my initiative's climate actions are effective, can I make a difference?”</i>
Education (Kennedy & Johnston, 2019)	The public must be educated on the coral reef.	- What is the form of highest education you have completed? -Have you been offered forms of education about the coral reef? Such as webinars/ workshops etc.?
Perceived salience (Mees, 2022)	The public must understand the importance of the functioning coral reef for the (safety of the) island.	- <i>“How important is the issue/service for me, my community?” In climate change, this concerns the perceived climate risk and experience with a climate threat.”</i> -What disasters could occur without the coral reef’s presence? -What is situation now, what will the situation be when the reef is not present
Sense of own responsibility (Mees, 2022)	The public must feel responsible if the government is not doing enough to prevent coral reef degradation.	- <i>“Do I believe I am responsible for solving an issue such as climate change? -“Do I believe the government is not doing enough on climate change?”</i>

Willingness (skene, 2022)/ expected return of investment (Mees, 2022)	The public must be willing to offer their time to engage in public action.	-How much time do you realistically want to offer to trying to save the coral reef? -Are individuals willing to embrace solutions based on dialectic synthesis, even though one can never predict what form the new solution will take? <i>-“What is in it for me or my community? Is the reward worth the effort?”</i>
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2.4.2 PUBLIC ACTION

It is important to study the perspectives on public action that is given by the public as well as for organizations. This will be done by mapping three conditions. Starting with the question: how much persistence has been manifested in culture (so will they continue in the process of public action, or will they most likely drop the matter after 1 action). This could make the difference between short-term implementation and a more long lasting, sustainable way of implementation of public action, which could ultimately result in eco-empowerment (Kennedy & Johnston, 2019). If not, another form to stimulate engaging in public action might be due to peer influence (Mees, 2022) locally respected figures could function as an ambassador for coral reef conservation. Skene (2022) proposes that the form of organization could highly influence public action: do they organise it themselves, or do they need help from other institutions?

Table 2 presents a short overview of the conditions with imperatives and operationalisations of the concept public action. The operationalisations in italics are direct quotes of the author mentioned in the condition.

Table 2: Analytical framework public action

Condition	Imperative	Operationalisation
Culture (Kennedy & Johnston, 2019)	To advance in the process ecological public mobilisation, it would be of importance that the significance of the coral reef surrounding the island is manifested in the culture of the public.	<ul style="list-style-type: none"> -Are there reigning taboos or are the particular encouragements towards marine conservation in the culture? (think about not eating a particular sea animal because of religious beliefs -What is the history of public action in the context? This can be unrelated to marine conservation.
Peer influence (Mees, 2022)	Locals must be stimulated by other members of the community to also engage in public action	<i>-“Do I feel pressurized to produce a climate service because they do?”</i>
Organization (Skene, 2022)	Locals must have an active presence in the organisation of public actions for coral reef conservation	<ul style="list-style-type: none"> - How should public action be organised. For instance, via self-organization, citizen collectives, or should an institution help with that?

2.4.3. INSTITUTIONAL ECO-EMPOWERMENT

This section will focus on the analytical concept institutional eco-empowerment. Note, this analytical concept will be investigated from the perspective of the institutions as well as the public, even though the name may suggest otherwise. Starting with a success condition that is introduced by the researcher herself: expertise of the institution. How much knowledge is there, so they could or could not eco-empower the public. This later leads to strategic thinking, introduced by van Aalderen, et al., (2023). How much of marine conservation is actually incorporated in corporate policies? Or is the goal, making as much profit possible? Do their actions cause friction with the public? Leading to another success condition introduced by the researcher herself: financial capability. Is there form of capital e.g. knowledge, services, goods or budget, going to marine conservation? The final condition is power relations described by Skene (2022). Are institutions open to input of the public? In this research, only the power relations related to the government is investigated. And if they are open to input, the condition collaboration with the other stakeholders, described by van Aalderen, et al., (2023), will be investigated. Which investigates if the participants are cooperating, or might they like to cooperate more?

Table 3, presents a short overview of the conditions with imperatives and operationalisations of the concept institutional eco-empowerment.

Table 3: Analytical framework institutional eco-empowerment

Condition	Imperative	Operationalisation
Expertise	Institutions must have knowledge about how their organisation can engage in the most sustainable policy	-How much knowledge about marine conservation is present in the company?
Strategic thinking (van Aalderen, 2023)	Institutions must keep in mind the goals of the public, their practices should not provoke friction with the public	-How is marine conservation incorporation in the vision and cooperation of the company?
Financial capability	Institutions should have a form of capital (knowledge, goods, money) that goes towards coral reef conservation.	-Is there a part of the budget that goes to marine conservation?
Power relations (Skene, 2022)	institutions should use their power to include the goals of other stakeholders in their company policy	-How could the power relations be balanced equally? -Are they open for public opinions/ goals or even involvement?
Collaboration with other stakeholders (van Aalderen, et al., 2023)	Institutions should be open for collaboration with other stakeholders.	-How much should other stakeholders be involved in the process? -How many goals of the public should be incorporated into the strategy of the institution?

2.4.4. PUBLIC ECO-EMPOWERMENT

Finally the analytical concept public eco-empowerment will be discussed. Note, this analytical concept will be investigated from the perspective of the public as well as the institutions, even though the name may suggest otherwise. Welfare is the first condition identified in this analytical concept, identified by Kennedy & Johntson (2019). They claim that the more welfare a person has, the easier it is to feel empowered. The next condition is community. When a tight community has formed in the public action phase, it is important that that community also has the ability to pursue their goals and connection is established (Skene, 2022; Hernández, 2021). Furthermore Skene, 2022 argues that it is important that there is an ability for the community present to participate in decision-making, which will be the last condition.

Table 4 presents a short overview of the conditions with imperatives and operationalisations of the concept public eco-empowerment. The operationalisations in italics are direct quotes of the author mentioned in the condition.

Table 4: Analytical framework public eco-empowerment

Condition	Imperative	Operationalisation
Welfare (Kennedy & Johnston, 2019)	Community must have knowledge and the means to feel empowered in coral reef conservation.	-In what income condition is the interviewee/ person that took the questionnaire?
Community (Skene, 2022; Hernández, 2021)	There must be connection among the members of the community.	<p>-Is there an ability of a community to make decisions, action those decisions, set its own priorities, build capacity, secure resources and be sustainable?</p> <p>-Is connection deemed as important in eco-empowerment?</p> <p><i>-“The empowered individual in community psychology need not be the individual in isolation or even in groups, fighting with others for power and control.”</i></p>
Participation in decision making (Skene, 2022)	The community must be included in the decision making.	<p><i>-“Is the client continuously supported to produce the range of possibility that she/he sees appropriate to his/her needs; that the client is the centre for all decisions that affect her/his life”</i></p>

Figure 3 summarises the 17 success conditions that were identified in the analytical framework. These success conditions will be used to question the public, NGOs, government and private organisations to explore the status of the ecological public mobilisation process in Curaçao.

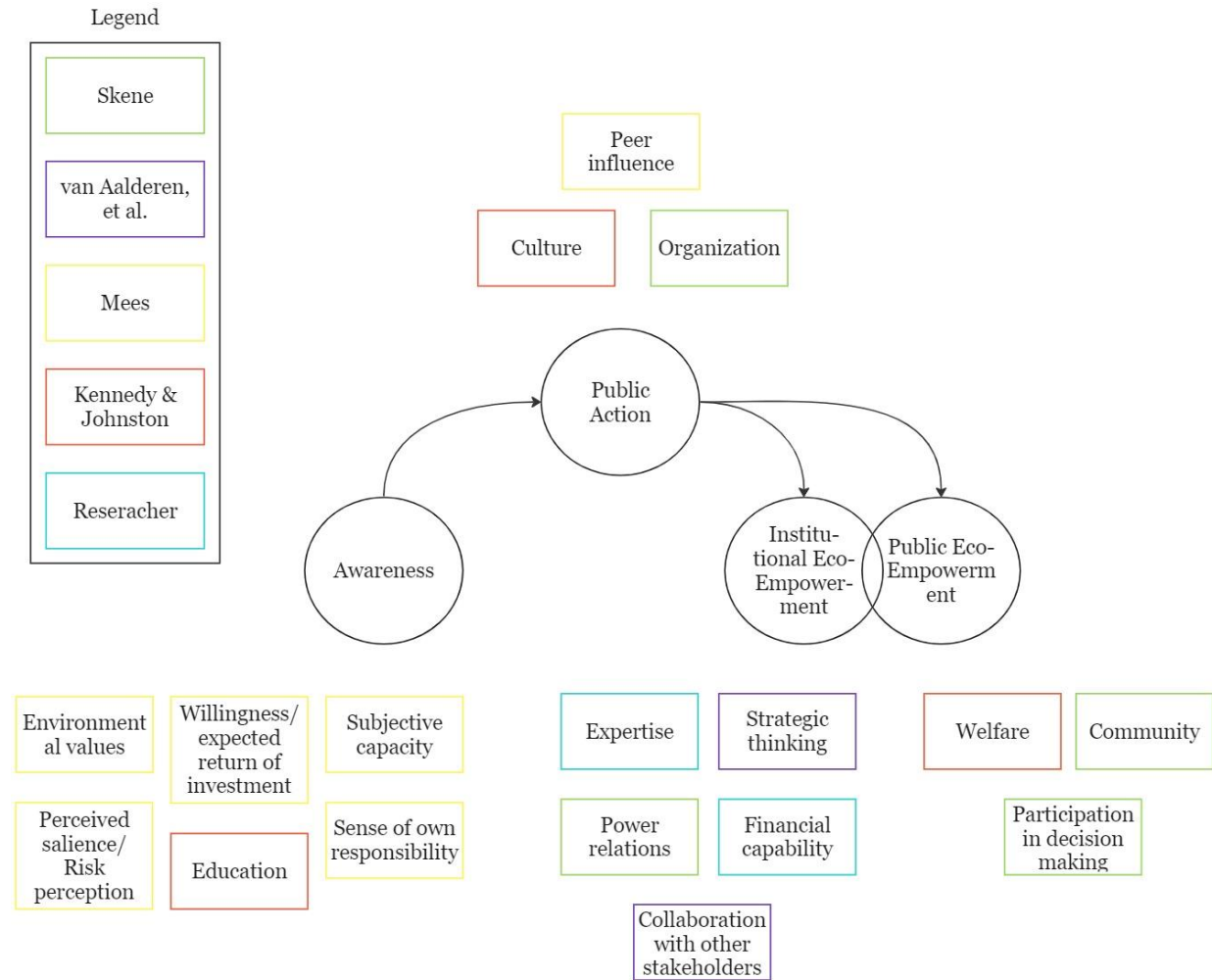


Figure 3: Analytical model of the success conditions categorized by analytical concept.

3. TECHNICAL DESIGN

To develop an insight into the variety on perspectives on the island of Curaçao, the perspectives of the local population were examined through questionnaires. Similar interviews were held with institutions, in order to gain their perspective on the participation of the public in coral reef conservation. The data that was gathered later, was analysed through excel and a discourse network analysis.

3.1 CASE SELECTION

Curaçao seemed to be an excellent example of an island state where the researcher expected that the civilians didn't experience eco-empowerment, and failed to engage in public action. Houtman (2022), conducted her master thesis on Curaçao where she identified that there was a feeling of eco-powerlessness, without public action. The researcher did a literature review, but has not discovered other communities that felt powerless while not engaging in public action, except for Australia (Morrison, et al., 2022). However, this country already has implemented the Reef 2050 Plan which includes a water quality improvement plan, with millions of Australian dollars funding transitions in various sectors polluting the Great Barrier Reef (Queensland government, 2023). Therefore, it seemed, if Australian civilians would like to participate in public actions, it was likely that there already existed opportunities to do so, as opposed to the island of Curaçao where there was limited budget and policies for coral reef conservation (Waitt institute, 2017).

This context functioned as revelatory and representative case study (Mees, 2023). Revelatory, as there was no study that had studied eco-empowerment in the community of Curaçao. It could be representative for other island states, facing similar challenges. For instance, the Dominican Republic that is facing degradation in the health of their reef due to coral reef fisheries. Cramer & Kittinger (2021), proposed marked interventions and empowerment strategies for fisheries. This research could help placing eco-empowerment into a broader perspective on the Dominican Republic.

3.2 DATA COLLECTION

To collect the necessary data, the researcher travelled to Curaçao to collect the data firsthand. Not only has this benefited the validity of the data, the researcher could also identify informal social processes related to coral conservation, and included that in the data analysis, to establish a more comprehensive result.

First, a deductive approach was used in shape of conducting a literature study to establish an analytical framework and additionally answer sub-question 1. *Which conditions conducive to eco-empowerment (in coral reef conservation) can be derived from the literature?* For sub-question 2 *To what extent have these conditions been met according to members of the laymen population on Curaçao?* based on the analytical framework. This followed an interpretivist approach to explore the perspectives on ecological public mobilisation of Curaçao via surveys which were made by means of the program Qualtrics. This was followed by asking respondents if they would like to participate by filling in the questionnaire via a QR-code, finally this data was investigated by Microsoft Excel. Sub-question 3: *To what extent have these conditions been met according to different government officials, scientists, businesses and non-governmental organizations (NGOs) in Curaçao?* was answered by interviewing several organisations on their opinions about the success conditions. These interviews were transcribed and coded in the program Data Network Analyzer, the discourse networks were made by putting the coded file into the program Visone. To answer sub-question 4 *What strengths and weaknesses can be identified based on the evaluation of conditions in SQ2 and SQ3?* the outcomes of sub-questions 2 and 3 were evaluated which formed the basis for the strengths and weaknesses. Finally the opportunities based on the strengths and weaknesses could be identified in sub-question 5 *Derived from the strengths and weaknesses, supplemented with relevant literature, what opportunities for institutions and citizens could be identified to empower the community of Curaçao in the conservation of the coral reef?* A schematic overview of the data collection process is presented in figure 4.

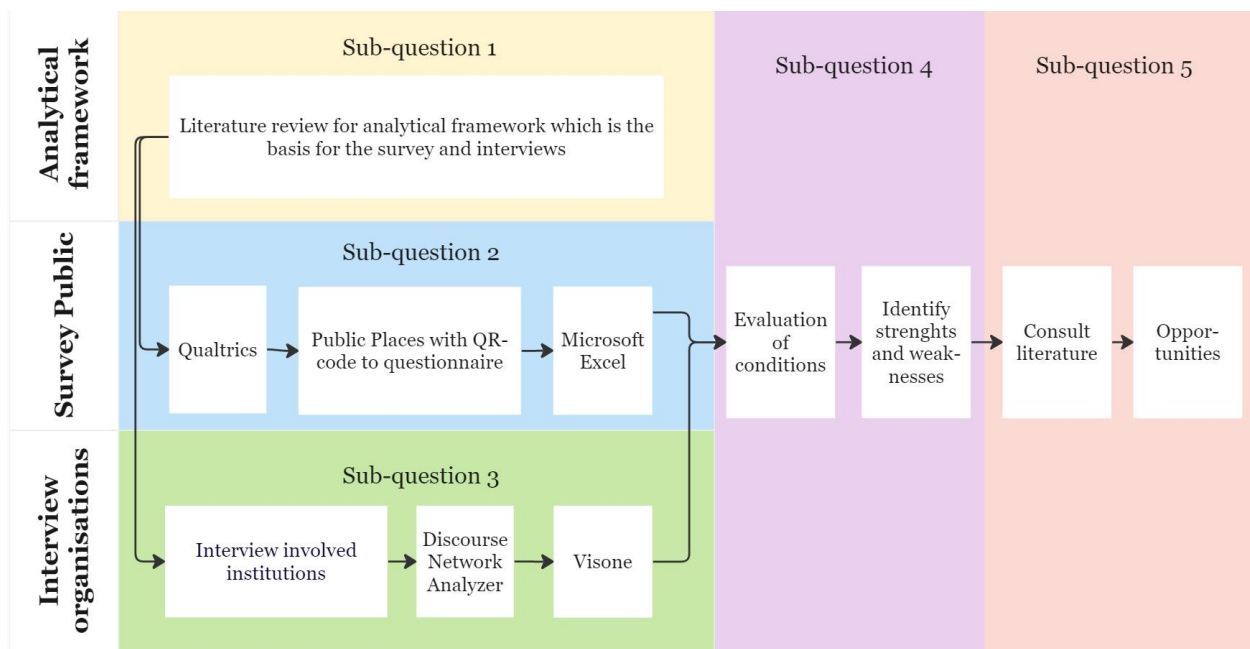


Figure 4: Overview of data collection process

3.2.1. SURVEY

Almost all concepts were tested in the questionnaire, to gain insights into the perspectives about the advancements in the ecological public mobilisation process for coral reef conservation in Curaçao under the public. The concepts belonging to institutional eco-empowerment that were left out were: expertise, strategic thinking, financial capability, and collaboration with other stakeholders. These were left out because it was assumed that the average laymen did not know a lot about the performance of the institutions related to eco-empowerment in coral reef conservation. Simultaneously the survey would also be shorter which was preferable as the attention span of the respondent was not assumed to be too long.

The first sampled analytical concept was awareness for coral reef conservation, to see which success conditions were promising, indifferent or unpromising based on the perspective of the public. Secondly, public action was questioned, for instance how did they see the organisation of coral conservation for them? Thirdly, eco-empowerment was tested. Again, it was not expected that the respondents knew a lot about institutional eco-empowerment, to keep the questionnaire short, several of these conditions had been excluded. Public eco-empowerment was examined more closely, how connected did they for instance think that their community was? The questionnaire concluded with general questions in order to characterize the sample. The whole questionnaire can be found in

11.2.2. questionnaire in the appendix together with a connection table in 11.1. that relates the success conditions on the questions. By completion of this questionnaire by the public it is expected that perspective of the public has been mapped and could be used for an evaluation of the success conditions.

A larger sample size of the population was needed to identify the opportunities for public action and ultimately eco-empowerment. This was the reason why the choice fell on the option of surveys in the shape of questionnaires, because it was easier to use questionnaires in bigger sample sizes. To avoid excluding certain language groups of participating, the questionnaire had been translated in three languages, these included: English, Dutch, and Papiamentu. Although Spanish is also an official language in Curaçao, the researcher did not chose to translate the questionnaire to this language because only 5% of the population has Spanish as mother tongue with a large chance that they were also fluent in one of the other three languages. In addition, the researcher was not fluent in Spanish herself and therefore it would have been more difficult to introduce the questionnaire to the Spanish speaking citizen. To conduct the questionnaires, the researcher stood at four different popular places for locals with the QR-codes, that sent the participant to the questionnaire in their preferred language. Figure 5 presents the four places where was sampled, these were the Mangusa Hypermarket located on the Cas Coraweg, Willemstad. This was one of the biggest supermarkets on the island. She saw that in weekends people came from far to collect their groceries. The second location was in the centre of Willemstad, where the researcher asked several shop owners to fill in the questionnaire. Furthermore, the beaches Piscadera and Lagun, had been targeted on weekends, as locals would be expected to have more spare time. The island has nearly two hundred thousand inhabitants, to have a rate of error of approximate 10%, a sample size of at



least 100 would be necessary. Realistically, this would not be feasible as the researcher also needed to conduct 16 interviews and therefore the aim was to gather 30 questionnaires, more was always better.

Figure 5, Mapsland (n.d.). Adapted with red crosses by researcher in order to indicate questionnaire collection places.

Papiamentu is the mother language of the island, it is likely that most questionnaires will be collected in that language, furthermore Dutch is the second language so it is realistic that many questionnaires will also be collected in that language. English is the fourth language of the country, and not likely that a participant does not speak Papiamentu and Dutch, therefore it is expected that not many English questionnaires will be filled in. Therefore there is no aim to collect a certain number of English written questionnaires. Once the questionnaires are conducted, the outcomes will be presented in graphs, and compared as such, to give an indication for sub-question 3.

The questionnaire focussed on the degree of awareness of the participant, and his or her perspective on public action and eco-empowerment in coral reef conservation. The questionnaires were originally fully based upon the analytical framework, however due to the length and advices of trial persons, it has been adapted to a shorter version which excluded some of the conditions (see appendix). Starting with the advice to exclude to ask defining open questions to the participants, because they would be likely to simply copy the previously given definitions to the concepts. The introduction texts were also much too long and complicated. In total, the trial persons took 20 minutes to complete the questionnaire instead of the previously indicated 5 minutes. Easier language was recommended therefore the word protection is used instead of conservation as an example. Headings were changed, because the trial persons were set on the wrong foot. In addition, examples were preferred instead of definitions of concepts.

3.2.2. INTERVIEWS

Interviews were held to gain insights of the nuances in perspectives about the advancements in the ecological public mobilisation process for coral reef conservation in Curaçao under the institutions. All concepts were tested in the questionnaire, starting with the degree of awareness for the importance of the coral reef. Here the organizations indicated how 'aware' the public was. This could be later compared to the answers of the public to ensure reliability. Secondly, public action was questioned, for instance how did they see the organisation of coral conservation for them? Thirdly, the concept eco-empowerment was tested, how did they see eco-empowerment in the context of Curaçao? Did they agree with the theory on ecological public mobilisation. The outlines of the interviews can be found in the 11.3. interviews in the appendix together with a connection table that relates the success conditions on the questions. By conducting these interviews with organizations, it was expected that perspective of the organizations would be mapped and could be used for an evaluation of the success conditions.

The interviews were loosely based upon the analytical conditions described in the analytical framework. To avoid the scenario where participants couldn't bring in their own ideas about

ecological public mobilisation, the interviews were semi-structured. The aim was to conduct 16 interviews or more, with at least four of every stakeholder group which included the government, NGOs and organizations in the private sector that focus on citizen empowerment. The aim was to approach different institutions, in order to find a diverse perspective pallet. If this could not be fulfilled by for instance the government, the aim was to conduct interviews with different departments within one organization. It is important to note that the representatives for these organizations had one thing in common, they are aware of the situation of the degrading of the coral reef and often also had a goal to spread awareness for coral reef conservation among the population of Curaçao. This group that predominantly was approached because of the assumption of the researcher that they would have more insights on the process of ecological public mobilisation. Additionally, they were often more willing to engage in interviews as opposed to their colleagues that were not occupied in forms of sustainability, which has resulted in a convenience bias. Because of this selective sampling, only one type of perspective has been identified, which is progressively shaped in favour of marine conservation opposed to the liberal, conservative economically advantaged perspective that the researcher also heard of from the interviewees, were vividly present on the island but she failed to report upon that perspective. Which is why, only nuances in perspectives will be identified instead of perspectives themselves as they are too similar.

Institutions were not asked to fill in the questionnaire, that is because the sample size was not expected to be as big as the sample size of the local population. Plus, it was important to gain an elaborate perspective on how they would like to involve the public in coral conservation. When only a questionnaire would have been used to examine the institutions, there would have been a risk that important insights would not come across. The institutions were approached via E-mail or WhatsApp first, and then a physical meeting took place.

3.3. DATA ANALYSIS

Once the data had been gathered, the analysis started to identify possible opportunities towards eco-empowerment. The main source of analysis is the method discourse network analysis. The advantages of conducting a discourse network analysis (DNA) as opposed to coding with hand are among other things, that with a DNA a visualization of discourse structures could be made, here the relationships between various stakeholders is shown (do they both agree or disagree with a statement based on a success condition) which can provide insights into the structure of communication and help identify what the more important conditions for the context of Curaçao are. The outcomes of the discourse network analysis were compared to the literature, and based on that, the opportunities were given.

The author had never conducted a discourse network analysis, which is the reason why the discourses were analysed by following the plan of Mullet (2018). She describes a plan of seven steps, that were mentioned and adapted to the context of this research, and therefore only the last four steps were used. The steps are:

1. Locating and preparing data sources. This was done partially at home and partially in Curaçao, where the public was asked to participate in questionnaires. The institutions that were interviewed, were approached via E-mail or WhatsApp beforehand, in order to optimise the time that was spent in Curaçao. This step corresponds with SQ 2&3.
2. Coding the texts and identifying the overarching themes. This was done via a computer programme Discourse Network Analyzer. Corresponding to SQ 3. A code was made by selecting one or multiple sentences in the transcript, select a statement type, for example financial goods lack, and then the researcher indicated if the participant agreed or disagreed with the statement. The transcripts were coded two separate times, the first time the codes were inductively coded, the researcher noticed that certain codes returned often, and made these into codes. The second time the researcher followed a deductive approach, she made codes beforehand based on the conditions of the analytical framework, and tested if certain passages of the transcripts matched or opposed the statement in the code.
3. Analysing the relation towards other stakeholders in the in the transcripts of the interviews, which again, applied to SQ 3. This was done with help of the computer programme Visone. This programme displayed the connections among actors (participants / organizations) via a network. It was considered how the transcripts were shaped by prevailing social relations (social practices and structures) and how it, in turn, shaped and influenced these relations.

4. Finally, the data needed to be interpreted, which was done by comparing the perspectives of civilians and the institutions to each other in SQ 4. In SQ 5 it was linked to relevant literature, to ensure validity and filter the odd ones out, but also to find inspiration to identify the opportunities in the community of Curaçao in public action for coral reef conservation.

3.3.1. EVALUATION PROCESS OF THE SUCCES CONDITIONS

To gain an insight about how far Curaçao had advanced in the ecological public mobilisation process, the success condition were evaluated by the researcher based on the perspectives of the institutions and the public. A success condition could be rated as promising, which meant that based on the research, the success condition seemed to be of no threat in advancing in the process towards eco-empowerment, or even stimulated advancements in the process. In the tables that summarised the evaluation, when a success condition was rated as promising it was represented by the colour green. Next, a success condition could be rated as indifferent, meaning that contradicting statements about the success condition had been made, some that showed promising evidence others that showed unpromising evidence, or the status was neither hindering the ecological public mobilisation process but also not fundamentally stimulated the process either. In the tables the evaluation indifferent is represented by the colour blue. Next, when a success condition hindered the development of the ecological public mobilisation process, it was evaluated as unpromising represented in tables by the colour red. Finally, sometimes a participant did not speak about a certain condition, or the researcher did not have enough evidence to make an evaluation about that success condition, the code was 'missing' which was indicated by white. See the table 5 on the next page for the evaluation matched with their colours.

Table 5: Evaluation terms matched with evaluation colours

Colour	Evaluation
	Promising
	Indifferent
	Unpromising
	Missing code

For the survey, the evaluation process was straightforward, based on the responses on the question, presented in an accompanying table, a success condition was evaluated to be one of the four presented in table 5: promising, indifferent, unpromising or missing.

For the evaluation of the presence of success conditions based on the perspective of institutions the process was less straightforward. Sometimes the evaluation of success conditions was simple, for instance for expertise the statement was '*expertise is present in my organisation*' on which a participant agreed (promising) or disagreed (unpromising). This was a little harder when there were multiple sub-conditions present for one condition, sometimes a participant agreed or disagreed on all the statements for one condition. Occasionally, logical thinking had been applied for instance for the condition community which had two sub-codes 'connection in community' and 'friction in community', participants always agreed to one and disagreed with the other, which meant that they thought the condition was either promising or unpromising. When no of these strategies worked, there was one condition chosen that was deemed most important, for instance in the condition power relations, when a participant indicated that the enforcement lacked, the condition was rated as unpromising.

3.4. LIMITATIONS

The foremost limitation of this research could be that there is a high possibility that there would only be a convenience sample of the population that is interested in the topic, and therefore gladly likes to participate in the questionnaire or an interview. On the other hand, the question arises, whether it would be desirable to involve everyone equally, even the ones that do not wish to participate. Their insights could be helpful, but greater insights are expected from the ones that want to be empowered, so their wishes could have a bigger place in the opportunities given.

Another limitation could be that the interviews could only be conducted in Dutch and English due to the language proficiency of the researcher. This will mean that the people who are not fluent in these languages, are overlooked in the interviews.

To ensure the reliability of this research, the researcher will first train in making discourse network analyses, in order to avoid some errors and that the technique will be applied consistently. Later in the process she makes sure that the process of coding is correctly recorded on paper. So if the research would be repeated, there would be clear guidelines to follow on how to identify and categorize different discursive elements of the discourses (Robberts & Priest, 2006).

3.5. ETHICAL ISSUES

In advance of the online questionnaire the participants have been asked for their consent that their data will be used in this research. All the participants of the interviews had been asked to verbally give their consent to be taped and to use their interviews for research purposes, and use their names in this research to support their statements. If consent was given, the interview had been recorded, in order to later make a transcript, to ensure validity.

RESULTS

This section presents the results of this research divided in chapter 4, 5, 6 and 7, these have been obtained by 16 interviews and 29 questionnaires. In order to answer the main research question: *Which opportunities for stakeholders on Curaçao can be identified to empower the local community in the conservation of the coral reef?*

The first sub-question has already been answered in the chapter 2, where the conditions for the analytical framework on eco-empowerment for coral reef conservation in Curaçao have been identified. Therefore the results will start with sub-question 2: *To what extent have these conditions been met according to members of the laymen population on Curaçao?* This will be investigated in chapter 4 that describes the general perspective under the laymen population in Curaçao on ecological public mobilisation. This will be based on the conducted survey. Continuing with sub-question 3: *To what extent have these conditions been met according to different government officials, scientists, businesses and non-governmental organizations (NGOs) in Curaçao?* which will be answered in chapter 5, perspectives of institutional actors on ecological public mobilisation. Then, Sub-question 4 *What strengths and weaknesses can be identified based on the evaluation of conditions in SQ2 and SQ3?* will be answered in chapter 6. In this chapter the strengths and weaknesses in the ecological public mobilisation process will be identified. The answer will be based on the perspectives, of the public, government officials, scientists, and NGOs. Lastly, sub-question 5, *Derived from the strengths and weaknesses, supplemented with relevant literature, what opportunities for institutions and citizens could be identified to empower the community of Curaçao in the conservation of the coral reef?* Will be answered in chapter 7 Opportunities for citizens and institutions to empower the community of Curaçao in the conservation of the coral reef.

4. PERSPECTIVES OF LAYMEN POPULATION IN CURAÇAO ON ECOLOGICAL PUBLIC MOBILISATION

This chapter formulates an answer to sub-question 2: *To what extent have these conditions been met according to members of the laymen population on Curaçao?* For this, the results of the questionnaires have been used. The construction of this chapter is based on figure 2: ecological public mobilisation. To recap shortly, this is process of awareness, public action, institutional- and public eco-empowerment to ultimately reach eco-empowerment for the citizens of Curaçao. In the first section of this chapter the characteristics of the sample will be shortly discussed, in order to notify the bias that is present in the sample (a more detailed description can be found in the discussion). Then each analytical concept will be discussed, the degree in which such an analytical concept is present will be determined on the presence of the success condition that are described in the analytical framework (table 1-4). Starting with establishing the degree of the analytical concept awareness of the sample on the importance of the coral reef in Curaçao. Then the respondents will be guide through question on their preparedness to engage in public action for coral reef conservation, and finally their vision upon institutional and public eco-empowerment will be investigated. The last section of the chapter will include the overall evaluation of the presence of the success conditions under the laymen population in Curaçao. The evaluation is shaped in the terms promising (green), indifferent (blue) or unpromising (red), to advance the process of ecological public mobilisation. Later these evaluations will displayed in table 6 where a general overview of the evaluation is displayed. It is important to note that some of the questions posed in the survey could apply to multiple conditions, this will be reported in the beginning of the graph, the graph will not be discussed double however the researcher will keep the order similar to how the conditions were presented in the analytical framework.

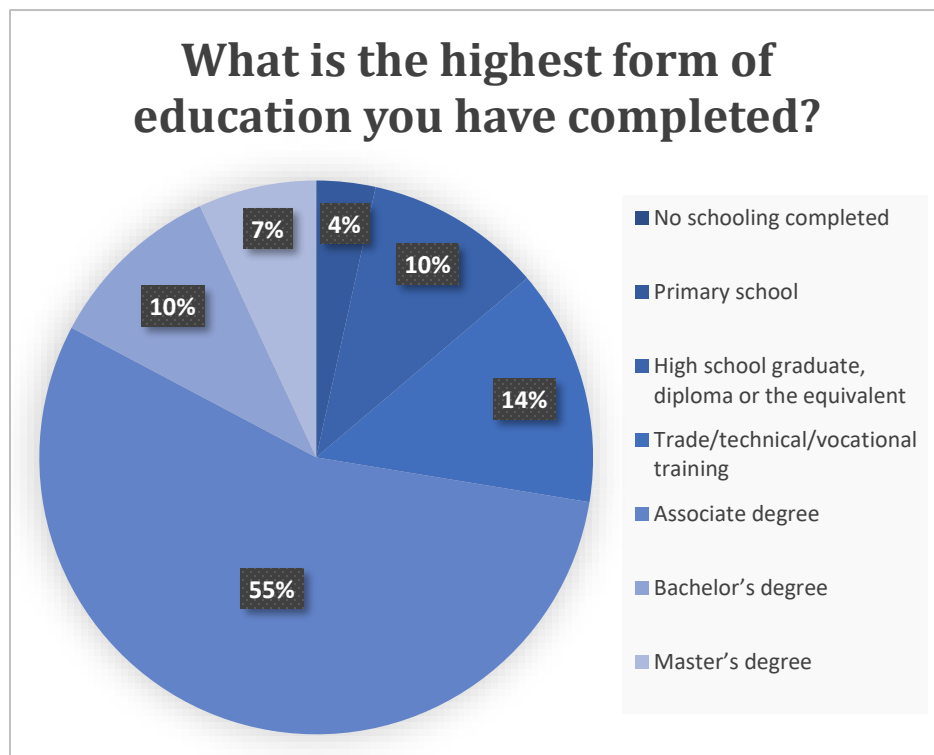
4.1. CHARACTERISTICS OF SAMPLE

For reasons of transparency, the most prominent biases that are present in this sample will be shortly discussed. A detailed discussion of the characteristics and what that means for the validity and generalisability of this research can be found in the discussion. Starting with the characteristics of the sample, here the most outstanding characteristics will be presented, that have led to a bias in the research. The survey has gotten 29 valid responses, the majority of these are higher educated people (72% of the sample has an associate's degree (HBO) or higher).

Another major note is that at the places where was sampled, such as the supermarket, more women were present, which also can be seen in the results. Women represent 79% of the survey. This was not only accredited by the places where was sampled, also men more often had a language barrier, refused to do the questionnaire or simply asked their wives to do it.

The next variable, questioned the ethnicity of the respondents, 10% had Dutch roots, the other 90% had Curaçaoan roots. The community of only Spanish speakers has been excluded in the survey as there was no options for surveys in their language. Also due to the location bias, the researcher did not ask anyone from the Asian community to participate in the survey.

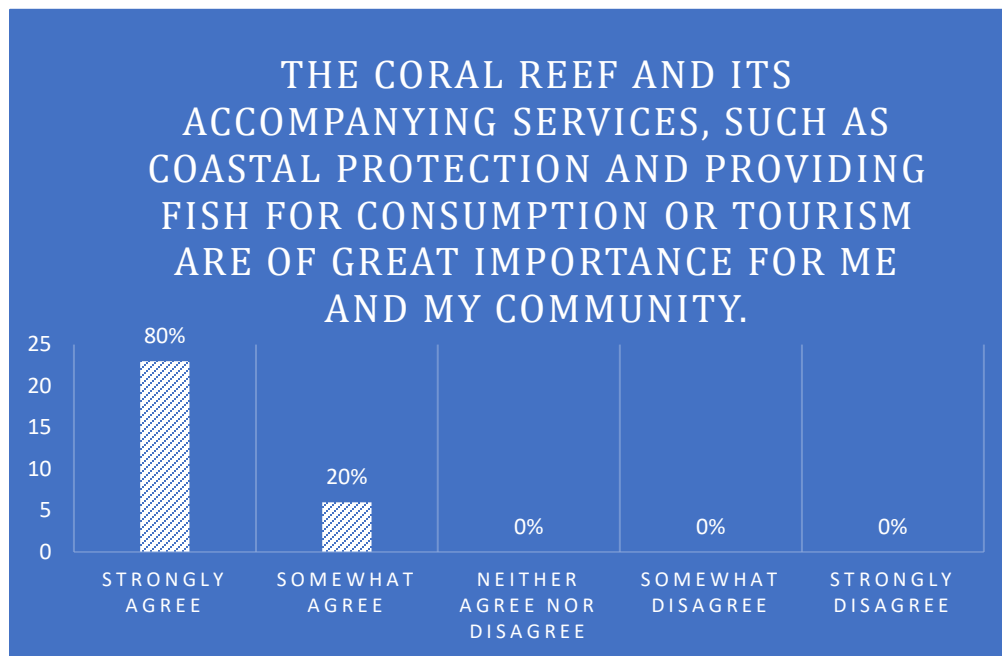
Overall, the sample has a major bias in level of education and gender. But excels in the age distribution.



Graph 1: Distribution of education level among sample

4.2. AWARENESS OF SAMPLE

To give an indication of the awareness of the population of Curaçao, five questions based on the conditions described in table 1, analytical framework for awareness have been asked. The first statement is displayed below and relates to the conditions **environmental values** - environmental values must be conducive to ecological mobilisation - and **perceived salience** - the public must understand the importance of the functioning of the coral reef for (the safety) of the island -. Here the respondents were asked whether they agreed or disagreed with the statement: *The coral reef and its accompanying services, such as coastal protection and providing fish for consumption or tourism are of great importance for me and my community.* This condition is evaluated as promising as it can be assumed that (strongly) agreeing with this statement will have a positive influence on the degree of awareness of the respondents. In graph 2 It can be seen that 80% of the respondents, agreed to the statement, and 20% somewhat agreed with the statement, and none of the respondents gave an indication other than that. Overall, this means that the respondents value and see the connection between the health of the reef and its accompanying services.



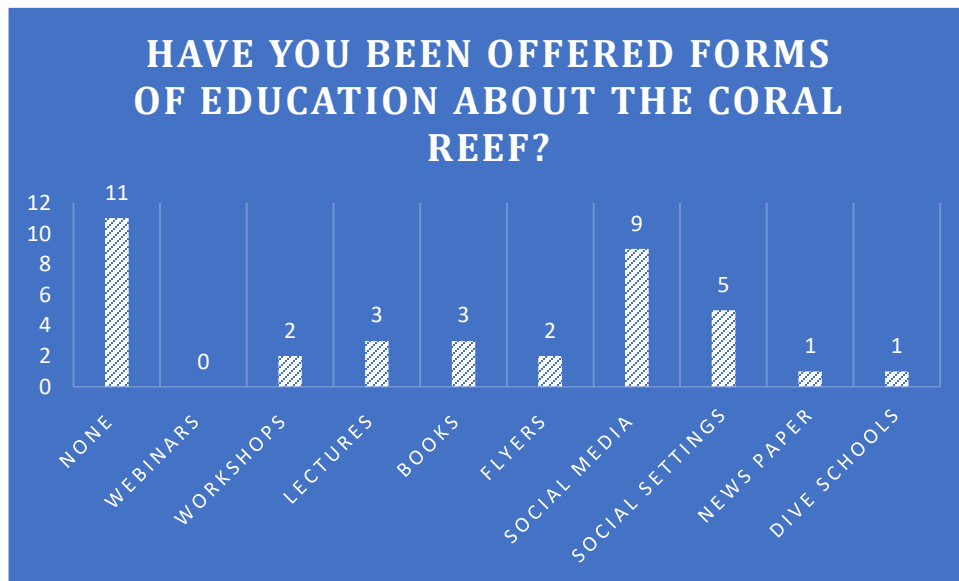
Graph 2: The importance of the coral reef for respondents, category environmental values

The condition raised: **subjective capacity** - the public must feel that they have the capacity to contribute to ecological public mobilisation -, has not been questioned separately in the survey. Nevertheless, the success condition has still been rated as indifferent. Graph 8 shows that none of the respondents ticked the option 'I don't think my actions would make a meaningful difference' on the question things that could withhold me from engaging in public action. This gives the impression that respondents at least think that their actions matter on an individual level for coral reef conservation if they would engage in public action. On the other hand, graph 13 that tests the condition community later in this chapter and focuses on the statement '*I think my community could adapt to a world without coral,*' 80% of the respondents ticked somewhat- and strongly disagree. This statement also relates to subjective capacity on a societal level as the respondents have to indicate the ability of their community to adapt to a situation where corals are not protecting their island anymore.

Overall, the respondents largely disagree with the statement raised in graph 13, as opposed to what graph 8. Therefore, the subjective capacity is more present on an individual level than the societal level.

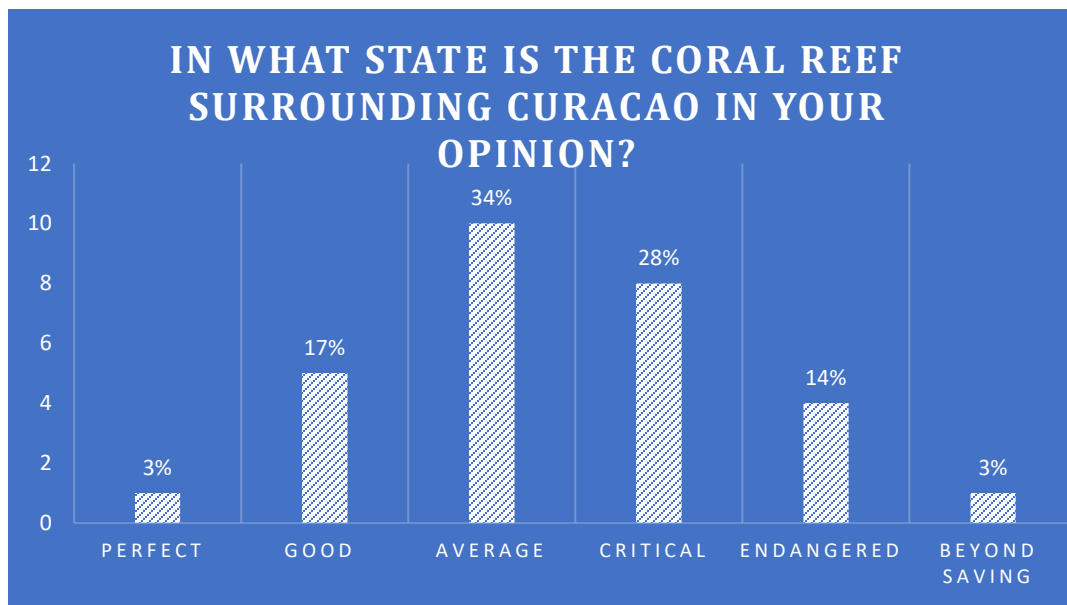
Graph 3 refers to the condition of where they stress that education not only in school is important but other sorts sources of education as well. The condition **education** - the public must be educated on the coral reef - for the public is rated as unpromising, it could have a negative on the development of ecological public mobilisation in Curaçao. The respondents were allowed to choose multiple answers on how they had been offered forms of education about the coral reef. The most commonly chosen option indicated that they have not been informed about the (status of the) coral reef. The second most chosen option was by social media, followed by social settings. These two option are both informal streams of information, which could be worrisome as people could base their perception on information that has not been proven by science. On the other hand Interviewee 12, the representative for Avila beach hotel, claimed that one of the best methods for Curaçaoans to raise awareness is word of mouth.

Overall, 11 times the box has been ticked that they have had no education on the coral reef, the two options that are ticked most after that are both in informal settings, which are hard to control on credibility and validity, thus improvements could be made in the education forms on the coral reef.



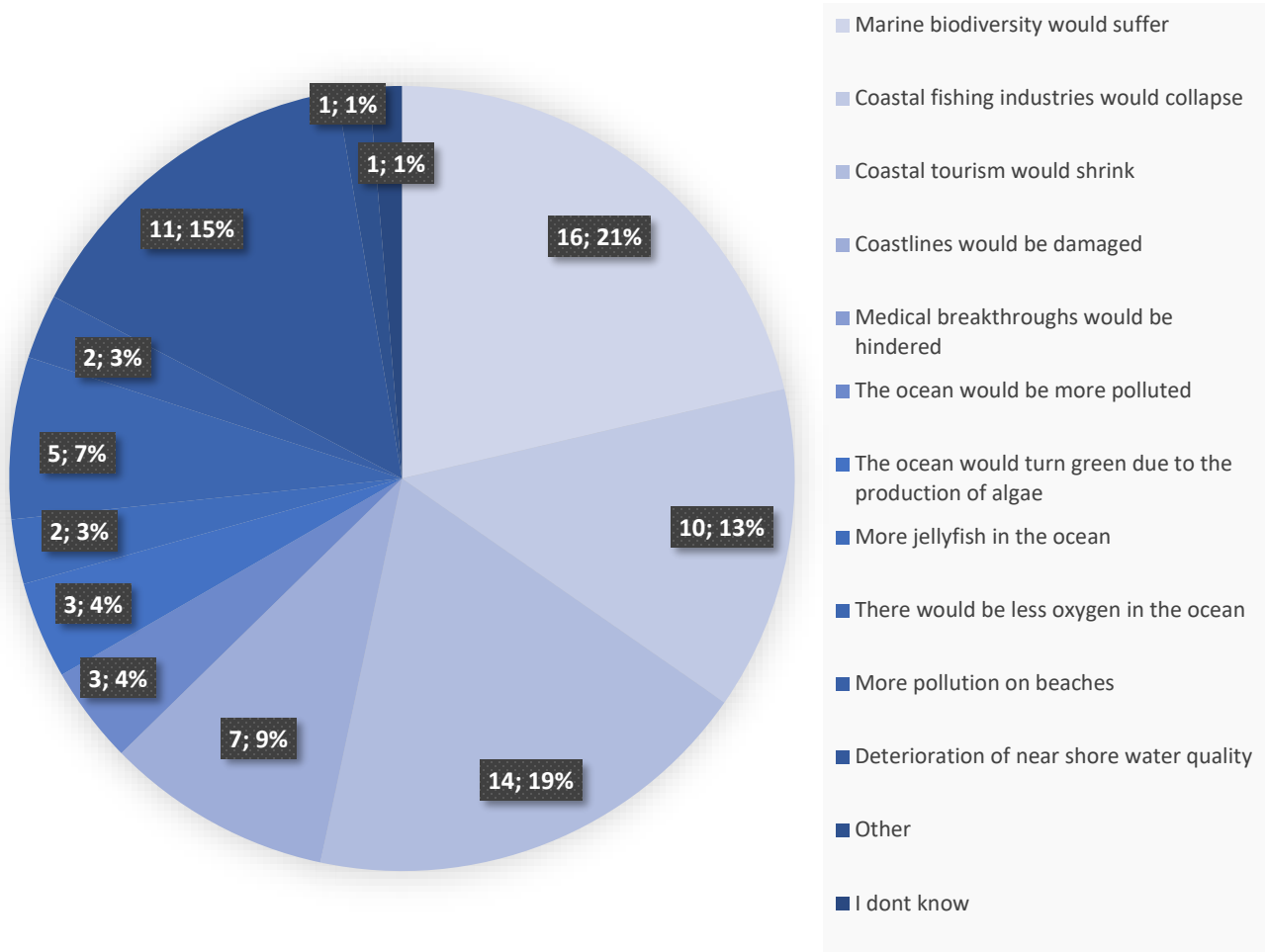
Graph 3: Various forms of education offered to respondents, category education

Graph 4 refers to the condition **perceived salience** - the public must understand the importance of the functioning coral reef for the (safety of the) island -. In this question it was assumed that the perceived salience would be lower if the state of the coral reef would be better. The respondents show a lot of disagreement in the statement *'In what state is the coral reef surrounding Curaçao in your opinion?'* This condition is evaluated as unpromising, it could have a negative impact on the development of ecological public mobilisation in Curaçao. 54% of the respondents ticked average or higher the remaining 46% was more sceptical and ticked critical or worse. Comparing the current situation of the coral reefs in the Caribbean from a scientific perspective with graph 4 is that in the scientific perspective corals are degrading rapidly with a loss approximately 50% in just 4 decades (Wilkinson 2000). If these rates continue to develop, WAITT institute has predicted that 60% of Caribbean coral reefs will be lost over the next 30 years (WAITT institute, 2017). The researcher interprets this as that the status of reefs on Curaçao are critical or worse. Therefore more than half of the respondents' perception of the status of the coral reef does not match with the findings of scientist.



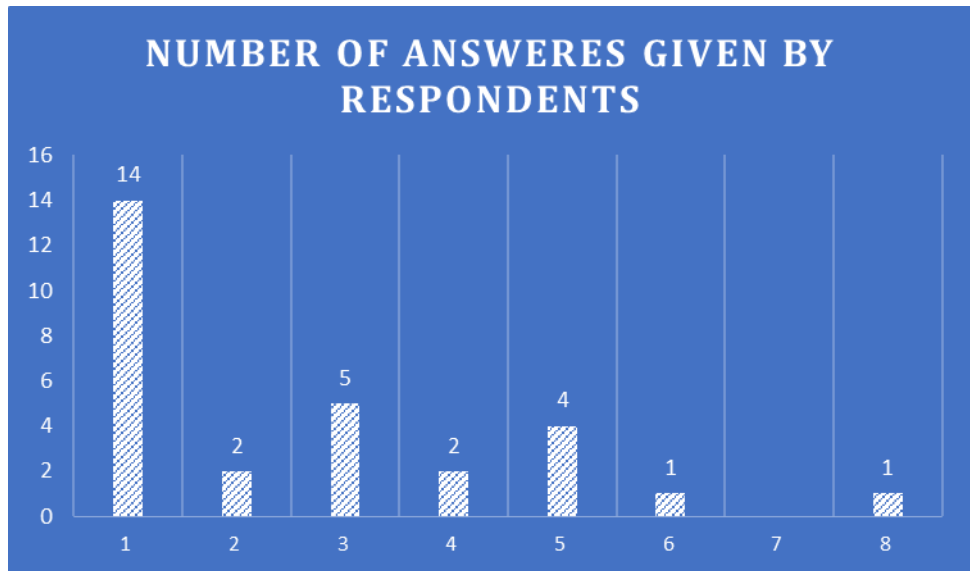
Graph 4: Distribution of perceptions of the state of the coral reef in Curaçao, category perceived salience

What are the three most severe phenomena that you think could occur due to the absence of coral reefs?



Graph 5: Most severe phenomena that could occur in the perception of the respondents, category perceived salience.

Graph 6: Number of options ticked for the question on their perspective on most severe phenomena that could occur due the absence of coral by respondents (half of the respondents, n=14, ticked one option. The other halve ticked two or more options.



Graph 5 displays the distribution of the perception of respondents on the most severe phenomena that could occur due to the absence of coral reefs. This graph is based on **perceived salience** - the public must understand the importance of the functioning coral reef for the (safety of the) island -, again and is a detailed addition to graph 4. Th condition perceived salience is evaluated as unpromising. These two graphs indicate that the perceived salience in awareness of the respondents is not high enough to evaluate it as a promising or indifferent condition for Curaçao. According to graph 5 as 55% indicated that the state of the reef is average or higher, which is not shared with the perception of scientists, this could be concerning for the overall awareness of the deterioration of the coral reef in Curaçao.

All the options that were given in graph 5 were realistic phenomena that could occur with the absence of the coral reef (de Bakker, 2019; *Unprecedented 3 Years of Global Coral Bleaching, 2014–2017*, 2018; Wielgus, et al., 2010). The respondents were allowed to fill in multiple answers. Technically all options could be ticked, this however did not happen. Graph 6 gives an indication of the number of options the respondents gave, and most respondents only ticked 1 option.

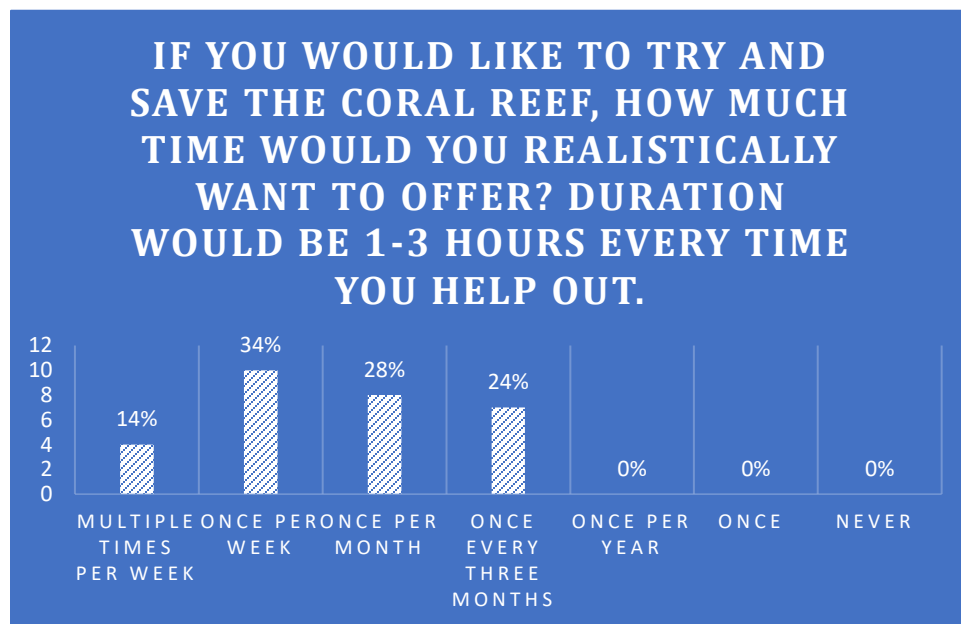
The option that was chosen most often, was the deterioration of the marine biodiversity, the second option that was ticked the chance that the absence of coral would result in less coastal tourism. This is not surprising as many incomes of Curaçaoans depend on tourism, with roughly 20% of Curaçao’s GDP in 2017 (Statista, 2020). The option that was chosen third most was the possible deterioration of near shore water quality. Close to number 3, was the option that coastal fishing

industries would collapse. The number 5, of this list is the possibility that Coastlines would be damaged. The remaining options have been ticked 5 times or less.

Later in this chapter, the respondents reacted on the statement '*I think my community could adapt to a world without coral,*' This belongs to graph 13 from the concept **community** - there must be connection between the members of the community -. 80% Of the respondents ticked somewhat- and strongly disagree to the statement. This statement also relates to perceived salience as the respondents think that their community cannot adapt to a situation where corals are not protecting their island anymore. Which should increase the condition perceived salience to promising because the respondents do not think they can adapt to a situation without coral. This would indicate a more promising result than has been evaluated right now. However, the public has a better perception of the health of the coral reef than it actually is, which is why the evaluation of the success condition perceived salience remains unpromising.

The last question in the concept awareness, is based on the conditions **sense of own responsibility** - the public must feel responsible if the government is not doing enough to prevent coral reef degradation - and **willingness** - the public must be willing to offer their time to engage in public action also called expected return of investment -. This condition is evaluated as promising for the development of ecological public mobilisation in Curaçao. Graph 7 shows that the willingness to participate in public actions for coral reef conservation is very high. Four persons have indicated that they would like to participate multiple times per week. This might be explained by that respondents could feel a high sense of own responsibility. The largest group of 10 people have indicated that they would like to participate once per week. Followed by two large groups as well, that would like to participate once per month or once every three months. Not one of the respondents would like to participate less than once every three months, which seems unlikely. This could be accredited to the relative high education of the respondents, this may be paired with more spare time or that the majority of the respondents gave a social acceptable answer which could result in a social desirability bias.

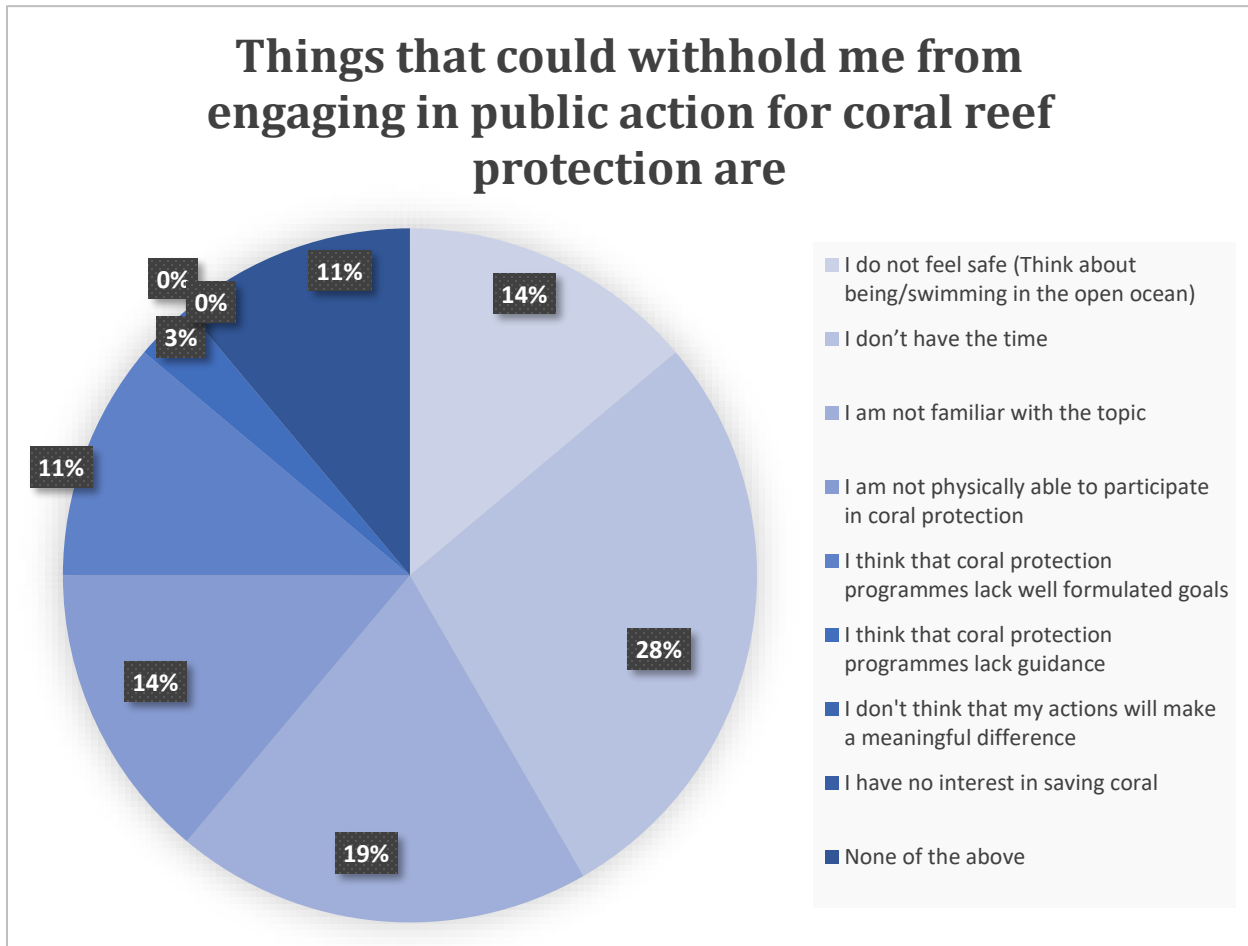
Overall, this outcome on willingness and high sense of responsibility would be good for the overall perspective on awareness by the respondents, however, it is questionable because of a potential social confirmation bias.



Graph 7. Willingness to participate in public action, category willingness & sense of own responsibility

4.3. RESPONDENTS' PERCEPTION ON PUBLIC ACTIONS FOR CORAL REEF CONSERVATION

To give an indication of the respondents' perceptions on public actions for coral reef conservation several questions have been asked in the questionnaire. Table 2 in chapter 2 describes the condition for public actions in the process of eco-empowerment. Again, these questions are based on the conditions in table 3.



Graph 8: Things that could prevent public from engaging in public action, condition culture.

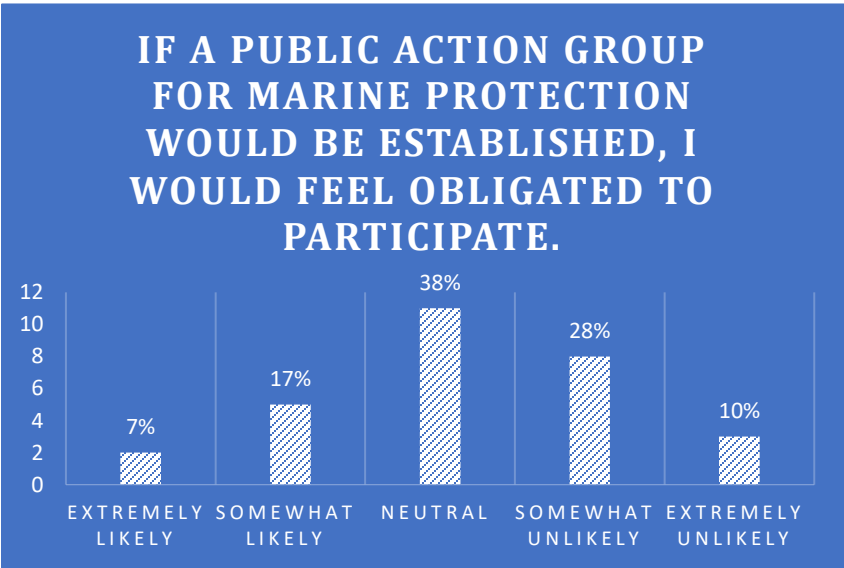
The first question for public action is based on the condition and **culture**, to advance in the process of ecological public mobilisation, it would be of importance that the significance of the coral reef surrounding the island is manifested in the culture of the public. This condition is marked as unpromising as it could negatively impact the perspective on public actions, hindering the development of ecological public mobilisation in Curaçao. Respondents were given the option to tick multiple options which are displayed in graph 8. 14% Of the respondents have indicated that they do not feel safe on the open ocean which could be a reason to not engage in public action. When the

researcher was collecting the questionnaires, the first response of some of the participants was, that they could not swim or did not know anything about corals. It is important to note that this research did not do any investigation to the degree of population that cannot swim, however it could be one of the reasons that there is not strong connection to the ocean, but this needs further research. Secondly, more than a quarter of the participants indicated that they do not have the time to participate with public actions for coral reef conservation. This is surprising considering the previous graph 8 pointed out that all the respondents would realistically like to participate in saving the coral reef at least once every three months, and many indicated even more. A possible explanation for this difference is that the respondents might have had more emphasis on the part 'like to participated' instead of the part 'realistically'. In addition, almost 20% indicated that they are not familiar with the topic, graph 4 where the distribution of forms of education of the coral reef have been displayed, indicated that 38% had not been offered any forms of education on the coral reef. This could be explained by the indication that that only one respondent ticked the option 'I think that coral protection programmes lack guidance'. So the respondents think that there would be enough guidance once they participate in a programme, such that their unfamiliarity with the topic will not be a problem. Four persons have indicated that coral protection programmes lack well formulated goals for them to participate. Finally, none of the respondents ticked the option that they had no interest in saving the reef or that they did not think that their actions would make a difference. Therefore, following the respondents, it seems plausible that once people would participate in a coral protection programme the condition subjective capacity would be fulfilled. However, it would be important to check this claim once people actually start participating in coral rescue programmes.

Overall, the indication is that the main reasons that most respondents do not engage in public action for coral reef protection are that most people would not have the time to participate in public actions, are not familiar with the topic or do not feel safe or are not able to participate.

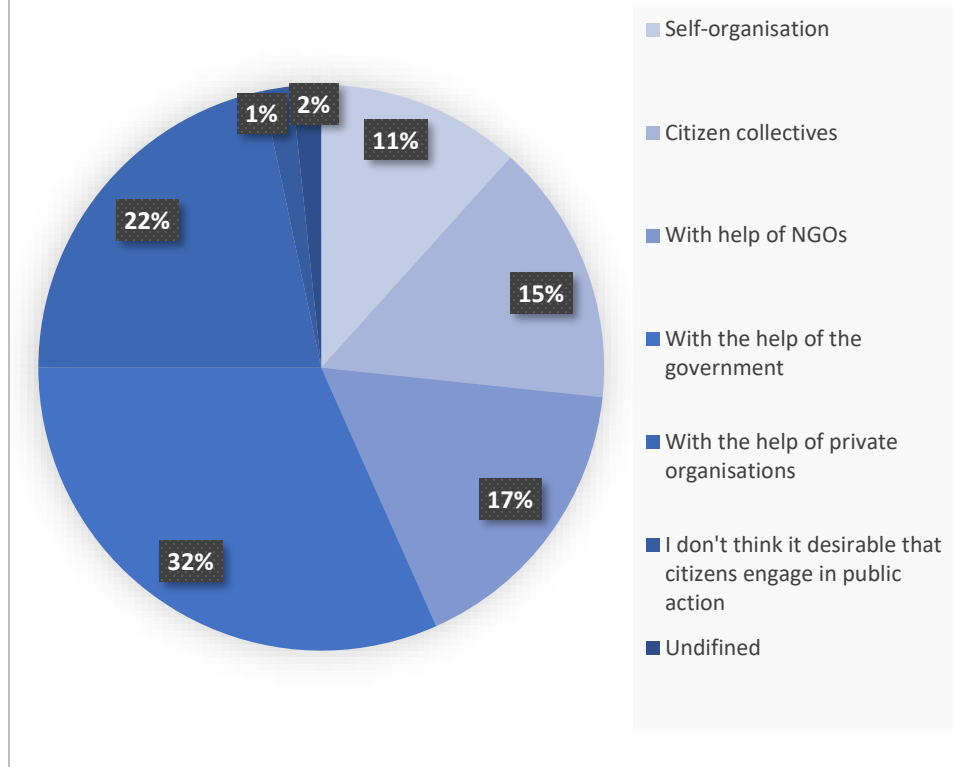
Furthermore, the option 'I don't think my actions will make a meaningful difference' was also discussed in the evaluation for the condition **subjective capacity** - the public must feel that they have the capacity to contribute to ecological public mobilisation -, has originally been classified by awareness.

Graph 9 displays the condition **peer influence** - locals must be stimulated by other members of the community to also engage in public action -, another condition of table 2. The condition peer pressure does not seem to have a major positive or negative impact on the concept public action. Therefore it is evaluated as indifferent as it is not expected to advance nor hinder the process of ecological public mobilisation. 24% Says that it will be likely or extremely likely that they would feel obligated to participate if such an action group for marine protection was established. By far the largest group ticked the option that they are neutral about statement, and the remaining 38% ticked the option that it is somewhat- or extremely unlikely that they would feel obligated to participate. The large group that ticked neutral could be explained by the desirability of the participants to not condemn to peer pressure, or that they simply did not know if they would feel pressure to join a public action group for marine protection.



Graph 9: Feeling of obligation to participate by the respondents, category, peer influence

How should public action for marine protection be organised?



Graph 10. Respondents perspectives on how public action should be organised for marine protection, category organization

Graph 10 corresponds with the condition **organization** - locals must have an active presence in the organisation of public actions for coral reef conservation -, in the analytical concept public action. There will be no evaluation of this condition, as different organisation forms could be more optimal for some context compared to others. The respondents were asked for their perspectives on how public actions should be organised for marine protection, they could tick multiple options. It turned out that their opinions are very divided. The largest group ticked the option that the government should organise public actions for marine protection. Followed by the involvement of private organizations and then NGOs follow. Citizen collectives and self-organization also score high in the question. Only one person thinks that it is not desirable that citizens engage in public actions.

Overall, there is a distribution in the perspectives on how public action should be organised, which is not necessarily good or bad as the most optimal option could depend on the situation. It also

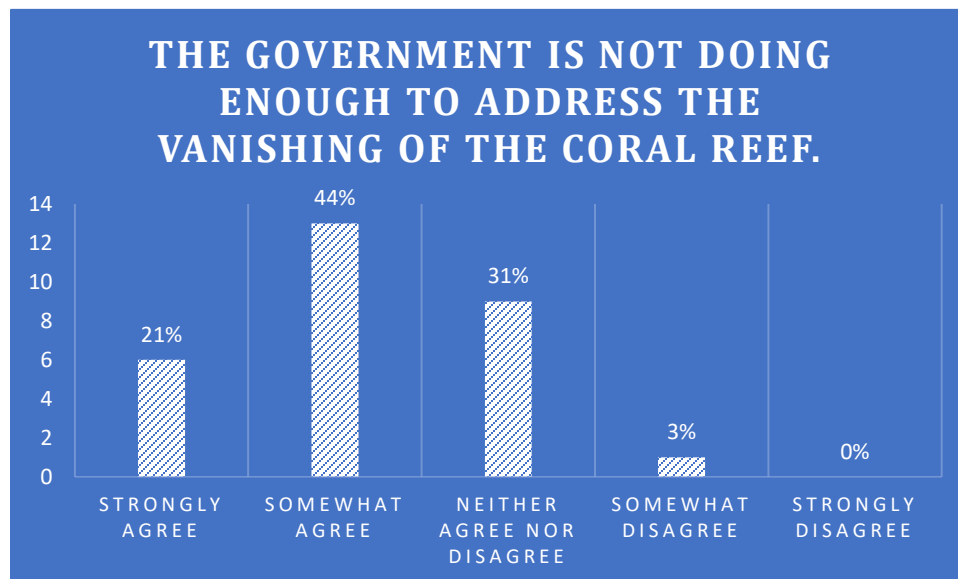
could be argued that it is good that various actors will be involved in organising public action to create a broader support of the community..

4.4. PERSPECTIVE OF RESPONDENTS ON THE ROLE OF THE INSTITUTIONS IN ECO-EMPOWERMENT

The survey questions in this section are based on table 3: conditions for institutional eco-empowerment. The conditions of institutional eco-empowerment focuses more on the specifics of institutions rather than on the public, which is why four conditions have been excluded from the survey, these are expertise, strategic thinking, financial capability and collaboration with other stakeholders.

The only statement in this section is based on the condition **power relations** - institutions should use their power to include the goals of other stakeholders in their company policy -, in which the participants are assessing the functioning of the government in terms of coral conservation. The outcome of the statement of graph 11, that 2/3th of the respondents think that the government is not making enough effort in addressing the vanishing of the coral reef in Curaçao, therefore it is evaluated as unpromising. 30% does not agree nor disagree and only one person disagreed with the statement somewhat.

Overall, the respondents think that the government could make more effort to address the vanishing of the coral reef. Therefore this condition has been marked as unpromising as it is not expected that this outcome will hinder the process of ecological public mobilisation.

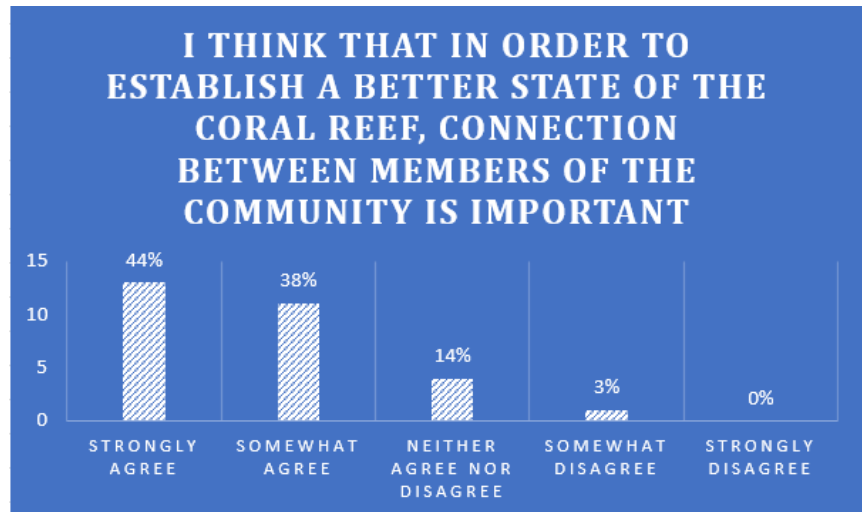


Graph 11. Perspective of public on actions of government to safe coral reef, condition power relations

4.5. PERSPECTIVES OF THE PUBLIC ON PUBLIC ECO-EMPOWERMENT

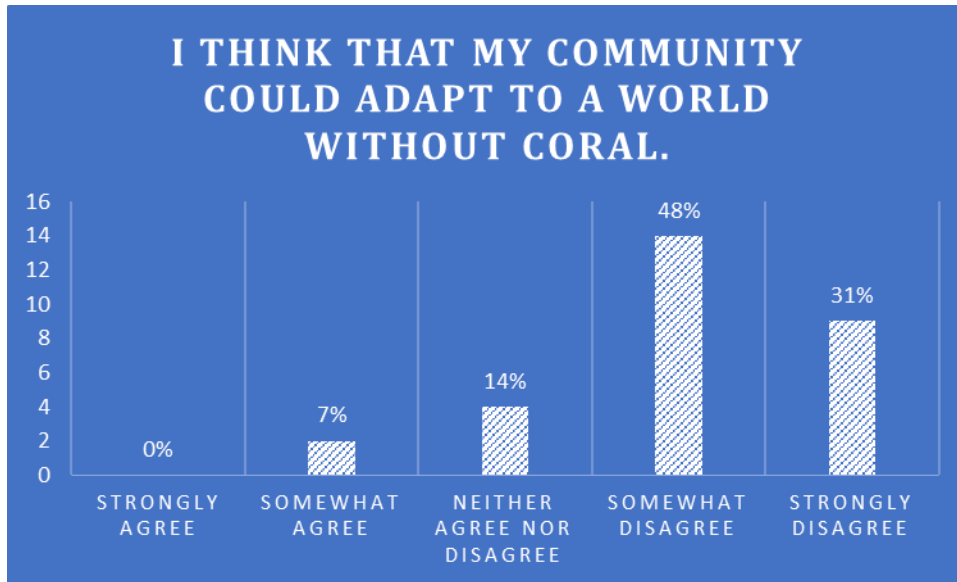
The questions in this section are based on table 4. Condition for public eco-empowerment. One condition, welfare, has not been included in the survey. This is because the meaning of the word welfare could be interpreted differently per person, and it might be more beneficial to have an expert answering this than a respondent to this survey.

The following condition is **community**, there must be connection among the members of the community. Graph 12 presents the statement 'I think that in order to establish a better state of the coral reef, connection between members of the community is important'. Most participants agreed with the statement (82%). 14% Was neutral and



Graph 12: connection in community is deemed important, category community

only one respondent somewhat disagreed to the statement. Which is peculiar, as interviewee 7 (Carmabi) said in his interview that in Curaçao the lower- and higher incomes groups, are not mixed at all and a connection between the members of the community can be far sought. This gives a clear signal that community and collaboration are considered as important for eco-empowerment. So it is could be inferred that the community would like to be involved in the process, and that (some) of their goals should be incorporated into the strategy of the institutions.



Graph 13:
Adaptability of
community, category
community

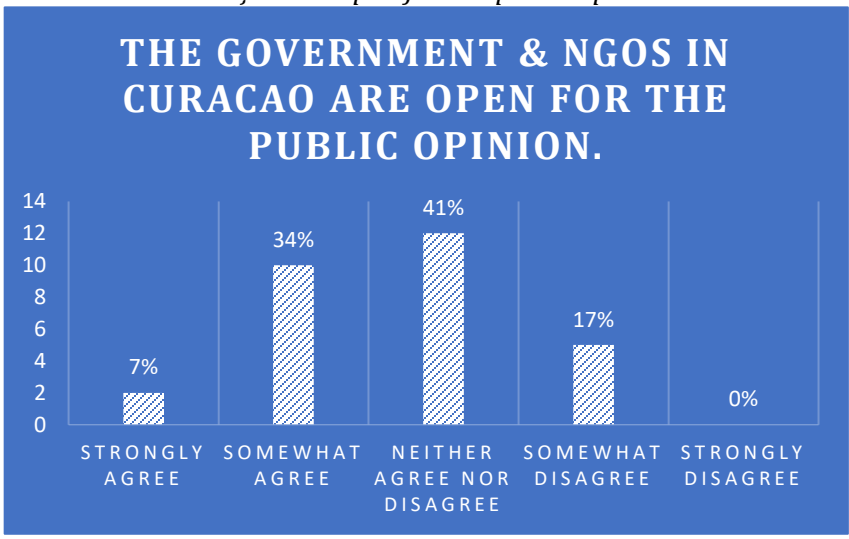
The next question, displayed in graph 13, is a mix based on several conditions which are: **community** - there must be connection among the members

of the community -. **perceived salience** - the public must understand the importance of the functioning coral reef for the (safety of the) island - and **subjective capacity** - the public must feel that they have the capacity to contribute to ecological public mobilisation - both borrowed from the awareness section, as the author assumes the relationship between the increased ability to adapt will decrease in perceived salience. But the respondents are indirectly also asked for their subjective capacity, which means knowledge, resources and skills to adapt. Graph 13 raises the statement 'I think that my community could adapt to a world without coral'. 80% is convinced that the community on Curaçao could not adapt to a world without coral. 14% chooses the neutral option. And 2 persons somewhat think that their community could adapt to a world without coral. As the ability to adapt is perceived to be very low, the author infers from this that this would translate to a high perceived salience, which is also high in graph 5. But it contradicts the figure where respondents assess the state of the coral reef in graph 3, which is relatively good.

Overall, for the condition community the respondents think that connectivity among the community is important for public eco-empowerment. On the other hand the respondent do not think there is an ability from the community on Curaçao to make decisions, action those decisions, set its own priorities, build capacity, secure resources and be sustainable. Which is why this condition has been evaluated as unpromising, this condition is expected to hinder the development of ecological public mobilisation. However, there was no question asked if the respondents thought that their community was very connected. This could have been useful information to determine the actual connectivity among the community. To give an indication of an answer for this blank, Interviewee 7 from Carmabi said that there wasn't a good mix from theoretical- and practical educated persons,

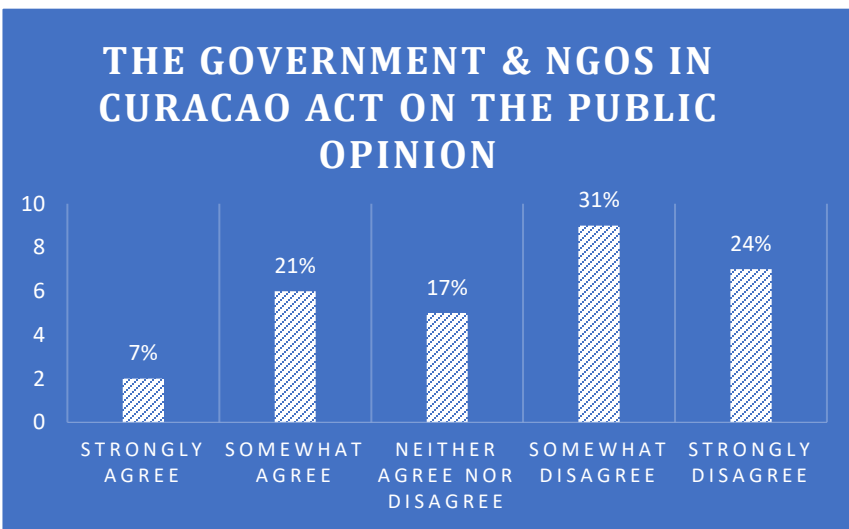
which translated from school into the work place, where there usually was a preference of people with similar ethnicity.

The next statement ‘*the government & NGOs in Curaçao are open for the public opinion*’ is based on the condition **participation in decision making** - the community must be included in the decision making -. Graph 14 shows that 41% ticked the box, neither agree nor disagree. Furthermore 41% (7% strongly agree + 34% somewhat agree) of the respondents ticked the option that the government and NGOs were open to the public opinion. Only 17% somewhat disagreed with the statement.



Graph 14: Government is open for the public opinion, category participation in decision making

The statement that follows in graph 15, also based on the condition **participation in decision making** - the community must be included in the decision making -. Displaying the opinion whether the respondents think if the government acts on the public opinion. Here we see a broader distribution of the ticked options. More than half (55%) thinks that the government and NGOs do not act on the public



Graph 15: Government acts on the public opinion, category participation in decision making

opinion, whereas only 17% is neutral in this statement and 41% agrees. A phenomenon that was brought under the attention by the representative Interviewee 3 from VVRP and Interviewee 7 from Carmabi is that it needs to be considered that the public opinion in Curaçao is very influenceable,

there is no research journalism on the island, which can cause that the public opinion could not align with what is scientifically proven.

Overall, there were much unclarities in the last 2 statement about the power relations between the public and the institutions. Additionally there is a debate on whether it is good or not if the government acts or listens to the public opinion, which will mean that the researcher will not make a judgement about this condition.

4.6. EVALUATION & INTERMEDIATE CONCLUSION DISTINCTIVE PERSPECTIVES UNDER THE LAYMEN POPULATION REGARDING CORAL REEF CONSERVATION

In this section the answer to the sub-question 2: *‘To what extent have these conditions been met according to members of the laymen population on Curaçao?’* will be answered. The answer will be constructed by a small concluding recap of the investigated concepts, followed by an evaluative table. The table contains the condition and the final evaluation colour, the colour green means that the condition is evaluated as promising, which means that it is likely that the condition will have a positive impact on the process of eco-empowerment for coral reef conservation in Curaçao. The colour red means that the condition is marked as insufficient, which means that it is unlikely that condition will advance the process of eco-empowerment or in extreme cases could even oppose the process of ecological public mobilisation. The colour blue means that the condition is marked as indifferent, that the respondents have mostly responded neutral or an answer that is similar to neutral. The colour white means that that this research failed to indicate a reliable answer for the condition, therefore will not be considered in the evaluation.

4.6.1. EVALUATION OF CONCEPT BY THE RESPONDENTS

Table 6. Displays a short summary of the conditions in the key concepts of the respondents. The conditions have been rated on basis of the figures and text in chapter 4.

Table 6: Summary grading conditions in for key concepts for the public

Concept	Condition	Rating
Awareness	Environmental values	Promising
	Subjective capacity	Indifferent
	Education	Unpromising
	Perceived salience	Unpromising
	Sence of own responsibility/ willingness	Promising
Public action	Culture	Unpromising
	Peer influence	Indifferent
	Organization	Missing
Institutional eco-empowerment	Power relations	Unpromising
Public eco-empowerment	Community	Unpromising
	Participation in decision making	Missing

Starting with the concept awareness, the condition **environmental values** - environmental values of the public must be conducive to ecological public mobilisation -, is rated as promising, this condition is not expected to hinder ecological public mobilisation. Next, the condition **subjective capacity** - the public must feel that they have the capacity to contribute to ecological public mobilisation -, did not have a question on its own in the survey, but graph 8 indicates with the option 'I don't think my actions will make a meaningful difference' that was not ticked, that subjective capacity is not likely to be a condition that could withhold the process of ecological public mobilisation, which is why it still received a blue mark. The condition **education** - the public must be educated on the coral reef -, received an unpromising, red marking, 11 respondents ticked that they never had any information about the coral reef. Options that were also ticked often were based on informal streams of information, which is hard to check on credibility and validity. The condition **perceived salience** - the public must understand the importance of the functioning coral reef for the

(safety of the) island -, was graded insufficient as well. A possible explanation is that the condition education also received an insufficient grade because people have not been educated enough on the importance of a healthy reef, they also value the accompanied risks as less potent. Both conditions could slow down the process of ecological public mobilisation. Finally, both conditions **sense of own responsibility** - the public must feel responsible if the government is not doing enough to prevent coral reef degradation -, and **willingness** - the public must be willing to offer their time to engage in public action -, are graded together as promising, this is because they were also measured in one question. Graph 7 showed the high responses for helping in coral reef conservation.

The next key concept that will be discussed is public action. The first condition, **culture** - to advance in the process ecological public mobilisation, it would be of importance that the significance of the coral reef surrounding the island is manifested in the culture of the public -, received an unpromising grading. Locals have indicated that they do not have enough time for coral conservation, do not feel comfortable or are not physically able to, and 28% indicated that they are not familiar with the topic, which could be lead back to the condition education, which also received an unpromising grading in the previous section of awareness. It was hard to put a grade on the next condition **peer influence** - locals must be stimulated by other members of the community to also engage in public action -. The majority of the respondents indicated that they were neutral, which is why it received an insufficient mark. The condition **organization** - locals must have an active presence in the organisation of public actions for coral reef conservation -, did not receive a grade because the form of an organisation could be more optimal for certain context than others.

The only condition that has to be rated for the concept institutional eco-empowerment, is **power relations** - institutions should use their power to include the goals of other stakeholders in their company policy -. This received an unpromising mark grade as the public does not think that the government is doing enough on the vanishing of the reef. Furthermore there is a debate on whether it is good if the government listens to the public opinion as there is no research journalism on the island, enabling the production of fake news.

The intermediate evaluation for the analytical concept public eco-empowerment does not look sufficient in first sight. The respondents think that connection in **community** - there must be connection among the members of the community -, is deemed important for coral conservation. On the other hand they do not think that their community is able to make the right decisions and adapt to a world without corals. With the additional comment of Interviewee 7, on the actual connectivity of the community, the rating has been indicated as insufficient. The following condition,

participation in decision making - the community must be included in the decision making -, has been excluded from grating. There were are a lot of uncertainties in the results.

Overall, the answer to the question *'To what extent have these conditions been met according to members of the laymen population on Curaçao?'* is: the only two conditions that received a promising mark, that were investigated under the public, were environmental values and sense of own responsibility/ willingness. The mark that the conditions subjective capacity and peer influence received was indifferent. Finally the conditions education, perceived salience, culture, power relations and community scored unpromising.

5. PERSPECTIVES OF INSTITUTIONAL ACTORS ON ECOLOGICAL PUBLIC MOBILISATION

This section will present the results that will be the fundamentals of the answer to the sub-question 3: *To what extent have these conditions been met according to different government officials, scientists, businesses and non-governmental organizations (NGOs) in Curaçao?* To answer this question, 16 interviews have been conducted, and several informal conversations have been held with fishermen on a fishermen conference for fishers organised by KUP. Based on their perspectives, a discourse network analysis has been created to evaluate to what extent the conditions have been met. The specific organizations with representatives have been presented in table 7. It is important to note that the representatives for these organizations have one thing in common, they are aware of the situation of the degrading of the coral reef and often also have a goal to spread awareness for coral reef conservation among the population of Curaçao. The interviews have again been based upon the analytical framework in chapter 2, table 1-4, which means that similar conditions have been evaluated as the population have evaluated in chapter 4. At the section of the analytical concept in the perspective of the institutions, a figure of the concerned success conditions and its code names will be displayed.

Table 7: List of participants for interviews

Type	Organization	Brief description of organization	Representative
Government	Ministry of Health, Environment and Nature (GMN)	Supervision on practices that could influence the health of coral	Interviewee 1
	Ministry of traffic, safety and spatial planning (VVRP), CCCP, METEO	idem	Interviewee 2
	Ministry of traffic, safety and spatial planning (VVRP),	idem	Interviewee 3
	M.M. Römerschool (M.M. Rs)	Primary school	Interviewee 4

NGO	Branch Coral foundation (BCF)	Growing corals	Interviewee 5
	Carmabi, director	Research + education institute about the environment	Interviewee 6
	Carmabi, education director	idem	Interviewee 7
	Carmabi, research director	idem	Interviewee 8
	Curaçao Underwater Kunuku (CUWK)	Film that tries to raise awareness about the underwater life of Curaçao by snorkelling the entire length of the south coast.	Interviewee 9
	Greenkids	Foundation to make free- and modern education about the environment	Interviewee 10
	Kids For Coral (KFC)	Foundation that teaches children about corals via a snorkelling course	Interviewee 11
Business	Avila Beach resort (ABR)	Resort that has a coral nursery in front.	Interviewee 12
	Ecovision	Environmental consultancy bureau	Interviewee 13
	Federashon KUP	Federation of fisherman and farmers	Interviewee 14
	Lion Fish Caribbean (LFC)	Restaurant that serves lionfish (which is an invasive species on Curaçao)	Interviewee 15
	Vidanova bank	Bank that sometimes sponsors sustainable initiatives.	Interviewee 16
	Fishermen (KUP)	Informal conversation with fishermen on conference from KUP	-

5.1. PERSPECTIVES ABOUT THE AWARENESS OF CURAÇAO AMONG INSTITUTIONS

	Conditions	Imperative	Code names
Awareness	Environmental Values	Environmental values of the public must be conducive to ecological public	Environmental Values
	Subjective capacity	The public must feel that they have the capacity to contribute to ecological public mobilisation.	Start Simple
	Education	The public must be educated on the coral reef.	Education on coral reef
	Perceived Salience	The public must understand the importance of the functioning coral reef for the (safety of the) island.	Perceived Salience low
	Sense of own responsibility	The public must feel responsible if the government is not doing enough to prevent coral reef degradation.	Sense of own responsibility
	Willingness	The public must be willing to offer their time to engage in public action.	Willingness of locals
	Overall Awareness of public	How do the institutions perceive the awareness of the public?	Overall Awareness of public

Figure 6: Codes of conditions that belong in Awareness

Chapter 2 presented an analytical framework for eco-empowerment, figure 6, connects again table 1 which works out the conditions of awareness and converts them into the used codes to figure 7, discourse network analysis on awareness of the public from the perspective of the institutions. The code names could differ from the condition as in the Discourse Network Analyzer programme a person had to agree or disagree with a node (code), the differences are presented in figure 6. The analytical framework did sometimes present a condition too un-subjective for the participant to agree or disagree with. In figure 7, the black rectangles represent conditions of awareness presented in table 1. The lines connect an organisation to a node, they can make disagreeing statements (red), and agreeing statements (green), if they make both agreeing and disagreeing statements about a node, the connection line is coloured blue. The figure presents a colourful network of ties and nodes. Which means that there is a lot of disagreement about the concepts themselves. Sometimes an actor made a statement about a concept that was only directed for their organization, but other times the statement about the concept was directed for the whole society on the island.

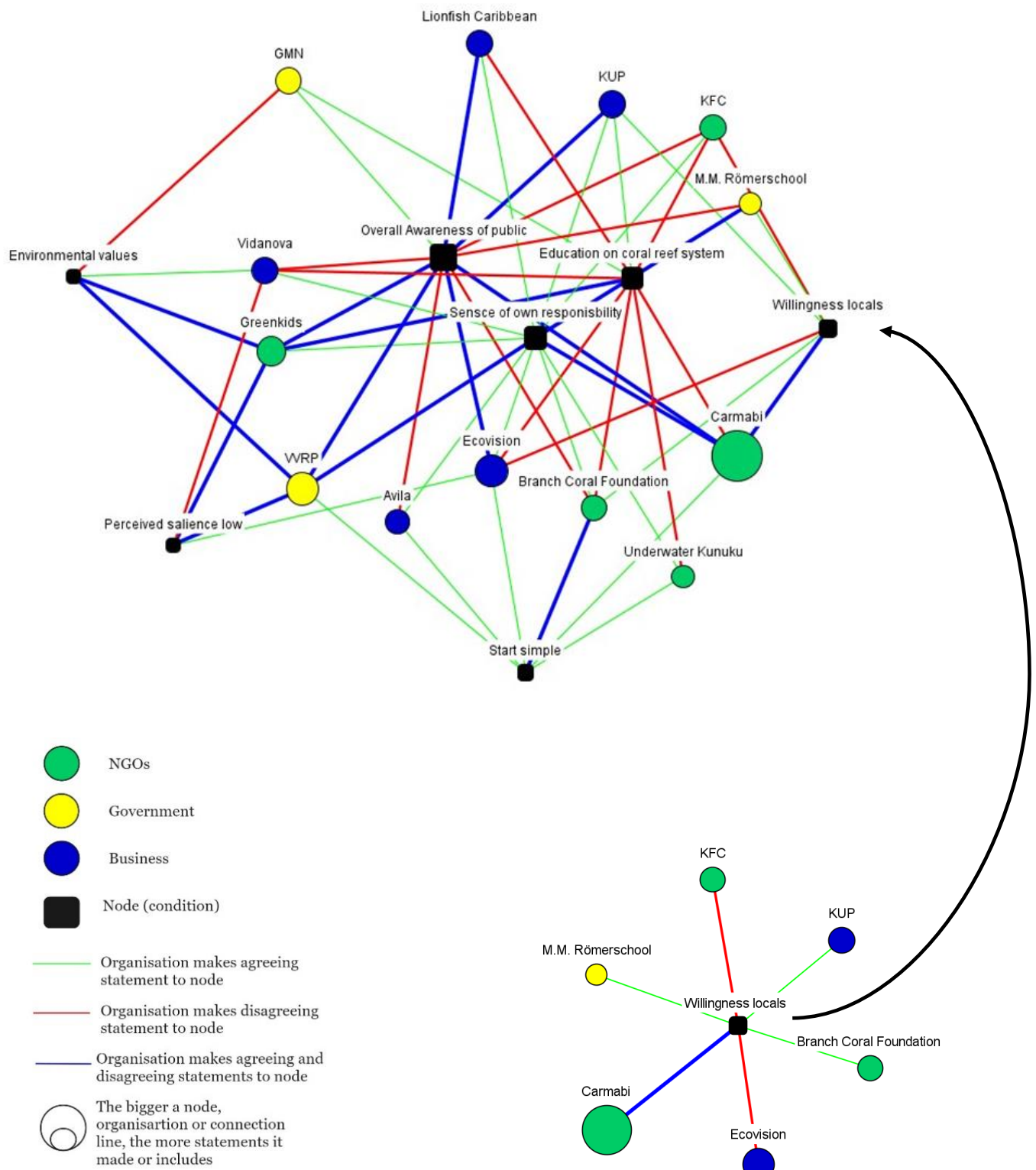


Figure 7: Discourse Network Analysis of awareness among the participants

Starting with the concept that is located on the left side of the figure, **environmental values** - environmental values of the public must be conducive to ecological public mobilisation -. It could be concluded that the organizations that made a statement about environmental values more or less agree that the environmental values on the island are unpromising in enabling the process of environmental public mobilisation. For this concept it was identified that Vidanova bank is the only actor that solely agrees that this condition is present in the context of this research (see green connection line between Vidanova and the node environmental values in figure 7). This could be explained by the fact that the representative only talks about his organization, whereas the other actors that are referring to environmental values also recognise the environmental values of society. Thus, the other organizations that mention the condition, do so with referring to society.

Figure 7 displays the condition **subjective capacity** - the public must feel that they have the capacity to contribute to ecological public mobilisation -. Instead of using the term subjective capacity as a code itself, the researcher noticed while coding that an abundance of participants stressed the importance of simplicity, which is why the code name had been changed to start simple, located in the bottom of the figure. For sake of staying within the context of Curaçao and not zooming out to international scale, figure 7 shows by the abundance of the green connection lines to the node, that there is agreement among the participants that starting simple could enlarge the subjective capacity. Nevertheless, with the terms that subjective capacity is started simple, the condition is rated as promising. Interviewee 6 explained in his interview that if you start simple, for instance stimulating people to come up with a simple plan themselves, people will be engaged more easily. As opposed to complex projects, where there is a bigger chance that there will be no funding etc. Which is the reason why the author has included another concept that is named start simple (see figure 6). Based on this statement the author assumes that the subjective capacity will rise with simplicity. For subjective capacity, Greenkids and three other organizations made comments. Underwater Kunuku and Vidanova bank referred to their own projects. Interviewee 9 from Underwater Kunuku, was convinced his film about the underwater world in Curaçao did make a difference in people's perceptions of the beauty of the underwater world. Vidanova bank Interviewee 16 said that the bank did not make demands for the provisions of loans to ensure sustainability. However, they did a sustainable housing project but due to the costs, the houses became less sustainable than originally intended. More organization agreed on the concept of starting simple, where some even emphasized that the beginning should always be simple as otherwise it will scare people off. The only organization that made mixed statements about simplicity, was Branch Coral Foundation. This organization also stressed the importance of the bigger picture and said it was crucial not only to

considerer Curaçao, but to also take into account that the entire area of the Caribbean is an ecosystem as well, and other islands would need to work together more tightly, zoom out instead of zooming in, in order to make advances in coral conservation.

The actors agree that the condition, located in the middle right, **education** - the public must be educated on the coral reef - is needed to stimulate awareness among the public. The condition is located in the middle of the figure, by the abundance of red connection lines it can be seen that multiple actors made negative comments towards the education on coral reef system. Meaning that they think, more education is needed on coral reef conservation, thus the condition is marked as unpromising. Two actors, GMN and a teacher from primary school M.M. Römer, did see the advances that were made in the education of coral reef conservation, and how this impacted the vision of the students. However, interviewee 16 from Vidanova bank, saw the unawareness of the importance of the coral reef surrounding him, which is a generally older audience where a lot of education is not targeted at. The researcher asked the education director of Carmabi interviewee 7 why the general target group was children and why not adults. She thought that adults are generally more able to make a contribution to coral conservation compared to children. He answered that his reach is very limited and the public opinion is stacked against Carmabi, as the minister often takes anti-environment measures and often publicly expresses that he hopes that Carmabi will disappear quickly. Without investigative journalism the public opinion could be steered very much, which is not in favour of Carmabi and educating the adult population of Curaçao. Therefore, schools are an easy target audience without receiving the anti-reaction.

The condition, located on the bottom left, **perceived salience** - the public must understand the importance of the functioning coral reef for the (safety of the) island - or the coded version, perceived salience low (see figure 6), has been mentioned by four organizations. The participants expressed themselves about whether they thought if the population had a promising look at the perceived salience of the ecosystem services that the reef, amongst others, provides. The overall outcome is indifferent. Ecovision was the only organization that directly agreed to the statement perceived salience low. Interviewee 13 said that the people of Curaçao had the feeling that there always had been a fight against drought, heavy rain and wind, which had not necessarily increased due to the observation of climate change, so therefore he agreed to the node perceived salience low of the public. VVRP and Greenkids made contradicting statements about the concept. Interviewee 3 said that nature conservation is not seen as vital to for protection or as function for resilience (so perceived salience is indeed low). She added that a fishermen mentioned to her that he missed a lot of other fishermen in the fisher conference about marine conservation where she and the author met.

She continued that fishermen deemed the protection of the mangrove important as it was an important place for the breeding fish, therefore they could be deemed (maybe unconsciously) the ecosystem service as important, which would indicate that there was perceived salience after all. Vidanova bank disagreed because interviewee 16 spoke for himself about the concept.

The condition located in the middle: **sense of own responsibility** - the public must feel responsible if the government is not doing enough to prevent coral reef degradation - is more complicated than it seems. In first sight to the node displayed in the middle of figure 7, everyone seems to agree on this condition (see the majority in green and blue lines connected to the node). This is because the author only interviewed organizations that deemed sustainability important in their vision. However, some representatives made comments upon the sense of own responsibility of the community, which resulted in a blue lines connected to the node of sense of own responsibility in figure 7. Overall, the condition sense of own responsibility is promising under the participants, but it may not be representative to the community.

There is a lot of disagreement in the concept **willingness** - the public must be willing to offer their time to engage in public action - of locals displayed on the right in figure 7. Which why the figure also contains a detailed version of the discourse network on willingness, in this way the variety of coloured connection lines can be seen better. Due to the abundance of disagreements under this condition, this points towards a nuance in perspectives among the participants about the willingness of locals to participate in coral conservation. The Federation of for fishers (KUP), strongly thinks that there is sufficient willingness, however fishermen do not receive the knowledge or means to contribute to it, and interviewee 5 of Branch Coral Foundation often only receives positive responses as he is fishing and asks fishers to be careful where they throw out their anchors. The other NGOs on the other hand, do not see the local population back as volunteers in their programmes, resulting in that they are mostly runed by foreigners.

The node on the middle left: **overall awareness of the public**, is not a separate condition that was identified in table 1 of the analytical framework, rather the sum of the previously mentioned conditions. The question was asked how 'aware' the representatives of the institutions thought the public was from their personal experience. This node nearly had only displayed blue and red connections. Only GMN totally agreed with that the awareness of the public was sufficient or at least was developing. Many actors claimed that awareness of the public is not yet on the level it should be, therefore unpromising.

5.2. PERSPECTIVES ABOUT THE PUBLIC ACTION IN CURAÇAO AMONG INSTITUTIONS

	Conditions	Imperative	Code names
Public Action	Culture	To advance in the process ecological public mobilisation, it would be of importance that the significance of the coral reef surrounding the island is manifested in the culture of the public.	Culture in Curaçao hinders SD for corals
	Peer influence	Locals must be stimulated by other members of the community to also engage in public action	Peer influence
	Organisation	Locals must have an active presence in the organisation of public actions for coral reef conservation	Locals need to be involved

Figure 8: Code names of conditions that belong in public action

Chapter 2 presented an analytical framework for eco-empowerment, figure 8 located above connects table 2 which works out the conditions of public action and the converted version in code names which are used in figure 9, discourse network on public action from the perspective of the institutions. Figure 8 connects the conditions with the code names, these could differ from the condition as in the Discourse Network Analyzer programme a person had to agree or disagree with a node (code), the analytical framework did sometimes present the a condition too un-subjective for instance 'culture' for the participants to agree or disagree with, which is why the code name had been converted into 'Culture in Curaçao hinders sustainable development (SD) for corals'.

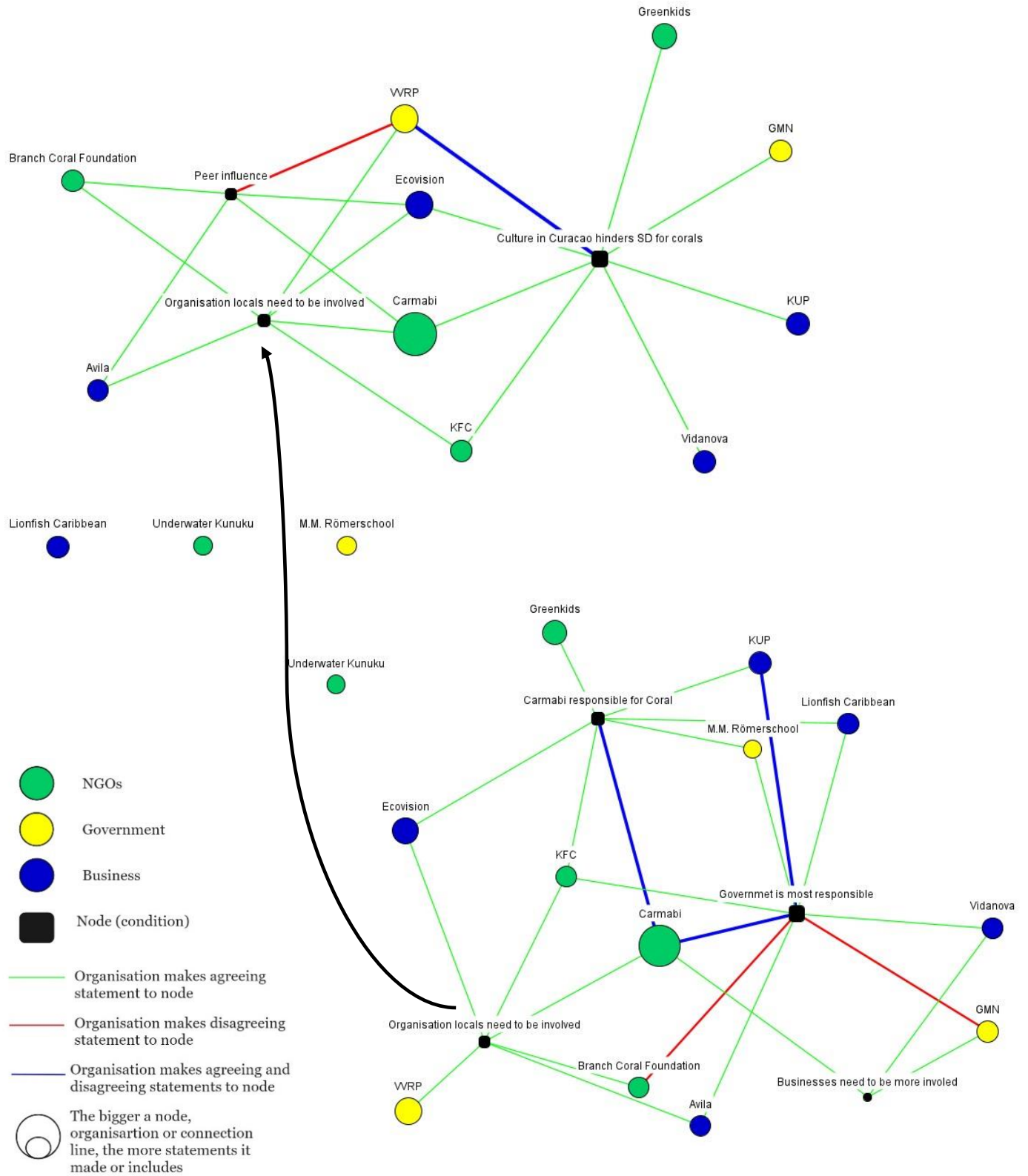


Figure 9: Discourse network analysis of perspective on public action among the participants, below a detailed discourse network analysis has been displayed for the condition organization

On the upper right hand of figure 9, the concept **culture** - to advance in the process ecological public mobilisation - it would be of importance that the significance of the coral reef surrounding the island is manifested in the culture of the public, or the code Curaçao hinders sustainable development for coral conservation is being displayed. Seven actors agreed with the statement, therefore it can be concluded that all organizations that made a statement about this condition are of opinion that the culture in Curaçao hinders sustainable development for coral conservation, therefore the condition is rated as unpromising. Interviewee 11 representing Kids For Coral, gave the example that parents mostly were afraid of the ocean because of the sharks, or that the women were not prepared to go for a dip in the ocean as it could take up to a day to rinse from salt and fix their frizzy hair. Again, the ministry of VVRP that made some disagreeing statements with the concepts, interviewee 3 gave the example that the fishing sector is very traditional in Curaçao, and not very large scale, but on the other hand she gave the example of the official culture where a lot of corruption appears similar to the last example of interviewee 3 which hinders sustainable development for coral conservation.

The condition located at the upper left side of figure 9 **peer influence** - locals must be stimulated by other members of the community to also engage in public action - is mostly mentioned in an international context. Namely the desire of Curaçao to outperform the other ABC islands. Peer influence from other countries, even in treaties does not always work to set a foot in the right direction. Overall, most organizations agree that peer influence plays a promising role in acting of the government to move towards more sustainable practices. Interviewee 8, the research director of Carmabi gave the following example when a new list of Caribbean islands appeared that compared the degree of reef conservation on the islands, Curaçao was the islands that was somewhere in the middle of the 30 participating countries, while the neighbouring island Bonaire held the third place. Bonaire simultaneously has 5 Ramsar areas, which are areas under the Ramsar Convention on Wetlands of International Importance, whereas Curaçao only had 4. Therefore Curaçao appointed two new Ramsar areas in no time, without much inspection of the new appointed areas, the most important thing was that they outperformed Bonaire in the matter. This example proofs the presence of peer influence or even peer pressure to outperform other islands in the Caribbean. On the other hand, the only organization that disagreed with the concept peer influence was the ministry of traffic, transportation and spatial planning (VVRP), interviewee 3 explained that when Curaçao had signed an international treaty for coral protection, it could negatively affect a certain persons economically. When the lawsuit against the coral protection law was on the verge of losing in court, the opposing side opted to pursue a political approach, resulting in the rapid rejection of the bill. Interviewee 3 summarised it in these words:

‘Wij hebben internationaal ook nog wel een verhaal hoog te houden dat we hier als fatsoenlijk land hier verplichtingen kennen, maar dat mocht allemaal niet baten bij de vermeenden mogelijkheid, dat die bescherming wel eens iemands portemonnee wat kleiner zou maken.’

‘In international terms we have to uphold a story, that we as a decent country also have obligations, however this was not of significance because of the possibility that this conservation could hurt someone financially.’

The condition **organization** - locals must have an active presence in the organisation of public actions for coral reef conservation - has been displayed separately on the bottom half of figure 9. This is because the researcher believes that sub-condition power relations the analytical concept institutional eco-empowerment are also impacting the performance of the condition organization. There is not one solution fits all, the organization of coral conservation in Curaçao might be optimal in different shapes depending on the situation, nevertheless a clear signal has been sent that locals need to be more involved in the organization of public action to ensure the long term sustainability of the projects, which resulted in an unpromising evaluation of this condition. Similarly to the previous chapter, graph 10 where the public indicated what sort of organization they preferred for coral conservation action, the respondents are rather divided. Some think that the government is responsible for coral conservation while others such as Interviewee 10, from Greenkids think that Carmabi is the role model. Some think that businesses need to be involved more in the process for coral reef conservation. The sub-conditions that belong to the concept institutional eco-empowerment will be explained in more detail in the following section. A select group on the other hand think that there are not enough locals involved in public action. Interviewee 5 from Branch coral foundation, explained that the local population rarely was involved in public action and research for coral reef conservation. Most public action is done by foreigners, which often leave after a certain time period, causing the lack of long term vision for projects. Interviewee 3 from VVRP said, it was not always clear which interests these foreigners had.

5.3 PERSPECTIVES ABOUT THE POTENTIAL OF INSTITUTIONAL ECO-EMPOWERMENT IN CURAÇAO AMONG INSTITUTIONS

Conditions	Imperative	Code names			
Expertise	Institutions must have knowledge about how their organisation can engage in the most sustainable policy	Expertise in organisation			
Strategic thinking	Institutions must keep in mind the goals of the public, their practices should not provoke friction with the public	Friction for practices of organisations			
Financial capability	Institutions should have a form of capital (knowledge, goods, money) that goes towards coral reef conservation.	Capital (Budget)	Financial goods lack		
Power relations	institutions should use their power to include the goals of other stakeholders in their company policy	Carmabi is most responsible	Government is most responsible	Enforcement lacks	
Collaboration with other stakeholders	Institutions should be open for collaboration with other stakeholders.	Cooperation with other actors	Cooperation in sustainable practices of organisation by public	Businesses need to be involved more	Cooperation is needed more

**Institutional
eco-empowerment**

Figure 10: Code names of conditions that belong in institutional eco-empowerment.

Again, figure 10 displays the variety of code names based on the conditions for institutional eco-empowerment mapped in analytical framework displayed in table 3 of chapter 2. The reason that some conditions have more than one code name is because after analysing it was noticed that some of these phenomena returned more often, making it worth to make sub-conditions. Figure 11 displays the discourse network analysis of the organizations to the conditions deemed important for institutional eco-empowerment by table 3. Due to the abundance of sub-conditions, and a nuance in

the condition collaboration with other stakeholders this condition has been displayed separately in figure 12.

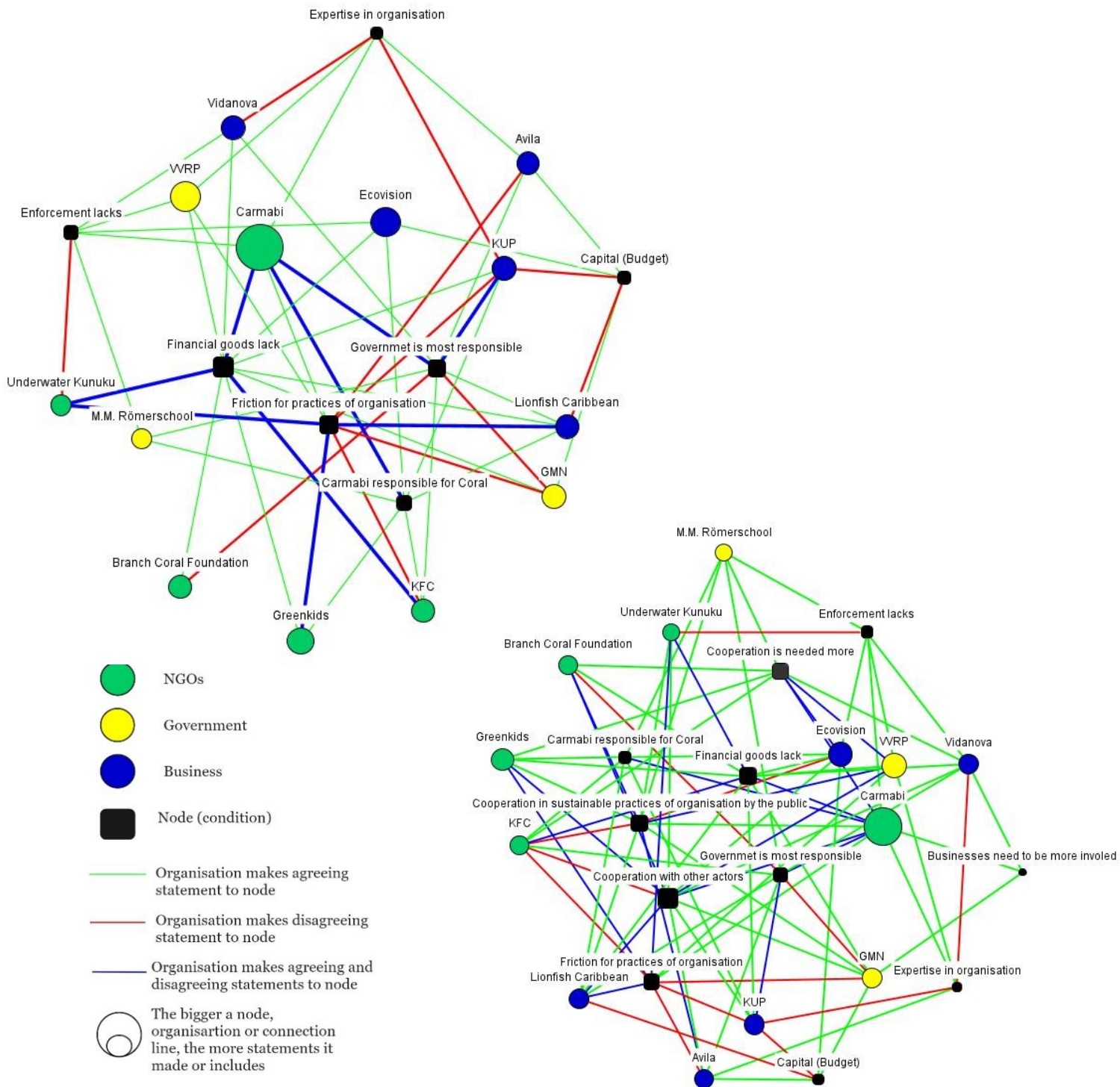


Figure 11: Discourse Network Analysis of perspective on institutional eco-empowerment among the participants. Top DNA is without the category 'collaboration with other stakeholders' and the bottom DNA includes the entire perspective on institutional eco-empowerment.

The first condition of institutional eco-empowerment, **expertise** - institutions must have knowledge about how their organisation can engage in the most sustainable policy - is displayed on the top part of figure 11. There were different responses on the question whether there was experience in the organisation, this does immediately result in a nuance in perspective, as the fundamentals of the separate organizations are different, a NGO is founded in order to stimulate sustainability whereas a private organization is established for economic purposes, it could be sustainable but is not its main task. Two organizations KUP and Vidanova bank mentioned that they lacked the expertise in their organization for everyone to make frequently conscious decisions. Other institutions such as VVRP and Carmabi, thought they had sufficient expertise. And Avila is the only interviewed private organization that has a special department for sustainability.

The condition **strategic thinking** - institutions must keep in mind the goals of the public, their practices should not provoke friction with the public - has been translated in the coding of the transcripts to the node 'friction for practices of organization' (see middle of figure 10). Because the author was of opinion that specific examples of appearing of the absence of friction for practices of the organization could very well represent the strategic thinking of the concerned organization. The reactions on this statement, were rather different, pointing at a potential nuance in perspectives. In the lower middle part of figure 11 the node 'friction for practices of organization' has all colours of connection lines, which indicates in a nuance in perspectives. Interviewee 3 of the ministry of VVRP and interviewee 7 from Carmabi already indicated in the section awareness that they experienced some sort of friction for their practices. Either that new more sustainable laws were prevented or that the public opinion was against them. Other organizations such as the Federation for Fishermen (KUP), Kids for Coral, Avila Beach Resort did not experience friction in society for their practices. Again others made nuanced statements as well.

The concept **power relations** - institutions should use their power to include the goals of other stakeholders in their company policy - is displayed in the top part of figure 11. This concept will be described in three nodes these include: Carmabi is most responsible, government is most responsible and enforcement lacks. Most actors agree on that the enforcement lack of sustainable initiatives, which indicates that this condition can be evaluated as unpromising. The actors that made a statement about that they found that Carmabi is responsible agreed to it on the and thought that Carmabi is one of the most responsible actors for coral conservation in Curaçao, apart from Carmabi itself, who adds that the government holds some responsibility. On the other hand, a nuance could be identified in the perspective that multiple organizations also think that the government holds major responsibility in coral conservation. Only the ministry of GMN and Coral Branch Foundation disagree

with that statement as they are of opinion that everyone is responsible for coral conservation, and that the biggest contributors such as resorts should carry the most weight. Furthermore, it is seen that all actors agree on that enforcement of the plans of the government lack. Only Interviewee 9 (Curaçao Underwater Kunuku) disagrees, as he is referring to his own project.

The concept **financial capability** - institutions should have a form of capital (knowledge, goods, money) that goes towards coral reef conservation - has been divided into two statement types. These are: Capital (budget) displayed in the right of the figure, and financial goods lack, located in the middle left. Everyone agrees that there is a lack of funding for sustainable projects. Some however struggle more than others with budgets or capital appointed for sustainable practices. In the interviews, it came forward that there is a lack of financial goods on the island to execute consistent sustainable policies. Unfortunately, multiple organizations face problems, that they cannot execute their sustainable plans due to the lack of funding. Underwater Kunuku, Kids For Coral, and Carmabi, do not necessarily face this problem right now as they have steady sponsorships (which is why they have blue connection lines in figure 11 to the node), or funding by the government. Interviewee 7 said that there is only a small circle where you could obtain your funding, Carmabi is funded by the government, so if Carmabi would like to make a new programme, it could spend the funding for 100% on the project. Whereas other organizations would also have to pay the wages of their employees from that funding. This simultaneously results in a harder environment for cooperation between organizations, as they have different financial structures. Plus Carmabi doesn't want to collect money for another's wages. Which indirectly makes organizations competitors from each other. The other sub-condition, 'Capital (budget)' refers to more than only budget that organizations give back to the community in relation to coral conservation, this could be in the shape of knowledge as well. Interviewee 14 from the federation KUP indicated that they do neither have the budget nor knowledge (look to the node expertise as well) to advance in a more sustainable way of fishing nevertheless the indicated willingness. Other businesses such as Ecovision indicate that they give back to the community in relation to coral conservation with knowledge, they sometimes do projects for free in order to advance sustainable practices on the island.

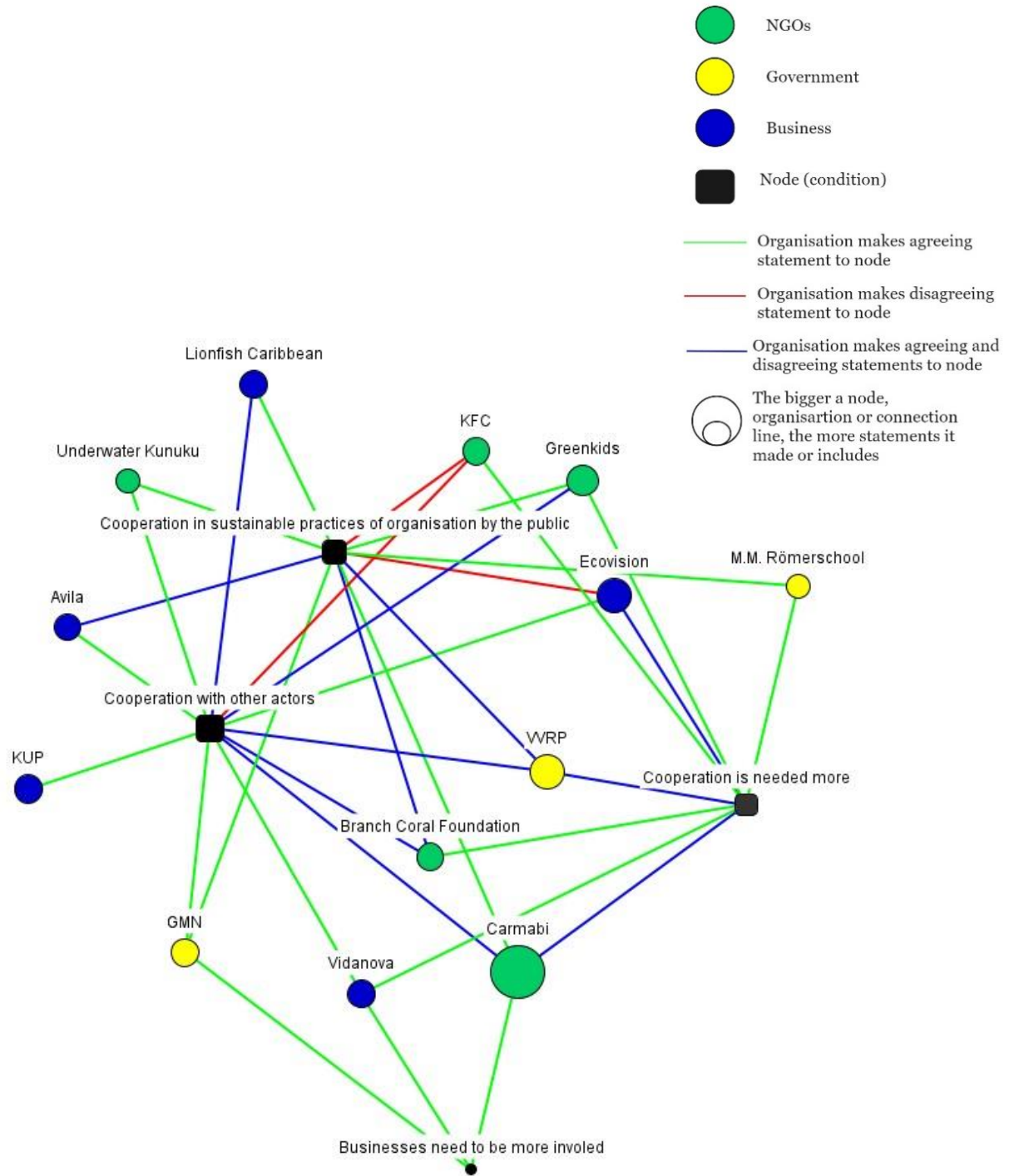


Figure 12: Discourse Network Analysis on cooperation among the participants

The next condition showed in more detail in figure 12, **collaboration with other stakeholders** - institutions should be open for collaboration with other stakeholders - within institutional empowerment. This condition is examined more specifically as the perspectives are more divided, additionally the condition has many sub-codes which would make it clearer to discuss it separately. This condition holds four nodes these include: Businesses need to be more involved (located in the bottom), cooperation in sustainable practices of organization by the public (located at the top), cooperation is needed more (right) and Cooperation with other actors (left).

The essence of the division of nuances in perspectives could be described by two camps. One that thinks that more cooperation between organizations is essential for the development in coral reef conservation and the other sees more difficulties in cooperations than the advantages it will bring. Because it is a nuanced topic, figure 12 displayed predominantly green and blue ties, instead of the expected red connection lines that a reader would expect in a condition as nuanced as this. This is because, the organizations that opposed the idea of cooperation often also consider the possible advantages it could bring, making their statements contractionary which results in a blue line, instead of a red one.

An abundance of the actors do agree with the sub-statement cooperation is needed more in order to promote sustainable practices for coral reef conservation. An advocate of the node 'cooperation is needed more', is Interviewee 5, representative of Branch Coral foundation. He describes the cooperation of his organization with other organizations such as Greenkids or Carmabi, he thinks that if NGOs come together more often, they will have a stronger voice to advocate for coral reef conservation. He also stresses the inclusion of the local community which need to be more tightly involved. He thinks that they could make more impact, as opposed to researcher that leave the island after their research has completed. Interviewee 7 has a more nuanced opinion about this condition, in the previous condition, financial goods, he explained that the lack of financial goods results in a harder environment for cooperation between organizations which indirectly makes organizations competitors from each other instead of colleagues.

In the current state of the sub-condition 'cooperation between actors' various colours of ties could be identified, which points at a nuance in perspectives. The organizations that do not poses a green tie, often described their outreach to the government, in which the government ignored them. In addition, similar to the explanation of interviewee 7 in last sub-condition due to the difference in financial constructions it could hinder cooperation between organizations. On the other hand, green ties to the sub-condition 'cooperation between actors' could also be identified in figure 12. For instance, Branch Coral Foundation works together with Avila Beach Hotel to maintain the coral

nursery in front of the hotel. Furthermore, three actors agreed to the statement that 'businesses should be involved more' in sustainability for coral conservation.

Finally, there was some controversy in the sub-condition of 'cooperation in sustainable practices by the public'. Interviewee 11 of Kids for Coral, said that a lot of schools, were not very enthusiastic in participating in her programme and teachers were often not very involved in the education and snorkelling. On the other hand, she noticed that students were often very enthusiastic about the snorkelling part of the course. Whereas other organizations did not receive this difficult response. For instance Lion Fish Caribbean, a restaurant that only serves the lionfish, an invasive species to the island. In conclusion, due to the abundance of blue ties to the sub-condition, a nuance in perspective is present.

5.4 PERSPECTIVES ABOUT THE POTENTIAL OF PUBLIC ECO-EMPOWERMENT IN CURAÇAO AMONG INSTITUTIONS

Conditions	Imperative	Code names		
Welfare	Community must have knowledge and the means to feel empowered in coral reef conservation.	Welfare not high enough	Curaçao has developed enormously	Public Eco-empowerment
Community	There must be connection among the members of the community.	Connection in Community	Friction in Community	
Participation in decision making	The community must be included in the decision making.	Government Listens	Government Acts	Government actively executes reports
Defenition of Eco-empowerment	Defenition of Eco-empowerment	Do institutions agree with the definition of EE?	Awareness in EE is important	Awareness leads to PA

Figure 13: Code names of conditions that belong in public eco-empowerment.

The figure that is presented above represents the conditions of table 4 and its representing code names that are used in figure 14. Figure 13 similarly to the figure 10, in which conditions have multiple representing code names, as some statements had returned regularly, which could be helpful with identifying the perspectives of the institutions. The condition definition of eco-empowerment enjoys its own discourse network analysis in 4.2.5. in order to reflect if the theory on ecological public mobilisation in chapter 2, is in line with the perspective of the respondents.

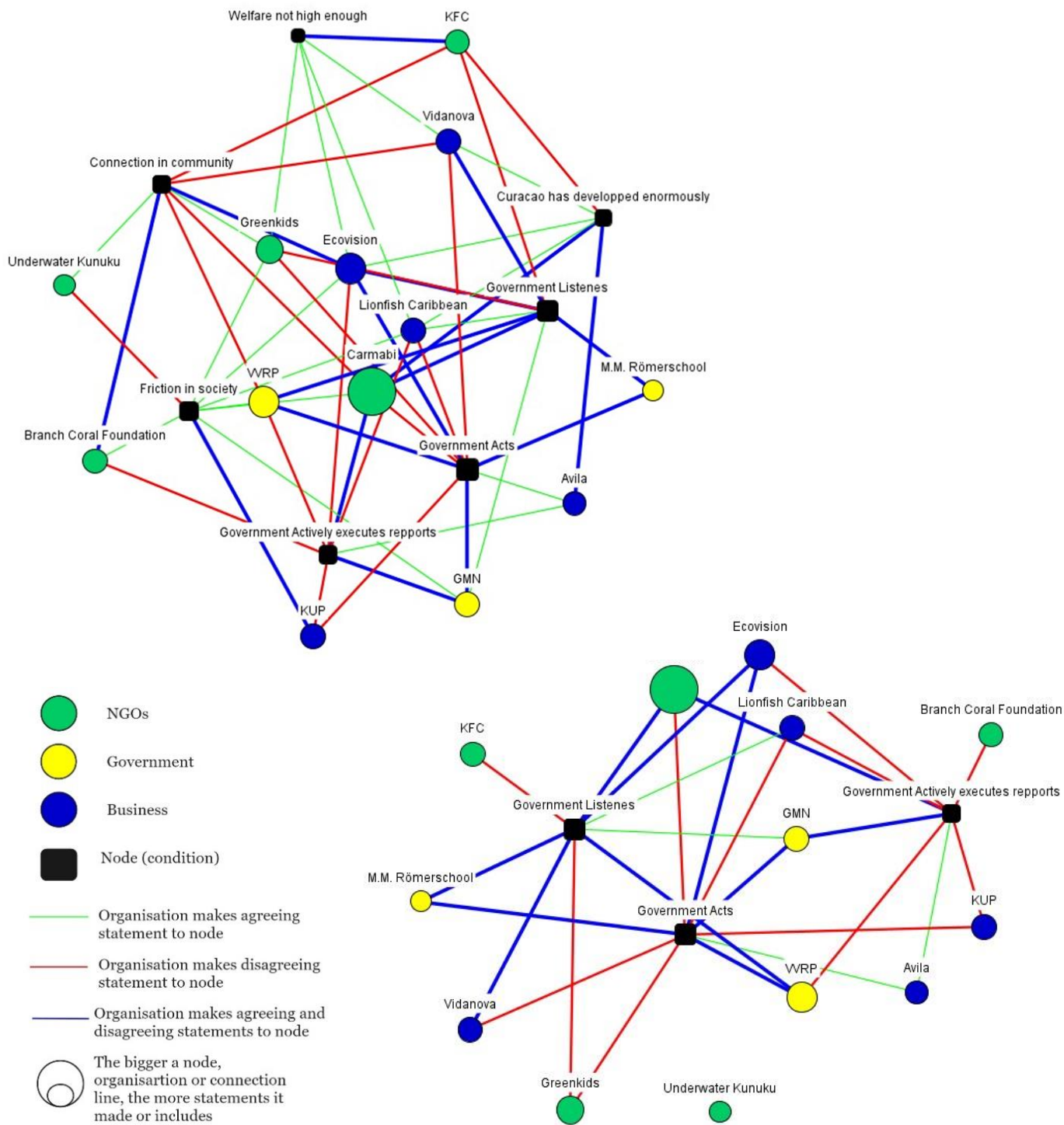


Figure 14: Discourse Network Analysis of perspective on public eco-empowerment among the participants. Top DNA includes the entire perspective on public eco-empowerment. Bottom DNA features only the sub-conditions that belong to participation in decision making.

The discourse network analysis of public eco-empowerment is displayed in figure 14. The first condition of public eco-empowerment is **welfare** - community must have knowledge and the means to feel empowered in coral reef conservation - this condition has been separated in two sub-conditions (see figure 13). These are: welfare not high enough, located at the top of the figure and Curaçao has developed enormously, located at the right hand. Overall, everyone that made a statement about that the welfare is not high enough for locals to participate in coral conservation, agrees on this. On the other hand, Carmabi and Kids For Coral, did not notice a major changes in the years that they were active in the field, whereas others such as Ecovision, Lionfish Caribbean and Vidanova bank have noticed positive developments related to sustainability over the years, which could point towards a small nuance. Interestingly, it seems that mostly NGOs are opposing the node while private organizations support the node. Four actors made a statement about the welfare not being high enough for the population to engage in large scale public action. Interviewee 13 from Ecovision explained this as the following: considering the local population, they mostly must focus on their own social problems, therefore there is no spare time to help with coral restoration. He thinks that the social situation in Curaçao is on a low level. The economy has to improve in order to improve social wellbeing. However, improving the economy and social wellbeing is a slow and difficult process. The next sub-condition of welfare is: Curaçao has developed enormously. The author has added this sub-condition to let interviewees reflect on how much has already been done over the last years. Interviewee 13 from Ecovision agrees with the statement he said that it may not look like anything is happening in relation to coral conservation on the island, a lot of his work will not immediately be released to the public due to NDA's, and he has to wait until his client releases it, which takes time. Interviewee 11, who represents Kids For Coral on the other hand, opposed this statement. She is already in the field for her foundation for 30 years. She said that she did not see change a single thing over this period of time, she still has to go to the same process of approaching schools and asking if they would like to participate in the Kids For Coral programme. If they would like to participate, the schools have to ask special permission from the ministry of education. In the years she is doing it, not one government official has shown interest in her programme, and only one student of hers is now a volunteer for Kids For Coral.

The second condition located at the left side of figure 14 of public eco-empowerment is **community** - there must be connection among the members of the community -. Skene (2022) & Hernández (2021), deemed it important that there is an ability of the community to make decisions that could affect the phenomenon and that the community fights together for power and control. Most of the actors agree that the connection within the community should be improved in order to

ensure sustainable development for coral conservation. For the community to make sustainable decisions, it needs some degree of awareness of coral conservation, which has been discussed in the section awareness. To fight as a community for power and control, first a connection needs to be established, that is why the author decided to measure the sub-conditions connection in community and the opposite friction in society. For the sub-condition connection in community, it is evident that the majority of the actors do not see the connection within the. Interviewee 7 from Carmabi explained this by the division of the theoretical- and practical educated groups. People look mostly at who you are and not what you can do.

'Het is hier een kennis economie en geen kennis economie'

'It is a contact economy and not a knowledge economy'

Which means that in Curaçao you can only reach something when you have the network of connections and not necessarily if you have the knowledge. The other sub-condition for community is friction in society, most of the actors agree that there is friction in society about coral conservation. There are multiple examples given for this sub-condition, however most could be summarised to who has to contribute most to coral conservation and who is (unfairly) being relieved for that responsibility, which are often the ones that pollute the most and bribe government officials.

The final condition is **participation in decision making**, the community must be included in the decision making. this has been divided in the sub-conditions. These are: government listens, government acts and government actively executes reports. The difference between acting and actively executing is that with the 'government acts', plans or laws are being made, while in actively executing these plans and laws are also really implemented and executed. Because of the detected nuances in perspectives of this condition, a separate discourse network analysis has been displayed at the bottom of figure 14. The organizations agree that the process of participation in decision making jams at some point whether it is listening, acting or executing. There are nuances in where the process of participation exactly stalls, an explanation of this could be that this could differ per situation. Interviewee 15 from Lionfish Caribbean summarised it as yes, listening they do but they do not act on it. Similarly, on the sub-condition government actively executes reports, the difference in this condition with the government acts, is that this is directed at specific examples. Interviewee 10 from Greenkids felt that the government did not listen nor did it act, she perceived that the government saw her foundation rather as a threat than as an enrichment for the Curaçaoan education. Other also added that the government did not actively execute reports. Interviewee 1 from

ministry of Health, environment and nature (GMN) explained that, there is a lot of knowledge building within the government but the execution of these reports are often hindered due to the lack of funding and manpower. She says that the government certainly acknowledges this, she knows it is not optimal and that this is a point of congestion within the government. Interviewee 7 confirms this, and adds that in Curaçao often money will be invested in the implementation of a new plan without a plan of maintenance.

5.5. PERSPECTIVE ON ECOLOGICAL PUBLIC MOBILISATION AMONG INSTITUTIONS IN CURAÇAO

In figure 2, the process of ecological public mobilisation has been described. In this section, by the description of figure 13, that displays three code names on the process of eco-empowerment, it will be tested whether this theory makes sense in the eyes of the participants, displayed in figure 15 on the next page.

Most actors agreed with the definition of eco-empowerment, the only person that did not (totally) agree was Interviewee 1 from the ministry of health, environment and nature (GMN) she agreed to the concept to some extent but deemed it important that concept of ownership would be included in the definition as well. This would answer the question who is responsible for what, mostly in the context of the Rampsar area of Little Curaçao, where there is much discussion about how to manage the area. She thinks it is important that certain groups of volunteers would have their own responsibilities in the conservation of the area.

Only three organizations mentioned that awareness is important for public action in Curaçao, Carmabi did not totally agree with the concept. Interviewee 7 said that he noticed that the youth generally became more aware not only in nature conservation but also more on the social aspect for LBTHQ+ which is probably caused by the introduction of social media. However, he does not yet see it reflected in the actions of the youth. At this point he thinks, how can we involve young people in participating in public action. However, he noticed that the group of marine rangers that Carmabi coached last year, really would like to be involved with making dives etc.

On the other side of the model the concept awareness in eco-empowerment is important, has been accepted by everyone who made a statement about it.

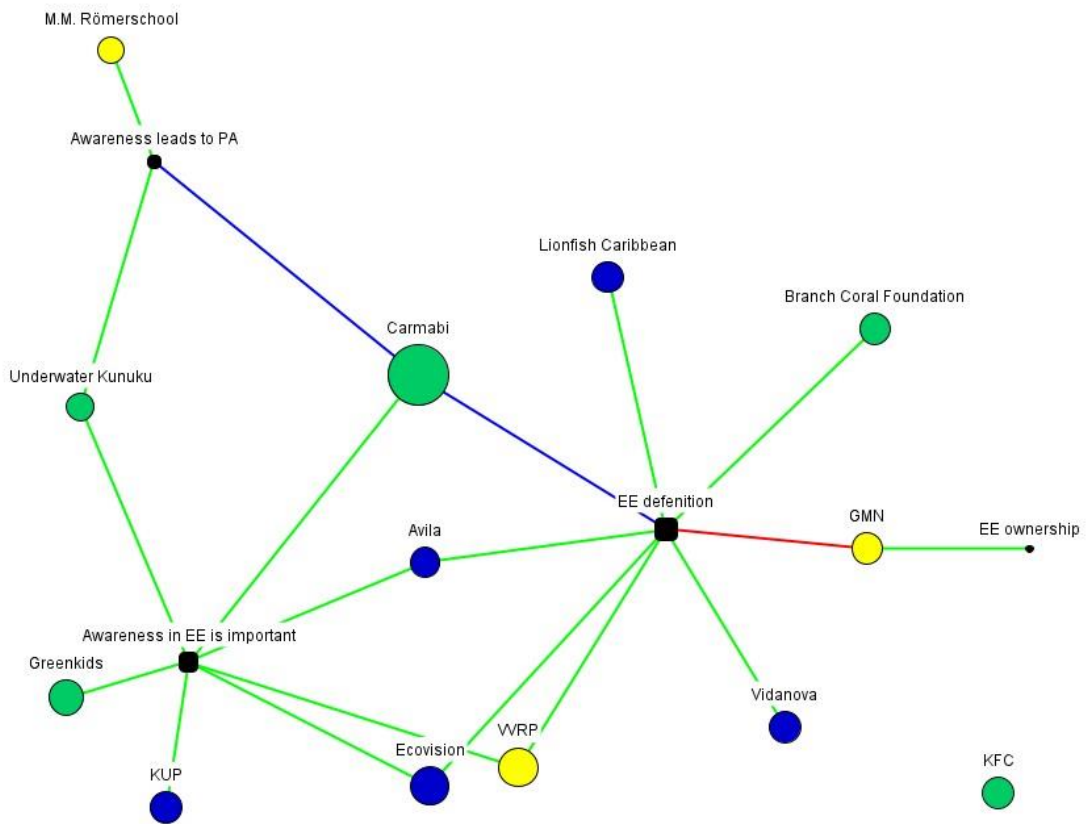
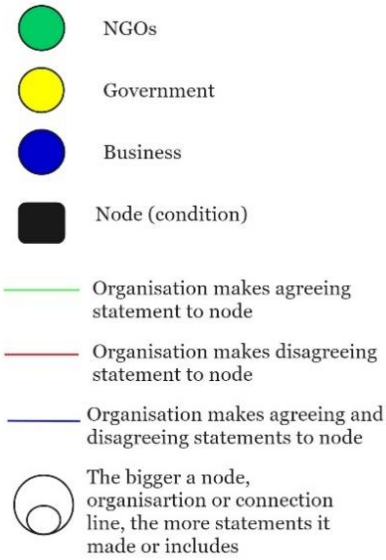


Figure 15: Discourse Network Analysis on ecological public mobilisation among the participants

5.6. EVALUATION & INTERMEDIATE CONCLUSION NUANCES IN PERSPECTIVES OF INSTITUTIONS IN CURAÇAO

In this section the sub-question 3: *To what extent have these conditions been met according to different government officials, scientists, businesses and non-governmental organizations (NGOs) in Curaçao?* will be answered. It is important to keep in mind that all participants in the interview are aware of the problem of the degrading coral and often aim to spread more awareness for the cause. Causing that there is only one reigning perspective that is investigated in this research. This perspective stresses the cruciality to protect the coral for the functioning of the society on Curaçao.

Table 8 offers the short answer to sub-question 3, presenting an overview whether an organization thinks a condition is present or not present, based on the discourse network analyses earlier presented in this chapter. The colours that are used are similar to the discourse networks and table 6 where the conditions are evaluated based on the outcome of the survey for the public. The colour green means that they are of opinion that the condition is promising, red means that the condition is not promising and blue means that contradicting statements have been made at expense of the condition. The blanks mean that the condition was not applicable to the actor, or that the organization did not make a statement about the concerned condition. The colours of the codes are based on connection lines of last chapter, some have multiple codes on which it is based (See last section). Keep in mind that this is a simplified table, and that the organizations often have a more nuanced opinion.

Table 8: Evaluation of conditions based on the perspectives of the institutions

	Condition	Government			NGOS				organization	Private				
		GMN	VVRP	M.M. Rs	BCF	Carmabi	CUWK	Greenkids	KFC	ABR	Ecovision	KUP	LFC	Vidanova
Awareness	Environmental values	Unpromising	Indifferent					Indifferent						Promising
	Subjective capacity		Promising		Indifferent	Promising	Promising			Promising	Promising			
	Education	Promising		Promising	Unpromising	Unpromising	Unpromising	Indifferent	Unpromising		Unpromising	Promising	Unpromising	Unpromising
	Perceived salience		Indifferent					Indifferent			Unpromising			Promising
	Sense of own responsibility		Indifferent	Indifferent	Promising	Indifferent	Promising	Promising	Promising			Promising	Promising	Promising
	Willingness				Promising	Indifferent			Unpromising		Unpromising	Promising		
	Overall awareness	Promising	Indifferent	Unpromising	Unpromising	Indifferent		Indifferent	Unpromising	Unpromising	Indifferent	Indifferent	Indifferent	Unpromising
Public action	Culture	Unpromising	Indifferent			Unpromising		Unpromising	Unpromising	Unpromising	Unpromising			Unpromising
	Peer influence		Unpromising		Promising	Promising				Promising	Promising			
	Organization	Indifferent	Unpromising		Unpromising	Unpromising			Unpromising	Unpromising	Unpromising			Unpromising
Institutional EE	Expertise		Promising			Promising				Promising		Unpromising		Unpromising
	Strategic thinking	Promising	Unpromising			Unpromising	Indifferent	Indifferent	Promising	Promising		Promising	Indifferent	
	Financial capability	Indifferent	Unpromising		Unpromising	Indifferent	Indifferent	Indifferent	Indifferent	Promising	Indifferent	Unpromising	Unpromising	Unpromising
	Power relations	Promising	Unpromising	Unpromising	Promising	Indifferent	Promising	Unpromising	Unpromising	Unpromising	Unpromising	Unpromising	Unpromising	Unpromising
	Collaboration stakeholders	Indifferent	Indifferent	Unpromising	Unpromising	Unpromising	Promising	Unpromising	Unpromising	Indifferent	Unpromising	Promising	Indifferent	Unpromising
Public EE	Welfare					Indifferent		Unpromising	Unpromising	Indifferent	Indifferent		Indifferent	Indifferent
	Community	Unpromising	Unpromising		Unpromising	Unpromising	Promising	Indifferent	Unpromising		Indifferent	Indifferent	Unpromising	Unpromising
	Participation decision make	Indifferent	Indifferent	Indifferent	Unpromising	Indifferent		Unpromising	Unpromising	Promising	Indifferent	Unpromising	Indifferent	Indifferent

Legend	Promising	Indifferent	Unpromising	Missing code
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Organizations frequently reach a consensus on the specific conditions that fall under the idea of awareness when addressing sub-question 3. For instance they nearly all think that the subjective capacity is promising and that the success condition education must be improved. One nuance under these perspectives has been identified. The condition willingness of the locals is partially identified as unpromising and partially as promising. Some have elaborately described the willingness of the locals in the interviews. NGOs for instance only see a hand full of locals back in their programmes, while others say that locals are open to sustainable ways of for instance fishing, but they cannot find the knowledge, education or capital to engage in these more sustainable practices.

The concept public action for this time, will be answered. Just in last section, all participants relatively have the same perception about the conditions under public action, which is that peer influence is a factor that definitely works in Curaçao and that the culture in Curaçao hinders the development of sustainable policies. The organization traffic, safety and spatial planning (VVRP), seems like the odd duck as this is the only organization that makes nuanced (blue connection lines) or even negative (red connection line) statements about peer influence and culture hinders sustainable development in Curaçao. It is important to consider the nuance this organization gives in the perspective about these two conditions, as the two persons that were interviewed have a broad understanding of how the government responses to for instance corruption described in the culture that prevented the stimulating effect of peer influence of international treaties. Therefore, it could be helpful for NGOs to consult and Interviewee 2 & 3 from the ministry VVRP in new strategies, as they possess more inside information on how the government acts and reacts.

All participants relatively have the similar opinions about the conditions under institutional eco-empowerment. For the conditions 'expertise' and 'financial capability' no major nuances have been detected. For expertise there are nuances present as not each organization has the similar goals that require similar amounts of expertise. For 'financial capability' everyone agrees that there is a lack of financial goods to stimulate more sustainable behaviour, not everyone has similar budgets or capital that goes towards greening the organization or community but again, not every organization has similar end goals. The conditions that had nuances in perspectives, were strategic thinking, power relations and collaboration with other stakeholders. For strategic thinking this depended on whether the organization caused friction in society with its practices, some such as Carmabi felt friction, others such as KUP and Avila Beach Resort did not. The nuances in power relations depended mostly on who the participants deemed most responsible for coral conservation. Some deemed the government and Carmabi as most responsible, while others thought that there should be a fair distribution on who has to contribute what, profiting resorts / other businesses should contribute

more. A remarkable discovery was that, every participant thought that the enforcement of sustainable policies was lacking by the government. Finally, there were a lot of nuances in the sub-condition 'collaboration with other stakeholders'. The only sub-condition that was totally agreed upon by everyone that made a statement about it, was: 'businesses need to be involved more'. Other sub-conditions such as 'cooperation is needed more' is divided into two camps, the first side thinks that more cooperation is needed to ensure further sustainable development for coral conservation. The other camp considers this, but deemed it more difficult due to the differences in financial structures. The division in the next sub-condition also signed by this explanation, some can more easily work together than others due to differences and similarities in financial structures. The final sub-condition, 'cooperation in sustainable practices by the public' is signed by the division that some organizations receive less cooperation than others.

For the concept public eco-empowerment the following conditions are investigated: welfare, community and participation in decision making have been discussed. The condition 'community' experienced most agreement, most of the actors agreed that the connection within the community should be improved in order to ensure sustainable development for coral conservation. The next condition, 'welfare' is believed not to be high enough for locals to participate in coral conservation. On the other hand, NGOs, did not notice a major changes in the years that they were active in the field, whereas private organization more often did notice the advancements in sustainability of society over the years, which could point towards a small nuance. The final condition 'participation in decision' also enjoyed agreement, however nuances were detected where the process seemed to stall.

6. STRENGTHS AND WEAKNESSES BASED ON THE PERSPECTIVES, OF THE PUBLIC, AND THE INSTITUTIONS OF CONDITIONS FOR ECO-EMPOWERMENT

This chapter will identify the strengths and weaknesses based on the perspectives of the public and the institutions by answering sub-question 4: *What strengths and weaknesses can be identified based on the evaluation of conditions in SQ2 and SQ3?* Sub-question 2 and 3 have made an evaluation of the presence of the success conditions based on the perspectives of the institutions and the public. These evaluations have been displayed in table 9 as a colour coded raster, on the following page. Based on this table, the strengths and weaknesses will be identified. Table 9 is largely similar to table 8, the difference is that in table 9 one actor, the public, has been added. The table can be read in the same way table 8 can be read. Keep in mind that this is a simplified table, sometimes the colour depends on four sub-conditions and that the organizations have a more nuanced opinion.

Table 9: Evaluation of conditions based on the perspectives of the actors

	Condition	Actor													
		Public	Government			NGOS					Private organization				
		Public	GMN	VVRP	M.M. Rs	BCF	Carmabi	CUWK	Greenkids	KFC	ABR	Ecovision	KUP	LFC	Vidanova
Awareness	Environmental values	Promising	Unpromising	Indifferent					Indifferent						Promising
	Subjective capacity	Indifferent		Promising		Indifferent	Promising	Promising			Promising	Promising			
	Education	Unpromising	Promising		Promising	Unpromising	Unpromising	Unpromising	Indifferent	Unpromising		Unpromising	Promising	Unpromising	Unpromising
	Perceived salience	Unpromising		Indifferent					Indifferent			Unpromising			Promising
	Sense of own responsibility	Promising		Indifferent	Indifferent	Promising	Indifferent	Promising	Promising	Promising	Promising		Promising	Promising	Promising
	Willingness	Promising				Promising	Indifferent			Unpromising		Unpromising	Unpromising	Promising	
	Overall awareness	Indifferent	Promising	Indifferent	Unpromising	Unpromising	Indifferent		Indifferent	Unpromising	Unpromising	Indifferent	Indifferent	Indifferent	Unpromising
Public action	Culture	Unpromising	Unpromising	Indifferent			Unpromising		Unpromising	Unpromising		Unpromising	Unpromising		Unpromising
	Peer influence	Indifferent		Unpromising		Promising	Promising				Promising	Promising			
	Organization		Indifferent	Unpromising		Unpromising	Unpromising			Unpromising	Unpromising	Unpromising			Unpromising
Institutional eco-empowerment	Expertise			Promising			Promising				Promising		Unpromising		Unpromising
	Strategic thinking		Promising	Unpromising			Unpromising	Indifferent	Indifferent	Promising	Promising		Promising	Indifferent	
	Financial capability		Indifferent	Unpromising		Unpromising	Indifferent	Indifferent	Unpromising	Indifferent	Promising	Indifferent	Unpromising	Unpromising	Unpromising
	Power relations	Unpromising	Promising	Unpromising	Unpromising	Promising	Indifferent	Promising	Unpromising	Unpromising	Unpromising	Unpromising	Unpromising	Unpromising	Unpromising
	Collaboration stakeholders		Indifferent	Indifferent	Unpromising	Unpromising	Unpromising	Promising	Unpromising	Unpromising	Indifferent	Unpromising	Promising	Indifferent	Unpromising
Public eco-empowerment	Welfare						Indifferent		Unpromising	Unpromising	Indifferent	Indifferent		Indifferent	Indifferent
	Community	Unpromising	Unpromising	Unpromising		Unpromising	Unpromising	Promising	Indifferent	Unpromising		Indifferent	Indifferent	Unpromising	Unpromising
	Participation decision mak	Indifferent	Indifferent	Indifferent	Indifferent	Unpromising	Indifferent		Unpromising	Unpromising	Promising	Indifferent	Unpromising	Indifferent	Indifferent

Legend	Promising	Indifferent	Unpromising	Missing code
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If this table would be applied to map a scenario where eco-empowerment is established, then all the codes would be green. In this case however, the table looks more like a quilt. The colour of the codes is based upon the colour of the ties between actors and nodes in the discourse network analyses in chapter 5. The codes have been evaluated by the researcher based on the statements the participants made.

The conceptual framework that describes the process of ecological public mobilisation in figure 2, this section will compare this process with the evaluation of analytical concepts and their condition presented in table 9. Table 9 shows that the conditions of the analytical concept awareness, on average have more green and blue codes, compared to the other three analytical concepts, peer influence, institutional- and public eco-empowerment. Thus, the analytical concept awareness is rated as more promising than the others, the weakness in the analytical concept awareness is the success condition education, as most codes are red from this condition. Meaning that the priority should be given to the concept education, before advancing to the conditions belonging to other analytical concepts. This approach is confirmed by the line of thought that was presented in figure 2, the conceptual framework, which described the process of ecological public mobilisation that argued that there should be first a foundation established of the analytical concept awareness and only then should the focus shift to the other analytical concepts. Figuratively speaking, the community in Curaçao first should be taught how to walk, before it should be thought to run.

6.1. MAIN STRENGTHS

The foremost strength that can be identified thanks to table 9, is that the public and the other organizations do not have complete differences in perspectives. Sometimes it differs a little (also between organizations), but it is not the case where the perspective of the organizations is coloured red where the perspective of the public is coloured green. This could be promising for the communication between the public and other actors, and ultimately for the process of ecological public mobilisation.

The conditions in table 9 that include the most green codes, thus are rated as promising, are identified as the main strengths these are the conditions: subjective capacity, sense of own responsibility willingness and peer influence. Starting with the condition **subjective capacity** - the public must feel that they have the capacity to contribute to ecological public mobilisation - which belongs to the analytical concept awareness. For the public, the respondents thought that their own hypothetical coral reef conservation actions could be effective. On the other hand, the respondents have indicated that they do not think that their community is able to adapt to a situation where corals

are not protecting their island anymore. Which is the reason why the subjective capacity is more present on an individual level than the societal level according to the public, which caused the rating to be indifferent. On the other hand, most organizations have evaluated the condition subjective capacity as promising, as long as there was an emphasis on simplicity. The perspectives of the public and organizations fit well together, people believe that they can make a difference on an individual level, which is the simplest form of action which is simultaneously valued by the organizations.

Continuing with the condition **sense of own responsibility** - the public must feel responsible if the government is not doing enough to prevent coral reef degradation - grouped in the analytical concept awareness. The public had a promising attitude towards their sense of own responsibility. The organizations that mentioned the condition, mostly referred back to themselves. They described it as feeling responsible for guiding the course of sustainable development the island needs to make in order to prepare for future hazards. Mees (2022) argues that at first sight, a high sense of responsibility seems to point at awareness of the negative impacts on the environment of a practice. On the other hand, when a higher sense of responsibility in society is present, there is a low trust in the government. Which means that there is a low expectation that the government could provide the public service for citizens. So it is likely that in Curaçao, the society actually feels responsible to straighten up the flaws dropped by the government in sustainable development. Nevertheless, this condition is still valued as a strength as a promising sense of responsibility could stimulate sustainable practices that favour coral reef conservation and also give a boost to the development in the process of ecological public mobilisation.

The outcome of the condition **willingness** - the public must be willing to offer their time to engage in public action - turned out to be rated as more promising by the public than suspected in advance (see graph 7). Some organizations made a comment about the willingness of the locals, two of them thought that social problems prevented the willingness to participate. Other organizations thought that the willingness would be promising under the population. When the public was asked how many times they realistically would like to participate in public action for coral reef conservation all respondents indicated once every 3 months and very often even more, which indicates a high willingness. The organizations notice this as well that once they explain to the locals why it is important to safe, not only the coral reefs but also the mangroves for instance they are willing to change their behaviour which benefits the ecosystem. An example for this given by Interviewee 5 from Branch Coral Foundation is that he comes in contact with fishermen, once he explains that is more beneficial for the reef to anchor at an anchor point instead of throwing the anchor at the reef, as it

could damage the reef (a breeding place for the beloved fish of the fishermen), the fishermen will adapt this his or her behaviour and makes the habit to anker at an anker point.

The last strength belongs to the analytical concept public action which is **peer influence** - locals must be stimulated by other members of the community to also engage in public action -. This condition is evaluated as a promising, based on the green codes in table 9. For the public this conditions has been rated as indifferent as there was a dispersion among answers plus most respondents answered neutral to the question whether they would feel obliged to take part in public action if a marine action group would be established presented in graph 9. Nevertheless the organizations not only saw the potential on the individual scale, where publicly respected figures could encourage the community to engage in public action for coral reef conservation. Additionally, the organizations also saw that peer pressure would work on a larger scale, for instance between countries as Curaçao had to live up to signed treaties that would stimulate coral conservation.

6.2. MAIN WEAKNESSES

The conditions that received major amounts of unpromising feedback are indicated by the abundance of red codes in their rows, in table 9. The conditions identified as weakness are: education, culture, organization, power relations, collaboration with other stakeholders and community.

The only condition that is identified as weakness for the analytical concept awareness is **education** - the public must be educated on the coral reef -. The condition education is also the most fundamental weakness as this could serve as a foundation for other conditions as well, according to the ecological public mobilisation. First, all the conditions under awareness must be present before engaging in the other concepts such as public action. Most organizations are of opinion, that locals are not yet well enough educated on the importance of a well-functioning coral reef system. This is shared by the public, when viewing graph 4, it shows that 11 respondents have not had any education forms offered which is more than 1/3th of the respondents, which confirms the believes of the participating organizations. In addition it was noted that the target audience of most NGOs that focussed on marine education that were interviewed for this research, was directed at children, it seemed that the was a lesser interest in the group of adults. Which is concerning as in the strengths it was showed that there was a sense of responsibility, willingness and individual subjective capacity under the respondents, which could go to waste if they are not educated or at least informed on what they could do to advance marine conservation in Curaçao. Mees (2022) said that individuals that have enjoyed a higher levels of education, were generally more concerned about the environment and climate change and are thus more likely to get involved public actions.

The institutions and the public both agreed that on the unpromising evaluating of the condition **culture**, to advance in the process ecological public mobilisation, it would be of importance that the significance of the coral reef surrounding the island is manifested in the culture of the public. The organizations see that most people do not have a relationship with the ocean, rather see it as dangerous, causing the condition culture to be a barrier for coral reef conservation. Graph 8 displays all the barriers that the public sees for participation in public action for coral conservation, one of these is that people do not feel safe in or around the ocean. Interviewee 11, from Kids For Coral says that this prevents the people from having a connection to the life underwater. If on the other hand, people would embrace the underwater world and be proud of the reef surrounding the island, it would be much easier to protect.

Another condition that is identified as weak is **organization** - locals must have an active presence in the organisation of public actions for coral reef conservation -. Targeting at how public action should be organised. Several organizations pointed out in chapter 5, public action, that there was an absence of local volunteers/ employees/ researchers/ professionals in the marine conservation field, which is picked up by foreigners of which the intentions are unclear and due to their relatively, often short time that they spend on the island, there is a lack on long term vision.

The condition **power relations** - institutions should use their power to include the goals of other stakeholders in their company policy - was evaluated as unpromising. To come to this conclusion multiple sub-codes have been considered in making a definite evaluation, these are: government is most responsible, Carmabi is most responsible and enforcement lacks. Not only, When an organization had indicated that the enforcement of laws lacked, the power relations were indicated as unpromising as this is considered a vital step in the process towards eco-empowerment. Furthermore, it is deemed important for the process of eco-empowerment that not only one actor is responsible for ensuring the conservation of the coral reef, but as Batliwala (1993) said, the focus should be on balance between individuals and social groups. An institution however could be a role model or guide for others. Therefore, when an organization had a very strong perspective that the government or Carmabi were responsible for coral reef conservation, it was implied that they did not listen enough to what other organizations were saying, implying that there was no balance. Therefore the other organizations did not want to be held accountable for, for practices they did not approve of. Resulting in unpromising power relations.

Under institutional eco-empowerment the condition **collaboration with other stakeholders** - institutions should be open for collaboration with other stakeholders - was described as complicated. This condition entails how much of the goals of other stakeholders should be

incorporated in the organisations policy. The unpromising result for cooperation could prevent the implementation of bigger projects that cannot be executed by one organization on its own, weakening the advances that could be made in the process of ecological public mobilisation. In the context of Curaçao, there is a huge shortage of funding which makes the organizations competitors instead of colleagues, fuelling potential conflicts between organizations which could influence the stakeholder engagement (Interviewee 7) & (Araya and Vasquez, 2022).

Community - there must be connection among the members of the community - is the next condition considered to be a weakness, belonging to the analytical concept public action. The condition community also entails, that a community can make decisions, act on those decisions to be sustainable, a connection between the members is deemed important for this condition. The condition is rated as unpromising by the public as well as the organisations. In graph 13 the respondents expressed their concerns that they did overall not think that the community is able to adapt on a world without coral, which is concerning. For Curaçao an agreement between the institutions and the public can be spotted in the unpromising condition community. The participants of the organizations said that there was no feeling of connection within the community, while graph 13 of the survey displays that the respondents deemed it important that there would be connection in the community in order to enable coral reef conversation. Skene (2022), said that connection is as important as empowerment to advance in sustainable practices. He explained that empowered individual in community psychology should not be an individual in isolation or even in isolated groups, fighting with others for power and control. He also argued that connection in community is more important than empowerment, if there will be no feeling of connection towards others in the community, an individual could be so progressive towards sustainability or marine conservation, if it leads to fights for power and control it will never lead to eco-empowerment, which is why the condition community is a potential weakness in this context.

6.3. INTERMEDIATE CONCLUSION

To answer sub-question 4: *'What strengths and weaknesses can be identified based on the evaluation of conditions in SQ2 and SQ3?'* It seems the analytical concept awareness has relatively more strengths in its conditions compared to the other analytical concepts. The most important condition that is rated as unpromising that falls under the concept awareness is education, which can be seen as the obstacle towards further development in ecological public mobilisation. The other analytical concepts have not yet been so far developed as the concept awareness, but yet they are also to be emphasized only later in the ecological public mobilisation process. Which is why the weaknesses (indicated by the increased number of red codes further down in table 9) are growing larger when advancing in the process of ecological public mobilisation.

It is important to keep in mind that the conditions are linked to each other, when one condition improves it might be beneficial for another as well. For instance, if the condition education improves, this could mean that people will become more aware of the degradation of the coral reef and therefore value (the function of) the coral reef more, which would mean that the condition perceived salience also rises. With a higher perceived salience people might also have a higher sense of own responsibility to conserve the coral which on its turn could also impact the condition sense of own responsibility this could influence the condition willingness. The expected relations between conditions will be further explained in chapter 7.

7. OPPORTUNITIES FOR CITIZENS AND INSTITUTIONS TO EMPOWER THE COMMUNITY OF CURAÇAO IN THE CONSERVATION OF THE CORAL REEF

This chapter, dedicated to sub-question 5: *Derived from the strengths and weaknesses, supplemented with relevant literature, what opportunities for institutions and citizens could be identified to empower the community of Curaçao in the conservation of the coral reef?* will identify the opportunities for institutions and citizens to empower the community of Curaçao in the conservation of the coral reef, based on the strengths and weaknesses from last chapter. Five main opportunities have been identified in this section, and these will be presented in the order that it was presented in the analytical framework. Last chapter emphasized that the conditions influence the performance of each other. The strengths and weaknesses that have not been transformed in an opportunity are expected to (slightly) improve indirectly when the opportunities are implemented. Based on the results, the expectations on how certain conditions will influence each other are presented in the figure 16 below and will be further explained in the text.

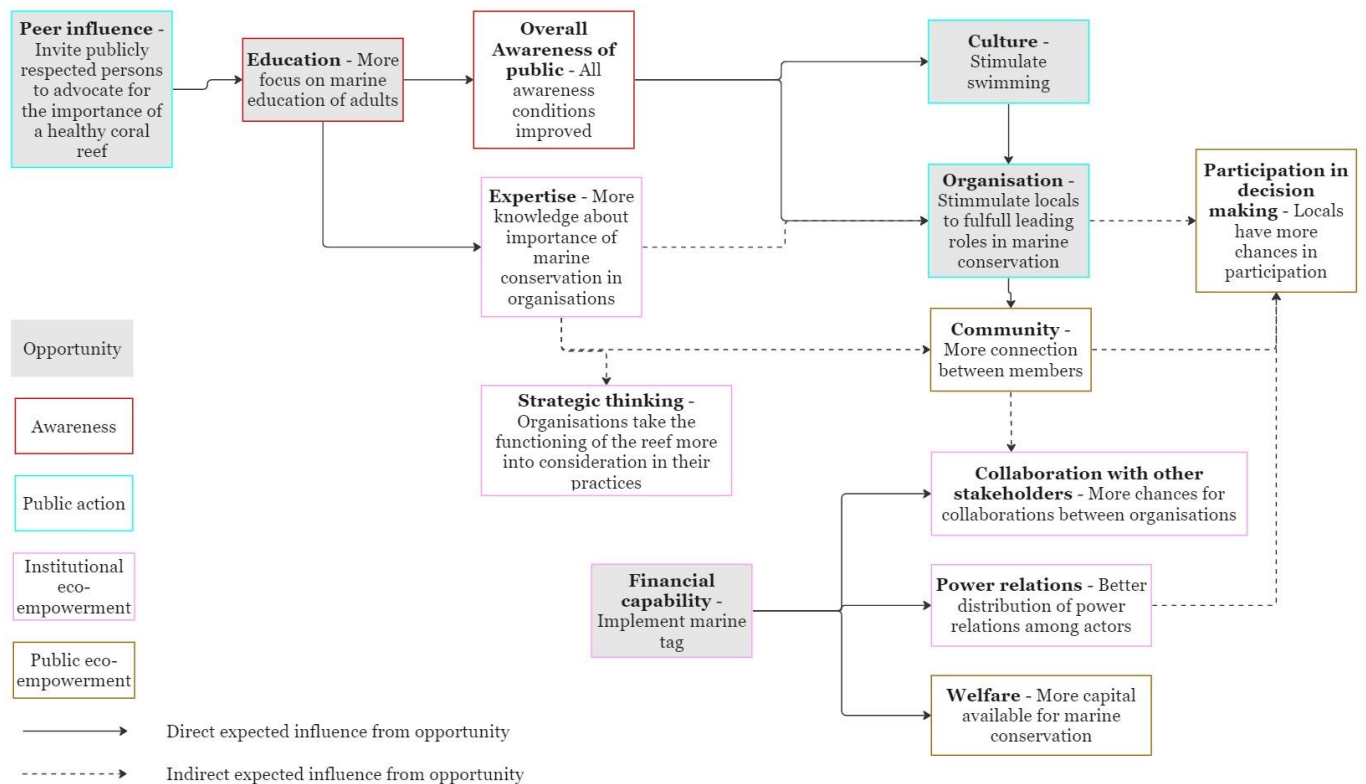


Figure 16 Theory of change: assumed empirical connections between conditions when opportunities are implemented.

The condition that has most potential to positively influence other conditions is **education** - the public must be educated on the coral reef -. While there is an abundance of marine education offered to children, there is no priority in educating adults, while they could make a relatively bigger impact than their children. It is assumed that when adults are higher educated in the (importance of) functioning of the marine ecosystem, other awareness conditions will also increase to more promising. For instance, when adults are educated on the risks of coral reef degradation, their perceived salience, environmental values or sense of own responsibility, may increase. Weaponed with a higher perceived salience due to education, they may be more willing to adapt their unsustainable behaviour. This could start simple (subjective capacity), for instance, a big problem is that rubbish is often dumped in nature areas. Since a few years, locals could dispose up to a thousand kilograms of their waste next to their collected general household rubbish at Selikor, Curaçao's rubbish tip. This has been implemented to prevent the illegal dumping of rubbish in nature areas, by people who did not want to pay a for waste disposal. Nevertheless, when the researcher was driving through a nature area at Curaçao, she passed the highlights of the Ikea collection so it seemed, which could ultimately end up in the sea. Locals are still disposing their waste, because they simply are not informed that they could do it for free at Selikor (*Betaal de afvalstorter*, 2021). Interviewee 1 from GMN said that the citizens have the role of watchdog, when they see a practice that is illegal by law, they should report. On the other hand, with a low overall awareness, the majority of the people on Curaçao do not have a clue, on what is illegal or harmful for the environment. Initiatives that are already happening to inform or educate adults on the importance of marine life are for instance the weekly radio programme of Interviewee 7, where he discusses animals from practice together with a veterinarian who discusses pets. Next to that, the Kunuku man cleans a very public spot once every week and posts the results on Facebook. Interviewee 9 from Underwater Kunuku swam the entire length of Curaçao's coastline and made it into a short film to show what beauty lies under the surface. This was a major success, besides the attention in received in Curaçao, it is also available in certain airplanes from Tui. Interviewee 14, from the federation for fisherman KUP, gathered some of the members to watch a presentation about whales and climate change. These initiatives are important and should receive a bigger emphasis to inform adults.

A potential way in which education for predominantly adults could be given a boost, is via the strength and condition **peer influence** - locals must be stimulated by other members of the community to also engage in public action - that also belongs to the analytical concept public action. The locals on Curaçao and Curaçao as a country on international level, are subjectable to peer influence which has been rated as promising in table 9. Mees (2022) described that citizens would

be motivated to join in public action (or at least make effort to cooperate in more sustainable practices) if they see that a respected person in their community does so, even if they are not personally acquainted. Interviewee 3 from the ministry VVRP gave an example about this phenomenon that is not directly related to marine conservation, but related to misconceptions in the society and a public figure speaking out against it. She described that a census is now being executing amongst the population in Curaçao. During a talk show on Radio MAS 99.7, hosted by Juny Joseph, the subject was brought up by one of his guests that thanks to the census, the government would know all their information, followed by other untruths. Junny Joseph reacted that their believes were untrue, and began explaining for a good thirty minutes why it was so important that everyone joined. Such a public figure that has a large reach and speaks up against misconceptions in society could play an important role in providing the adult population with the knowledge which is needed for them to make their own sustainable decisions which is part of eco-empowerment. Another widely respected public figure she had in mind that also could play a role in the process of ecological public mobilisation was Ron Gomes Casseres, he is a well know retired banker, and now in the board of the Mongui Maduro Foundation, while also researching historical topics in Curaçao. On the other hand, to ensure a broader audience is reached, public persons that you would not first pop up should be involved as well. Interviewee 3 thought about Lucho Rosales from the political party that fights against corruption: Partido Union i Progreso, with over then thousand followers on Facebook. When such a person uses its reach to inform or teach his or her followers about the importance of marine conservation, a new audience would be reached, and the condition education could improve to more promising.

The condition **culture** - to advance in the process ecological public mobilisation -, it would be of importance that the significance of the coral reef surrounding the island is manifested in the culture of the public, part of the analytical concept public action. An opportunity to improve this condition for the government and NGOs is designing a campaign for making swimming the national sport. Interviewee 9, the producer from Underwater Kunuku, showed with its film the entire underwater world of the southern coastline of Curaçao by snorkelling. When people see by swimming what beauties lie beneath the surface, it will be likely that a certain form of proudness of the island will be established. Currently, the organizations see that most people do not have a relationship with the ocean causing the condition culture to be a barrier for coral reef conservation. Interviewee 11 saw that many locals on Curaçao did not value the marine life in their culture, rather saw it as a threat. While on the neighbouring island of Bonaire, marine life surrounding the island was their proud, and therefore people on Bonaire are much more going into lengths to conserve the

reef. In the 1990's Bonaire accepted the so-called 'Pourier Plan', which has guided Bonaire's development policy for the past 20 years. This was based on the residents' preference for sustainable, environmentally conscious development (Caribbean Natural Resources Institute, 2011). Today, Bonaire's tourist industry is thought to be the engine of the entire island's economy, meaning that numerous other industries rely on it either directly or indirectly. The industry often contributes significantly to the island's GDP and, as a result, has a significant impact on society, mostly through job opportunities (Kamer van Koophandel Bonaire, 2020). The way Bonaire incorporated the ecosystem services provided by the coral reef, is now also show in their culture.

The other condition, **organization** - locals must have an active presence in the organisation of public actions for coral reef conservation - stressed that it could be improved if more locals would be in the board of NGOs etc. Trialfhianty & Suadi (2017), conducted a study to reef restauration projects in Bali and its success factors, one of these was the inclusion of Balinese leaders that became the bridge between global science and local awareness. Without this form of leadership functioning as a bridge between locals and global science, the article argues that the project probably would not have achieved significant local support. Based on this, it might be possible that if more locals are included in the organization process of coral reef conservation in Curaçao, that the condition connection in community and participation in decision making will also improve. Interviewee 7 proposed a potential opportunity for this is that there could be more encouragement in further education in (marine) biology or similar, for young Curaçaoans, to ensure that there are local people who can ensure long term plans and also give a feeling of representation in those NGOs.

An opportunity mentioned by certain interviewees could be linked to **financial capability** - Institutions should have a form of capital (knowledge, goods, money) that goes towards coral reef conservation - is implementing a tax form for water activities in Curaçao. Bonaire has an annual tax of 40.00\$ USD for divers and other water activities to ensure the quality of the ecosystem in the Bonaire National Marine Park, this must be paid before engaging in a scuba dive etc. Before a person can buy the required tag, he or she must agrees to the terms and conditions, a few of the conditions are: not touching the reef, no anchoring, no- taking, collecting, or feeding, etc. Which reminds the visitor of the reef, that it is a vulnerable ecosystem. In the case of Bonaire, implementing such a tax did have little to no adverse effects (Thur, 2010). This approach is already topic of debate in Curaçao, implementing such a required tag in order to be allowed to engage in marine activities could advance the quality of the coral reef, and simultaneously provide the condition financial capability that a lot of organizations struggle with. The division of the money is topic of the debate, interviewee 5 from Branch Coral Foundation for instance thinks that there should be a separate organ that makes sure

that the money is going directly towards marine conservation. If the government would be the mediating party, there would be a chance that the money would not be used for its original purposes. Plus, he thinks that an independent organ would ensure long term stability, because there is a new government every four years. Interviewee 3 (ministry VVRP) describes the downside of such an approach, namely establishing such a separate organ would first require extensive amount of investments, which is not appealing for the government.

If the condition financial capability is more promising for organizations, it would be likely that instead of seeing each other as competitors, targeting similar funds, they could see each other as colleagues which does not only advance the condition, collaboration with other stakeholders, but can also advance the power relations, as there colleagues could have a deeper debate as opposed to competitors. Finally, with the implementation of a marine tag, more money will be made available which can have a positive effect on the condition welfare, with more money circulating in the marine-conservation or activities, this could increase job opportunities in this field, simultaneously increasing welfare.

8. DISCUSSION

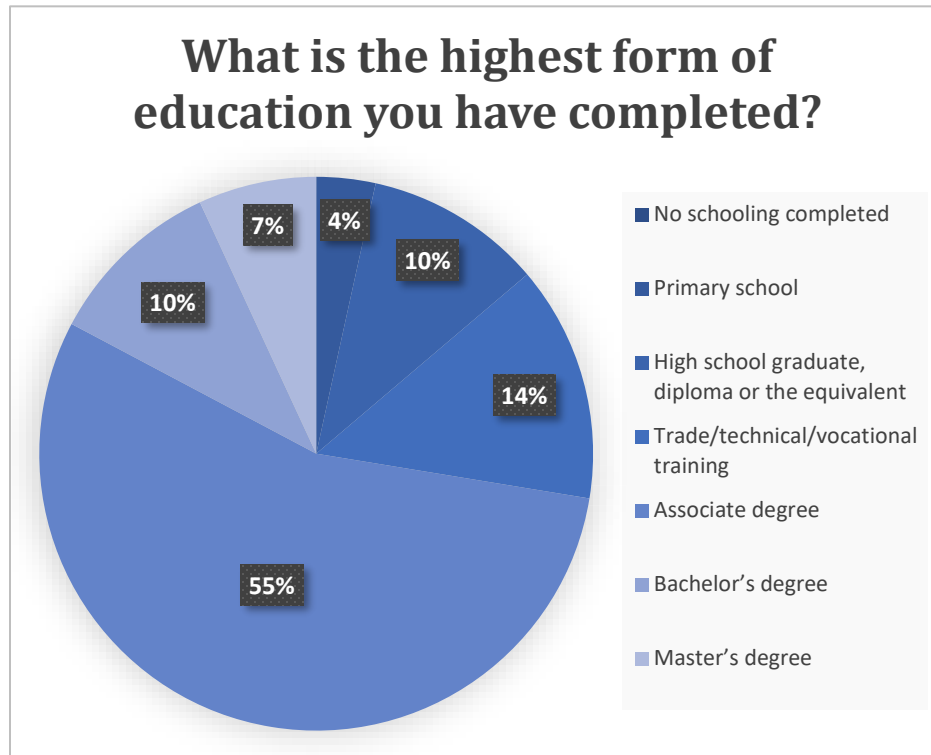
The discussion will start with the reflection of the research approach. Next, the interpretation of the results will be presented and will be subsequently followed by the theoretical implications. Lastly, the recommendations for further research will be presented.

8.1 REFLECTION ON RESEARCH APPROACH

In short, the research approach was as follows. First, a literature study was conducted to establish 17 success conditions for eco-empowerment in an analytical framework. How far Curaçao was in the ecological public mobilisation process, the process arguing that awareness precedes public action, which in turn precedes eco-empowerment in coral reef conservation, was based on the evaluation of success conditions based on perspectives of institutions and the public. To ensure validity, data triangulation was used in form of mixed methods. Based on the analytical framework, a survey was made by means of the program Qualtrics and this was filled in by 29 respondents. Besides, 16 participants were interviewed that held positions within organizations that were somehow involved in the ecological public mobilization process for coral reef conservation. The outcomes were compared via a data network analysis. Forming the basis for the strengths and weaknesses. Finally the opportunities based on the strengths and weaknesses could be identified.

8.1.1. SURVEY

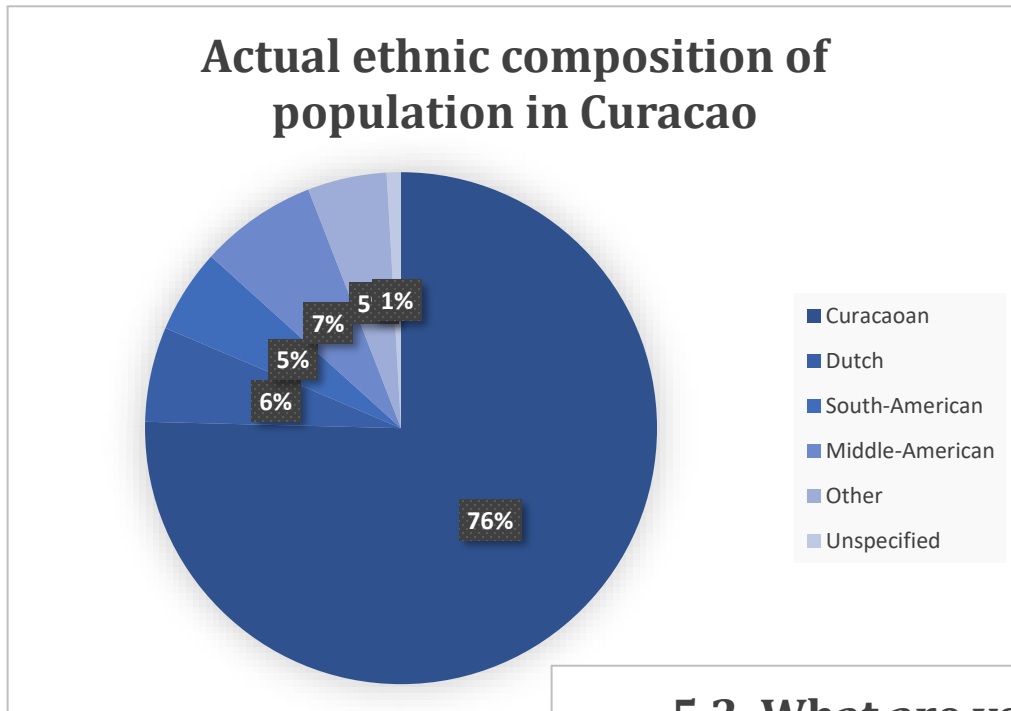
Starting with the characteristics of the sample of the conducted survey for the locals. The survey has received 29 valid responses. The biggest limitation that makes the results not generalisable is that the majority of the respondents are higher educated people (72% of the sample has an associate's degree (HBO) or higher). This may be because the researcher was not proficient in the Papiamentu language and therefore could not explain well enough why it would be relevant to participate in the research, to potential respondents who only speak Papiamentu. This could be avoided in following research by bringing an interpreter, or that the following researcher speaks Papiamentu his- or herself. In addition, the government of Curaçao is now performing a census, which could have played a role in why people were not keen on sharing their personal data with the researcher. Although the questionnaire was also available in the Papiamentu language, this apparently was not enough to convince a larger group of practically educated people to participate. Graph 16 shows the distribution of level of education in the sample.



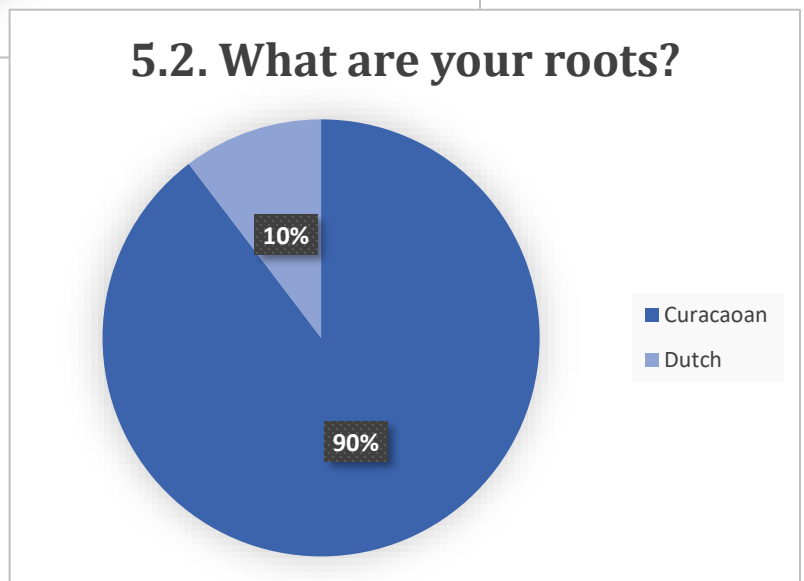
Graph 16: Distribution of education level among sample

Another major note is that at the places where was sampled, such as the supermarket or the beach, relatively more women than men were present, which can also be seen in the results. Women represent 79% of the survey. This was not only accredited by the places where was sampled. Also men more often had a language barrier, refused to do the questionnaire or simply asked their wives to do it. In following research this may be avoided by shifting survey collection spots. In this research, the researcher collected surveys at supermarkets and on beaches. Next time she could also consider collecting surveys in constructions shops, or other locations.

The next variable, questioned the ethnicity of the respondents: 10% had Dutch roots, the other 90% had Curaçaoan roots. The community of only Spanish speakers has been excluded in the survey as there was no options for surveys in their language. Also due to the location bias, the researcher did not ask anyone from the Asian community to participate in the survey. The figures below show the difference between the actual ethnic composition of the population of Curaçao (*Curaçao Ethnic groups – Demographics, 2011*), and the ethnic composition of the sample.

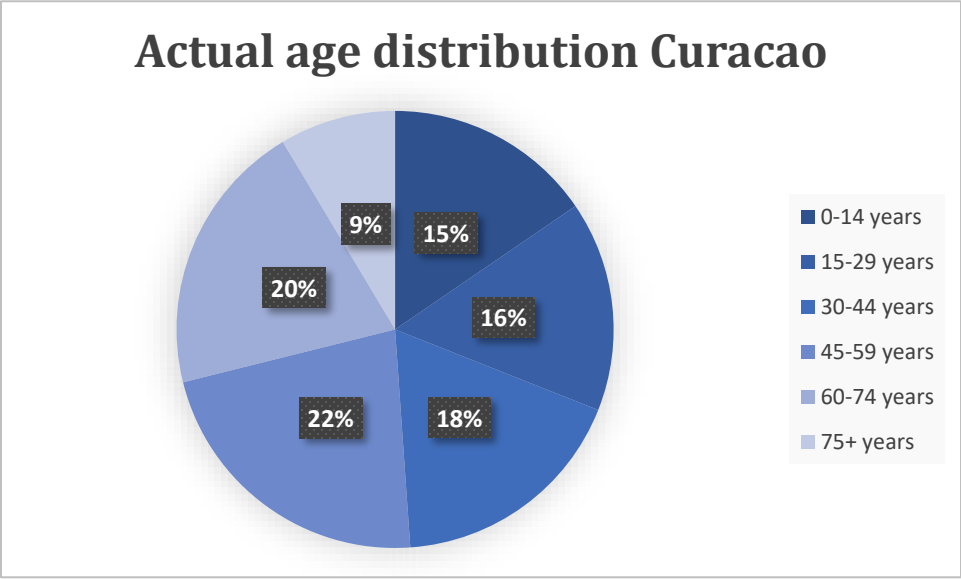


Graph 17: Actual ethnic composition of Curaçao. Based on (*Curaçao Ethnic groups – Demographics, 2011*)

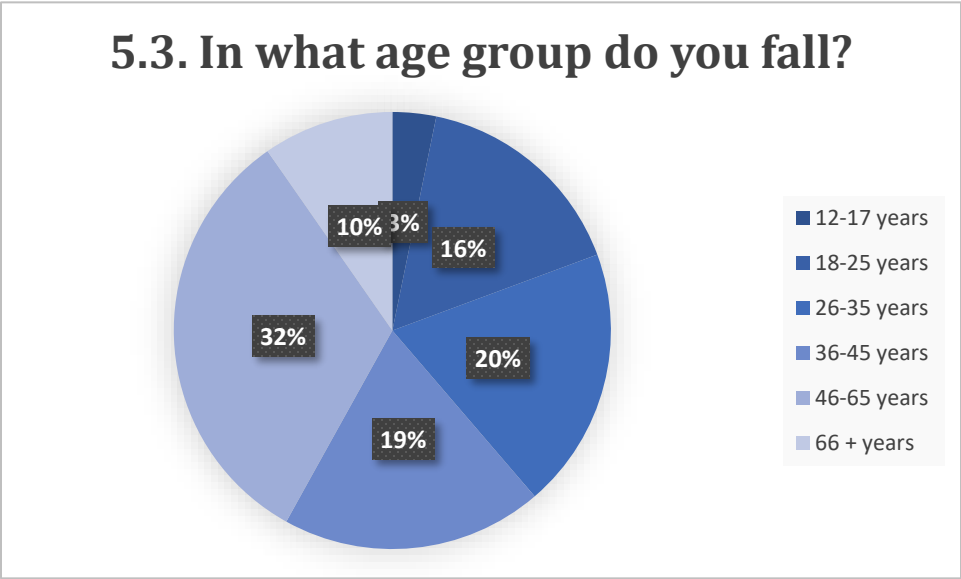


Graph 18: Ethnic composition of sample

Lastly, the sample was evenly divided in age. This can be seen in graph 20. The largest group that had participated was between the age of 46-65. Simultaneously is this group covers 20 years, whereas other age groups only consist of approximately 10 years of age difference. Graph 19 displays the actual age distribution in 2023, calculated by the Central Bureau of Statistics Curaçao (2023). As can be seen in the graph the age groups are not similar to each other, but the sample has a fairly distributed sample among age.



Graph 19: Actual age distribution in Curaçao based on Central Bureau of Statistics Curaçao (2023).



Graph 20: Dispersion of ages in survey

Despite the mentioned limitations, it is likely that when the highly educated population already has scored unpromising on the conditions education, perceived salience, culture, power relations and community, that the lesser educated part of the population will not indicate this as more promising, as it is likely that they come less into contact with marine conservation.

Overall, despite the bias that is detected in the surveys making the research not 100% representative, it is a good indication on where Curaçao is in the process of ecological public mobilisation. It is not likely that the evaluation is that invalid that this influences the strengths and weaknesses in such a way that the opportunities are not related to the current situation on the island anymore.

8.1.2. INTERVIEWS

It was deemed of value that the interviewed organizations did have some knowledge of ecological public mobilisation, or marine conservation in order to provide a clear perspective on the process of eco-empowerment and marine conservation. Preferably, the participants could provide the researcher with advice for the subject that she did not consider herself. If the researcher would have chosen to interview organizations that did not have any relation to her subject, it would have caused a higher degree in generalisability, but simultaneously it could have hindered the exploration process, as those organizations may not have the knowledge to provide valid answers. Due to this choice the internal validity of the research is not guaranteed due to the exploratory characteristics of this research of eco-empowerment in Curaçao.

While coding the interviews, the researcher noticed that some conditions, for instance expertise, were majorly applied to the organization itself, meaning that they thought that expertise about how to engage in unarmful practices for the coral reef was present in their organization. While on the other hand other conditions could only be applied to the society as a whole for instance the condition community. Aiming that they thought that there was not enough connection in the community to effectively engage in coral conservation. Making that some conditions have been evaluated based on the perspective of how their organization functioned. While other conditions had been evaluated from the perspective that an organization had on society as a whole. The condition culture on the other hand, did not have a very clear definition, it was coded as 'culture in Curaçao hinders sustainable development for corals', which varied from corruption to the inability to swim. This made the equation between conditions less straight forward. Thus it would be recommended for future research to carefully look into the to be used conditions and the definition thereof for the analytical concepts.

Furthermore, the approach for the interviews was semi-structured. Because of this approach, there were a lot of blank or missing codes in table 8 and 9 which evaluated the conditions of the ecological public mobilisation process, making some of the evaluations of certain conditions that had more blank codes less valuable.

With semi-structured interviews, it meant that participants only made statements about the conditions that they were certain about, instead of guessing the value of a certain condition, which made the evaluation more reliable.

8.1.3. POSITIONALITY OF RESEARCHER

The researcher acknowledges that although the evaluation has been conducted, based on the perception on the conditions of the interviewed organizations and the public, it also has been made with a Dutch perspective on how the conditions should be filled in. For instance, the researcher made recommendations about the condition culture, she has not grown up in Curaçao, but in the Netherlands where it is a normality that everyone learns to swim from a young age. Therefore, she deemed the ability to swim as important for the advancements in ecological public mobilisation, whereas this may not be of necessity for a Curaçaoan locale. Thus, especially for the recommendations about the condition culture, it is questionable whether it is desirable if a foreigner makes opportunities based on what she considers to be favourable based on culture. This could be related back to the previously mentioned weakness for the condition organization, part of the analytical concept public action. Participants indicated that there was lack of locals in research or participation in the organization of coral reef conservation initiatives. This could invoke the lack of a long-term approach or the lack of a comprehensive understanding of the context of Curaçao. This research is not any less similar, after the researcher has finished the thesis, she will have other courses and the priority of advocating for eco-empowerment in Curaçao will not be a priority anymore.

8.2 INTERPRETING THE RESULTS

Based on the literature, four analytical concepts have been identified to be part of the ecological public mobilisation process. In short: first there should be a foundation established of awareness before public action, and institutional- and public eco-empowerment could be established (see figure 2 for further explanation). These four conditions were further distilled into 17 theoretical success conditions, and the presence of these were later evaluated as promising, indifferent and unpromising,

based on the perspective of the public, the government, NGOs and public organizations, presented in figure 8.

In advance, this research assumed that with the presence of eco-empowerment for coral reef conservation, the state of the coral reef would improve or at the very least, stop deteriorating. Based on the bad state of the coral in Curaçao (Waite institute, 2017), it was not expected that there would be a certain form of eco-empowerment for coral reef conservation on Curaçao. Due to the high poverty rates on the island (31% *Armoede Op Curaçao*, 2024), it would have been likely that the people of Curaçao had other problems to face before engaging in public action. Therefore, the expectation was that current advancement in the process of ecological public mobilisation, would be stagnated at the analytical concept awareness.

Based on this research, *table 9 evaluation of conditions presented in colour coded raster based on the perspectives of the actors*, the results seem to align with these initial, as the other analytical concepts public action, institutional- and public eco-empowerment scored more unpromising compared to the concept awareness. This indicates that Curaçao is in the starting phase of ecological public mobilisation, Curaçao first has to fix the analytical concept awareness for coral reef conservation before it is encouraged to engage in other analytical concepts such as public action. To give an impression of what would happen if one condition will be improved figure 16 was mapped out. This is based on the assumed connections between the success conditions. This visually explains that when certain conditions are increased from unpromising to indifferent or promising, other conditions could be positively influenced as well. A good example and identified opportunity is the condition education in the analytical concept awareness had been rated as unpromising and as this condition formed an important foundation for other conditions. It was unexpected that this concept scored so unpromising, because of the fact that there are many coral reef education programmes active on the island. These include: Carmabi, Greenkids, Branch coral foundation, Kids for coral and much more. On the other hand, it was expected that the conditions perceived salience and willingness would form an obstacle in the process of ecological public mobilisation. For the condition perceived salience, this expectation could be accepted, perceived salience was rated as unpromising. The condition willingness however, turned out to be more promising than originally expected. Thus, the people of Curaçao show promising results regarding their willingness to engage in public action for coral reef conservation. Based on these results, it seems that they only need the knowledge about the deterioration of the coral reef, and its importance to the island.

8.3. THEORETICAL IMPLICATIONS

If the state of the coral reef is not improved soon, there is an increased chance on several severe phenomena such as a reduction in marine biodiversity, shrinking of coastal tourism, increase in pollution etc. (see graph 5 for more examples). Establishing a (pre) form of eco-empowerment for coral reef conservation in Curaçao could help prevent the occurrence of these severe phenomena because Mees (2022) argues that communities with a higher awareness tend to engage in public action more often.

This research has tried to advance the understanding of eco-empowerment by narrowing the existing knowledge gap, on why individuals don't come together and engage in public action when they feel powerless and how these individuals can be motivated to act and what potential role the institutions can play to advance in this process. This study has contributed by introducing the first steps towards ecological public mobilisation which is the process that argues that awareness precedes public action, which in turn precedes eco-empowerment in coral reef conservation. Based on an evaluation of the success conditions that are part of this process, this study has shown why the locals on Curaçao have not yet engaged in (larger forms of) public actions. Curaçao is in the beginning of this process namely, it needs to fulfil the last conditions that fall under awareness, before public actions would be effective. This finding could function as a foundation of future research related to the social- & environmental field in Curaçao. The insights can be used by the SEALINK research group and other interested organizations, in pinpointing areas where scientific-policy interfaces can be effectively established. Finally, the opportunities based on the strengths and weaknesses in the ecological public mobilisation process towards eco-empowerment within the Curaçaoan society, could serve as example for similar island states. More specifically, if figure 15 is consulted again, it shows that there are no (major) objection against the definition of eco-empowerment or the process of ecological public mobilisation that assumes that awareness leads to public action which again leads to institutional- and public eco-empowerment. These definitions can be used in further research to this subject.

Again, as there is not much research done to eco-empowerment in a marine context, a research that is more similar in methodology but less similar in the discussed context, is that of Hernández (2021). This comparison confirms that in the process of ecological public mobilisation in Curaçao, increasing awareness of the coral reef's degradation is crucial. This comparison stresses that unfavourable conditions, such as low perceived salience, cultural disconnection, and lack of community ties, hinder eco-empowerment, whereas favourable conditions, as observed in 50 Casas, are drivers for the advancement of ecological public mobilisation. Hernández (2021) explored eco-

empowerment in the marginalized neighbourhood 50 Casas in Ecuador. Compared to this research noteworthy differences can be detected. Unlike 50 Casas, where the community faced urgent daily threats from a nearby electric plant and petrochemical refinery, Curaçao's ecological public mobilisation process is less advanced. Starting with the fact that the residents of 50 Casas were acutely aware of toxins in their environment whereas the people of Curaçao lack awareness of the coral reef degradation and its consequences. Furthermore, the advances in ecological public mobilisation in 50 Casas can be mostly detected in the shared history of displacement and a strong desire to defend their community with public action. This is in strong contrast to Curaçao where cultural factors, such as a lack of island pride and minimal connections withing their community, hinders eco-empowerment. In short, the crucial distinction lies in the level of perceived salience - the public must understand the importance of the functioning coral reef for the (safety of the) island -, 50 Casas faced an immediate and visible threat, fostering urgency and unity in the community. Whereas Curaçao's coral reef issues manifest gradually, making them less urgent which prevents the locals from engaging in direct collective action.

Skene (2022), tried to define the unit of empowerment in his research by dividing empowerment in the terms public- and institutional empowerment. This research formulated 7 success conditions for these concepts and tried to place his theoretical work into context for empowering the public into making sustainable choices for coral reef conservation. The knowledge gap also stressed that it was of importance to investigate what potential role the institutions can play to advance in the ecological public mobilization process. This research primarily focussed on the interplay between the public and the institutions, how well the goals of the public were incorporated in the vision of the institutions and what was done to encourage the public in participation for coral reef conservation. But this research did not elaborate on what specific role an institution could play that was described by Esthi & Novitasari (2023) in 1.1. scientific debate. a) policy creator; b) coordinator; c) facilitators; d) implementers; and e) accelerators.

Overall, this study has made contributions in the field of eco-empowerment by defining the stages before eco-empowerment takes place. This has been described in ecological public mobilisation. The concepts or steps in ecological public mobilisation are: awareness, public action, institutional- and public eco-empowerment, these stages are further defined by 17 success conditions. This study investigated a context that was in the first stage, awareness, of ecological public mobilisation while other studies mostly focus on later stages such as public action (Hernández, 2021) and eco-empowerment (Irawan, Esthi & Novitasari, 2023). This shows the importance of

awareness in eco-empowerment. Furthermore, it has also explored the assumed relationships between the conditions, and how they could influence each other.

8.4. SUGGESTIONS FOR FURTHER RESEARCH

To give a more comprehensive meaning to the theory of ecological public mobilisation, it is of importance that this is further researched in other marine conservation context. This could be in a most similar approach, directed at another island state, that is not far in the process of ecological public mobilisation for coral reef conservation, to check of whether the condition are evaluated similarly. This analytical framework could also be applied to islands that are further in the development of ecological public mobilisation, for instance Bonaire, to see if the conditions are evaluated differently. Which could serve as an example to discover new opportunities for developing island states in eco-empowerment for coral reef conservation.

More specifically for the context of Curaçao, it is important to increase the level of awareness, which was deemed important in the last section. The condition education needs to be improved. This research concluded that the investigated organizations mostly focus on the education of children to raise awareness, however an abundance of the adult respondents indicated that they were willing to participate in public action for coral reef conservation. It would be wasteful, if that was not to be used. Nevertheless, the identified opportunities in this research for this phenomenon (such as peer influence), could be investigated in more detail in further research, to how effectively educate this group on the importance of a functioning coral reef system. It is expected that this condition positively influences the state of the other conditions, for instance perceived salience, which could accel the process of ecological public empowerment.

Skene (2022) argued that there could be no eco-empowerment without aid of the institutions. Last section described that this research had elaborated on the interplay of the public and institutions in terms of eco-empowerment in coral reef conservation, however the roles of the institutions that are willing to stimulate eco-empowerment could be researched in more detail. Esthi & Novitasari (2023) introduced 5 roles for institutions in the process of eco-empowerment, namely: a) policy creator; b) coordinator; c) facilitators; d) implementers; and e) accelerators. Further research, could investigate how institutions could encourage the process towards eco-empowerment while fulfilling one of the described roles of Esthi & Novitasari (2023) in a community (such as Curaçao) that is not yet far developed in the ecological public mobilisation process.

Furthermore, it is important that further research does not complicate possible attempts to advance in coral reef conservation policy of the government. Degradation in the health of the coral

reef on Curaçao is occurring as we speak, therefore the time to act is now. With endlessly researching this subject, the focus would be on the wrong area. Research should be complementary to actions for conservation of the coral reef in Curaçao. However, often it is the other way around says Interviewee 8, the government would like to wait on the outcome of certain researches instead of taking action. This fear of making errors could essentially hinder sustainable development.

9. CONCLUSION

Previous research lacked the understandings on why public action by the locals was absent in situations of eco-powerlessness. Additionally, there was no research to which possible success conditions could advance the transition from a state without eco-empowerment to one where this form of citizen empowerment is present in a marine context. Additionally, the role for the institutions in this context was not very far developed. This study addressed this knowledge gap by exploring the process towards eco-empowerment in the context of marine conservation, specifically focusing on coral reef ecosystems in Curaçao. This was done by delving deeper into the nuances in perspectives on eco-empowerment within coral reef ecosystems, mapping and evaluating the perspectives of the local population and several institutions, which ultimately lead to answering the main research question: *Which opportunities for stakeholders on Curaçao can be identified to empower the local community in the conservation of the coral reef?* To answer this question, the research process began with formulating success conditions for eco-empowerment based on the literature. These success conditions were rated by the researcher as promising, indifferent or unpromising based on interviews for organizations and surveys that questioned the public. By employing a discourse network analysis, this unveiled nuances in perspectives from NGOs, the government, private organizations, and the public regarding the conditions required to establish eco-empowerment. These insights were subsequently translated into strengths and weaknesses of the ecological public mobilisation process in Curaçao. This process argues that awareness precedes public action, which in turn precedes eco-empowerment in coral reef conservation. This research confirmed that for this process to be successful, it is deemed important to establish a robust foundation of awareness as a prerequisite for advancing towards public action or eco-empowerment initiatives. This finally formed the basis for identifying opportunities to empower the local community in coral reef conservation.

The core of the findings can be summarised as that the condition education was deemed the most fundamental obstacle in the advancements of the ecological public mobilisation process. In the end, this research did not only contribute to a deeper understanding of the stages previous to eco-empowerment in the social- and environmental context of Curaçao but also formed foundations for future studies in this field. Ultimately, five opportunities for advancing in ecological public mobilisation for stakeholders have been identified. Starting with the most fundamental opportunity for **education** - the public must be educated on the coral reef -. Education emerged as the least promising condition of awareness in the analysis. The research highlights a gap, which observes that much of the educational efforts on the island were aimed towards children, overlooking adults as

they are perceived as a 'difficult' target group. On the other hand, the conducted survey indicated that the respondents had a promising attitude towards willingness for participation in coral reef conservation.

Acknowledging this, the study emphasised that NGOs need to focus more on education opportunities to ensure a more age-inclusive approach to empowering the local community in coral reef conservation. Apart from targeting media forms that adults mostly come in contact with, such as radio or films, the second opportunity lies in the condition **peer influence** - locals must be stimulated by other members of the community to also engage in public action -. NGOs can invite respected public figures, for instance in talk shows to educate the older public in sustainable behaviour for coral reef conservation via peer influence. When the condition education will be improved to more promising, it is expected to positively influence the other conditions of awareness as well, which could mean that major advancements towards eco-empowerment for coral reef conservation will be made in Curaçao.

Other opportunities that are deemed less urgent as they are further ahead in the process of ecological public mobilisation have also been identified. These are based on the conditions culture and organization, originated in the analytical concept public action and financial capability which is originated in institutional eco-empowerment. The third opportunity is found in the condition **culture** - to advance in the process ecological public mobilisation, it is of importance that the significance of the coral reef surrounding the island is manifested in the culture of the public -. This could present a convincing prospect for embedding marine activities more deeply within the identity of Curaçao but was evaluated as unpromising in this research. This condition could be improved by for instance, the government stimulating locals to swim and see the underwater life for themselves. A shift in priorities is expected advancing public action for marine conservation, as marine activities become more fundamental to the island's cultural identity.

This cultural transformation could instigate a ripple effect, positively influencing the concept, and next opportunity organization. When a bigger group of locals cultivate a stronger connection to the marine life, it would be likely to attract a greater number of residents to engage in coral conservation efforts and the organization thereof. The fourth condition **organization** - locals must have an active presence in the organisation of public actions for coral reef conservation of coral reef conservation - is now rated as unpromising. With more locals present due to for instance the coral reef having a more fundamental place in the Curaçaoan culture, it would not only be likely that the immediate impact of coral conservation will be advanced but also the long term-vision will be fixated. Locals could not only take more marine conservation initiatives, but the organization thereof could

be more adapted to what the Curaçaoan public deems valuable instead of what foreign- scientists or volunteers think is valuable for the coral reef in the context. This will improve the condition organization to promising.

Finally, an opportunity has been identified for the condition **financial capability** - institutions should have a form of capital (knowledge, goods, money) that goes towards coral reef conservation -. In the opportunity the government can impose a marine activity tax which is a tax users need to pay before engaging in marine activities. The proceeds hereof can be used to alleviate the financial constraints faced by many NGOs on Curaçao to advance in coral reef conservation. This also has the potential to reshape power relations and foster collaboration among stakeholders, the transformation of NGOs from competitors to colleagues may result in an important turning point in advancing the overall process of ecological public mobilization. This opportunity is already topic of debate in Curaçao, the emphasis is where the proceeds of this opportunity would go to when implemented, making the opportunity look very expensive, and therefore less appealing for the government to implement.

This research also contributed in the scientific field by establishing the relation between certain conditions Presented in figure 16. Assumes that with the increase of one condition to more promising, it is expected that other conditions react positively on this as well. Again, the condition education is deemed as the most vital condition in this context for improving the entire process of ecological public mobilisation. Once the condition education has been moved from unpromising to more promising, it is expected that other conditions from the analytical concept awareness will also increase to more promising.

In essence, the identified opportunities, addressing education, peer influence, culture, organization, and financial capability, are transformed in a sustainable approach to eco-empowerment in coral reef conservation. This research has paved the way for a future where the local community is empowered to safeguard the marine ecosystems that define the unique identity of Curaçao.

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11. APPENDIX

11.1. CONNECTIONS TABLE ECOLOGICAL PUBLIC MOBILISATION TO QUESTIONNAIRE, INTERVIEWS AND CODENAMES

Table: 17 Connection table from success conditions to questions

Category	Operationalisation	(sub-) codes	Question
Awareness	Environmental values (Mees, 2022) <ul style="list-style-type: none"> “Do I want to protect the environment? Do I care about climate change?” 	Environmental values	2.1.
Awareness	Subjective capacity (Mees, 2022) <ul style="list-style-type: none"> “Do I/my initiative have sufficient resources to provide a public/climate service?” “Do I think my/my initiative's climate actions are effective, can I make a difference?” 	Start simple	3.1. N2.2.
Awareness	Education (Kennedy & Johnston, 2019) <ul style="list-style-type: none"> What is the form of highest education you have completed? Have you been offered forms of education about the coral reef? Such as webinars/ workshops etc.? 	Education on coral reef	2.4., 5.4. G2.
Awareness	Perceived salience (Mees, 2022) <ul style="list-style-type: none"> “How important is the issue/service for me, my community?” In climate change, this concerns the perceived climate risk and experience with a climate threat. ” 	Perceived salience low	2.1., 2.5., 2.6. P1. G2.

	<ul style="list-style-type: none"> • What disasters could occur without the coral reefs presence? • What is situation now, what will the situation be when the reef is not present 		
Awareness	<p>Sense of own responsibility (Mees, 2022)</p> <ul style="list-style-type: none"> • <i>“Do I believe I am responsible for solving an issue such as climate change?”</i> • <i>Do I believe the government is not doing enough on climate change?”</i> 	Sense of own responsibility	<p>2.2.</p> <p>P2.</p> <p>N3.4.</p> <p>G2.1. &G3.3.</p> <p>O2.1., O3.3, O3.4</p>
Awareness	<p>Willingness (skene, 2022)/ expected return of investment (Mees, 2022)</p> <ul style="list-style-type: none"> • How much time do you realistically want to offer to trying to save the coral reef? • Are individuals willing to embrace solutions based on dialectic synthesis, even though one can never predict what form the new solution will take? • <i>“What is in it for me or my community? Is the reward worth the effort?”</i> 	Willingness of locals	<p>2.3.</p> <p>P2.3.</p> <p>N2.2. & N2.3.</p> <p>G2.3.</p> <p>O2.3.</p>
Awareness		Overall awareness of public	

Public Action	<p>Culture (Kennedy & Johnston, 2019)</p> <ul style="list-style-type: none"> • Are there reigning taboos or are the particular encouragements towards marine conservation in the culture? (think about not eating a particular sea animal because of religious beliefs) • What is the history of public action in the context? This can be unrelated to marine conservation. 	Culture in Curacao hinders SD for corals	3.1.
Public Action	<p>Peer influence (Mees, 2022)</p> <ul style="list-style-type: none"> • <i>“Do I feel pressurized to produce a climate service because they do?”</i> 	Peer influence	3.2.
Public Action	<p>Organisation (Skene, 2022)</p> <ul style="list-style-type: none"> • How should public action be organised. For instance, via self-organisation, citizen collectives, or should an institution help with that? 	Locals need to be more involved	3.3. P2.2. N3.4. & N3.5.
Institutional Eco-empowerment	<p>Expertise</p> <ul style="list-style-type: none"> • How much knowledge about marine conservation is present in the company? 	Expertise in organisation	03.
Institutional Eco-empowerment	<p>Strategic thinking (van Aalderen, 2023)</p> <ul style="list-style-type: none"> • How is marine conservation incorporation in the vision and cooperation of the company? 	Friction for practices by organisations	N1. G1.& G1.2. 01
Institutional Eco-empowerment	<p>Financial capability – capital (budget)</p> <ul style="list-style-type: none"> • Is there a part of the budget that goes to marine conservation? 	Capital (Budget) Financial goods lack	G1.3. 01.2.

<p>Institutional Eco- empowerment</p>	<p>Power relations (Skene, 2022)</p> <ul style="list-style-type: none"> • How could the power relations be balanced equally? • Are they open for public opinions/ goals or even involvement? 	<p>Carmabi is most responsible</p> <p>Government is most responsible</p> <p>Enforcement lacks</p>	<p>4.1., 4.2.</p> <p>P2.1.</p> <p>G3.4.</p> <p>O1.3. & O3.4</p>
<p>Institutional Eco- empowerment</p>	<p>Collaboration with other stakeholders (van Aalderen, et al., 2023)</p> <ul style="list-style-type: none"> • How much should other stakeholders be involved in the process? • How many goals of the public should be incorporated into the strategy of the institution? 	<p>Businesses need to be more involved</p> <p>Cooperation in sustainable practices of organisation by the public</p> <p>Cooperation is needed more</p> <p>Cooperation with other actors</p>	<p>4.3.</p> <p>N1.1. & N1.2.</p> <p>G1.1. & G2.2.</p> <p>O1.3. & O2.2.</p>
<p>Public Eco- Empowerment</p>	<p>Welfare (Kennedy & Johnston, 2019) –</p> <ul style="list-style-type: none"> • In what income category is the interviewee/ person that took the questionnaire? 	<p>Welfare not high enough</p> <p>Curacao has developed enormously</p>	<p>5.4.</p>
<p>Public Eco- Empowerment</p>	<p>Community (Skene, 2022; Hernández, 2021)</p> <ul style="list-style-type: none"> • Is there an ability of a community to make decisions, action those 	<p>Connection in community</p>	<p>4.3., 4.4.</p>

	<p>decisions, set its own priorities, build capacity, secure resources and be sustainable?</p> <ul style="list-style-type: none"> Is connection deemed as important in eco-empowerment? <i>“The empowered individual in community psychology need not be the individual in isolation or even in groups, fighting with others for power and control.”</i> 	Friction in community	
Public Eco-Empowerment	<p>Participation in decision making (Skene, 2022)</p> <ul style="list-style-type: none"> <i>“Is the client continuously supported to produce the range of possibility that she/he sees appropriate to his/her needs; that the client is the centre for all decisions that affect her/his life”</i> 	<p>Government listens</p> <p>Government acts</p> <p>Government actively executes reports</p>	N3.6.
Public Eco-Empowerment	<p>Definition eco-empowerment?</p> <ul style="list-style-type: none"> How does the public look at eco-empowerment? 	<p>Do institutions agree with the definition of EE?</p> <p>Awareness in EE is important</p> <p>Awareness leads to EE</p>	<p>P3 – P3.2.</p> <p>N3.1. – N3.3.</p> <p>G3. - G3.2.</p> <p>O3 - O3.2.</p>
General	Belongs the participant to the right focus group?		Verbal confirmation before taking questionnaire

General	Questions to gain an insight of which social group the participant belongs		5.1. – 5.4.
General	Description of (function within) organisation		P1. N1. G1. O1.
General	Consent		P0. N0. G0. O0.

11.2. SURVEY FOR PUBLIC

11.2.1 SCENARIO FOR COLLECTING QUESTIONNAIRES

Hello, my name is Tanouschka, I'm a master student and currently I'm conducting my dissertation on awareness and eco-empowerment on coral reef conservation in Curaçao. Would you like to participate in my research and fill in this questionnaire? You do not need to be familiar with the subject, I am merely interested in your perspective and opinions on the topic! I think it will roughly take only 7 minutes.

Do you live in Curaçao for more than 10 months per year?

Are you involved with any type of governmental organizations/NGOs regarding marine protection?

You could scan the QR code corresponding to your preferred language.

If a questions is unclear, you could ask me for an explanation.

Thank you for participating in my research!

11.2.2. QUESTIONNAIRE

This questionnaire focusses on coral reef protection in Curaçao. The goal is to identify your degree of awareness and your overall perspective on public action and empowerment for coral reef protection. Participation in this research will be voluntary and anonymous and you can withdraw your participation if wished.

Thank you in advance for participating in my research!

Best of luck, Tanouschka Jansen

Part 1

1.1. Please confirm: I have read and understood the above and I agree to participate in the research.

- Yes

Part 2

The first set of questions are about your opinion on the coral reef surrounding Curaçao. Keep in mind that there is no 'right' or 'wrong' answer.

2.1. The coral reef and its accompanying services, such as coastal protection and providing fish for consumption or tourism are of great importance for me and my community.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

2.2. The government is not doing enough to address the vanishing of the coral reef.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

2.3. If you would like to try and save the coral reef, how much time would you realistically want to offer? Duration would be 1-3 hours every time you help out.

- Multiple times per week
- Once per week
- Once per month
- Once every three months
- Once per year
- Once
- Never

2.4. Have you been offered forms of education about the coral reef? (please select all that apply)

- None
- Webinars
- Workshops
- Lectures
- Books
- Information flyers
- Social Media
- Social settings
- Other

2.5. In what state is the coral reef surrounding Curaçao in your opinion?

- Perfect
- Good
- Average
- Critical
- Endangered
- Dead

2.6. What are the three most severe phenomena that you think could occur due to the absence of coral reefs? (please select the three phenomena you think that will be most severe)

- Marine biodiversity would suffer
- Coastal fishing industries would collapse
- Coastal tourism would shrink
- Coastlines would be damaged
- Medical breakthroughs would be hindered
- The ocean would be more polluted
- The ocean would turn green due to the production of algae
- More jellyfish in the ocean
- There would be less oxygen in the ocean
- More pollution on beaches
- Deterioration of near shore water quality
- Other

Part 3.

This set of questions will focus on *your perspective* on public actions (for instance beach cleans, awareness raising events or protests) that could influence the wellbeing of the coral reef. Keep in mind that there is no 'right' or 'wrong' answer.

3.1. Things that could withhold me from engaging in public action for coral reef protection are:

- I do not feel safe (Think about being/swimming in the open ocean)
- I don't have the time
- I am not familiar with the topic
- I am not physically able to participate in coral protection
- I think that coral protection programmes lack well formulated goals
- I think that coral protection programmes lack guidance
- I don't think that my actions will make a meaningful difference
- I have no interest in saving coral
- None of the above

3.2. If a public action group for marine protection would be established, I would feel obligated to participate.

- Extremely likely
- Somewhat likely
- Neutral
- Somewhat unlikely
- Extremely unlikely

3.3. How should public action for marine protection be organised? (you could tick multiple)

- Self-organisation
- Citizen collectives
- With help of NGOs
- With the help of the government
- With the help of private organisations
- I don't think it desirable that citizens engage in public action

Part 4.

This set of questions will focus on *your perspective* on the relation between the community and institutions (government and NGOs). Keep in mind that there is no ‘right’ or ‘wrong’ answer.

4.1. The government & NGOs in Curaçao are open for the public opinion.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

4.2. The government & NGOs in Curaçao act on the public opinion (please select strongly agree if you think they execute the goals of the public, and strongly disagree if you think they solely follow their own agenda).

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

4.3. I think that in order to establish a better state of the coral reef, connection between members of the community is important.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

4.4. I think that my community could adapt to a world without coral.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

5. General questions

The following background questions will help the researcher gain insight into the representativeness of the group that has participated in this research.

5.1. What is your gender?

- Female
- Male
- Other
- Prefer not to say

5.2. What are your roots?

- Curaçaoan
- Other area in Caribbean
- Dutch
- European (not Dutch)
- South-American
- North-American
- Middle-American
- Other

5.3. In what age group do you fall?

- 12-17 years
- 18-25 years
- 26-35 years
- 36-45 years
- 46-65 years
- 66 + years

5.4. What is the highest form of education you have completed?

- No schooling completed
- Primary school
- High school graduate, diploma or the equivalent
- Trade/technical/vocational training
- Associate degree
- Bachelor's degree
- Master's degree

11.3. INTERVIEWS

11.3.1. INTERVIEWS NGO

Introduction

I'm writing my thesis about citizen eco-empowerment for coral reef conservation on Curaçao. For this I am first measuring the degree of awareness of the greater public coral reef conservation, I will be asking you about your organisation's experiences on that in the interview. Then I will ask about your perspective on the willingness of citizens to participate in public actions such as (..... Insert public action of the interviewed organisation). This will be followed by a question on the power relations between the institutions by which I mean: NGOs, private organisations and the government with citizens in coral reef conservation, and I will close with questions on your perspective on eco-empowerment.

In my philosophy, citizen awareness leads to public actions and public actions ultimately lead to eco-empowerment. And my definition of eco-empowerment is, listen carefully: To empower all levels of the surrounding society (of the coral reef) and individuals, enabling them to make sustainable decisions that affect their way of life, by giving them the knowledge and the means. In turn this will cause optimisation of the functioning of the coral reef system. An example of eco-empowerment that is not related to coral reefs is that in Indonesia, while climbing on particular mountains, tourists often (unknowingly) offended locals in their behaviour, and were not respectful towards the sacred meaning of the particular mountain. So the locals and government worked together, to ban tourists from certain religious meaningful mountains. Now these mountains could only be visited for certain religious purposes by the local community. (Do you understand the definition now?)

Let's start the interview now, it is important to keep in mind that this is a semi-structured interview, if you have stories you think are relevant, please tell them!

N0. Do you give your consent to record this interview, and let me use this tape for my research?

(press play on recorder)

N0. Do you give your consent for mentioning your organisation in my thesis?

N1. Could you give a brief description of your organisation?

- N1.1. To what extent is your organisation active in coral reef conservation?
- N1.2. How much do you involve the vision and goals of the community in your strategy?

N2. In your view how aware is the public now about the degradation of the coral reef and its consequences?

- N2.1. What does your organisation do to raise awareness?
- N2.2. How much do citizens actually want to participate?
- N2.3. In what parts do you feel most engagement, and in what part of the actions do you feel least collaboration of the public?

N3. I just gave a definition of eco-empowerment,

- N3.1. What is your view on this definition?
- N3.2. Do you (and your organisation) have certain ideas on how eco-empowerment could be reached for coral reef conservation in Curaçao?
- N3.3. To what extent is your organisation engaging with the notion of eco-empowerment?
- N3.4. Does your NGO think that saving the coral reef is the task of the public initiatives, or do you think that other institutions such as the government should take the lead?
- N3.5. How should larger public action operations be organised?
 - *I.e. should the government arrange it, or NGOs or should it come from the public itself?*
- N3.6. What does your NGO think of the government interactions with the public in this perspective?

Is there something you would like to mention, that I have not asked, but could still be relevant to the topic?

Do you have suggestions for other persons/ organisations that I could interview?

If it turns out that I still have questions about this topic, are you available for follow up questions (via E-mail?)

Would you like a copy of the thesis when it has been finished?

11.3.2. INTERVIEW GOVERNMENT

Introduction

As you know I'm writing my thesis about citizen eco-empowerment for coral reef conservation on Curaçao. For this I am first measuring the degree of awareness of the greater public coral reef conservation. If ok with you, I will first ask you about your organisation's experiences on that in the interview. Then I will ask about your perspective on the willingness of citizens to participate in public actions such as (..... Insert public action of the interviewed organisation). This will be followed by a question on the power relations between institutions – by which I mean: NGOs, private organisations and the government - and citizens in coral reef conservation. I will close with questions on your perspective on eco-empowerment.

In my philosophy, citizen awareness leads to public actions and public actions ultimately lead to eco-empowerment. And my definition of eco-empowerment is, listen carefully: To empower all levels of the surrounding society (of the coral reef) and individuals, enabling them to make sustainable decisions that affect their way of life by providing them with the knowledge and the means. In turn this will cause optimisation of the functioning of the coral reef system. An example of eco-empowerment that is not related to coral reefs is that in Indonesia, while climbing on particular mountains, tourists often (unknowingly) offended locals in their behaviour, and were not respectful towards the sacred meaning of the particular mountain. So the locals and government worked together, to ban tourists from certain religious meaningful mountains. Now these mountain could only be visited for certain religious purposes by the local community. (Do you understand the definition now?)

Let's start with the interview now, it is important to keep in mind that this is a semi-structured interview, if you have stories you think are relevant, please tell them!

G0. Do you give your consent to record this interview, and let me use this tape for my research?

(press play on recorder)

G0. Do you give your consent for mentioning your organisation in my thesis?

G1. Could you give a brief description of your function and how does it relate to coral conservation?

- G1.1. How is marine/coral conservation incorporated in the vision of the government?
- G1.2. To which extent are the visions and goals of citizens actually incorporated in the long term vision of the government?
- G1.3. Is there a part of the government budget that goes directly to marine conservation?

G2. In your view how aware is the public now about the degradation of the coral reef and its consequences??

- G2.1. To what extent has the government made a contribution to this? / How are you stimulating civilians to participate in marine conservation
- G2.2. How involved are citizens in coral conservation
- G2.3. On what points do you feel most engagement of the public, and in what points do you feel most friction in cooperation with citizens?

G3. I just gave a definition of eco-empowerment

- G3.1. What is your view on this definition?
- G3.2. Do you (and your organisation) have certain ideas on how eco-empowerment could be reached for coral reef conservation in Curaçao?
- G3.3. Whose responsibility is it to save the coral reef?
- G3.4. How could the power relations be balanced equally between government, NGOs, private organisations and the public in the field of marine conservation?

Is there something you would like to mention, that I have not asked, but could still be relevant to the topic?

Do you have suggestions for other persons/ organisations that I could interview?

If it turns out that I still have questions about this topic, are you available for follow up questions (via E-mail?)

Would you like a copy of the thesis when it has been finished?

11.3.3. PRIVATE ORGANISATIONS

Introduction

As you know I'm writing my thesis about citizen eco-empowerment for coral reef conservation on Curacao. For this I am first measuring the degree of awareness of the greater public coral reef conservation. If okay with you, I would like to start the interview by asking you about your organisation's experiences on that. Then I will ask about your perspective on the willingness of citizens to participate in public actions such as (..... Insert public action of the interviewed organisation). This will be followed by a question on the power relations between institutions – by which I mean: NGOs, private organisations and the government – and citizens in coral reef conservation. I will close with questions on your perspective on eco-empowerment.

In my philosophy, citizen awareness leads to public actions and public actions ultimately lead to eco-empowerment. And my definition of eco-empowerment is, listen carefully: To empower all levels of the surrounding society (of the coral reef) and individuals, enabling them to make sustainable decisions that affect their way of life by providing them with the knowledge and the means. In turn this will cause optimisation of the functioning of the coral reef system. An example of eco-empowerment that is not related to coral reefs is that in Indonesia, while climbing on particular mountains, tourists often (unknowingly) offended locals in their behaviour, and were not respectful towards the sacred meaning of the particular mountain. So the locals and government worked together, to ban tourists from certain religious meaningful mountains. Now these mountain could only be visited for certain religious purposes by the local community. (Do you understand the definition now?)

Lets start with the interview now, it is important to keep in mind that this is a semi-structured interview, so if you have stories that you think are relevant for this research, please tell them!

00. Do you give your consent to record this interview, and let me use this tape for my research?

(press play on recorder)

00. Do you give your consent for mentioning your organisation in my thesis?

O1. Could you give a brief description of your organisation and your function within the organisation, and how this relates to coral reef conservation or eco-empowerment?

- O1.1. How much knowledge about marine conservation is present in the company?
- O1.2. Is there a part of the budget/profits/resources that goes to marine conservation?
- O1.3. How much should other stakeholders, such as the public, be involved in your companies vision?

O2. In your view how aware is the public now about the degradation of the coral reef and its consequences?

- O2.1. What does your organisation do to raise awareness? / How are you stimulating civilians to participate in marine conservation
- O2.2. How involved are citizens in coral conservation
- O2.3. On what points do you feel most engagement and when do you feel friction in collaborating with citizens?

O3. I just gave a definition of eco-empowerment

- O3.1. What is your view on this definition?
- O3.2. Do you (and your organisation) have certain ideas on how eco-empowerment could be reached for coral reef conservation in Curaçao?
- O3.3. Who is responsible for saving the coral reef? / Do you think your company is responsible for saving Curaçao's coral reef?
- O3.4. Do you have specific ideas about how the government should act in this process?

Is there something you would like to mention, that I have not asked, but could still be relevant to the topic?

Do you have suggestions for other persons/ organisations that I could interview?

If it turns out that I still have questions about this topic, are you available for follow up questions (via E-mail?)

Would you like a copy of the thesis when it has been finished?