



JÖNKÖPING UNIVERSITY

*School of Education and
Communication*

“Stop stealing our beaches”

A comparative study on how Mauritius and
the Seychelles are affected by and deal with
climate change and tourism.

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ABSTRACT

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Small Island Developing States are known to be extra sensitive to environmental changes due to their geographical location and characteristics and many are known as luxurious tourist destinations. This study explores how Mauritius and the Seychelles are affected by and deal with climate change and the negative impacts of tourism. The study connects to globalisation and sustainable tourism frameworks while analysing vulnerability and resilience in both countries, as well as how the countries work towards the 2030 Agenda for Sustainable Development. The method used is a mixed qualitative method with interviews and a text analysis of websites and official documents. The result indicates that both Mauritius and the Seychelles are highly vulnerable to climate change, especially in their coastal zones, which is further increased by tourism practices and development of tourism facilities. The study also highlights that both countries lack resilience to environmental changes. Both Mauritius and the Seychelles strive to work towards the 2030 Agenda, through policymaking on state level and through non-governmental organisations aligning their projects to the Sustainable Development Goals. The result also shows that there is a need to create a more sustainable tourism sector in each country to protect both the environment and the countries' economies. This study aims to be a contribution to the research field of Small Island Developing States and to increase the understanding of Mauritius and the Seychelles' particular characteristics and vulnerabilities.

Keywords: the 2030 Agenda for Sustainable Development, SDGs, SIDS, climate change, tourism, Mauritius, the Seychelles, vulnerability, resilience

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Table of Contents

1. INTRODUCTION	1
1.1 PURPOSE	1
1.2 RESEARCH QUESTIONS	2
1.3 CLARIFICATION OF MFS	2
1.4 LIMITATIONS	2
2. BACKGROUND	3
2.1 MAURITIUS	3
2.2 THE SEYCHELLES	4
2.3 THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT	5
3. METHODOLOGY	5
3.1 INTERVIEWS	6
3.2 TEXT ANALYSIS	8
3.3 TRUSTWORTHINESS OF THE STUDY	9
3.4 CONTRIBUTION TO THE FIELD	9
3.5 METHOD CRITICISM	9
3.6 CONCEPTS OF RELEVANCE FOR THIS STUDY	10
4. PREVIOUS RESEARCH	11
4.1 THEORETICAL FRAMEWORK	11
4.2 PREVIOUS RESEARCH ON SIDS	13
5. RESULTS	15
5.1 MAURITIUS	15
5.1.1 <i>Climate Change & Vulnerability</i>	16
5.1.2 <i>Resilience</i>	18
5.1.3 <i>Tourism</i>	20
5.1.4 <i>NGOs work with SDGs</i>	21
5.1.5 <i>Government's work with SDGs</i>	22
5.2 THE SEYCHELLES	24
5.2.1 <i>Climate Change & Vulnerability</i>	25
5.2.2 <i>Resilience</i>	27
5.2.3 <i>Tourism</i>	28
5.2.4 <i>NGOs work with SDGs</i>	30
5.2.5 <i>Government's work with SDGs</i>	31
6. ANALYSIS	32
6.1 VULNERABILITY AND RESILIENCE IN RELATION TO CLIMATE CHANGE AND TOURISM	33
6.1.1 <i>Vulnerability</i>	33
6.1.2 <i>Resilience</i>	35
6.2 THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT	37
6.2.1 <i>NGOs</i>	37
6.2.2 <i>Government</i>	38
6.3 WHAT NEW KNOWLEDGE CAN BE DRAWN FROM THIS STUDY?	39
7. CONCLUSION	41
7.1 RESEARCH QUESTIONS	41
7.2 FUTURE RESEARCH	42

REFERENCES.....	43
APPENDIX - INTERVIEW GUIDE	47

Abbreviations

BPOA: Barbados Programme of Action
CSR: Corporate Social Response
EMS: EcoMode Society
EPCO: Environmental Protection & Conservation Organisation
GDP: Gross Domestic Product
GEF: Global Environment Facility
GIF: Green Island Foundation
IISD: International Institute for Sustainable Development
IPCC: Intergovernmental Panel on Climate Change
MCSS: Marine Conservation Society Seychelles
MFS: Minor Field Studies
MSI: Mauritius Strategy of Implementation
MPA: Marine Protected Areas
NGO: Non-governmental organisation
OECD: Organisation for Economic Cooperation and Development
RIA: Regulatory Impact Assessment
SDG: Sustainable Development Goals
SIDS: Small Island Developing States
UNDP: United Nations Development Programme
UNWTO: United Nations World Tourism Organization

1. Introduction

Has your traveling ever had you ponder the environmental effects of the tourism you take part in? As a global phenomenon, tourism can take us to the most remote places and the smallest islands in our longing for warm climate and beautiful beaches. Mauritius and the Seychelles are two of the countries that live up to this dream, but is tourism to each country in fact sustainable so that this is true also for future generations? Mauritius and the Seychelles are both Small Island Developing States (SIDS), which is a group of countries extra vulnerable in the face of climate change. While SIDS are being studied to better understand their challenges and how to respond to them, researchers push for an enhanced understanding of SIDS environmental and social contexts, to make it possible to improve future adaptation and interventions for a sustainable future. This becomes especially important during the pace of the twenty-first century since climate changes have increased in island contexts and the need for effective and sustainable adaptation is urgent (Nunn & Kumar, 2017).

This study seeks to contribute to the research field of SIDS by analysing and comparing how Mauritius and the Seychelles are affected by and deal with climate change and tourism. This is studied by examining the countries' vulnerability and resilience, as well as how they work with the 2030 Agenda for Sustainable Development on a governmental level and by non-governmental organisations. The two main topics climate change and tourism are also discussed and analysed in the context of the globalisation theory. Researchers argue that every SIDS must be understood based on their own specific contexts because if we generalise all SIDS to having the same challenges, adaptation to climate change will not be effective. SIDS must therefore be understood through their local challenges and opportunities, to enable adaptation to environmental and climate changes (Petzold & Ratter, 2019). Because of this, we have chosen to study Mauritius and the Seychelles and their specific characteristics and vulnerabilities.

1.1 Purpose

The purpose of this study is to conduct a comparative analysis on how Mauritius and the Seychelles are affected by and deal with climate change and the negative impacts of tourism. The study focuses on analysing the two countries' vulnerability and resilience, and how they are adapting to challenges caused by climate change and tourism. The aim is also to analyse whether the countries' characteristics cause for more vulnerability or more resilience, studied in connection to previous research on SIDS. The study also examines how the two countries work with the 2030 Agenda for Sustainable Development and its Sustainable Development Goals [SDGs], on state level and through non-governmental organisations.

1.2 Research Questions

- What vulnerability and resilience can be identified in Mauritius and the Seychelles in regard to climate change and tourism?
- How do Mauritius and the Seychelles work towards the 2030 Agenda for Sustainable Development, on a state level and through non-governmental organisations?
- What new knowledge about the management of climate change and tourism impacts can be drawn from this study?

1.3 Clarification of MFS

Minor Field Studies (MFS) is a SIDA-funded scholarship program that provides the opportunity for field work in a developing country for at least eight consecutive weeks. Our study was initially to be conducted in Mauritius in March to May 2020. Due to the current situation in the world with the global pandemic Covid-19 our planned study could not be completed. The original plan was to use a qualitative approach with interviews to gather data for our analysis to gain a deeper understanding of the field. Because of Covid-19 we could not carry out all planned interviews for ethical reasons and instead we chose to combine fewer interviews with a text analysis, through reviewing scientific articles and official documents.

1.4 Limitations

As the purpose of the study had to be changed due to the inability to conduct field research in Mauritius at the moment, we still wished to remain within our subject as much as possible. To find enough data for this study, we made the decision to base our study on comparing two SIDS, instead of only analysing one. We decided to continue with Mauritius as one of the countries and expanded our study by including another SIDS in the Indian Ocean. The Indian Ocean has three other SIDS in addition to Mauritius. Since we had already gathered information on Mauritius' characteristics, our criteria for finding another island were similarities in location, the environment and dependency of tourism and imports. The island that we found most relevant based on the criteria above was the Seychelles. This limitation could be done through information searches on government websites and scientific databases on the three remaining SIDS.

This study aims to examine environmental issues and tourism through studying the work of different actors in the countries. We chose to limit our study to the work of non-governmental organisations and the governments. From an initial search on tourist and environmental activities in SIDS, we found that non-governmental organisations work towards sustainability in many SIDS and often function as a counterpart to the government, while the governments have the highest authority in deciding the development of each country. We therefore chose to study two actors in each country and how they work with sustainability. For our MFS, we already had a contact organisation in Mauritius, and we chose to find similar organisations in the Seychelles to be able to conduct interviews with representatives for both countries. The criteria for finding NGOs were that their main field of work is related to environmental issues and that they have ongoing projects in that field.

2. Background

In this section a background is given on each country and on the 2030 Agenda for Sustainable Development.

2.1 Mauritius

The Republic of Mauritius (from here referred to as Mauritius) is a Small Island Developing State in the Indian Ocean that became an independent republic in 1968¹. Mauritius, like many other small islands, is almost entirely surrounded by beaches, coral reefs, lagoons and has a coastline of 177 kilometres. The country is located on the tail of the Indian Ocean cyclone belt (UN Environment Programme, 2019). The country has low-lying coastal areas and the landscape consists of a plain in the north that rises to a central plateau, with mountains that vary from 270-730 meters above sea level. The island is also surrounded by coral reefs (The Commonwealth, 2020a). Mauritius is vulnerable to different climatic, biological and geological hazards, which are affecting people's livelihood in the country (UN environment Programme, 2019).

The Mauritian population is diverse as a result of colonialism with ethnic groups from Europe, Asia and Africa (The Swedish Institute of National Affairs, 2019). In 2018, the total Mauritian population was 1,265,000 (The World Bank, 2019a). According to the World Bank, Mauritius faces challenges in transitioning to a knowledge-based economy and also in adapting to climate change (The World Bank, 2019b). Mauritius faces environmental problems as a result of climate change, but the Government of Mauritius is committed to implementing the Sustainable Development Goals (SDGs) in order to reduce the environmental threats (COE, 2018).

Mauritius has seen many investments in areas such as agriculture, industry, infrastructure and tourism. Tourism especially has led to increased pressure on the environment and the island's resources. In addition, high consumption is also a contributing factor to the increased demand for water resources and to environmental degradation. Further problems for the coastal environment come from rapid tourism development and climate change which threatens biodiversity and marine ecosystems in the coastal zones. Marine practices, especially fishing, are major sources of nutrition and income for the population in Mauritius. However, the fishing industry has changed from a subsistence economy towards meeting the needs of the tourism and export market (Ministry of Finance and Economic Development, 2018, p. 83).

Mauritius has successfully diversified their economy from an agriculture-based to an economy based on tourism, manufacturing and financial services. The tourism sector has increased rapidly and is providing work and income for many of the islands' inhabitants (The Commonwealth, 2020b). The number of tourists that visit the island yearly has during the last couple of

¹ Some sections of this study have been taken from an essay also written by the authors of this thesis. The essay was for a preparatory bachelor thesis course, where the purpose was to write a PM about the planned field of study for the thesis.

years exceeded the number of local residents. This disproportion of tourists to locals, and the small size of the island, puts pressure on the carrying capacity of the island's resources and thereby the population's livelihoods (Ministry of Environment and Sustainable Development, 2011, p. 168). However, tourism is an important sector for economic and social development in the country, despite its environmental impact (Ministry of Finance and Economic Development, 2018, p. 83).

2.2 The Seychelles

The Republic of Seychelles (from now on referred to as the Seychelles) is a Small Island Developing State in the western Indian Ocean comprising of over 115 small islands, and with a population of 96,762 (The World Bank, 2019c). The Seychelles' population is thus far smaller than Mauritius' population, about a tenth of its size. The Seychelles became independent in 1976 and has developed from an agrarian-based economy into one based upon fisheries and tourism. Tourism is the main sector in the country and contributes to 26 % of the GDP and maintains 30 % of employment. The fishing industry is also very important and accounts for 8 % GDP (Government of Seychelles, 2012, p. 7). The country is a low-lying island located outside of the Indian Ocean's cyclone belt, with a coastline of 491 kilometres (The Commonwealth, 2020c). The Seychelles have limited access to flat coast land and the small mountainous topography of the populated granitic islands makes space highly limited for large-scale agriculture and industries (Martin, 2010, p. 5).

The Ministry of Environment, Energy and Climate Change in the Seychelles argues that the country is deeply threatened by the consequences of climate change. Specific threats on coastal livelihoods and ecosystems include increased sea temperatures, storm and tidal surges and sea-level rise which will result in coastal flooding (Ministry of Environment, Energy and Climate Change, 2020a). However, in contrast to Mauritius, the risk of cyclones is very low, with more than 50 years since the last event (Government of Seychelles, 2012, p. 6). Development in coastal zones and non-resilient ecosystems and populations make the islands vulnerable both economically and environmentally. The ministry also expects a negative impact on tourism to the islands, which further affects the economy (Ministry of Environment, Energy and Climate Change, 2020b).

Tourism in the Seychelles has increased the last decade and in 2017 the islands had about 350,000 tourists, a much larger number than the country's population (Ministry of Environment, Energy and Climate Change, Seychelles, 2019, p.1). The Ministry of Tourism has declared its mission to create a sustainable tourism sector in the country while also upholding good quality of the tourist experience but the number of tourists is expected to grow in the coming years (Ministry of Tourism, Civil Aviation, Ports and Marine, 2017).

As a result of extreme changes in ocean temperature, droughts and sea level rise, there has been a significant impact on the marine environment and fishing practices. Coral bleaching, changing fish stocks and coastal erosion have led to an increased stress in the Seychelles' marine ecosystem (Government of Seychelles, 2012, p.10). To combat this, the Government of Seychelles

and its ministries are dedicated to working towards sustainable development through policy and strategy making.

2.3 The 2030 Agenda for Sustainable Development

The 2030 Agenda for Sustainable Development consists of 17 interconnected Sustainable Development Goals [SDGs] and is an action plan for all countries to work in a global partnership. In 2015 all United Nations member states adopted these goals and today they act as the main foundation for all people on the planet, to progress with a shared plan for sustainable development. The goals aim to end poverty and at the same time work with strategies that improve health and education, economic growth and reduce inequalities, whilst undertaking action to deal with climate change and preservation of forests and oceans (Sustainable development goals knowledge platform, n.d, a).

For this study all 17 SDGs will not be highlighted and discussed. The goals that are of particular interest for this study and connected to our chosen topic are the goals concerning environmental sustainability and tourism. Therefore, the goals that will be discussed in this study are; Goal 8: Decent work and economic growth, Goal 12: Responsible consumption and production, Goal 13: Climate Action, Goal 14: Life below water and Goal 15: Life on land. Further goals of importance to the interviewed NGOs are also discussed to some extent, these are Goal 1: No poverty and Goal 17: Partnership for the goals. The goals are analysed in relation to our second research question, on NGO level and state level.

3. Methodology

For this study, a qualitative approach was chosen since the purpose is to gain a deeper understanding of the field. We chose a mixed qualitative method where we combined interviews on Skype with a text analysis, through reviewing websites and official documents. This method was chosen so that the empirical data would be sufficient to answer our research questions and contribute to a deeper knowledge in the field. The data collected from the mixed method was then studied through a thematic analysis.

The thematic analysis is a combination of a deductive and inductive analysis as the empirical data is analysed with predetermined themes, thus deductive, while the data also has led to new themes as the study had to be modified and the results are not to prove any pre-existing hypothesis but to contribute to the generation of new theory, thus inductive. Qualitative research is mostly associated with the inductive strategy where the purpose is to link data and theory together, which is also the case in this study (Bryman, 2016, p.23–24). The predetermined themes used to analyse the data were drawn from the research questions to delimit the study and are the following: climate change, vulnerability, resilience, Sustainable Development Goals and tourism. The countries are presented separately in the result section for clarity, but the main focus of the study and the analysis is to compare the two countries.

For this study, we chose to compare two similar countries. This decision was made because of an interest in analysing if the two countries work with sustainability in different ways despite having similar prerequisites, and if it is possible to see whether similar characteristics are causes for more vulnerability or more resilience. The two countries chosen for this study, Mauritius and the Seychelles, are both Small Island Developing States and are located in the Indian Ocean. They have similarities in geographical characteristics and economic aspects such as main sources of income and dependency on other countries. They are both dependent on the tourism industry as well as import of food products. However, they do have a difference in population, since Mauritius has about 10 times as many inhabitants as the Seychelles. There is also a difference in that the Seychelles consists of a large number of islands. These differences are considered by us to not have a vital role for the analysis of this study.

3.1 Interviews

Qualitative semi-structured interviews were chosen for this study in order to gain a deeper understanding of the countries, from its residents. We chose to interview non-governmental organisations as they, and their work, are the subject of our study. Four organisations were interviewed, two from each country.

Selection of informants

To find interview persons in the Seychelles and Mauritius while being in Sweden ourselves, we chose to use a purposive sampling with a snowball selection as we were assisted in finding interview persons by our contact organisation EPCO in Mauritius that we had for our MFS. Purposive sampling, according to Bryman (2016, p. 408), is a way of sampling when the goal is to gather participants strategically so that the sample is relevant to the research questions. Bryman (2016, p. 415) then argues that a snowball selection is one type of purposive sampling, often used when researchers are forced to gather information from any available source, or when networks are in focus. Three of the organisations were found through searches for non-governmental organisations in the two countries, and after a review of the websites we chose to contact those who work with sustainability either on land or in marine environments. The organisations were then contacted by email or via social media with a request to participate. One organisation was found with the help of EPCO, the first organisation we contacted and our contact organisation for MFS. They also helped us in receiving replies from the other organisations we contacted, by sending them emails on our behalf. We chose to use snowball sampling as the priority, due to changes in our original plan for research method, was to find organisations to interview and the only criterion was their field of work. Conducting the same number of interviews in both countries was also desirable to make the data material as even as possible. The interview persons are called informants in this study and are seen as sources of information while their personal opinions are also brought up.

In both Mauritius and the Seychelles, the chosen organisations had one informant that represented the organisation in the interview. In Mauritius two organisations were chosen, namely Environmental Protection & Conservation organisation (EPCO) and EcoMode Society (EMS). EPCO was represented by their Project Manager and EMS was represented by their President. In the Seychelles the chosen organisations were Green Island Foundation (GIF) and Marine

Conservation Society Seychelles (MCSS). GIF was represented by their General Manager and MCSS was represented by their Scientific Coordinator.

Interview guide

The purpose with the interviews was to gain information about the NGOs and the countries but also to hear the informants' thoughts and experiences of their work as a non-governmental organisation in the field of sustainability and environment as well as being residents in their respective country. The informants were offered to have the interview through Skype or email. Gladly, as it improves the experience of the interview and gave us the possibility to ask follow up questions, all four interviews could be held through video messages on Skype or Whatsapp. One of the informants, due to time limitations at first, answered the interview guide via email but was then able to have a Skype interview with follow up questions to the answers provided in the email.

The same interview guide was used in all interviews so that a comparison of the informant's answers could be made. We chose a semi-structured approach to be able to use follow up questions which created some variation in the interviews. This was a way to gather more information for a deeper analysis. The interviews on Skype and WhatsApp were recorded and transcribed. During transcription, humming words etcetera were not written down as it has no importance for this study. As the interview persons are informants, we are only interested in the information and opinions they provided and not the way they talk or present their information (Bryman, 2016, p. 479–481).

Bryman (2016) emphasises the importance of transcribing interviews, as it maintains the interview person's chosen words of expression. By transcribing frequently during the processes of interviews it can help the researchers to be more aware of different themes that show up and help the researcher to explore themes in next coming interviews (Bryman, 2016, p. 479–481). We transcribed after each interview so that we could review our interview guide and prepare potential follow up questions. The original interview guide stayed the same for all interviews except for an added question that we asked as a follow up question in the first interview.

Ethical considerations

Bryman (2016, p. 125–126) states that when conducting interviews, a few ethical considerations are necessary to have in mind. The interview persons gave consent to participate after being informed about that participation was voluntarily and that the result of the interviews was to be used for a bachelor's thesis. Confidentiality is another aspect to consider, and as the organisations are official and we refer to information published on their websites, we cannot anonymise the organisations. Our interview persons are representatives for these organisations and while their names are not written out, their titles are as their positions are considered to be of relevance. The interview persons are therefore not fully anonymous in this study. The information about participation was given to the informants by email when setting up the interview and once again before the interviews. In the beginning of the interviews, we ask if we were permitted to record the interview before starting with the interview questions. We received oral consent from all informants to participate and to let us use the material.

3.2 Text analysis

For the text analysis, the material used are mainly official documents and information found on the governments', and their ministries', websites. Material has also been found on the websites of actors with partnership to Mauritius and the Seychelles, such as the United Nations Development Programme. The material from governments, ministries and NGOs are viewed as primary sources since the information we present are opinions of studied actors and are analysed in the same way as the interview material. Material from other websites and actors used as supporting information are seen as secondary sources as we only use and analyse the information they present. Because of a limited amount of published information, all material that could be found on the topics of climate change and tourism in Mauritius and the Seychelles, and were considered relevant after a review of its credibility, were analysed thematically. In our study we have chosen to analyse our material from both the interviews and the text analysis through the predetermined themes mentioned above.

To find relevant sources and information on Mauritius and the Seychelles for the text analysis, we searched on ministries websites for published reports and with search words on Google. Some examples of search words are "report + Mauritius / Seychelles", "national report", as well as our chosen themes. The official documents and data presented by the organisations and governments that we used for the analysis were mainly found on their respective websites. Some reports and information on the countries were published on the United Nations and the World Bank's websites and were found through Google searches. When starting the selection of material for the text analysis, scientific articles were of interest as one source of information. However, through searches in databases we found previous research on the two countries specifically to be very limited and the decision was therefore taken to use only material from the relevant websites and official reports. Although, scientific articles are used in the presentation of previous research on SIDS in general. The material and documents used were, as mentioned above, collected with the predetermined themes in mind and also analysed thematically in a deductive way. The countries were first analysed individually linked to the themes and later compared.

Bryman (2016, p. 546) highlights four important criteria when assessing the quality of official documents as a source for data: authenticity, credibility, representativeness and meaning. The material used in this study is genuine as the origin is clearly stated and meaningful for this study as only relevant material was chosen. The material is representative as all material that relates to the chosen themes has been collected. Regarding credibility, because much of the used material is written by respective actor, such as ministries and organisations, there is a risk that the material is somewhat biased. This has been taken into consideration when reviewing and analysing the material. However, since the material is used as primary sources and we are interested in the opinions of the actors, the potential bias in the material are not seen as a problem for this study. The information presented in the study is referenced to clarify the actor behind the information, to highlight when the analysed data might be biased, and then contrasted with other sources to increase the credibility of the information we present.

3.3 Trustworthiness of the study

Instead of using reliability and validity when assessing a qualitative research, Bryman (2016) bring up two other criteria for reviewing the quality of a qualitative study: trustworthiness and authenticity. Trustworthiness comprises of four criteria: credibility, transferability, dependability and confirmability (Bryman, 2016, p. 385). Credibility can be reached by respondent validation and while this study did not have the time to send the gathered material to the participants for validation during the study, the participants did have the possibility to express their feelings about the interview within the frame of the semi-structured interview guide. Dependability refers to the process of documenting all steps of the research process which is done in the methodology section. The confirmability criterion refers to the need for transparency so that the study can be confirmed by others. We as authors have the intention to not let any personal opinions create a bias in the result of the study and to show all decisions taken in the process in a transparent way (Bryman, 2016, 383–386). The last criterion, transferability, is one way of creating external validity which can also be described as generalisability. Our purpose was not to conduct a study that was possible to generalise, instead the aim was to contribute to the field and fill knowledge gaps with our case study. Since we used predetermined themes when constructing our interview guide and when analysing our collected data for the result, this can increase the possibility to replicate our study (Bryman, 2016, p. 384).

3.4 Contribution to the field

The result of this study is aimed to be a contribution to the research field in the area of climate change and tourism, and particularly their effects on SIDS. It is also our intention that it will function as a case study in how two specific SIDS work with the Sustainable Development Goals, which could possibly be an inspiration for others. The aim is also to spread awareness of the impacts that tourism can have on small islands that are already vulnerable, and the relation between tourism and its impact on climate change.

3.5 Method criticism

The interviews are our main sources of data as they refer to all predetermined themes and as they are in-depth and resulted in much information that could be use in the analysis. The positive aspect with having interviews on Skype was that we could see the informants which led to a more relaxed interview where the informants could talk freely and openly. One negative aspect is that occasionally it was difficult to hear every word through the video calls which creates a risk for words being lost in the transcription. However, both authors were present in all interviews and listened to the audio recordings several times to make sure that this risk is minimised.

The material for each country is not fully equivalent as different countries publish different information. One major difference is the Voluntary National Review as it is highly relevant for this study but only published by one of the countries. This is highlighted and discussed in the Analysis section of this study. Since websites have been used as one source of information and they, in many cases, lack date of publication, some sources in this study lack dates but since

the websites are driven by official actors such as ministries, we assume that the websites are updated regularly. This was also checked before the information was used by looking at the relevance of the information on the sites, the years mentioned etcetera. Another important aspect to highlight regarding the sources of information is that there is a difference in the quality of the sources. While the informants present information on the current situation, causes and possible solutions, the government and their ministries present the countries' flaws and goals to be set but not much information about the actual current state in their reports. This difference is caused by that the sources have different purposes and the data is gathered through both interviews and text analysis, and also that the actors have different agendas. This is taken into consideration in the analysis.

3.6 Concepts of relevance for this study

Sustainable development

In this study, we use the definition from the Brundtland Report when referring to sustainable development, "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (IISD, n.d.).

Climate Change

The definition of climate change used by UN in United Nations Framework Convention on Climate Change, 1992, is used in this study: "Climate change means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods" (UN, 1992).

Tourism

In this study, we use the definition from UNWTO (World Tourism Organisation) that state tourism as: "a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes" (UNWTO, n.d, a).

Ecotourism

Ecotourism is "a means to conserve and manage biodiversity" (Chand et al., 2015). It can help to preserve the islands' ecosystems, which are often negatively affected by commercial mass tourism. Ecotourism can have the purpose to educate travellers or to provide funds for local communities or biodiversity conservation, and by that benefit small islands (Chand et al., 2015).

Livelihood

Livelihood is defined as "means of support or subsistence" (Merriam-Webster. n.d.). It is used in this study when referring to people's possibilities to support themselves and their families economically.

Vulnerability & Resilience

Vulnerability can be explained as lack of access to "economic, political, social, environmental and geographical assets" (Pelling & Uitto, 2001). This is deeply linked with resilience and is

increased when resilience decreases. Vatria et al. (2019) define resilience as “the ability of the community to deal with disturbances or changes that occur. A resilient community is a community that is able to respond to changes or pressures in a positive way” (Vatria et al., 2019). Pelling and Uitto (2001) extend the definition to include not only communities but also households, organisations, countries or even ecological systems. Vatria et al. (2019) argue that the difference between vulnerability and resilience is that vulnerability is one component of a society that will determine the level of resilience. Pelling and Uitto (2001) on the other hand, call resilience the reciprocal of vulnerability, showing that the two concepts are mutual rather than linked together.

Adaptation and Mitigation

Adaptation and Mitigation are the names of the different types of strategies used for addressing climate change and are both mentioned in this study. They differ in the way that mitigation addresses the causes of climate change and seeks to reduce them while adaptation processes focus on the impacts of climate change and how to adjust in response to them. Both are needed for dealing with climate change (Locatelli, 2011).

4. Previous research

This part consists of the theories and frameworks relevant for the field of this study and that are used in this paper. It also consists of previous research on SIDS in general, with scientific articles from databases as sources. This material is used in the analysis together with the results of this study.

4.1 Theoretical Framework

Globalisation

An overall theory in this study is globalisation as it has led to an increasingly interconnected world with interdependencies between countries. Globalisation has led to social, political and economic changes globally. The theory is debated in several disciplines as its effects can be seen as both positive and negative (Global Policy Forum, 2020). As globalisation has led to an intensified pattern of travel and movement of people, it is of relevance for this study as we examine the effects of tourism. The interconnectedness and increase in travelling and trade of goods have environmental effects due to the release of carbon dioxide, which is a cause for global warming (Carol McAusland, 2008). Climate change is a global phenomenon caused by many countries and affecting all. Globalisation therefore also has an environmental dimension to it as it has global consequences on the environment (NASA, 2020). Pelling and Uitto (2001) state that globalisation forces states to conform to new forms of economic organisation and transnational movements and that it should not be seen as a linear process but an emergence of new networks and exchanges. They also argue that small states face challenges in raising their profile internationally in order to attract foreign investment to increase economic resilience. In this study, globalisation is used in the analysis for a theoretical connection to our results.

General principles in international environmental law

A few of the general principles in international environmental law that comes from the Stockholm and Rio Declarations are also of interest for this study. Principle 21 in the Stockholm Declaration 1972 states that while states have sovereignty over their natural resources, they also have the responsibility to make sure that they do not cause transboundary harm. The polluter pays principle states that the actor responsible for causing pollution should also pay the costs for the pollution (Sands & Peel, 2012, p. 187, 228). How well these two principles are followed is studied when analysing how Mauritius and the Seychelles are affected by climate change in relation to the global Sustainable Development Goals. This is of interest since the general consensus is that climate change has been exacerbated mainly by the developed countries and SIDS pay the price by being the most affected (Jaffery, 2019).

Sustainable Tourism Framework

UNWTO has defined sustainable tourism as “tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities” (UNWTO, n.d, a). To create long-term sustainability, there is a need for a balance between the cultural, economic and environmental aspects of tourism. UNWTO further addresses three conditions for tourism to reach sustainability:

1. Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity.
2. Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to intercultural understanding and tolerance.
3. Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation. (UNWTO, n.d, a)

Tourism is part of the 2030 Agenda for Sustainable Development as it is mentioned in SDGs 8, 12 and 14. Tourism has great importance for the economy in SIDS, mainly the coastal and maritime related tourism. This is a reason for target 8.9: to devise implement policies to promote sustainable tourism that creates jobs and promotes local culture and products. Target 12.b sets a similar goal to develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products. Lastly, target 14.7 relates to SIDS specifically: By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism (Sustainable Development Goals Knowledge Platform, n.d, b).

Tourism's environmental impact

As a way to categorize the environmental impacts of tourism, Organization for Economic Cooperation and Development (OECD) created a model in 1980 of Environmental Impact Sequence targeted for tourism development on coastal areas. The model consists of four steps, where the first one is Stressor activities, that are “related to the initial acts of adverse environmental impacts such as permanent environmental restructuring, generation of waste residuals,

tourist activities”. The second is Environmental stresses, and third Environmental response, “the ability of environment to respond to those changes ranging from long-term or short-term, and direct or indirect”. The last step is Human response, “how various stakeholders and participants react to the environmental changes” (Mola, Shafaei & Mohamed, 2012).

4.2 Previous research on SIDS

SIDS and Climate Change

Small Island Developing States are a group of small islands around the world who all in some ways share characteristics with each other and face similar threats. The populations of SIDS are generally isolated, small, low-lying and dependent on natural resource-based livelihoods, with a strong connection to the ocean (Kelman, 2010). SIDS are known for their particular vulnerability in the face of climate change, being recognised as “hotspots” in literature. Warmer temperatures as a result of climate change lead to slow changes in the atmosphere which increase the probability of extreme weathers such as cyclones and hurricanes. Increased global temperature also has negative consequences for the oceans, where sea level rise, ocean warming and ocean acidification are impacts with immense effect on the islands (Petzold & Magnan, 2018). Acidification and ocean warming cause coral bleaching which affects fishing stocks negatively since about a quarter of all fish species live on coral reefs. Most SIDS depend heavily on fish as a source of protein and for economic importance. The maritime threats and changing ocean conditions threaten the livelihoods of those states and people that are dependent on marine resources because of reduction or alterations in fish stocks. Unsustainable and destructive practices can increase these threats further (Hay, 2013). Pelling and Uitto (2001) describe this by stating “the importance of national resource exploitation (agriculture, fisheries, tourism) to the economies of small islands means that climate change not only has a direct impact by increasing hazard risk but also an indirect impact through erosion of the economic base”.

SIDS are vulnerable to environmental changes because of their geographical isolation and exposure to threats (Hay, Forbes & Mimura, 2013). Kelman (2010) on the other hand argues that the smallness of SIDS’ population and land areas are not necessarily a disadvantage, but that they tend to be affected sooner by climate and environmental changes, and more severely than other locations. Pelling and Uitto (2001) present intrinsic vulnerability factors in SIDS caused by small size, remoteness, environmental factors such as large coastal zones, limited disaster mitigation capability, demographic factors such as population concentrated in coastal zones and lastly economic factors such as dependence on natural resources. The researchers state that vulnerability is “a product of access to economic political, social, environmental assets” and connects this with that the impact of globalisation on small islands needs to be considered (Pelling & Uitto, 2001).

Increased resilience is needed when facing the effects of climate change, but Pelling and Uitto (2001) argue that local effects are results of global processes and if they are only treated locally, we risk ignoring the deeper causes behind it. They mean that “this puts the burden of adjustment on the recipients rather than the producers of risk” (Pelling & Uitto, 2011). Local resilience is essential to limit the impacts of climate change, according to the researchers, but this will have

no effect if the root causes of climate change are not reduced, such as the large-scale use of fossil fuel globally.

Coral reefs

Many SIDS, including Mauritius and the Seychelles, have coral reefs as an important foundation for their marine ecosystems. Coral reefs have been shown through studies to be highly sensitive to increased sea temperatures, caused by climate change. Sato et al. (2020) states that with the warming of the oceans during the last decades, coral reefs in tropical regions have been largely impacted. This has triggered mass bleaching of the world's corals, specifically during three mass bleaching events in 1998, 2010 and 2016. The researchers describe that the reefs provide many ecosystem services, such as fish stocks, tourism activities and coastal protection. The study by Sato et al. (2020) examines the effects of the latest mass bleaching event in 2016 on major ecosystem services, two of them being fisheries production and recreational diving. All services that were studied showed a decrease after the event. The researchers argue that heating above normal levels and coral bleaching as a result can be representative of the impacts of climate change in the future (Sato et al., 2020).

SIDS Global Conferences

The first UN Global Conference on the Sustainable Development of SIDS was held in Barbados in 1994 and resulted in the Barbados Programme of Action (BPOA). The conference decided on a programme with priority areas and actions to address SIDS challenges. The Mauritius Conference in 2005 led to the adoption of the Mauritius Strategy (MSI), which is a further implementation of BPOA. SIDS had a difficulty in implementing the priority areas of BPOA due to limited financial means, and MSI's targets built on these areas while also implementing the Millennium Development Goals (MDGs). The third international conference on SIDS was held in Samoa in 2014, with the outcome of a Samoa Pathway document stating that the countries were in need of support and investment to achieve sustainable development. A SIDS Action Platform was developed to support implementation and partnerships (Sustainable Development Goals Knowledge Platform, n.d, c).

Tourism in SIDS

One important sector for many small island states that contributes to the economies and in many ways impact the livelihoods of local people is tourism. Especially tropical SIDS such as islands in the Caribbean, the Pacific and more recently also in the Indian Ocean, have a high dependency on tourism for their economic development (Chand et al., 2015). Current scientific literature show that tourism have both positive and negative effects on SIDS. While tourism has been shown to produce jobs and generate revenue, it can also have a negative social impact when it comes to culture, society and human rights (Kinseng et al., 2018). Kinseng et al. (2018) discuss the relationship between the growth of tourism and the impact on local communities. They could see a significant contribution to the country's economy but also to people's livelihood, while at the same time raising negative effects of tourism on societies and their cultures. The authors mean that tourism either can be a blessing or curse, but that it depends on the specific context and country.

Lasso and Dahles (2018) conclude, in accordance with Kinseng et al. (2018), that tourism development is regarded as an effective strategy for poverty reduction and sustainable livelihoods as it often triggers transformation in traditional livelihoods. However, Lasso and Dahles (2018) emphasise that while positive effects of tourism exist, they are positive only in a short timeframe. In a long-term perspective, which is important when studying sustainability, livelihoods based on tourism alone are vulnerable to many risks. This includes disruptions in politics, seasonality, consumer volatility etcetera, which can lead to poverty for the people dependent on tourism-based activities. They argue that the concept of sustainable tourism development is mostly approached from a tourism perspective and not on addressing the needs of local communities. They believe that the local development should steer tourism and not the other way around, as posed in previous research, since tourism may not be the right strategy for making local peoples' livelihoods sustainable (Lasso & Dahles, 2018).

5. Results

In this section, the collected material from interviews, information provided on NGOs' and governments' websites as well as official documents are presented. The material has been analysed and coded through the themes: climate change; SDGs & Agenda 2030; Vulnerability & Resilience and Tourism & Ecotourism. The findings are presented with one country at the time, divided into subcategories that respond to the themes. The NGO representatives that have been interviewed are presented under the first section of respective country, as the information from those interviews are presented throughout all the following sections.

5.1 Mauritius

Environmental Protection and Conservation Organisation (from now on referred to as EPCO) is an NGO in Mauritius. The organisation works with environmental awareness and action within the areas of climate change, solid waste management, freshwater ecosystem, marine ecosystem and participation in regional and international forums. They also work with poverty reduction by creating job opportunities (EPCO, 2020a). One example on a previous EPCO project is the CFLI Project in 2017, that aimed to empower poor communities to increase their resilience to the impact of climate change. Another project was a green job initiative and had the aim to make use of an invasive species of wood and at the same time create job opportunities for people in poverty. EPCO also work with educating communities on sustainability, scientific management through training and awareness programmes (EPCO, 2020b). EPCO mostly applies for funding internationally and not from the Mauritian government, but they also work directly with private companies. The interview with EPCO was conducted with their Project Manager.

EcoMode Society (referred to as EMS) is an NGO consisting of former master students in the areas of marine science. Their main work is in the fields of marine science and solid waste and resource management. The NGO works mostly with projects requested by their funding agen-

cies, which are mostly private companies, regarding various environmental issues. One example is assisting hotels in becoming more sustainable. They also have marine projects on coral farming. The president of the organisation and the informant in our interview also works as a senior lecturer at a university and has bachelor students who do projects on coral restoration and farming (President at EcoMode Society, May 6, 2020). The interview therefore brings up information and examples from both NGO level and the research field.

5.1.1 Climate Change & Vulnerability

United Nations Development Programme (UNDP) presents Mauritius as particularly vulnerable to consequences of climate change. They highlight that mainly the coastal zones are sensitive to threats such as accelerating sea level rise and increasing intensity of cyclones and rainfall. UNDP argues that this “will result in considerable economic loss, humanitarian stresses, and environmental degradation” (UNDP, 2020a).

Mauritius’ Ministry of Environment, Solid Waste Management and Climate Change (previously called Ministry of Environment and Sustainable development, and from here on referred to as only Ministry of Environment), describes in their Environmental Outlook Report 2011 that the principal areas of economic and environmental vulnerability to climate change are “tourism, agriculture, fisheries, health and freshwater”. They also highlight that the coastal zone also is vulnerable as it faces challenges with impacts on infrastructure such as buildings and roads, during environmental hazards (Ministry of Environment and Sustainable development, 2011, p. 138).

The Ministry of Environment lists projected impacts of climate change on their website where many builds on the already experienced impacts. Mentioned threats are; decreasing annual rainfall but increased heavy precipitation and flash floods; frequent heat waves and heat spills with a risk of heat related diseases and decrease in productivity in agriculture and livestock sectors; increase in extreme weathers such as cyclones, dry spells and tidal surges; higher water temperatures which increase the risk of vector-borne diseases and also causes changes in fish stocks and migration of fish species, mainly tuna, which affects the fishing industry; and lastly, corals are projected to be reduced by 80-100 % this century. The projected impacts show how different threats will lead to consequences and challenges in several different areas and for different sectors and industries. One example is increase in sea temperatures, which according to the ministry’s projection, will cause changes in the marine ecosystems, affecting the fisheries production which can lead to food insecurity for the population. This puts pressure on the economy and creates a bigger dependency on import of foods. The increase in diseases with higher temperatures also leads to a direct impact on population’s health (Ministry of Environment, Solid Waste Management and Climate Change, n.d, a).

On the topic of extreme weather events, the Ministry of Environment clarifies in the 2011 Report that the steady increase in sea surface temperatures increase the risk of stronger tropical cyclones developing in the Southwest Indian Ocean (IPCC, 2007, cited in Ministry of Envi-

ronment and Sustainable Development, 2011, p. 142). Since the 2000s, there has been an intensification of tropical storms in this region, even if Mauritius has not been directly hit by these (Ministry of Environment and Sustainable Development, 2011, p. 142).

Decrease in annual rainfall is a severe threat to Mauritius according to the Ministry of Environment since rainfall is the primary source of freshwater on the island. Increased frequency in droughts as a result of climate change might lead to water stress. Another issue is that the islands' groundwater reserves risk saltwater intrusion with sea level rise, which further decrease the total water supply (Ministry of Environment and Sustainable Development, 2011, p. 144). Apart from above-mentioned threats, the Voluntary National Review 2019 argues for the seriousness of sea level rise to low-lying areas in SIDS. Mauritius has experienced an accelerated rise according to the report, 5,6 mm per year which is almost twice the world average, which affect the coastal areas and local communities (Ministry of Foreign Affairs, Regional Integration and International Trade, 2019, p. 86–87).

Interview with EPCO

The project manager at EPCO explained that the most pressing environmental issue in Mauritius now is pollution, mainly pollution from waste. He said that the waste disposal system in the country consists of landfills that are quickly exceeding their capacities and the limited space on the island makes the current solid waste management a problem. The island does not have a functioning recycling system, according to the informant, which would be needed as an alternative to landfills. Another issue that was brought up in the interview was Mauritius' dependency on fossil fuels. While the government is working on renewable energy sources, wind and solar power, fossil fuel is still the main power source. The informant also explained that the island is vulnerable in the sense that it is small and surrounded by the ocean which makes the island's marine biodiversity an important resource. However, it is not taken care of properly, according to the informant, and he mentioned problems of overfishing, overexploitation of resources, destruction of coral reefs and harmful tourism activities. The project manager stated: "There's nothing in our lagoon now, everything is dead, the amount of fish is decreasing so people need to go more off lagoon to find it, which is more risky and more dangerous." (Project Manager at EPCO, April 17, 2020).

A cause for the mistreatment of the marine biodiversity according to the informant from EPCO is a lack of education and knowledge within the population. More knowledge on harmful marine practices is needed if the problems are to be resolved. The project manager explained that when they started working as an NGO, 30 years ago, many people in the general public did not understand what climate change was and what consequences it can have. This is still an issue today, he said. One event that did increase the understanding for the effects of climate change was a flash flood in 2008 with a deadly outcome. This was the first time a natural disaster like this happened in Mauritius, and when the second flash flood came a few years later people started to engage in learning the reasons behind the events (Project Manager at EPCO, April 17, 2020). Although the country has many challenges to work on, the informant has a positive view on future development and states that Mauritius is very advanced in comparison to other states in the Indian Ocean, giving Madagascar and the Comoros as examples.

Interview with EMS

The informant from EMS brought up the smallness of the island and how the size of the population and yearly number of tourists are very big for the island's size and capacity. He argued that this, together with facing climate change, is a major challenge for the country. The informant also brought up examples of climate change that he can see now, mentioning sea level rise, decrease in corals and flash floods. The flash floods in turn cause pollution in the waters, as "the sea doesn't pollute itself, so all pollution comes from land and end up in the sea", he explained. A major aspect of the country's vulnerability seems to be pollution and the effects it has on the island. The informant pointed out that because the island has limited space for waste and no functioning recycling, most of the waste ends up in the environment, both on land and in the sea (President at EcoMode Society, May 6, 2020).

Explaining the issue of pollution brought the informant to talk about the use of plastic in Mauritius. Even though the country has banned single use plastic, it still circulates and ends up as microplastic in the environment. The informant argues that the Covid-19 pandemic further increases this problem, since the usage of plastic has risen because of, for example, grocery stores putting every food item in a plastic wrap for protection against the virus. The informant believes that this will have a great effect on Mauritius in the long term, if the pandemic lingers for a long time (President at EcoMode Society, May 6, 2020).

On the topic of coral bleaching, which is of great interest and focus of work for the informant, he can see through monitoring corals and sea temperatures that the bleaching has become more severe in the latest years. The marine environment has also been affected by the rising tourism, he argued, because it entails more marine activities which disrupts the marine ecosystems, both the fish, smaller organisms and their behaviour. A final challenge mentioned in the interview is that they are "faced with limited research work", which makes it difficult to reverse and mitigate these threats (President at EcoMode Society, May 6, 2020).

5.1.2 Resilience

The Voluntary National Review 2019 refers to the 2018 World Risk Report when stating that Mauritius is among the countries most exposed to disaster risk, ranking 16th place. The report states that the effects of climate change are already visible with flash floods and changing patterns of precipitation and extreme weather events. Because of this, Mauritius has decided on initiatives to increase resilience and preparedness, where mitigation and adaptation measures are the focus areas in the investment. To increase the management of disaster risk reduction, the government has established a centre to deal with this issue and a response team that quickly can assist vulnerable communities (Ministry of Foreign Affairs, Regional Integration and International Trade, 2019, p. 86). Mauritius is also working together with UNDP in an initiative to increase the resilience to climate changes, targeted for communities and livelihoods in the vulnerable zones in Mauritius, called the Climate Change Adaptation Program (UNDP, 2020a).

In the Mauritius Environment Outlook Report 2011, the Ministry of Environment states that Mauritius “has justifiable concern about its future, especially with regard to its vulnerability to climate change and adaptive capacity” (Ministry of Environment and Sustainable Development, 2011, p. 143). This statement comes from meteorological observations, experiences with climate variability and extreme events, as well as projections of climate change impacts for the future. One extreme event that is given as an example in the report is the latest severe cyclone that Mauritius had, Dina in 2002, which led to major consequences for both the agricultural, industrial and tourism sector.

Interview with EPCO

When it comes to Mauritius’ resilience to environmental changes and hazards, specifically the perceived resilience from EPCO’s point of view, the informant explained that they are very vulnerable to climate change because of the geographical aspects, small island nation, and dependency on other countries, and that they as a result are not resilient to changes.

I would say Mauritius is, since we are a small island developing state, we are very vulnerable to climate change. Actually, we are just like other SIDS in the region, in Caribbean, the Pacific. We are very vulnerable because we are small, we are isolated, we have limited amount of land to produce resources, we depend a lot on imports. (Project Manager at EPCO, April 17, 2020)

The dependency on imports became extra apparent during the start of Covid-19, the informant from EPCO explained, when the prices on food items increased so much that people started to wish they could grow their own food at home. Mauritius also does not produce most of the fuel they use, which creates dependency on other countries for import. EPCO’s project manager concluded that their isolation and smallness have to be taken into consideration when planning development, and that it will take time for the country to become more prepared for different kinds of threats. There has been an increase in calamities that did not occur before, droughts, flooding, mini tornados and more cyclones. “We know the climate is changing for sure”, the project manager said. While the island has been spared from severe cyclones in the last 20 years, the project manager admitted that he cannot imagine what the consequences would be if a severe cyclone hit the island in today’s state. Since this has not been an issue for some years, it has been forgotten in planning and development which could have catastrophic consequences (Project Manager at EPCO, April 17, 2020).

Interview with EMS

On the question about resilience, the informant from EMS said that “there’s a lot of work that needs to be done. We are at a very base level.” Because of climate change, he said, there is a clash between economic development and environmental protection and conservation. “We tend to focus most on [the] economic aspect, but then the environmental side keep on degrading.” He later added that they have seen that harmful environmental practices also damage the economy, showing that these two in fact are interlinked and dependent on each other (President at EcoMode Society, May 6, 2020).

One problem for creating resilience in Mauritius according to the informant from EMS is that coastal areas in most places are filled with hotels and other infrastructure. He explained that the lack of coastal land left for environmental conservation reduces the country's resilience. The effect of coastal development has also showed itself in biodiversity changes such as turtles nesting. The informant explained that Mauritius used to have many turtles coming to nest but that this has changed, even if islands close to Mauritius, such as Réunion, still are nesting grounds. This is one example that was brought up in the interview on how the country needs to work on its policies regarding environmental protection, in order to create resilience to environmental challenges (President at EcoMode Society, May 6, 2020).

5.1.3 Tourism

The Ministry of Tourism in Mauritius has a vision to have “a leading and sustainable island destination” (Ministry of tourism, n.d). They want to include ecotourism amongst other forms of tourism to broaden the diversity of tourism on the island. One objective to reach the vision is to create awareness for why a sustainable development of the tourism sector is needed, and another is to support businesses and actors to become environmentally compliant. In order to achieve a sustainable island destination, the ministry aims to implement legislation to regulate the tourism sector and implement norms and guidelines for tourism activities (Ministry of Tourism, n.d).

In October 2019, the Ministry of Tourism published the Annual report on Performance for the financial year 2018/2019. The report showed that the tourism sector remains an important and growing sector for the Mauritian economy. The UNWTO have conducted a long-term forecast on the yearly increase of tourists in Mauritius. From the period 2010-2020 they estimated an increase of 3,8 % per year. From the annual report it is stated that tourist arrivals continue to increase steadily every year. In 2018 arrivals increased with 4,3 % to reach the number of 1,399,408 visitors that year. The report also indicates an increase in development of infrastructure such as hotels and resorts. From 1975 to 2018 the number of hotels expanded from 34 to 114 (Ministry of Tourism, 2019, p. 6, 26–27).

Interview with EPCO

The project manager from EPCO is concerned over the statistics and the total number of tourists that visit Mauritius every year, since it has increased rapidly the last decade. The informant brought up the question “Are we ready to accommodate these many tourists and at what cost are we sacrificing our resources, environment?”, and continued by saying that the increasing number of tourist arrivals every year will also increase the pressure to expand hotels, more restaurants etcetera which will lead to expanded development all over the island. This, he meant, will have an impact on the natural resources and the island's capacity to develop in a sustainable way. The rapid development of infrastructure and construction is, according to the informant, destroying local peoples' living space. The informant gave an example of an organisation working with this issue, who's name in Creole translates to “Stop stealing our beaches” which the informant agrees with is a big problem, since hotels and residents are building and occupying beaches with their resorts (Project Manager at EPCO, April 17, 2020).

The project manager from EPCO highlighted that there are still lots of opportunities for Mauritius to transform to a more sustainable tourism destination with less impact on the island's resources. The problem with developing into a more sustainable tourism destination, according to him, is that the government still focuses on the profit and is not enough concerned about the environment. The change towards moving into a more sustainable tourism will probably take time, but EPCO have already seen smaller changes. Greener options, like green hotels, are asked for by many tourists now and that will hopefully put pressure on resorts to build and act in a more sustainable way. The informant hopes that this will push development to meet these requirements. The project manager also stated that there is a need for the Ministry of Tourism to establish a section that focuses on sustainable tourism ideals for Mauritius, to encounter the social and the environmental parts of tourism as well (Project Manager at EPCO, April 17, 2020).

Interview with EMS

The informant from EMS explained that he saw both positive and negative effects of tourism, since the sector has greatly improved Mauritius' economy. He also stated that while tourism activities do affect the environment, these activities and also the tourist's behaviour have started to change, by giving an example of where tourists have taken part in coral nursing in one of the EMS' projects. A negative consequence of the increase in tourism that the informant emphasised is the rapid and unplanned development that has taken place in sensitive and coastal areas. This has left almost no space for environmental conservation purposes. The informant brought up wetlands as specifically sensitive areas where development in the area or even next to it pose a risk for the wetlands to be destroyed. He called for a need to further research the potential impacts of wetlands and also to implement research before construction of tourism facilities in new development policies. The informant ended the interview with saying "I say we need to put a full stop to new development in coastal areas. Because we have enough. We cannot develop more." (President at EcoMode Society, May 6, 2020).

5.1.4 NGOs work with SDGs

Interview with EPCO

The project manager described that the Government of Mauritius is trying to undertake all of the 17 SDGs but some of the goals do not correspond with Mauritius' priorities. For example, accessibility to food and water which can be connected to Goal 2: Zero hunger and Goal 6: Clean Water and Sanitation, are not problems that Mauritius are faced with and therefore there is no need to prioritise those goals, according to him. The project manager mentioned that there are more emerging issues that need to be prioritised, such as Goal 13: Climate Action and Goal 14: Life below water. The informant experiences that all 17 SDGs are well established in the government, the private sectors and in different NGOs, and that the different sectors have a shared commitment to work towards the SDGs (Project Manager at EPCO, April 17, 2020).

EPCO is an organisation working with many different projects in different areas, according to the informant. The first goal that he connected their work to is Goal 1: No poverty, since they work with poverty alleviations projects in different communities and use different innovative

ideas to create green jobs. Goal 4: Quality education is also linked to the organisation's work, as many projects aims to strengthen and educate communities in different topics. EPCO work mostly in the environmental field which connects them to Goal 13: Climate action, Goal 14: Life below water and Goal 15: Life on land. The project manager mentioned that many more goals can be connected to their priority areas and goals, since many goals are connected to and are affected by each other. Finally, Goal 17: Partnership for the goals are mentioned as an important aspect for EPCOs work, since they cooperate with different global partners (Project Manager at EPCO, April 17, 2020).

Interview with EMS

The president of EMS showed a positive view on the country's work with the SDGs in the interview, by saying that his personal view is that the goals can definitely be reached. However, he emphasised that it will take time, because there is a need for proper policies in some sectors, and a need to update already existing policies. The informant also argued for the importance of international collaboration to meet the goals, not only Goal 17 on partnership but also the other SDGs, especially now with Covid-19. While the informant admitted that some SDGs might not be reached fully, he has big hopes for the environmental goals because he has seen how well the EMS' projects have worked (President at EcoMode Society, May 6, 2020).

The SDGs that EMS work with according to the informant are Goals 13, 14 and 15, when it comes to the projects dealing with environmental and marine issues. The organisation has several marine projects on coral farming and restoration, while also working together with hotels and other private companies to make them more sustainable. The informant also mentioned that other members of the NGO work with solid waste, which also include Goal 12 on sustainable consumption (President at EcoMode Society, May 6, 2020).

5.1.5 Government's work with SDGs

The Ministry of Environment's vision is to:

achieve a cleaner, greener and safer Mauritius in a sustainable manner, through protection and management of our environmental assets, mainstreaming sustainable development principles in different sectors of the economy, solid and hazardous waste management, enhanced resilience to disasters, and conservation and rehabilitation of beaches. (Ministry of Environment, Solid Waste Management and Climate Change, n.d, b)

In their Voluntary National Review 2019, the Prime Minister of Mauritius states that they are working on implementing the SDGs and that the 2030 UN Agenda coincided with Mauritius' own development vision towards sustainability. The Prime Minister states in the report that while working to reach all goals, four of them are of special focus: Goal 1: no poverty, Goal 4: quality education, Goal 13: climate change and Goal 14: life below water, where the last one requires extra focus and collaboration to be reached. He also mentions that they have already achieved Goal 3: good health and Goal 17: partnerships. The government works with both the private sector and schools to engage businesses and youth in working towards the SDGs (Ministry of Foreign Affairs, Regional Integration and International Trade, 2019, p. 4, 6). The report also shows how national policies on different areas are aligned to SDGs. The policies regarding

sustainable development are aligned with Goals 6: Clean water, 7: Clean energy, 11: Sustainable cities, 13: Climate change and 15: Life on land. In the five target areas for Mauritius' Government Programme 2015-19, the economy, the nation, the people, democracy and quality of life, all SDGs are included (Ministry of Foreign Affairs, Regional Integration and International Trade, 2019, p. 13).

The Voluntary National Review 2019 mentions that a challenge with reaching SDG 13 is that Mauritius lacks the capacity and technology to address the impact of climate change. Mauritius is working towards becoming more resilient to climate change and they have therefore created an Early Warning System for incoming Storm and Tidal Surge, as well as a climate change refugee centre to increase the preparedness of the people in case of calamities. More research and development are needed for this, as well as for creating adaptation and mitigation measures (Ministry of Foreign Affairs, Regional Integration and International Trade, 2019, p.88–89).

The marine environment is of great importance for Mauritius' economy but faces degradation due to climate change as mentioned above. To reach SDG 14 Mauritius has set up a department for managing its maritime zones, a coordinating committee for marine spatial planning and established a system of Marine Protected Areas (MPAs). Challenges in working towards the SDG 14 are caused by lack of financial means to monitor all of Mauritius' marine area and also because of climate change effects on marine ecosystems (Ministry of Foreign Affairs, Regional Integration and International Trade, 2019, p. 92). Mauritius has also implemented a Native Terrestrial Biodiversity and National Parks Act 2015 to conserve the biodiversity and reach SDG 15. However, species and habitats are still sensitive to development and invasive species, and also climate change as it puts pressure on natural ecosystems. There is a need for more investments in restoration of biodiversity and habitats in order to create resilience to climate change (Ministry of Foreign Affairs, Regional Integration and International Trade, 2019, p. 96, 99).

The Voluntary National Review states that the tourism industry, which is of great economic importance, is adopting sustainable consumption and production practices in line with SDG 12. This includes a reduce-reuse-recycle concept for hotels, and a collaboration between hotels and NGOs to distribute leftover food to families in need or for production of biogas, to lower food wastage. The report also mentions that Mauritius is set to reach the Green Destination status by 2030, through the implementation of specific strategies for sustainable tourism development (Ministry of Foreign Affairs, Regional Integration and International Trade, 2019, p. 81–82).

The project manager from EPCO discussed governmental actions in relation to the country's resilience and explained that the flash floods led to a response by the government where they started working on drainage systems to mitigate the impacts of heavy rain. He said that in areas where construction of infrastructure has taken place with no consideration of avoiding water accumulation, there is a need to create drainages to avoid flooding and damage on buildings. This is one example on how climate change is getting anchored in all governmental decisions, the informant said. A national disaster committee has been created which activates when a calamity has been detected by people who monitor these events throughout the island. They

work together with a response team that helps people who are affected by the calamities, according to the informant (Project Manager at EPCO, April 17, 2020). The National Disaster Risk Reduction and Management Centre was established under the Ministry of Social Security and writes on their website that their mission is to coordinate risk reduction and planning for preparedness to risk for all levels in the country (National Disaster Risk Reduction and Management Centre, n.d).

The project manager from EPCO also brought up that the government are working towards two types of energy, solar panels and wind turbines. He described that this has contributed to that these greener options for energy is now easier and more accessible for small and medium enterprises. The informant also pointed out that the government is trying to connect all their projects to the SDGs. He said that “They want to go in the same line, the same direction, but of course when you look at those 17 SDGs it’s not all SDGs that’s a priority in Mauritius. We are focusing more on what are those priorities”. He continued with saying that SDGs are well established in the government and that all decisions made are being considered in accordance to the SDGs (Project Manager at EPCO, April 17, 2020).

5.2 The Seychelles

Marine Conservation Society Seychelles (from now on referred to as MCSS) is an NGO that is based and conducts their work in the Seychelles. The organisation consists of volunteers and a small group of permanent employees. MCSS dedicates their work to the conservation of the marine environment through research, education and implementation of different projects (MCSS, Website, 2020). The interview with MCSS was carried out with a representative that has the position as a Scientific Coordinator. The informant from MCSS described that most of their projects focus on coral reef restoration where the organisation tries to increase the diversity through different methods. MCSS also has close collaboration with various hotels and are operating with the hotels as a base where they provide ecotourism activities, like snorkelling tours to see coral reef restoration and tours showing marine biodiversity (Scientific Coordinator at MCSS, April 28, 2020). The projects are mostly funded by local businesses, associations and individuals (MCSS, Website, 2020).

Green Island Foundation (from now on referred to as GIF) is an NGO in the Seychelles that aims to promote the mainstreaming of sustainable development in private industries, mainly in the sectors of fisheries and tourism. The organisation aims to advocate for practices in industries that pose as little as possible stress on the environment and also seeks to bridge the gap between the private sector and national environmental programmes (Green Island Foundation, Website, n.d). The representative from GIF has the position as General Manager and explained that they work with habitat rehabilitation, species introduction and environmental management projects (General Manager at GIF, April 27, 2020). Many of GIFs projects are conducted in partnership with other organisations. One of GIF’s ongoing projects is called Marine Biodiversity Baseline Assessment Around Frigate Island, that aims to assess coral reef species and establish a long-term marine monitoring program on Frigate island and is linked to goal 14:

Life below water (Green Island Foundation, Facebook page, 2020). The organisation has projects funded by GEF (Global Environment Facility), a local new fund called Seychelles Conservation in Climate Change Trust and also from the Seychelles' CSR tax (Green Island Foundation, Website, 2020).

5.2.1 Climate Change & Vulnerability

The Seychelles' Ministry of Environment, Energy and Climate Change (from here on referred to as only Ministry of Environment) states that the Seychelles are “economically, culturally and environmentally vulnerable to the potential effects of climate change and associated extreme events” (Ministry of Environment, Energy and Climate Change, 2020, a). They emphasise on vulnerability characteristics such as development in the coastal zones and non-resilience in both the population and the country's ecosystems. The ministry expects that threats such as sea level rise, flooding, storm surges and increased temperatures in the waters will greatly impact coastal livelihoods, and also the important sector tourism (Ministry of Environment, Energy and Climate Change, 2020, a). Another issue brought up by the Adaptation Fund is that the Seychelles has big shifts in precipitation, leading to flooding in the wet season and drought in the dry season, an irregularity that is predicted to increase with climate change. They also emphasise that the water storage capacity is limited which leads to a dependency on rain for water supply (Adaptation fund, 2019).

Ministry of Environment published the report Seychelles' Coastal Management Plan 2019-2024 in 2019. The plan was created due to the Seychelles' dependency on its coastal zone for most of its development and infrastructure. The ministry emphasises in the report that most of the country's infrastructure is situated only 2–4 meters above the sea level, making it vulnerable to sea level rise in particular but also flooding events and coastal erosion. The report also highlights that the marine ecosystems, for example coral reefs and mangroves, are necessary to protect as they are a key factor in keeping the islands resilient to climate change hazards. The ministry emphasises that:

Continuous development in the coastal zone as well as climate change will further increase coastal flood and erosion risks in the decades ahead. The two major effects of climate change on coastal hazards and vulnerability in Seychelles are long-term sea level rise and tropical and extratropical storm surges. (Ministry of Environment, Energy and Climate Change, 2019, p. 1)

The report presents data over the monitored changes in sea level rise during the last decades, showing a rate of 5,6 to 6,6 millimetres between 1993 and 2011. The projection is that the sea level will rise with 0.6 meters by 2100, which is in the span of IPCC projections. This would result in the loss of 25–50 meters of coastal land. The report also discusses that there might be changes in the storm patterns in the cyclone belt in the Indian Ocean, which can lead to increased pressure on the coastal areas in forms of erosion and flooding (Ministry of Environment, Energy and Climate Change, 2019, p. 20).

Interview with MCSS

The informant from MCSS explains that the Seychelles has a rich biodiversity both on land and at sea. The islands have lush vegetation and biodiversity hotspots with many native and endemic species. The informant further explained that the islands have many natural and even protected areas, but since the islands have little land space, the rapid development of residential and tourism facilities encroach on the natural spaces. Other natural ecosystems that has been partly destroyed by development are wetlands, the informant stated. She explains how about 90 % of the original freshwater wetlands in the Seychelles have been drained in the last 200 years to make room for development of infrastructure and agriculture. Pollution was also mentioned in the interview when discussing challenges on land (Scientific Coordinator at MCSS, April 28, 2020).

The informant spent much of the interview talking about marine challenges, arguing that coral bleaching is one of the biggest problems for the Seychelles. The Seychelles was one of the most impacted countries in the 1998 coral bleaching event, with a large proportion of their corals bleached. The informant explained that the corals slowly started to recuperate but was again affected badly in the 2016 global bleaching event. The event “wiped out our corals”, the informant said. This has led to a bad state of the coral diversity in the Seychelles’ water, which have effects on both marine biodiversity and on tourism. The corals are one of the main tourist attractions but when exposed to bleaching, the corals lose their colour and die, which have an impact on the tourists’ experience and affects the industry (Scientific Coordinator at MCSS, April 28, 2020).

Another challenge connected to the marine environment that the informant from MCSS brought up is a current event of severe coastal erosion. She said that since December 2019, the islands have experienced severe storms and high tides, which have led to a quick erosion of the coastlines. On the question if this is a new phenomenon, the informant said that while storms and high tides happen occasionally and seasonally, this is the first time it has happened so fast and with such severe results. This has led to both the government and private actors such as hotel companies looking at ways to protect the coast, the informant mentioned hard engineering as an example of measures to take (Scientific Coordinator at MCSS, April 28, 2020).

Interview with GIF

The general manager of GIF explained that while the environment in the Seychelles is better than in many other islands, it is still in a bad state compared to 50 years ago. The main reasons being large alterations of the inhabited islands for agriculture and development. The manager also compared the Seychelles to Mauritius and argued that people in the conservation field in the Seychelles would agree that the environment in the Seychelles is much more intact and pristine, with less pollution. She then gave a few examples of the current environmental threats that the Seychelles is facing. Two of them are connected to biodiversity, invasive species as well as habitat destruction that leads to loss of critical habitats and as a result, loss of a number of species. Climate change was also brought up, the informant emphasised that it “is one of the greatest emerging challenges” (General Manager at GIF, April 27, 2020) that brings a number of threats and she mentioned specifically coral bleaching, higher temperatures, algae blooms

which all contributes to a loss of biodiversity. Pollution of land and at sea are also of concern for the islands. The higher water temperatures have led to coral bleaching, which was also brought up by MCSS, and the manager for GIF emphasised that about 90 % of the coral cover has been lost since the 1990s. Challenges caused by climate change in small islands is a never ending process, causing vulnerability and a difficulty in the work to protect the environment. The NGO is working with marine monitoring and have seen bleaching, algae blooming and other types of destruction on the marine environment (General Manager at GIF, April 27, 2020).

The general manager of GIF also emphasised that habitat destruction is a challenge. The coastal areas are home to many important habitats but are also the areas that can have infrastructure, which creates a conflict for available land between different actors and those wanting to protect and preserve it. The informant finished by saying that many do not see these threats as issues at the moment, since they are not severe problems yet. However, even if they are not visible now, they are emerging threats which will create challenges for the Seychelles (General Manager at GIF, April 27, 2020).

5.2.2 Resilience

The 2018 World Risk Report placed the Seychelles on 115th place in the list of countries with highest disaster risks, this indicates that they have a low risk for exposure and susceptibility (Bündnis Entwicklung Hilft and IFHV, 2018). The Ministry of Environment in the Seychelles writes on their website and in their Coastal Management Plan that its populations and ecosystems are non-resilient and highly sensitive to the effects of climate change. They argue that the country is vulnerable in all three aspects of development: socially, economically and environmentally. The ministry expects that the challenges that climate change poses will be a direct threat to the coastal livelihoods of the Seychelles. The ministry presents an implementation plan in its report with actions to increase the protection of coastal zones. The plan includes investments in infrastructure, monitoring and research. However, the ministry states that “this implementation plan does not secure coastal resilience for the decades ahead”, it only addresses the coastal issues up until 2024 (Ministry of Environment, Energy and Climate Change, 2019, p. 9, 46).

In the National Development Strategy 2019-2023, the Ministry of Finance explains that climate change impacts, such as droughts and flooding, are projected to increase to extreme levels, which may result in economic losses for many different sectors (Ministry of Finance, Trade, Investment and Economic Planning, 2019, p. 71). This statement indicates that the Seychelles are not currently resilient to the impacts that they are projected to face. The ministry emphasises that the country needs to take sustainability and resilience into consideration when planning all future work (Ministry of Finance, Trade, Investment and Economic Planning, 2019, p. 71).

Interview with MCSS

When asked about MCSS’s view on the country’s vulnerability and resilience to environmental changes, the informant said in a straightforward way, that no, the country is not resilient at all.

This is something that is understood across all sectors, from government to NGOs to the members of society, she stated. There is a general understanding that the Seychelles are very vulnerable to the impacts of climate change and according to the informant, they have already started to experience them. It was emphasised in the interview that the main pillars of the Seychelles' economy, tourism and fisheries, are both sensitive to climate change and reliant on that the ecosystems stay intact. She also mentioned that another aspect that increase the Seychelles' vulnerability is the development of buildings. This is mostly caused by the expanding tourism industry, both in general, as it takes up land, but also that they often are close to the coasts, exposed to hazards such as coastal erosions and high tides. However, the informant ended the discussion on resilience by saying that they are not resilient, "at least at this stage" (Scientific Coordinator at MCSS, April 28, 2020), opening up for a more positive outlook on the future.

Interview with GIF

According to the general manager of GIF, the country's "resilience to environmental changes is still in its infancy". She explained that the Seychelles are particularly susceptible to climate change impacts for several reasons, the main ones being that the infrastructure is mostly located on or close to the coasts, and degradation practices such as deforestation. According to the informant, out of the Seychelles' 115 islands, about 60 % are low lying islands. She highlighted that measures are being taken to increase the resilience. This includes coastal protection measures and hard engineering such as rock armouring², restoration of mangrove habitats and restoration of coral reefs, all functioning as protection of coasts against wave destruction. The informant explained that this is all part of an ecosystem-based adaptation approach to climate change impact that the Seychelles has taken. The plan is still in an early stage but is to ensure full resilience for the Seychelles within five to ten years. However, the informant argued that there are many uncertainties about coming challenges and more education is needed (General Manager at GIF, April 27, 2020).

5.2.3 Tourism

The Seychelles' tourism sector is one of the main pillars of the country's economy (Ministry of Tourism, Civil Aviation, Ports and Marine, 2018, p. 2). The report Seychelles' Coastal Management Plan 2019-2024 states the tourism sector has increased rapidly in the last decades, from 170,000 tourist arrivals in 2007 to 350,000 in 2017 (Ministry of Environment, Energy and Climate Change, 2019, p.1). The vision for the Ministry of Tourism in the Seychelles should continue the work for a sustained tourism growth, as well as development in the country (Ministry of Tourism, Civil Aviation, Ports and Marine, 2017).

The Ministry of Tourism in the Seychelles created in 2012 a Tourism Master Plan as a way to implement the country's new tourism vision. Part I of the plan was updated 2018 and functions as a framework for Part II of the plan called "Destination 2023: a strategy for sustainable tourism growth". The Master Plan presents the tourism sector in context of the country and globally and uses a global sustainable tourism framework where they connect their plan to the SDGs.

² Rock armouring is a process where large boulders are placed by the shoreline to break the sea waves and protect the coastline. <https://www.bbc.co.uk/bitesize/guides/z2234j6/revision/1>

The plan presents Goal 8: Decent work and economic growth and Goal 12: Responsible consumption and production as of specific relevance to sustainable development of the tourism industry (Ministry of Tourism, Civil Aviation, Ports and Marine, 2018, p. 13). The ministry describes in the report that sustainable tourism has the potential to protect the environment. It also highlights that tourism can have adverse impacts of the environment, stating the following as examples:

- Rising greenhouse emissions - especially from transportation and accommodation.
- Rising water consumption – that may lead to shortage of drinking water.
- Increased volume and poor management of waste and wastewater - including discharge of untreated sewage into the sea.
- Coastal erosion.
- Destruction of marine and terrestrial habitats and biodiversity – including damage to coral reefs, forests, mangroves and wetlands.
- Depletion of living species
- Increased conflict with local communities – including restrictions on access to private beach and nature trails trespassing private property.
- Threats to cultural integrity – arising from unplanned activities.

(Ministry of Tourism, Civil Aviation, Ports and Marine 2018, p. 40)

Interview with MCSS

On the topic of tourism, the informant from MCSS said that tourism will have an impact on the Seychelles' environment, since more people are sharing the same resources. Tourism is one of the main sectors for the Seychelles' economy, she said, which makes the country highly dependent on tourism. The informant described the Seychelles' tourism industry as exclusive because it is not affordable for the average tourist. She argued that there is not necessarily too many tourists visiting the island, but in terms of development the informant has seen an increased development in hotels and resorts often located close to the coast. The informant from MCSS has noticed, that with more establishment of resorts, the use of vehicles has also increased. This in turn has led to that the national charm, the simplistic kind of life that used to be one of the Seychelles' characteristics as a tourist destination, has started to fade away in favour of more modern facilities. MCSS as an organisation works with hotels and is also dependent on the tourism sector since many of its projects aim to sensitise tourists on their impact of the environment and how to make less of an impact (Scientific Coordinator at MCSS, April 28, 2020).

Interview with GIF

The informant from GIF also brought up tourism as an important pillar for the Seychelles' economy. She mentioned that the Seychelles has marketed itself as an expensive and luxury tourist destination, which the average tourist cannot afford. It has been the country's strategy to not expand into a mass tourism destination. In the last four to five years the informant has seen an increase in tourist arrivals, which can be connected to the shifted marketing strategy in the Seychelles. The informant mentioned that the marketing strategy has changed to reach more emerging markets, especially as many people are becoming richer in Asian countries. She also argued that tourism in the country is much based on the environment and in order to sustain tourism, the environment needs to be preserved (General Manager at GIF, April 27, 2020).

The informant also pointed out that there has been development in the last two to three years of the tourism infrastructure. She argued that the expansion of infrastructure and increased tourist arrivals need to be reconsidered, because the Seychelles has started to change and will not remain a pristine island if the development continues. The informant explained that it is important that the tourism operators work and consume in a sustainable way so that tourism does not impact the environment negatively. She highlighted that the Seychelles are at a cross-road, and that they need to be careful in how they proceed their work. She said that everything needs to be done in a holistic way, where the islands' carrying capacity is taken into account. Lastly, the informant said that the marketing strategy with the Seychelles as an affordable destination needs to be synchronized with the work Ministry of Environment is doing in terms of minimising the impact of the environment (General Manager at GIF, April 27, 2020).

5.2.4 NGOs work with SDGs

Interview with MCSS

The informant from MCSS said that as an organisation, and with their own projects, they do not necessarily align themselves with the SDGs. But they are also a part of a major national project that is developed with links to other NGOs in the Seychelles and are monitored by the Ministry of Environment. This project and other bigger projects they have taken part in are funded by the Global Environment Facility (GEF) and the Adaptation Fund which, the informant argued, indicates that their work in that perspective are connected and puts focus on the SDGs. The informant explained how MCSS mostly work in the field of marine environment and that a national report on the convention on biological diversity is in progress. The informant said that with certain targets, the Seychelles are quite far ahead, whilst other targets need to be worked on. One example she mentioned is; "...Seychelles has designated 30 % of its water as protected areas. So, we meet the target, which was only meant to be met in 2030, but we have now met that 2020 so we are 10 years ahead of that." (Scientific Coordinator at MCSS, April 28, 2020).

Interview with GIF

When planning new projects, the informant from GIF said that they put focus on the connection to the SDGs, mainly because they want to align their projects to fit in the government's overall policies and plans for the Seychelles. To be more specific, the informant mentioned the most urgent goals for them in their work and projects. The goals mentioned as important for the organisation, with her explanation of them, are:

Goal 12: Ensure sustainable consumption and production patterns; Goal 14: Conserve and sustainable use the oceans, seas and marine resources for sustainable development and Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. (General Manager at GIF, April 27, 2020)

The above-mentioned goals are linked to the two areas GIF focuses their work in, tourism and fisheries. The tourism and fisheries sector are the two main contributors to the Seychelles' economy, according to the informant. In the fisheries industry they aim to contribute to sustainable consumptions by giving the fishermen the education and resources needed to conduct fishing in a sustainable way. In the tourism area, GIF's focus is also on sustainable consumption and also on how to minimise the pressure on the environment that tourism creates. Therefore, the informant meant that it is especially important to sustain these two sectors as sustainably as possible. The organisation's motto is to mainstream sustainable development in the industries of fisheries and tourism, and that the industries they cooperate with include sustainable development as an important aspect of their everyday work. The organisation is also working with spreading information between the government and industries on what is happening on a national level, which progresses being made and how it fits into the Seychelles' national plan and the achievement of the SDGs, to bridge the gap between the different parties (General Manager at GIF, April 27, 2020).

5.2.5 Government's work with SDGs

The Ministry of Environment is responsible for ensuring; “the constitutional right of every person to live in and enjoy a clean, healthy and ecologically balanced environment, the provision of a reliable, affordable and safe water and energy supply and build resilience against climate change and disasters.” (Ministry of Environment, Energy and Climate Change, 2020, b). The Ministry undertakes to protect and preserve the environment, improve the public awareness and to invest in resilience measures.

The Tourism Master Plan aims to continue the economic and social benefits of tourism for the country's people, but also to take responsibility for an ethical tourism industry by promoting sustainable tourism practices. (Ministry of Tourism, Civil Aviation, Ports and Marine, n.d, p. 1). The Master Plan links three of the SDGs and their targets to tourism. These are SDGs 8, 12 and 14. Within these, target 8.9, 12.b and 14.7 are of extra relevance.

- Target 8.9: By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.
- Target 12.b: Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.
- Target 14.7: By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism

(Ministry of Tourism, Civil Aviation, Ports and Marine, 2018, p.13)

The Coastal Management Plan has the objective to “help maintain and protect the coastal zone to reduce coastal risk, support healthy ecosystems, and enable sustainable coastal economic development” (Ministry of Environment, Energy and Climate Change, 2019, p.2). The report also helps different implementation actors to identify their respective policies to aid the implementation of the plan. The plan however does not mention any specific SDGs, only that the plan will lead to an increased sustainability.

The Government of Seychelles has a 15-year vision “Towards a sustainable and inclusive future”, which will be implemented with three five-year strategies. The first one, National Development Strategy 2019-2023, consists of six pillars which stands for key areas in the country’s development. These are Good governance, People at the centre of development, Social cohesion, Innovative Economy, Economic transformation and Environmental sustainability and resilience (Ministry of Finance, Trade, Investment and Economic Planning, 2019, p. 19).

In the field of environment, climate change and inclusive development, UNDP supports the Government of the Seychelles to implement a strategic policy intervention. This programme, called UNDP country programme, will support investments in sustainable development in the Seychelles, while focusing on promoting inclusion of all sectors in the pursuit of working towards the SDGs. Through these investments, national actors, systems and institutions will continue to be strengthened through targeted policy intervention and translation of the goals of sustainable development at national level. Important principles for this program are partnerships and networks to implement and monitor national initiatives, to accelerate growth and secure development gains (UNDP, 2020b).

From the interview with GIF, the informant mentioned that in 2019, it was reported that the Seychelles has achieved four of the 17 SDGs in Agenda 2030. The stated goals that they have achieved are, SDG 1: No poverty, SDG 3: Good Health and Well-being, SDG 4: Quality Education and SDG 13: Climate Action. It was also stated that the Seychelles was on track for the remaining SDG (General Manager at GIF, April 27, 2020). This information was presented in a news article where the principal secretary at the Economic Planning Department, Elizabeth Agathine, was interviewed on the Seychelles’ progress with their Voluntary National Review. The review is to be presented at a UN forum in 2020, but a baseline report is needed to review which targets are relevant for the Seychelles (Seychelles News Agency, 2019). The informant from MCSS mentioned that the Voluntary National Review is being conducted by the government to estimate the country’s progress towards the Sustainable Development Goals (Scientific Coordinator at MCSS, April 28, 2020). Another thing that was brought up in the interview with GIF was that an RIA (Regulatory Impact Assessment) assessment was made in 2017, which is a tool that helps countries to work with the SDGs. This assessment was used to verify the mainstreaming of the SDGs in 20 of the Seychelles’ national documents. The result of this showed a high degree of mainstreaming of the SDGs in the Seychelles’ plans and policies (General Manager at GIF, April 27, 2020).

6. Analysis

In this section, we compare Mauritius and the Seychelles with the results found from our thematic analysis and analyse it in relation to our research questions. The analysis is also linked to the presented theories and previous research. This section is divided into three headlines based on the research questions.

6.1 Vulnerability and resilience in relation to climate change and tourism

6.1.1 Vulnerability

The results presented above from conducted interviews and related documents show a coherent image on that both Mauritius and the Seychelles show many vulnerability factors. All sources, both global and local, presented in the result state that the two countries are particularly vulnerable to consequences of climate change. The countries share vulnerability for several climate change impacts: sea level rise, extreme weather such as cyclones or storm surges, changes in rainfall patterns, drought and increased sea temperatures which affects biodiversity and cause coral bleaching. The results also show that these threats in turn have further consequences for the environment. The main consequence, mentioned by several sources, is a change in the marine ecosystem with a decrease in fish stocks which impacts people's livelihoods and the country's food security. Additional threats mentioned for Mauritius are flash floods and a risk for future heat waves, while in the Seychelles, coastal erosion was brought up as an emerging problem.

Since globalisation is a cause for climate change and the impacts of climate change is projected to have great effect on the two SIDS, we link the severe threats we can see in Mauritius and the Seychelles to the globalisation theory. Therefore, we argue that the impact on the environment is an important dimension to globalisation that is not as often discussed as, for example, the economic and political dimensions. The enabling of tourism as a result of globalisation has also, according to the informants and other data, changed the two countries at their core. As both are located in the Indian Ocean, isolated from other countries, there is a great distance to travel to them which causes more release of carbon dioxide and further exacerbate global warming and climate change.

Coral bleaching was highlighted as one visible result of increased sea temperatures in both countries, argued by the informants, which can be seen as example on how climate change leads to a vulnerability in many levels and sectors. Bleaching of coral reefs impacts the marine ecosystem, leading to a change in fish stocks and loss of biodiversity. Since fisheries is one of the main economic sectors in both countries, this could impact the countries' economies and fishermen's livelihood. We believe that this is the reason that several of the NGOs that we have interviewed focus on coral restoration or farming in their projects, as a way to protect the coral reefs from total bleaching and the consequences that coral bleaching cause.

A difference between the countries is that the Seychelles recently has been more affected by coastal erosion. This was explained as a potential future threat as late as 2019 in the Seychelles' Coastal Management Report (Ministry of Environment, Energy and Climate Change, 2019, p. 20). Seeing how this has impacted the coasts in the Seychelles since December 2019, according to the informant from MCSS, shows that it has quickly gone from a potential threat to being a reality. While the processes of different environmental threats, such as coastal erosion, are not studied here as it would have required a much more extensive research, two possible explanations for the difference in effects of erosion might be different wind patterns and surges in the

regions of the countries, because of the cyclone belt, and also that the Seychelles with its many islands has a coastline of almost three times the length of Mauritius' coasts. With more coastal areas on smaller islands, the country can also be more susceptible for coastal erosion.

One contributing factor for the countries' vulnerability that we can see from this study is the increased development of infrastructure in coastal areas. Both Mauritius and the Seychelles have had an increased number of tourist arrivals every year, which have led to extensive development of tourist facilities mainly in coastal areas. This has limited areas of natural habitats and increased the vulnerability of coastal zones. This is a clear indication that the countries' already existing vulnerability is increased by the expansion of the tourism sector. However, several informants explained that tourism is a positive thing in both countries, especially the Seychelles. They also emphasised the dependency on tourism for the countries' economies, which raises the question if tourism is only seen as positive because of its economic gain. Since the effects of tourism development on the environment were brought up in all interviews, we argue that from an environmental point of view, the existing tourism practices can only be seen as damaging. Apart from increasing vulnerability in coastal zones, the large number of tourists also put an extra pressure on the countries' resources. The results on tourism, especially the list of impacts of tourism on the environment stated in Seychelles' Tourism Master Plan, can also be connected to the previous research that stated that tourism have social and environmental implications despite its economic gain. Lasso and Dahles (2018) statement on that the positive effects of tourism are short-term while the negative effects are long-term, also correspond with our findings, especially the information received through the interviews.

The current tourism practices in Mauritius and the Seychelles do not live up to the UNWTO definition of what sustainable tourism is as they, according to the informants at least, do not take full account of their environmental impacts and address the needs of communities and the environment. The tourism in both countries can also be connected to the Environmental Impact Sequence model. Tourism, and especially the increased development of tourism facilities, can be connected to stressor activities which is the first step of the model. According to the model, this leads to environmental stresses which can be seen in the countries as the destruction of wetlands and habitats, disruption of marine ecosystems and development in coastal areas. The environmental response for the stresses, step three in the model, shows the effect that the stresses have on the environment which can be seen in Mauritius and the Seychelles as loss of biodiversity and increased vulnerability. The last step, human response, can be connected to the work of NGOs to protect and conserve the environment. The model was created in 1980 but shows its relevance even today with changed patterns of travel as it can still be used to explain tourism impacts in countries now.

The result also shows that there are a number of man-made threats that increase the environmental challenges and vulnerability in both Mauritius and the Seychelles. These are of interest in this study as they have effects on the countries and also the possibility to create sustainability. In Mauritius, pollution is brought up as a major issue because of poor waste management. As pollution can impact, from climate change, an already unstable biodiversity it can further reduce the country's adaptability to changes. Another issue is destruction of natural habitats for

development of infrastructure, as both countries experience loss of environmentally important ecosystem such as wetlands and coastal areas that some species, such as turtles, are dependent on. A third threat to the biodiversity, brought up by an informant from Mauritius, is the lack of education on the topic of environment. Harmful practices, especially marine, can lead to an overexploitation of resources and destruction of ecosystems.

The countries are in many ways facing similar impacts from climate change and we can see that they are both very vulnerable as the impacts have further environmental consequences. While the result of studying only two countries cannot lead to generalisations made for all SIDS, in this case we can see that SIDS in the Indian Ocean that have similar characteristics and dependencies also share vulnerability to the same threats. Mauritius and the Seychelles also share many of the characteristics that SIDS have in general that were presented in the previous research section, such as isolation, dependency on the ocean and natural resource-based livelihoods. The threats that both countries face also correlates with the articles presented by Petzold and Magnan (2018) and Pelling and Uitto (2001), among others, which indicates that what Mauritius and the Seychelles are experiencing, or might be in the future, are not unique only to them. This study thereby supports the previous research on SIDS while also increasing the knowledge on the two countries specifically.

6.1.2 Resilience

The 2018 World Risk Report's index over highest disaster risks, ranks Mauritius on the 16th place and the Seychelles on 115th place. This shows a significant difference in the two countries' exposure risk. While the report does not state the reason behind this ranking, the result of this study shows that Mauritius is more vulnerable in terms of cyclones than the Seychelles, seeing that Mauritius is within the Indian Ocean Cyclone Belt (UN Environment Programme, 2019). However, as the Seychelles' islands are considered to be low-lying, we believe that with future sea level rise and increased extreme weather even in that region, the Seychelles will likely rank higher on the disaster risk index in the future.

According to the informants from both Mauritius and the Seychelles, neither country is resilient to changes. In the Seychelles, where one stated that the Seychelles is not resilient at all and the other said that they still are in its infancy to environmental challenges, it is apparent that NGOs in the country consider the resilience to be very low. This is also agreed upon by the Seychelles' Ministry of Environment and they seem to see one step further on the effects of non-resilience, by arguing that this causes vulnerability in both social and economic development. In Mauritius, the informants argue that the characteristics of being a SIDS are the main reasons for why they are not resilient to changes in the environment. Mauritius was also mentioned to be at base level in its work towards resilience and that there is a clash between economic development and environmental protection. Our study therefore shows a bigger similarity between the two countries' resilience than what is presented by the 2018 World Risk Report. This can be explained by our qualitative study's focus on the perceived resilience by different actors, primarily expressed in a long-term perspective, rather than on the currently measured resilience that

the report presents. We can therefore identify a need for more research on the subject, to merge the perceived and the measured resilience.

The result shows different ways that the countries work to increase resilience and the two major themes seem to be hard engineering to set up coastal protection, and management plans. The first includes investments in protective infrastructure, drainage systems and restoration of natural protection such as coral reefs and mangroves. Investments in research, establishment of a Disaster Risk Reduction Centre in Mauritius as well as UNDP programs are examples of national strategies to increase resilience. This shows that work is conducted on several levels which we believe is needed for the countries to be resilient in more than one aspect. This also gives an indication that while the governments seem to have realised that they are not resilient now, they are taking measures to change that. The question is then if these measures are enough, depending on the intensity in the effects of climate change.

The projected economic effects from vulnerability and non-resilience in both countries make it evident that environmental threats and climate change can have large consequences for the countries. This should, according to the authors of this study, be an incentive to invest in measures to increase the resilience. While this might be costly, not doing so could require even more financial means in restoration of destroyed ecosystems, infrastructure and loss of livelihood. The need to invest in resilience is also expressed by the informant from EMS, who stated that the NGO has seen that harmful environmental practices have caused economic damage. However, a theme that we can see from the result of this study is that several actors, both NGOs and others, do not give any examples on how to attain resilience and what is needed. We consider this to be an indication to that the countries have not yet come too far in the process towards resilience. This can also make it difficult to invest in measures to increase it and to mitigate climate change effects.

The need for Mauritius and the Seychelles to pay the cost of climate change impacts, that they most likely have not contributed much to, shows that the environmental principle of polluter pays is not complied with globally. According to the principle, the countries that have caused climate change should be the ones to pay for its consequences. This has also been discussed by Pelling and Uitto (2001) as they stated that local effects are the results of global processes and that in the case of SIDS, the recipients have to adjust instead of the producer of risk. The projects funded by UNDP would however correspond to a higher degree with the polluter pays principle as developed countries stand for the largest funding (UNDP, 2020c). Nonetheless, as argued by Pelling and Uitto (2001), if the causes of climate change are not removed or reduced, local resilience will have little to no effect for the islands in a long-term perspective. Therefore, we argue that the work with adaptation to create resilience, locally or globally, always has to be done together with mitigation of the causes of climate change.

6.2 The 2030 Agenda for Sustainable Development

6.2.1 NGOs

All four NGOs believe that it is possible to reach the goals of the 2030 Agenda for Sustainable Development in each country, showing an optimistic view on the future of the countries' sustainability. In Mauritius as well as the Seychelles, all 17 SDGs are integrated in governmental policies but not prioritised according to the informants, this due to that some of the SDGs are of higher importance for the countries right now. There is a common view in both countries that there is a need to put extra work on the SDGs regarding the environment, such as Goal 13: Climate Action, Goal 14: Life Below Water and Goal 15: Life on Land. The result also showed that there is a difference in the work of the NGOs and how they connect projects to the goals. Some of the NGOs link their work with specific SDGs and targets when developing new projects, while one of the NGOs does not align themselves with any specific goals when creating new projects. However, we can see that even their work and the projects the informant mentioned has a visible connection to the SDGs. This is evident as they work on environmental protection and restoration that is part of SDGs 13,14 and 15. This is also true for the other NGOs, the SDGs they mentioned themselves in the interview are also reflected in the projects they discuss. One common theme for the three NGOs that do work specifically with the SDGs is that they seem to align the projects to, for them and the country, important SDGs, instead of creating projects based on them. We believe this approach can be linked to the type of partners and donors they have for projects and that their focus is to work with sustainability while reaching the SDGs is the responsibility of the governments.

A common theme in the NGOs work is that they work with projects that in some way promote sustainability in one local area or one local ecosystem, for example wetlands. Their focus seems to be to contribute to a sustainable future by small-scale projects that improve the environment, and in EPCOs' case, also for the communities. This analysis shows that the NGOs do not only work generally with the SDGs but that their projects correlates to specific targets within the different goals. For EPCO, their work with education in communities in different projects relates to target 13.3 on improving education and awareness-raising on climate change. All NGOs contribute to target 14.2 to sustainably manage and protect marine and coastal ecosystems, by strengthening their resilience, in their projects on marine ecosystems and biodiversity in general and on coral restoration. Target 14.A on increasing scientific knowledge can be linked to the research that MCSS and EMS conduct on coral reefs. Goal 15 is also of relevance to the three NGOs that work specifically towards the SDGs, where target 15.1 mentions wetlands which is worked on by MCSS, and target 15.8 to prevent invasive alien species has been a project conducted by EPCO.

A significant difference in the work of the NGOs is that the organisations in the Seychelles has a connection to the tourism sector, as they have partnerships with hotels that include sustainability projects and ecotourism activities. Target 12.B to develop tools for sustainable tourism, can be connected to both organisations in the Seychelles which shows an anchoring to the SDGs even in the work with tourism. The targets 8.9 and 14.7 cannot be distinctly connected

to the work of the NGOs since they relate more to the work on state level by focusing on implementing policies and management of the tourism sector. However, we can still see that the NGOs that are working with tourism have a focus on reaching sustainable practises, which can be connected to the 2030 Agenda in general.

Partnership is an important aspect for the NGOs when working towards the SDGs and sustainability, as many larger projects require funding from global actors and NGOs cooperating to reach the objectives. Several of the NGOs also mention that they have taken part in this type of projects. Partnership is therefore one way for the NGOs to reach the SDGs that they work with. This, and funding for projects, can have a great influence on the NGOs work as they are dependent on donors to exist. How the organisations receive funding differs and the interests of the donors could potentially influence the priority areas of the projects. While some informants said that they only accept the proposals that they see relevant and do the planning mostly themselves, we believe that there can be differences in intent of the donors depending on if it is a hotel, another private company or a global actor such as the Global Environment Facility.

6.2.2 Government

The text analysis on the governments' work with the SDGs was affected by a difference in the published material between the two countries, which is of relevance when analysing the results. It is especially the Voluntary National Review report that makes the available material uneven, as Mauritius has published its 2019 report while the Seychelles' report cannot be found and has likely not been published yet. As the Review functions as a report on the countries' work with the SDGs, we could present a coherent picture of the state that Mauritius is in. To find corresponding results for the Seychelles, we presented the national plans available regarding environment and tourism. However, when it comes to the information available from the governments in both countries, the reports and plans on development in different sectors address implementation but do not, in general, discuss the outcomes of these actions. This makes it difficult to analyse the results and effects of the governments' work with development strategies, with the SDGs and also with resilience. In order to be able to analyse the work of the government more in depth, there is a need to gain access to this information.

In Mauritius, Goal 3 on good health and Goal 17 on partnerships are considered to be already achieved while in Seychelles, SDGs 1, 3, 4 and 13 are considered to be met. Having already achieved some goals shows that both countries aspire to work towards the 2030 Agenda. Although, the facts behind the statements on SDGs achieved by Seychelles could not be found and the authors are critical to the notion that Goal 13 on climate change is met in the Seychelles as Target 13:1 is to strengthen resilience and adaptive capacity to climate-related hazards and natural disasters. As this study has found resilience to be a challenge in the country, argued by both governmental bodies and the NGOs, it is unclear to us why the country would have already achieved Goal 13 despite this. As the Voluntary National Review for 2019 is not published, this is a question for future research on the subject.

Mauritius stated in their Voluntary National Review that they are on track to meet the SDGs and while they work on reaching all goals, SDGs 1, 4, 13 and 14 are in focus. To find similar data on the Seychelles, the government's and ministries' action plans and strategies are used to find correlations of the work on SDGs. The country's 15-year vision presented six key areas for development which we connect to Goal 16 (to the key area good governance), Goals 3 and 4 (people at centre of development), Goals 1 and 5 (social cohesion), Goals 7, 9 and 14 (innovative economy), Goals 8, 9 and 17 (economic transformation) and Goals 13, 14 and 15 (environmental sustainability and resilience). This indicates a diverse approach by the Government in Seychelles to reach the 2030 Agenda, as they do not specifically focus on few goals but have created thematic key areas that connects to a majority of the goals. Mauritius established a similar approach with five target areas between 2015–2019 where all SDGs were connected to one or more targets. The countries therefore show a high mainstreaming of the SDGs. In the case of Seychelles, this is also confirmed by the informant from GIF.

The result found that the Ministries of Environment in Mauritius and the Seychelles show a similarity in how they present their vision and how they aim to work with environmental issues. Both highlight, for example, the need for protection of the environment and resilience to climate change and address this in a similar way. This shows that the ministries share a highly similar view on what needs to be worked on in each country. Both ministries have identified comparable vulnerabilities to their countries which can be linked to the islands facing similar challenges that need to be addressed to reach the 2030 Agenda for Sustainable Development. Also, the Ministries of Tourism in both countries present a similar idea on the need to create a sustainable tourism sector, while both have a more positive outlook on the current policies than what is shown by the informants from the NGOs.

6.3 What new knowledge can be drawn from this study?

This study had the aim to contribute to a better state of knowledge in the research on SIDS by looking at two similar countries through a case study on their respective challenges and vulnerabilities. What we can see is that Mauritius and the Seychelles show many similarities in vulnerability aspects because of climate change which pose similar threats for both countries. As these threats can be seen in other SIDS as discussed in previous research, we can draw the conclusion that Mauritius and the Seychelles are typical cases of SIDS as they also share geographical characteristics with other small islands. Therefore, as these two countries are not seen as odd cases of SIDS, the results of this study further confirm already existing research on SIDS when it comes to effects of climate change and tourism.

The topics of vulnerability and resilience and the Sustainable Development Goals have been analysed separately to create structure in the study, but by studying the countries' work with these we believe that there is a clear correlation between the topics. The work towards resilience is in many ways similar to some of the SDG targets, both on a governmental level and the work of NGOs. The countries' vulnerabilities are also affecting the ability to implement the SDGs, as they might hinder the creation of resilience and sustainability. Since the results showed that the main cause for vulnerability is climate change, reducing these threats are not

only the responsibility of the two countries but also a global obligation. The global character of the vulnerabilities, for example sea level rise, also pose difficulties for the countries to reach the SDGs that relate to these issues, as the countries themselves are not responsible for them. The negative effects of tourism however is in many ways caused by the countries themselves and therefore, the countries should have the ability to change the tourism sector into becoming more sustainable, in line with the SDGs.

A few aspects that have emerged from this study will be presented here as we argue that they are important for the two countries, and in an extension, to all SIDS with similar characteristics. Tourism seems to have the most effect on the countries through the development of tourist facilities and also, in Mauritius case, the high number of tourists which put pressure on the islands' resources. It is interesting to see that the informants had nothing negative to say about the tourism in particular but emphasise the poor development plans that have led to destruction of coastal areas and occupation of beaches from locals and biodiversity. The interview with an informant from GIF also raised the topic of the tourism sector's dependency on the protection of the environment, which shows the need for a change in tourism practices also from an economic point of view.

Another aspect brought up in the interviews connected to tourism development is that despite the realisation that the countries have to become more resilient and protect their environment, the economy still outweighs environmental sustainability. The global characteristics of tourism also put the countries on the map, despite their small size and small economies. The authors of this study believes that this could be another important benefit of their tourism sector, apart from the economic gain. As long as profit remains the main concern, the authors of this study believe that not enough focus will be put on adapting to climate change.

Since we can see that Mauritius and the Seychelles have similar characteristics, such as large coastal areas and dependency on its coral reefs and marine biodiversity, we argue that these characteristics therefore are a cause of more vulnerability, and that it is likely that other countries with these characteristics also share the same types of vulnerability. This is also supported by previous research on SIDS. The result also shows that the countries do not seem to have any intrinsic resilience factors and that they instead have to create resilience to the effects of climate change. This is also likely to be a major reason as to why the countries are as vulnerable to changes as they are. This study has examined the perceived vulnerability and resilience from the perspective of residents while also analysing this in relation to statements made by governments and ministries. This gives a general picture on the current state of Mauritius and the Seychelles and can be used as a starting point for further research.

7. Conclusion

7.1 Research questions

The aim of this study was to make a comparative analysis on how Mauritius and the Seychelles are affected by and deal with climate change and the negative impacts of tourism, as well as study how the two countries work with the Sustainable Development Goals.

What vulnerability and resilience can be identified in Mauritius and Seychelles in regard to climate change and tourism? This study has identified similar effects of climate change as threats for both Mauritius and the Seychelles, which shows that both countries are vulnerable to the effects of climate change. The threats they are facing are mainly affecting the marine environment and coastal areas. The result from the study also indicates that tourism, mainly development of tourism facilities, is one contributing factor that increases the vulnerability which we have connected to the theory of globalisation. The study therefore concludes that climate change leads to vulnerability in both countries which is further increased by tourism. Development in coastal areas together with the already existing environmental vulnerability factors aggravate the work towards resilience and currently both countries are in their infancies of creating resilience towards further impacts of climate change.

How do Mauritius and the Seychelles work towards the 2030 Agenda for Sustainable Development, on a state level and through non-governmental organisations? This study shows that while the governments in Mauritius and the Seychelles create plans and policies to reach the Sustainable Development Goals, NGOs in both countries work mostly with aligning their projects to the SDGs. This shows that working with the 2030 Agenda is mainstreamed in both levels but is conducted with different approaches to the SDGs. The environmental goals, 13, 14 and 15, are of specific importance for both countries and for all four NGOs, especially SDG 14 because of their dependency on marine resources. Creating a sustainable tourism sector is a mission in both countries as well, which we connect to SDGs 8 and 12. The result of the study also shows that the NGOs have partnerships with the private sector and global partners for their work towards sustainability.

What new knowledge about the management of climate change and tourism impacts can be drawn from this study? In this study we argue that Mauritius and the Seychelles show many similarities regarding vulnerability and resilience with other SIDS, and that their mutual characteristics can be seen as factors for vulnerability. We have also seen that there is a connection between environmental concerns and tourism mainly due to the environmental impacts of tourism-based development. This has also been shown to be the main concern of the NGOs regarding the impacts of tourism on both countries. The authors of this study argue that while tourism is not likely to be reduced because of its economic importance, there is a need to create a more sustainable tourism sector in order to protect the environment. As focus still lays on the economic aspect it is important to note that if the environment is not protected, future tourism is threatened.

7.2 Future research

Our study has given an insight into the impacts of climate change and tourism in two cases of Mauritius and the Seychelles. Due to the limited existing research on both countries, we believe that there is a need for further research on them in order to create a better understanding of them and their challenges. Based on our findings we can also see that there is a need for more research on SIDS to better understand their specific vulnerabilities and how to adapt and mitigate to the effects of climate change. As written in the introduction to this study, SIDS must be studied from their specific contexts so that adaption measures can be effective and that the countries' differences are not neglected. Our study is a small contribution to the field as it analyses the specific vulnerabilities in two SIDS and should be seen as studying this topic from the perspective of environmental NGOs. It would also be of interest to analyse this from the perspective of other stakeholders such as residents, private companies and on state-level.

As highlighted in the introduction of this study, the global characteristics of tourism pose challenges to the tourism destinations, maybe without the knowledge of the tourists travelling to these places. The authors, therefore, agree that there is a need to make the negative effects of tourism visible in order to make people more aware of the implications their travels, and how this industry can be made more sustainable. A further scientific development of ecotourism is therefore needed.

Throughout this study we have experienced a gap in research and policies on resilience. While the need for an increased resilience in SIDS is well discussed in research, we argue that how resilience is to be created is often not mentioned. Also, as discussed in the analysis, we can identify a need to merge perceived and measured resilience when studying long-term resilience to the effects of climate change. Therefore, we believe that there is a need for more research on resilience and how to protect small island livelihoods from future threats.

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Appendix - Interview guide

- Can you describe the current state of the country's environment on land and at sea, and its challenges?
- How does your organisation work with environmental issues?
- How does your organisation experience the country's resilience for environmental changes due to climate change?
- What is your view on the Sustainable Development Goals? Does your country have the prerequisites to reach them?
- Which goals do your organisation work with?
- How does your organisation plan new projects, in relation to the sustainability goals?
- How do you fund your projects?
- Has the increase in tourism affected the environment in your country? Has it led to any changes in your work?