Community Resilience and the Vulnerability to Climate Change in the Republic of Fiji

A qualitative field study on Mudu Village’s ability to recover from natural disasters

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“...Fiji is asking the world for drastic action on climate change - building resilience through adaptation and reducing greenhouse gas emissions so that climate change does not impose a limit to our development and the aspiration of our people to live on their own lands.”

(COP23 President and Fijian Prime Minister, 2017)
Abstract

The ability to recover from the effects of climate change among communities is acknowledged in previous research, where focus is laid on disaster recovery through adaptive capacities and resilience. The objective of this study was to investigate a rural community’s ability to cope with natural disasters in the aftermath of Severe Tropical Cyclone Winston, by using the case of Mudu Village in Koro Island, Fiji. The data was based on observations through an ethnographically inspired approach, as well as 20 semi-structured interviews with residents in Mudu Village and other relevant stakeholders. The study was based upon the characteristics of the concept of community resilience, which allowed for deeper understanding of disaster recovery and coping mechanisms among rural communities exposed to natural disasters. The result of the thesis has showed that disaster preparedness and social support systems within the community has increased due to the experience from past recovery processes. By using the concept of community resilience, it has further become clear that the dependence on natural resources has decreased the capacity to cope with and recover from natural disasters in Mudu Village, which thus constitutes the main hindrance to community resilience.

Keywords: Climate Change, Fiji, Resilience, Disaster Recovery, Adaptive Capacities
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1 Introduction

This thesis was written as an undergraduate thesis at the Peace and Development Programme at Linnaeus University in Växjö, Sweden, during the spring of 2018.

1.1 Context and Research Problem

Climate change is a world-wide issue caused by greenhouse gas emissions which has resulted in sea-level rise, extreme weather conditions and an increase in the frequency and strength of natural disasters. The effects of climate change are threatening the livelihoods and security of many (Vogler, 2014), where small island developing states (SIDS) are particularly vulnerable due to their coastal location and socio-economic constraints (UN-OHRLLC, 2011:2).

In February 2016, Fiji was struck by Severe Tropical Cyclone (TC) Winston, the strongest tropical cyclone to ever make landfall in the Southern Hemisphere and in Fijian history, which has led to large-scale consequences for the nation, and particularly for people living in rural areas. The cyclone has had a direct effect on rural livelihoods, where loss of houses and property and decreased income opportunities has hindered the enjoyment of fundamental human rights, such as the right to livelihood and security (Miyaji et.al, 2017:161-162).

Koro Island was one of the Fijian islands which suffered from heavy destruction and damage from TC Winston, with an average wind speed of 233 km/h (Esler, 2016:10). According to C. Dahl and E. Persson (2018:44), the majority of villages located in Koro Island is relatively self-sufficient and depend on locally cultivated crops as their main source of food. However, as agriculture generally is very sensitive to natural disasters and extreme weather conditions, heavy variations in weather and temperature have a high plausibility of affecting the food production systems negatively (IFAD - Investing in Rural People n.d.).

Former studies indicate that the Fijian government and international organizations have focused on humanitarian assistance, reconstruction efforts and resilience-building in the aftermath of TC Winston (Miyaji et.al, 2017:166 and Ministry of Economy at the Government of Fiji, 2017:). Resilience is based on the capacity of an individual or a community to cope with a stress or shock and proceed to develop after hazards (Stockholm Resilience Centre n.d.). The concept of community resilience further
builds upon the thought that a community possesses valuable capacities that contributes to robustness and adaptability when exposed to hazards (McAslan, 2010:5-6). Previous research conducted in Koro Island has mostly focused on household preparedness and evaluations of property damage (Dahl and Persson, 2018), whereas less research has been done on community resilience in communities exposed to natural disasters and climate change (Levine and Fan, 2012:3).

The research problem has been identified as the lack of research on community resilience in remote communities in Koro Island that possesses a high level of self-sufficiency, which may impact the capacity to cope with and recover from natural disasters.

1.2 Relevance

The impacts of climate change are a global concern and are felt in many place of the world. As the greenhouse gas emissions increases, the consequences of climate change are continuous, and estimates to worsen into an increasingly amount of severe storms, drought, flooding, and increased levels of human dislocation (Sinden, 2008:2). The impacts of climate change are shown to be particularly heavy in rural areas where people rely on agriculture and natural resources as their main source of income. Remote communities around the world has had no choice but to adapt to new circumstances and weather phenomena in order to continue their everyday lives (Hunter, 2007).

When discussing the issue of climate change and its effects on human systems, adaptation and resilience has been central. As stated in ‘Resilience: Conceptual Reflections’ by O. Jütersonke and M. Kartas (2012:3), the United Nations Development Programme (UNDP) argues that resilient communities has shown to be less vulnerable to external stress and shock, and has a higher ability to cope with natural disasters. This has led to the assumption that the concept of resilience may have the potential to reduce the need for humanitarian assistance, where communities with a high level of resilience may have higher ability to self-recovery (Levine and Fan, 2012:3).

This study can contribute to the understanding of the impact of climate change and post-disaster recovery on community level in SIDS. Furthermore, it can support non-governmental organizations and other national and international stakeholders in the process of assessing the needs of such communities in the aftermath of a natural disaster.
1.3 Research Objective

The objective of the thesis was to investigate community resilience and the ability to cope with natural disasters in Mudu Village in Koro Island, Fiji, by looking at the recovery process from Tropical Cyclone (TC) Winston in 2016. The study further aimed to assess the extensive amount of humanitarian assistance provided after TC Winston, and its impact on disaster preparedness in Mudu Village.

1.4 Research Questions

(i) To what degree has Mudu Village in Koro Island, Fiji, recovered from TC Winston in 2016?

(ii) Has the large amount of humanitarian assistance that was provided after the cyclone helped Mudu Village in Koro Island, Fiji to prepare for future disasters?

(iii) To what extent has Mudu Village in Koro Island, Fiji the capacity to cope with a natural disaster?

1.5 Methodological Framework

The methodological framework of the thesis was based on a qualitative field study which provided the thesis with in-depth knowledge of a certain phenomenon (Esaiasson et.al, 2017). The thesis was written through a case study approach in Mudu Village in Koro Island, Fiji. The method was based on 20 semi-structured interviews, with residents in Mudu Village and in order to triangulate the data, interviews were held with governmental and non-governmental stakeholders.

Further, as there is limited research on resilience in Koro Island, an in-depth research was crucial (Esaiasson et.al, 2017:262). Based on this, semi-structured interviews allowed for valuable knowledge and comprehensive awareness of the current state (Bryman, 2016:466). Ethical principles, such as informed consent and upholding confidentiality, were considered during the data collection and the coding process.

1.6 Analytical Framework

The analytical framework chosen for this thesis was the concept of community resilience, which served as a tool to increase the understanding of rural communities’ ability to recover from a stress or shock. The concept explains the ability to “bounce back” after disaster, stress or shock, and recognises transformability, adaptability and robustness as
important principles within communities. However, a common definition of resilience is absent within the global community, where several understandings of the concept can be found (Jütersonke & Kartas, 2012:1-2). The concept of resilience has thus been defined in the Analytical Framework.

Furthermore, the concept of resilience was used as a tool to examine the assumption that a high level of community resilience will ease the aftermath of crisis, and provide for important capacities that facilitates the recovery process (Levine and Fan, 2012:2). The concept was used as a framework to understand the extent of which such measures was needed in Fiji, Koro Island, after the TC Winston in 2016, and whether the community is resilient enough to cope with future disasters.

1.7 Disposition

The thesis has been divided into eight different chapters. Chapter two outlines the Methodological Framework and the method of the study, followed by the third chapter, Literature Review, which revises previous research and studies within the field. Chapter four presents the Analytical Framework of the study, which has been acknowledged as the concept of community resilience. Moreover, chapter five includes the Background which consists of an overview of the chosen topic. This is followed by chapter 6, which presents the Findings of the study. Chapter 7 comprises the Analysis, where the findings of the study are analyzed in regards to the research questions and the concept of community resilience. The final chapter presents a summary of the Conclusion of the thesis, and where considerations are given to potential further research within the field.
2 Methodological Framework

The methodological framework consists of the choice of methodology and method, the selection of participants, as well as the limitations and delimitations discovered during the process. The chapter concludes in explaining the sources and validity of the thesis, as well as an description of the ethical principles that has been considered when executing the field study.

2.1 Methodology

The research was conducted through a qualitative field study with the basis of investigating the capacity to cope with and recover from natural disasters. According to J. Creswell and J. Creswell (2018:4), a qualitative research methodology is useful when research is lacking within a specific field or when a new phenomenon or concept is to be explored. A qualitative approach allows for understanding and exploring the thoughts and opinions of individuals and groups of people, and where the respondent’s point of view is central (Corbin and Strauss, 2015:5). The method of the thesis was of abductive reasoning and aimed to explain Mudu Village’s ability to prepare for and cope with natural disasters, using the concept of community resilience (Ward, Vertue and Haig, 1999).

Further, the thesis has assumed an ethnographically inspired approach which allowed the researchers to collect information regarding certain activities, cultures and ceremonies of the respondents in their natural context (Aspers, 2011:136, 245). In accordance with A. Bryman (2016:377), ethnographic observations are suitable when the researcher aims to further the knowledge about a social setting and thus create a broader understanding of the respondent’s answers. The thesis also comprised an interview method that enabled the respondent’s to freely argue their opinions regarding the topic, but where the researchers had structured the areas of the interview (Aspers, 2011:143).

2.1.1 A Case Study through Field Work

The research was carried out through the methodology of a case study approach, in order to gain a comprehensive understanding of a certain phenomenon. A case study approach is most often used in order to gain in-depth knowledge about real-life situations in a certain context within a delimited area. Based on this, semi-structured interviews allowed
for valuable knowledge and comprehensive awareness of the current state (Yin, 2009:18), which may not be available through a desk study (Bryman, 2016:546-566).

The case study was conducted through a field study in Mudu Village in Koro Island, Fiji, which was based on the fact that Fiji is heavily impacted by climate change and natural disasters, and that Koro Island experienced severe damage from TC Winston in 2016 (Esler, 2016:19). Koro Island therefore seemed to be a beneficial choice when conducting a study aiming to investigate how community resilience influences disaster recovery and the ability to cope with natural disasters in the future.

2.2 Method

The main source of data was collected through 20 semi-structured interviews, where 17 interviews were conducted with local inhabitants of Mudu Village in Koro Island, Fiji. The researchers aimed to create a broad understanding of the issue of disaster recovery and community resilience, and in order to increase the validity of the thesis, two interview was carried out with the Climate Change and International Cooperation Division at the Fiji Government, and one interview was conducted with the Disaster Unit at the Fiji Red Cross Society.

The method was mainly chosen due to the open format of the semi-structured interview approach, which allowed for the understanding of a specific view of the respondent (Bryman, 2016:467). The interview-method provided the thesis with personal information of the respondent’s thoughts and feelings in the aftermath of TC Winston in 2016, and the humanitarian assistance that was received by external actors (Flick, 2009:150). The method gave the respondents the opportunity to develop their own thoughts and/or perspectives of the topic, regardless of that person being a local farmer or an employee at governmental institutions or NGOs working within the field (Bryman, 2016:467). Further, when conducting the study, it was of importance to direct the respondent to the particular topic without giving straight forward instructions of what to talk about (Gill et.al, 2008:291).

The interview questions were phrased in a way that enabled respondents to express their views of disaster recovery and preparedness for future disasters. By constructing such questions, information was accumulated in order to broaden the understanding of the aftermath of natural disasters, as well as community resilience and the knowledge and capacity of rural communities to recover from and adapt to new circumstances (Flick, 2009:151).
2.3 Selection of Participants

The majority of the respondents were residents in Mudu Village in Koro Island, Fiji and most of the respondents were found through local contacts in the community. However, the technique of snowball sampling was used to find additional participants. The snowball sampling technique provided the means for additional respondents through the dialogue with relevant participants in the selected area (Bryman, 2016:415).

The sample in Mudu Village consisted of eleven men and six women between the ages of 25 and 68, where the main occupations were farming and domestic work. All respondents except one were present in the village during TC Winston in 2016, and shared their experiences of the cyclone itself and the recovery process afterwards. However, the respondent who was absent during the cyclone, shared the experience of returning to Koro Island a few days after the cyclone as well as the protracted reconstruction of the village.

The interviews carried out with the Climate Change and International Cooperation Division at the Fiji Government was selected due to their knowledge in the post-disaster process after TC Winston. The interviews were conducted with two employees at the division that possessed valuable knowledge of the recovery from the cyclone, as well as the public awareness of the impact of climate change and natural disasters in general.

Lastly, the interview conducted with the Disaster Unit at Fiji Red Cross Society was a result of snowball sampling as the majority of the residents in Mudu Village mentioned Fiji Red Cross Society as one of the first organizations to arrive after the cyclone as well as the fact that they are still working in parts of Koro Island.

2.4 Limitations

One of the limitations identified was the issue of language barriers, which is further discussed in the section below. An additional limitation was the unwillingness of the respondents to answer questions or share any information needed to answer the research questions, which was solved by searching for alternative respondents. This resulted in the fact that 26 interviews were initiated in total, and where six of them were unusable due to insufficient answers and language barriers, as well as terminated interviews based on the wish of the respondent.

Another limitation was the inability of the researchers to travel to Koro Island according to schedule. The disturbance was due to Tropical Cyclone Keni, a
category 3 cyclone that hit Fiji during the intended stay in Mudu Village. This resulted in shorter amount of time spent in the village than originally planned, which limited the capacity of the researchers to conduct interviews in the targeted village due to time constraints.

2.4.1 Language Barriers and Perception of Questions

One limitation discovered during the interviews was the issue of language barriers. Language barriers were prevalent during the interviews, since uncertainties occurred when the researchers asked the questions. This was solved by repeating questions and changing the choice of word. An example of this was the phrase “humanitarian assistance”, which was unfamiliar to many of the respondents. The researcher thus changed the phrase to “aid” or “help”, which made it easier for the respondents to understand the question. Below is an example from Respondent 1.

Interviewee: And do you know what humanitarian assistance is?

   Respondent: Humanitarian?

Interviewee: Humanitarian assistance or aid?

   Respondent: Yeah, Red Cross eh?

   (R1, 13 April, 2018)

Further, another issue that arose was the personal perception of the questions that the researchers asked. The respondents sometimes perceived the questions differently from the researchers intention of the question which led to misunderstandings during the interviews as well as when the researchers compiled the findings.

Another error worth mentioning was the issue of follow-up questions, which occurred when the respondents had hardship in understanding what was asked. This led the researchers to ask leading questions and/or statements in order to confirm the answer of the respondent. In some cases, this led the respondent to answer “yes” or “no” to the follow-up question and/or statements without reflecting on the content of the question. However, in order to solve the issue, the researchers asked the respondent additional follow-up with “how come” or “why” in order to confirm what was said by the respondent.
2.4.2 Biases

The issue of biases and pre-existing assumptions has a risk of impacting the interview process due to underlying prejudice and personal values. Such biases may thus shape the way the researchers design the interview guide and how the questions are asked based on the expectation of a certain answer (Creswell and Miller, 2000:127). In order to limit biases, the researchers have informed themselves on the impact of biases, prejudice and personal values prior to the interviews and thus strived to uphold subjectivity.

2.5 Delimitations

In regards to the topic of the thesis, several discourses needed to be addressed. Underlying conditions of vulnerability, such as poverty, ethnicity and gender can be potential contributors to the ability of long-term recovery from natural disasters, and resilience among the communities located in Koro Island can thus vary. However, due to time constraints, the thesis focused on one community in Koro Island, and the data collected therefore represented the targeted village. The thesis has taken on a gender-sensitive approach and actively endeavoured to conduct interviews with both females and males living in Mudu Village. The field study has thus been delimited to Mudu Village in Koro Island, Fiji, and the conclusion of the thesis may not represent the country of Fiji as a whole or island nations in the South Pacific in general.

2.6 Sources and Validity

The thesis has used a variety of sources including primary sources such as interviews with residents in Mudu Village in Koro Island, Fiji as well as with stakeholders from governmental and non-governmental sectors. Additional primary sources include official documents such as the “Post-Disaster Needs Assessment”, a report published by the Fiji Government after TC Winston in 2016. Further, secondary sources were used in order to collect background information about the topic. Secondary sources were used in the form of books, webpages, articles etc, and have been collected through the Linnaeus University Library and One Search function.

In order to increase the credibility of the thesis, the collected information has been triangulated, which is seen as a measure of validity (Creswell and Miller, 2000:126). The importance of validity is reflected in the quality of the research, where
the measurements used for investigation must be accurate and trustworthy (Flick, 2009:483).

2.7 Ethical Considerations

The researchers have taken into consideration relevant ethical principles for qualitative research. The principle of informed consent has been acknowledged in order to ensure the respondents understanding of the study, as well as their role in it. Additionally, the respondents were informed of their right to withdraw from the study at any time during the interview, as well as up to the deadline of the thesis. Further, another principle that was taken into consideration during the field study was to avoid harm to participants, which was done by avoiding the creation of internal crisis and disrespectful actions. This was carried out in line with the ethical principle of respecting all respondents (Flick, 2014:54,57).

All respondents who participated in the study remained anonymous, where no concrete and personal information about the respondents was released to external actors or in the thesis. Furthermore, confidentiality was upheld through managing the data in a secure way, where no names or contact information was stored at the same place as recordings and transcriptions (Flick, 2014:57,59). When composing the thesis, it was further essential to understand that certain perceptions of the respondents could be reflected in the text, and thus, the importance of an objective mindset was central (Flick, 2014:58-59). The actions mentioned above served as precautions for the respondents when participating in the study.
3 Literature Review

The effects of climate change have been recognized by scholars around the world for over two decades, where SIDS are claimed to be particularly vulnerable (Barnett and Campbell, 2010:1). Wu Hongbo (n.d), the Conference Secretary-General of the Third International Conference on Small Island Developing States in 2014 acknowledges that SIDS are at risk of various natural disasters and climatic disturbances such as sea-level rise, tropical cyclones and heavy rainfall. According to Hongbo (n.d), the consequences of such weather phenomena can affect the adaptive capacities and livelihoods of the local population within these nations.

Climate change is not a recent issue in environmental policies, where the focus on environmental vulnerability has dominated the field for a long time, and scientific approaches to climatic variations has been targeted. The debate has previously neglected the acknowledgement of social aspects such as income, employment and food scarcity, which may affect local ability to cope with the consequences of climate change (Barnett and Campbell, 2010:1). During the last years, the importance to incorporate the social aspects in the debate of climate change, has been acknowledged. As evident in article 1.1 in the UNFCCC, the environmental aspects such as the ecosystems are not the only ones affected by climate change, and thus that socioeconomic aspects such as welfare and human health are significantly affected as well (United Nations, 1992).

As previously mentioned, recent research in Koro Island has acknowledged household preparedness for natural disasters (Dahl and Persson, 2018). Furthermore, the Fijian government published a report, ‘Post-Disaster Needs Assessment’ in May 2016, which concluded that Koro Island suffered from heavy consequences of the cyclone that included increased malnutrition among children and severe property damage (Esler, 2016:70). Previous studies within climate change affected areas has shown that adaptation is central (Pelling, 2011 and Smit & Wendel, 2006), and in Fiji, reducing vulnerability and increasing capabilities has been targeted through humanitarian assistance, resilience-building, aid and reconstruction (Esler, 2016). However, resilience has during the past years appeared to be a trending concept within disaster relief, and the UNDP recognizes resilience as important due to its ability to locally impact economic development and sustainable livelihoods (United Nations Development Programme, 2018). The definition of resilience has been contested by many scholars due to its wide terminology (McAslan, 2010:1), and has thus been clarified in the chapter of Analytical Framework.
Further, the general debate has, as mentioned above, during the last years focused on disaster recovery through adaptive capacities and resilience within communities. The researchers have therefore based the study of the principles of community resilience in order to test Mudu Village’s ability to cope and recovery from natural disaster.
4 Analytical Framework

The analytical framework is outlined below, followed by an explanation of the chosen definition. Furthermore, the operationalization of the concept of resilience is presented, where seven characteristics are defined.

4.1 The Concept of Resilience

The term resilience springs from the Latin word ‘resilire’, which translates to rebound or recoil, and was first used in academics in the year of 1818. The term ‘resilience’ is known all over the world and has since the last decade contributed to the design of several policies on governmental, institutional and academic level (McAslan, 2010:1-2). Resilience is today used within global issues and matters such as disaster relief, peacebuilding, sustainable development and humanitarian aid, and is closely associated with the steady and healthy development of a system (Folke et.al. 2002:437).

The common understanding of resilience is portrayed by the ability to ‘bounce back’ after a stress, defined as a slow outbreak, or a shock, defined as a rapid outbreak (IFRC, 2012:20). It is further recognized by robustness to withstand and resist the impacts of a stress or shock as well as adaptability and transformability to such events, and increases the chance of rehabilitation in order to return to ordinariness (Jüntesonke & Kartas, 2012:1-2). Resilience further contains values such as control, independence and creativity where the system has the capacity to cope with a stress or shock without changing the basic conditions of the system (Folke et.al 2002:438). In this perspective, the capacity comprises important tools for a system to cope with sudden as well as protracted hazards (IFRC, 2012:20). However, the character of the stress or shock can sometimes limit the possibility of a system to go back to its original shape. Further, a nation, community or an individual that has been affected by a disturbance, stress or shock may never go back to what it used to be, but can still show signs of resilience in terms of the ability to transform and adapt to the situation (Jüntesonke & Kartas, 2012:2).

When talking about resilience, there is a need to address the issue of vulnerability. According to Coppola (2015:33), vulnerability implicates the exposure of a system, object or entity to the effects of an attack or hazard. K. Magis (2010:404) argues that a community tends to become more vulnerable when exposed to such disruptions. In addition, geographic and natural phenomena may indicate if a system is prone to natural disasters, which may have a high plausibility of leading to vulnerability within the system.
(McAslan, 2010:5-6). A resilient system has, in such cases, the ability to take measures to cope with the stress or shock (Magis, 2010:404). Further, the concept of resilience builds on the idea that vulnerability is the opposing conception to resilience, meaning that a resilient system tends to be less exposed to vulnerability than a non-resilient system. A system that is exposed to social, economic and environmental vulnerability thus possess a lower chance to become resilient (Cutter et. al, 2008:601).

S. Levine and L. Fan (2012:3-4), argues that resilience decreases the need for humanitarian assistance and external recovery measures. This assumption is based on the idea that a resilient system has a higher probability to withstand the need for expensive recovery measures and humanitarian assistance due to its ability to transform and adapt to new circumstances. On the other hand, it has been acknowledged that short-term disaster relief may be crucial even for already resilient systems, such as a community, in order to maintain fundamental rights and resources such as access to food, water and shelter (IFRC, 2012:46).

4.2 Defining Resilience

Defining resilience has shown to be difficult as there are multiple definitions composed in different fields. Due to the flexible nature of resilience, the definition tends to depend on the scope of use, which leaves room for a concept customed to its purpose (Menkhaus, 2013:3).

The definition chosen for the analytical framework is featured by community resilience and its characteristics. Climate change and the increasing amount of natural disasters threatens the survival of communities in Fiji, which has led to the need for disaster preparedness but also for adaptive measures on community level (Esler, 2016:35). Thus, community resilience offers an understanding of everyday coping strategies on communal level, and capacity to cope with the impacts of natural disasters (Public Health Emergency, 2015).

The thesis has assumed the definition below:

“Community resilience is referred to as ‘the capacity or ability of a community to anticipate, prepare for and respond to, and recover quickly from impacts of disaster’, or ‘the ability of a system, community or society to resist, absorb, cope with and recover from the effects of hazard’.”

(IFRC, 2012:22).
The definition of community resilience is based upon the assumption that a certain community or village possesses valuable tools, resources and capacities to prepare for, withstand and recover from a stress or shock (IFRC, 2012:22). Furthermore, a community may not have the ability to control a shock or stress, however, has the capacity to reconstruct the community’s basic conditions in the aftermath of a stress or shock, and thus enhance community resilience (Berkes and Ross, 2013:13).

4.3 Operationalization of Community Resilience

The operationalization of community resilience is based on seven characteristics which mainly draws upon the outline of community resilience by A. McAslan, F. Norris et al and the International Federation of Red Cross and Red Crescent Societies. The components aims to operationalize community resilience in order to further understand and increase the knowledge of vital capacities in resilient communities. The characteristics chosen for the operationalization are stated below and are further developed in the next sub-chapter.

- Basic Needs
- Economic Capital
- Social Network
- Knowledge and External Connections
- Natural Resources
- Infrastructure
- Community Response

4.3.1 Basic Needs

The management and fulfillment of basic needs lay the foundation for community resilience as it is one of the most important components for the existence of a functioning community. The access to basic needs has shown to be of vital importance for community resilience, as it allows for an understanding of a community’s ability to provide for such needs. Basic needs has in this sense, been defined as primary sources such as the access to shelter, health, sanitation, food and water (IFRC, 2012:13).
In accordance with the International Federation of Red Cross and Red Crescent Societies (2012:13,26), a community which possess the capacity to provide and manage the access to food, water and medical supplies, is more likely to be resilient than a community without such capacity. Furthermore, the fulfillment of basic needs is acknowledged by the access and knowledge in first aid methods, the access to external or alternative food and water supplies, the ability to manage and cook food, and lastly, the internal provision of disaster relief items. Such capacities are recognized as of great importance in order for a community to increase resilience.

4.3.2 Economic Capital

In addition to basic needs, community resilience acknowledges the importance of a community's ability to control certain assets, covering a scope of both social, natural, political and financial capital (IFRC, 2012:13). Norris et. al (2007:136) further acknowledges the importance of economic development, incorporating economic growth, sustainable and stable livelihoods and the distribution of income among the residents. A resilient community has the capacity of providing its residents with employment opportunities. Further, human capital, such as skills, access to knowledge, information and education, and financial capital such as savings, investments and earnings has been outlined by McAslan (2010:6) as important indicators when measuring community resilience.

In addition, the capacity to provide for income opportunities is considered to be vital in a resilient community. This means that a community needs to be flexible and innovative enough to offer the population diverse opportunities of income, where the residents have access to alternative methods of income in case of a stress or shock. However, in cases where a community lacks the full capability of coping with a stress or shock, the need for proper access to resources from neighboring communities, governmental institutions or organizations may be of great importance (IFRC, 2012:13, 48).

4.3.3 Social Network

Another criterion which lay the foundation for community resilience is social network, and the synergy between individuals, households, groups and the surroundings. However, in order to understand such interactions and the effects it may have on a community, there is a need to acknowledge the importance of social support (McAslan, 2010:5). Social
support is identified as the relationship between households in rural villages providing for both emotional and material support (Rockenbauch & Sakdapolrak, 2017). This can further enable for collective values, the capacity and the determination to accommodate change, as well as improved knowledge and information (McAslan, 2010:5).

Norris et. al (2007:138) further stresses the function of social influence, which is set out as an important part of a resilient community. Social influence includes the facilitation of individual behavior in emergencies by seeking guidance from peers. Social networks may thus have the chance to reduce community vulnerability which emerges from the exposure to social, economic and environmental hazards, and increase community resilience by collective support and influence (McAslan, 2010:5).

4.3.4 Knowledge and External Connections

According to the International Federation of Red Cross and Red Crescent Societies (2012:40), a resilient community has the ability to access information and knowledge about potential hazards, preparation and recovery, and can use past experiences in order to cope with future disasters. Information has been acknowledged as a primary resource for the organizational system in a resilient community (Norris et.al, 2007). When talking about community resilience, knowledge can be divided into subcategories including skills, education, language and communication capacities as well as knowledge based on local customs. Furthermore, knowledge also includes awareness and training regarding potential hazards and survival techniques, basic first aid, health and sanitation methods (IFRC, 2012:39).

Moreover, an additional dimension to community resilience is the communication between the community and external actors. These include stakeholders like governments and their institutions as well as non-governmental organizations. Such communications and connections are vital in order to access external resources and services, which may be of particular importance for remote communities with restrained possibilities to independence and control. Independence, in this sense, points to the capability of a community to respond to a hazard by coping with internal available resources, and with limited need for external assistance. However, a community with insufficient internal resources may be in need of external assistance in order to have a better chance to cope with hazards. These resources may include health care services, schools and teaching facilities, as well as access to financial services and religious
organizations, as this may enhance coping mechanisms for a community (IFRC, 2012:13,17).

4.3.5 Natural Resources

According to the International Federation of Red Cross and Red Cross Societies (2012:49), community resilience incorporates a community’s access to and management of natural resources. Natural resources are defined by the OECD (2005) as natural assets that can function as income opportunity and/or can be used for consumption. In a rural community, natural resources may constitute the foundation for income opportunities. In this sense, a resilient community has a high plausibility to manage and maintain the natural resources that are available in the vicinity (IFRC, 2012:49).

In accordance with McAslan (2010:5-6), the capacity to maintain natural resources is of vital importance for remote communities with limited external connections and access to assistance. This is particularly so, as such communities may face difficulties in finding sufficient sources of income, which may leave them in a vulnerable position in terms of food security and income opportunities. Therefore, a non-resilient community that does not possess the capacity to make use of natural resources, may depend on alternative income and food production methods outside of the community (IFRC, 2012:13).

4.3.6 Infrastructure

Furthermore, the importance of infrastructure is highlighted by both McAslan (2010:5-6) and the International Federation of Red Cross and Red Crescent Societies (2012:47), as an important component for community resilience. Resilient infrastructure includes power and water systems, sanitation, roads, transportation opportunities, and housing. In this sense, a community is considered more vulnerable if infrastructure is lacking or if the community has difficulties to maintain these. Community resilience thus requires that the community possesses functioning infrastructure as well as the ability to manage them (McAslan, 2010:5).

4.3.7 Community Response

The importance of community response has been highlighted by several scholars, aiming to explain the relationship between the gathering of information, disaster preparedness and relief (IFRC, 2012, McAslan, 2010 and Flint & Luloff, 2005). A resilient community
has the capacity to gather and process information in order to make decisions thereafter (Norris et.al, 2007). Such information is considered important for community response, which is argued to be a vital component of community resilience (IFRC, 2012:52, McAslan, 2010:6).

C. Flint and A. Luloff (2005:406) has acknowledged that a community’s capacity to act determines the level of response in relation to hazards and disasters, as well as the efficiency of such response. Moreover, three influential elements have been identified where focus is laid on socioeconomic, physical and biological factors that may lead to vulnerability. Further, previous events and shared experiences can create a mutual understanding of risks, and lastly the article highlights the ability of local cooperation. As mentioned previously, community response builds upon an organized community where the ability to understand how and why disasters happen is present, as well as the communal capacity to cope with such disasters (IFRC, 2012:52).
5 Background

This chapter presents the background information about Small Island Developing States and the vulnerability to natural disasters. Further, general information about climate change in Fiji and the Tropical Cyclone Winston is followed. The chapter concludes in information regarding Koro Island and Mudu Village.

5.1 Small Island Developing States and Vulnerability

Small Island Developing States (SIDS) are defined as countries that possess a high level of vulnerability in social, environmental and economic terms (UN-OHRLLS, 2011:2). Further, SIDS are distinguished by their remoteness and coastal location, where the effects of climate change, such as rising sea level, coral bleaching and tropical storms and cyclones, are visible (Sustainable Development Knowledge Platform, n.d b).

The south pacific is located in the tropical latitudes, where the climate enables thermal energy and atmospheric interactions, leaving the area particularly vulnerable to climate variations. The nations in the pacific region are mainly surrounded by water, hence increasing the risk of being exposed to the impacts of climate change (U.S Fish and Wildlife Service, 2011). The capacity to adapt to climate change among SIDS has in general shown to be low, where socio-economic and cultural aspects have hindered the response to such consequences (Sustainable Development Knowledge Platform, n.d b). It has been stated that resilient communities is a crucial component to economic growth and sustainable development, as well as to communities’ ability to reduce their vulnerability to future natural disasters. Reducing vulnerabilities has thus shown to be vital in order to achieve resilient communities in SIDS (IFRC et.al, 2009:4).

According to the Sustainable Development Knowledge Platform (n.d b), climate change is a threat to the livelihoods of many people and can lead to devastating consequences for the poor and vulnerable. Furthermore, it is estimated that the most vulnerable groups, such as women, children and the elderly, will be the ones affected the most by climate change related problems.

5.2 Climate Change in Fiji

The Republic of Fiji, situated in the central South Pacific Ocean, consists of 300 islands with a population of 870 000 people. The islands of Fiji include volcanic islands and atolls which are vulnerable to various forms of natural disasters, such as tropical cyclones,
heavy rainfall, flooding and drought. It has been estimated that 1.7 million people in the Pacific region, including Fiji, are at risk of being displaced due to the consequences of climate change by 2050 (United Nations, 1992). According to the Fiji Government Online Portal (2015), three villages has already been relocated due to the impacts of climate change, and it has been estimated that in the coming five to ten years, 45 more villages are at risk of relocation.

According to the OECD (2018), Fiji is considered an upper middle income country, however, its vulnerable geographic location together with its dependence on the agriculture sector has concluded in the qualification of a SIDS (Sustainable Development Knowledge Platform, n.d b). Due to the high majority of people living in rural areas, where many has to base their livelihood on agriculture, a local food production system is crucial for creating food security and cash crops such as sugar cane, bananas, and forestry products. Scientific studies show that future effects of climate change in Fiji may include the loss of fertility in soil and protracted periods of drought and flooding due to increased precipitation, which may have a high plausibility of affecting the livelihoods of people relying on local agriculture (IFAD - Investing in Rural People n.d.).

5.3 Severe Tropical Cyclone Winston

In February 2016, Fiji was struck by TC Winston, a category 5 cyclone with wind gusts reaching up to 306 km/hour. TC Winston has been measured as the strongest tropical cyclone to make landfall in Fiji and the Southern Hemisphere, and has resulted in extensive damage and destruction in many places of the nation (Esler, 2016:10). It has been estimated that 62 percent of the population experienced damages and destruction as a direct cause of TC Winston, where up to 80 percent of the population lost power and communication systems. Further, the cyclone left approximately 40 000 people in need of need of humanitarian assistance, and 60 percent of the population suffered from the lack of proper livelihoods due to destruction of local agriculture and cash crops (Esler, 2016:10).

The cyclone has had great impact on the nation, and the loss of assets, production and goods has been estimated to the value of one fifth of the country’s GDP in 2014 (Esler, 2016:11).
5.4 Koro Island and Mudu Village

Koro Island is located 140 kilometers northeast of Viti Levu, in the Lomaiviti Group of islands. The island consists of 14 villages and in 2011, the population reached approximately 3800 (The Fiji Government Portal, 2011). There are two ways of commuting to the island. The first one is by ferry that leaves from Suva, Viti Levu, on Monday’s at 6 PM and arrives in Koro roughly 12 hours later. The ferry then leaves Koro at 6 PM on Tuesday’s and arrives in Suva the morning after. The second transportation option is by airplane, which leaves Suva on Monday mornings, and returns from Koro a few hours later.

*Indication pointing at Koro Island (Google, 2018).*

All villages in Koro Island are located on the coastal line, as the main part of the island is covered by mountainous terrain. A carrier as well as a school bus goes between the villages a few times every day, which enables for communication around the island. Services such as a health clinic and education facilities, including a primary, secondary and high school are located on the island.

Koro Island was heavily affected by TC Winston in 2016, with intense winds and storm surges. According to the United Nations Office for Coordination of Humanitarian Affairs (2016), Koro Island was considered to be ground zero of the cyclone, and the death toll on the island was estimated to nine people. Furthermore, the
Fiji Government states that 926 houses were completely destroyed in the cyclone, and that 66 houses were damaged (National Emergency Operation Center, 2016:5).

![Koro Island at the center of Severe Tropical Cyclone Winston (NASA, 2016).](image)

Mudu Village is located on the eastern side of Koro Island and is inhabited by approximately 200 people in roughly 60 households. The houses in the village are located in a rather small area, where many of the houses are built close together. The majority of the houses are made of sheet metal walls and roof, built upon either concrete foundation or wooden pillars. The houses consist of two till three rooms, where a flush toilet and running water is located outdoors. Meals are prepared on open fire or in a portable stove. The residents have access to electricity a few hours every night, which is powered through a generator.

The main occupations in the village are farming and domestic housework. The village has access to primary and secondary school in the neighboring village Nakodu whereas the high school is shared with all 14 villages. The religion that is practiced in the village is Methodism, but as the church was destroyed in the cyclone, the city hall now functions as the religious meeting point. TC Winston led to extensive damages in Mudu Village, as 100 percent of the houses were destroyed or damaged. Mudu Village did not experience any deaths as a direct cause of the cyclone, however, some of the residents did obtain minor cuts, scrapes and wounds during TC Winston.
6 Findings

The chapter comprises the findings from the conducted interviews with respondents in Mudu Village, with the Fiji Red Cross Society and the Climate Change and International Cooperation Division of the Fiji Government.

6.1 Respondents in Mudu Village

6.1.1 Awareness of Natural Disasters

The respondents in Mudu Village in Koro Island, Fiji have shown basic knowledge of the term “natural disasters”, where many mentioned tropical cyclone or hurricane as one of the natural disasters they have been affected by. Many of the respondents mentioned TC Winston during this stage of the interview, as this is the only category 5 cyclone to ever hit Koro Island. It was clear that the term “natural disaster” is strongly connected to TC Winston and tropical cyclones in general, by the respondents in Mudu Village. However, other respondents spontaneously mentioned additional natural disasters like flooding, drought and heavy rainfall. Moreover, when receiving questions that directly referred to such disasters, several respondents stated themselves as affected by one or more of these hazards (R5, 14 April, 2018).

Based on the answers from the respondents, it was clear that several would take on measures in order to cope with natural disasters such as heavy rainfalls, flooding and droughts. In accordance with Respondent 12, the measures that are taken during heavy rainfalls include protecting the house and windows by using window shutters (R12, 15 April 2018). Further, Respondent 13 stated that staying at home and preparing food is of importance for him during heavy rainfall and flooding (R13, 15 April, 2018). Respondent 7 and Respondent 9 stated that in case of flooding, they would take on measures such as relocating to higher grounds and delve holes in order to create water flow to the ocean (R7, 14 April, 2018 and R9, 15 April, 2018).

6.1.2 Income Opportunities

Several of the respondents felt that their income opportunities have been affected by natural disasters, which was due to disturbances in their possibilities to maintain their plantations. The researchers found it clear that several respondents had TC Winston in mind when answering the questions regarding the effects on their income opportunities,
as the cyclone led to severe damage on local plantations and crops. As mentioned previously, the main occupations in Mudu Village are mainly farming and domestic work, and the community relies heavily on the plantations as their main source of income. The respondents stated that natural disasters such as heavy rainfall or flooding, destroys the soil and crops, which lay the foundation for exports as well as personal food production. This is evident in the interview with Respondent 16, that stated the following:

“Yeah, the the resource, the source of our income yeah is mostly our land, we plant what we sell yeah, but when disaster come, climate come it affect our plantation and source of our income yeah?”

(R16, 15 April, 2018)

Furthermore, a few of the respondents mentioned that the material used for weaving mats was destroyed during TC Winston. According to Respondent 3, many of the females in the community were affected by the loss of crops as they used to export the mats to markets in Suva (R3, 14 April, 2018).

6.1.3 Coping after Severe Tropical Cyclone Winston

All 17 respondents except for one were present in Mudu Village during TC Winston in 2016. The respondents showed a common understanding of the fact that there was a tropical cyclone coming towards the direction of Koro Island as it was announced on the radio. However, several of the respondents stated that the strength of TC Winston took them by surprise and that the respondents therefore felt helpless and unprepared when TC Winston hit. This was due to the fact that none of the respondents had ever experienced a category 5 cyclone, and that Koro Island usually was spared from tropical cyclones of such strength (R14, 15 April, 2018).

“Ehh, we were not fully prepared at that time. We were expecting strong like that yeah, we were expecting 3 category, 4 category, but it was category 5, and we did not prepare for that category.”

(R16, 15 April, 2018)

However, some of the respondents prepared for the cyclone by collecting clothes, food and water when the winds started to increase, whereas others did not take any action apart
from staying indoors and relocate to safer grounds. Further, when receiving the questions regarding coping measures taken during the cyclone, several of the respondents answered that they stayed indoors. In accordance with Respondent 5, relocation was done upon the destruction of their home, as they felt that their lives were in danger (R5, 14 April, 2018). Many respondents stated that they relocated from house to house during the cyclone, since property and buildings were destroyed by the strong winds and the tidal waves (R17, 15 April, 2018).

“During the cyclone Winston, when we stayed in our house, it destroyed. We run from other house to other house. And I can say that eh all the things we got was destroyed.”

(R5, 14 April, 2018)

During the coding process, it became clear that there was a dissension in the opinion among the respondents regarding sufficient amount of food in the aftermath of the cyclone. According to several respondents, food was collected in the remaining of the plantations, but was also found in the debris of the local shops (R9, 14 April, 2018). When talking to one of the women in the community, she stated that she and her family had enough food to survive, although it was not a sufficient amount (R14, 15 April, 2018). One man shared that he collected fruits from the trees during the first four days after the cyclone, and thus perceived that his food was sufficient in order to survive (R10, 14 April, 2018).

Several respondents mentioned that finding shelter when the cyclone was over, was of great importance. Due to the fact that all of the houses in the community, except from three, were completely destroyed by the cyclone, the search for immediate shelter was of high priority for many. Some of the respondents stated that they stayed in one of the three houses that were unharmed together with a large amount of people (R6, 14 April, 2018), as others respondents declared that they built small shacks out of debris (R15, 15 April, 2018).

Furthermore, another respondent spoke of villagers working together when the cyclone was over, in order to try to make everyone feel better and safe. In addition, one respondent mentioned that in order to process the trauma of the cyclone, there has been a consultation program focusing on the mental health of the villagers, and according to him it was appreciated and helped many in the community (R16, 15 April, 2018).
6.1.4 Humanitarian Assistance

Koro Island received a large amount of humanitarian assistance after TC Winston. When asking the respondents how many days it took for the assistance to arrive, it became clear for the researchers that the respondents found it hard to estimate how long they had to cope by themselves, and answers varied between a time period of four days till one month. This led many villagers to secure their survival by collecting unharmed crops from the plantations. Several respondents stated that by the time the assistance arrived, they were in great need of some of the most fundamental human resources, such as food, clothes and proper shelter. According to many respondents, the main organizations and institutions that provided assistance in Mudu Village were Australian Aid, New Zealand Air Force, the Fiji Red Cross Society and the Fiji Government. In accordance with Respondent 7 and Respondent 8, these stakeholders provided aid such as clothes, food packages, first aid kits and tents (R7, 14 April, 2018 and R8, 15 April, 2018).

“The foods, the building materials, and everything to live the house, the... the shelter, the tents. Everything so that we can live and wait to time to build another house”

(R7, 14 April, 2018)

As evident above, Respondent 7 stated that the he received materials in order to build a temporary house from several of the organizations providing humanitarian assistance. Furthermore, it was clear that TC Winston left the respondents in need of proper housing as the majority of the houses in the community were destroyed. In accordance with Respondent 16, the government arrived in Koro Island and provided the villagers with a money voucher for materials that was aimed for the building of their new houses. However, Respondent 16 also pointed out that despite the fact that it has been more than two years since TC Winston, some of the families in Mudu Village still lives in tents (R16, 15 April, 2018).

In accordance with Respondent 10 and the observations of the researchers, the local primary-and secondary school were severely damaged in TC Winston. At the current state, the children attend a temporary school which is located in the same vicinity. Respondent 10 stated that due to the protracted construction of the education facility, the
children experienced loud noises and disruptions in their learning, which has caused frustration among families in Mudu Village (R10, 15 April, 2018).

6.1.5 Disaster Relief and Preparedness

Several respondents mentioned that they felt like they had control over the situation after TC Winston. One respondent claimed that this was particularly so because of the solidarity among villagers in the community and “because all the people in the village they control building houses together for us to live in” (R17, 15 April, 2018). Other respondents mentioned that they had control because they felt like they knew what to do in order to cope with the destruction by the cyclone (R5, 14 April, 2018), whereas others claimed to have felt helpless and scared rather than in control of the situation (R2, 13 April, 2018).

When asking about the standard of living two years after TC Winston, respondent 12 claimed to have the same standard of living now as she had before the cyclone and that little had changed since then in terms of her household (R12, 15 April, 2018). However, many respondents stated that they used to have a larger house, including bathroom, kitchen and bedroom and that their current houses are smaller (R17, 15 April, 2018). One respondent stated the following:

"Ahh, first time we got a big house yeah and bathroom, toilet inside and from before Winston and nowadays, we got no other things like that, only a plain house, no, no what’s that, no bathroom inside, no toilet inside.”

(R17, 15 April, 2018)

It is contended that TC Winston affected all respondents in one way or another and several have stated that their standard of living is different now compared to before the cyclone. Some respondents mentioned the negative impact the cyclone has had on their lives such as the difficulties to plant and grow crops. One respondent claimed that the diversity of crops has decreased after TC Winston and that it has affected his income opportunities negatively (R1, 13 April, 2018). This was also supported by Respondent 10, who claimed that he could sell several crops to the mainland in order to gain income, however, that the community now has to depend on a few crops as their main source of income (R10, 15 April, 2018). However, some respondents stated that they have achieved the same level of crops, or even a higher amount, than before the cyclone. (R13, 15 April, 2018).
Even though several respondents considered themselves to have poorer standard of living after the cyclone, many claimed to have better life now. According to Respondent 5, her life has changed after the cyclone due to the fact that she felt the need to make changes within herself. She further states that this was a positive transformation and that her life is better now, something that was mentioned by several respondents. Many respondents connected this to their religion, Christian Methodists, and that the church has been an important component to the personal recovery process of respondents as many believed that the cyclone hit Koro Island as a result of sinful acts among the villagers (R5, 15 April, 2018).

“It changed my life like us Methodist, we say that eh hurricane eh that cyclone came because we have a lot of sin like in Koro. And for me I changed myself. Like I was doing a lot of things bad in the village and my family. I start to change.”

(R5, 14 April, 2018)

Others considered their life to be better after TC Winston due to the fact that they feel more prepared for future disasters. Respondent 16 explained that he uses his time more wisely and makes sure to plant a larger amount of crops in order to secure food production and income opportunity in case of a future disaster (R16, 15 April, 2018). Respondent 10 believed that his life is better now as he understands the consequences of a tropical cyclone and that he would take on immediate measures in case of a future cyclone warning. He said he would go to the school to collect his children, bring them to the evacuation center in the community, as well as prepare some food and water for his family (R10, 15 April, 2018).

Furthermore, Respondent 3 and Respondent 15 mentioned that the experience they gained from TC Winston has helped them to prepare for future disasters (R3, 14 April, 2018 (R, April, 2018). Many respondents also claimed that they feel more prepared due to the fact that they received training from organizations on how to prepare for disasters (R5, 14 April, 2018). Another respondent also stated that he received information about TC Winston and the emergence of tropical cyclones in general, which helped him understand and accept what he went through.

“... that man come and explain to us and I agree with that explanation... It helped me because then I know what I don’t know. They told me what I don’t know”
It is proven that all respondents in Mudu Village have increased their capacity to prepare for future disasters in several ways, which was supported by Respondent 14 who stated: “... like a today, any cyclone that we are going to prepare...” (R14, 15 April, 2018), meaning that the villagers now take on measures when receiving cyclone warnings of any category.

6.2 Fiji Red Cross Society

6.2.1 The Provision of Humanitarian Assistance

After TC Winston in 2016, the Fiji Red Cross Society provided humanitarian assistance to communities around Fiji. The main assistance provided to Koro Island was psychosocial support, first aid training and relief items. The respondent highlighted that psychosocial support was the main focus as the two employees who were sent to Koro Island three days after the cyclone, realized that many locals were traumatized and in need of counselling. However, the respondent also stated that there was only time for basic counselling and that it became more of a support system where residents were taught to comfort each other (N1, 27 April, 2018).

According to the respondent, many residents in Koro Island were in need of medical treatment as some were injured. However, the access to medical care was insufficient the first weeks after the cyclone, as infrastructure and roads were completely blocked by debris and fallen trees. This resulted in the fact that many villagers were unable to reach the medical center until several weeks later. Non-governmental organizations present in Koro Island after the cyclone worked together to fulfill basic needs in terms of medical treatments, however, the respondent expressed that medical treatment was lacking until it was provided by the hospital in Suva (N1, 27 April, 2018).

The employees from Fiji Red Cross Society were present in Koro Island for one week, and then moved on to assist other parts of Fiji affected by TC Winston. The decision to leave Koro Island was due to the fact that the majority of the responding agencies were directing their assistance towards Koro Island. However, the Fiji Red Cross Society decided to return to Koro Island five to six months later as they realized that the recovery process among the communities was slow. The respondent claimed that communities in Koro Island were in need of additional assistance from the Fiji Red Cross.
Society as their recovery had stagnated and that the conditions were unchanged. Therefore, aid was provided a second time in order to enhance recovery in Koro Island. When asked about the kind of aid that was provided the second time, the respondent answered that it was similar to what was provided the first time. This was due to the fact that the communities in Koro Island were still in need of assistance in order to have their needs met (N1, 27 April, 2018).

6.2.2 Recovery from Severe Tropical Cyclone Winston

According to the respondent, TC Winston has heavily affected the income opportunities among the residents in Koro Island, as well as the access to healthcare and education. In terms of education, many of the young residents in Koro Island decided to relocate to Suva in order to get proper schooling in the first few months after the cyclone. However, Koro Island is moving forward in its recovery process and the respondent highlighted that the communities were taught how to rebuild their homes in order for them to be cyclone proof, and thus hinder similar destruction in case of future tropical cyclones (N1, 27 April, 2018).

Furthermore, the respondent claimed that many residents in Koro Island were able to cope after the cyclone and move forward in the recovery processes due to their belief in God. He stated that religion, especially Christianity, is a very important component for residents in Koro Island. Since the cyclone, the church has become a central part in several villages, who believed that God would stand beside them in their recovery from TC Winston (N1, 27 April, 2018).

6.2.3 Awareness and Knowledge

The respondent estimated that the knowledge and awareness of climate change and natural disasters among the residents in Koro Island is quite high, as a variety of humanitarian organizations has worked there prior to and after TC Winston. He also stated that government departments have worked in the communities in Koro Island, aiming to increase the general awareness of the impacts of climate change. Despite of this, the respondent has detected the need of continuing informing the residents of issues related to climate change and natural disasters, and is currently providing assistance in Koro Island (N1, 27 April, 2018).

Furthermore, the respondent mentioned that the Fiji Red Cross Society’s main focus areas in Koro Island have been in the villages of Tuatua and Kade. When the
researchers asked the respondent if he considered that the villagers in Koro Island have enough knowledge on disaster preparedness and relief to be able to cope with a future disaster, the respondent stated that he is certain that the villagers in Tuatua and Kade possesses enough knowledge. He thus could not say if the villagers in Mudu village have received the same information regarding preparedness and relief. However, he further stated that the Fiji government has requested the Fiji Red Cross Society to expand their work to all 14 villages in Koro Island, which will be done as soon as the budget allows for it (N1, 27 April, 2018).

6.2.4 Resilience in Koro Island

When talking to the respondent about resilience, it became clear for the researchers that the respondent did not consider the villages in Koro Island fully resilient prior to TC Winston. However, he believed that the extensive destruction throughout the island has taught them a lesson, and thus increased resilience through disaster preparedness and capacity building. The respondent stated that the large amount of humanitarian assistance that was provided after the cyclone has helped the communities in Koro Island to set up a disaster management and evacuation plan which may increase resilience within the communities in the long run (N1, 27 April, 2018).

The respondent further highlighted that he believes that resilient communities in Fiji generally have a higher possibility of coping with disasters than non-resilient communities. The respondent claimed that in order for the communities in Koro Island to increase resilience, there is a need to accept the happening of TC Winston as well as the extent of the damages (N1, 27 April, 2018).

"..."make a decision, you are gone, I able, I will rebuild. To make that decision ey, because most people look at the items and it affected the mental status ey. So maybe for me, if Koro, some people in Koro communities to be resilient, they have to bounce back faster and make the decision to move on ey”"

(N1, 27 April, 2018)

As stated above, the respondent claimed that acceptance is the first step to recovery, which he stated is a crucial component to resilience. The respondent highlighted another important component to resilience, which he stated is preparedness. He mostly focused
on preparations of crops as it constitutes the main source of food in the island, and used an example of pot planting, which can be done close to the house (N1, 27 April, 2018).

When talking to the respondent, it was evident that he considered humanitarian assistance as a necessity in Koro Island when affected by a category 5 cyclone, in order for the residents to have their basic needs met. The respondent further highlighted the importance of resilience building in the communities in Koro Island, which can increase capacities among the individuals as well as the community as a whole. The respondent also acknowledged the issue of sea-level rise, as all of the communities in Koro Island is located in a coastal area. Without the provision of proper sea walls that prevents saltwater intrusion, an issue that is threatening agriculture and the plantations, the respondent cannot see how any community in Koro Island can be fully resilient (N1, 27 April, 2018).

6.3 Climate Change and International Cooperation Division at the Fiji Government

6.3.1 Disaster Response and Challenges after Severe Tropical Cyclone Winston

The issue of climate change, tropical cyclones and flooding has become of great concern for the government, since TC Winston in 2016. Respondent 1 claimed that such concern is not only due to the fact that sea-level rise is threatening the survival of a large amount of communities in Fiji, but is of particular importance because of the negative impacts on the agricultural sector as the soil is losing its minerals and nutrition. He further stated that climate change therefore is a potential threat to all communities in Fiji as it makes it difficult for communities to grow crops and maintain their businesses (G1, 6 April, 2018).

After TC Winston, Koro Island received support from the government, which included financial support in order for the villagers to be able to rebuild their homes. The financial support was provided through a money voucher of 7 000 Fijian Dollars and aimed to cover the most necessary items needed in order to build a proper house. Further, the communities were provided with instructions of how to build cyclone proof homes, which the government considered was an attempt to make communities in Koro Island more resilient when coping with future natural disasters (G2, 6 April, 2018).
In addition, Koro Island received help rebuilding schools in order for the children to be able to take part in mandatory schooling (G1, 6 April, 2018). In the aftermath of TC Winston, Fiji received humanitarian assistance from all over the world. However, in accordance with Respondent 2, Koro Island did not receive any help from the government until two weeks after the cyclone. He further said that this was due to insufficient response mechanisms and mentioned that the government should have responded faster. Furthermore, he stated that the government should be more prepared for future disasters and improve the disaster response in order to provide help to communities faster (G2, 6 April, 2018).

Shortly after the cyclone, national and international stakeholders including UNDP, other UN agencies and NGOs, together with the Fiji Government cooperated and initiated a mapping procedure of the destruction made by TC Winston. The outcome was the “Climate Change Vulnerability Assessment” and the “Fiji Development Plan”. The government has further taken the issue of climate change more seriously since TC Winston, and is currently drafting policies and frameworks that includes issues such as disasters, relocation and internal migration. Furthermore, the government is currently drafting a National Adaptation Plan and a National Climate Change Policy which will serve as long term frameworks for making communities more resilient in Fiji (G1, 6 April, 2018).

6.3.2 Awareness among locals

According to the government, the general knowledge of the impacts of climate change is slowly increasing within the Fijian population. This is mainly a result of the fact that climate change is visible in everyday life, as the population experiences a greater number of natural disasters every year. The increasing sea-levels, flooding, droughts and tropical cyclones are only a few to mention. The government has attempted to increase the awareness among the population by enforcing education on climate change in schools on all levels (G1, 6 April, 2018).
7 Analysis

This chapter is analyzing the findings from the interviews executed with the respondents in Mudu Village in Koro Island, Fiji as well as the Fiji Red Cross Society and the Climate Change and International Cooperation Division at the Fiji Government, by using the concept of community resilience.

When conducting the interviews in Mudu Village in Koro Island, Fiji, the researchers found it clear that the community was highly affected by TC Winston 2016. The impacts were clearly visible in the first year after the cyclone, however, it was demonstrated that even in April 2018 and more than two years after TC Winston, the community had still not fully recovered psychologically nor physically. However, the researchers would like to point to the fact that TC Winston struck Fiji as a category 5 cyclone where Koro Island was considered to be ground zero, which led to obliterate consequences for all communities in Koro Island.

7.1 Humanitarian Assistance and Basic Needs

The concept of community resilience recognizes the importance of the fulfillment of basic needs. Such basic needs include proper access to clean and safe drinking water, food, shelter, medical supplies and sanitation facilities. The access to basic needs is a vital part of a resilient community as it is a primary condition in the functioning of a community. The residents of Mudu Village have shown to be more or less self-sufficient due to their ability to rely on locally produced crops and fisheries as their main source of food. Further, the residents have access to clean drinking water through a local water system which makes them less dependent on external transports from Viti Levu.

Based on the findings of the thesis, it has become clear that the residents of Mudu Village has, at the current state, access to all basic needs outlined in the chapter of ‘Analytical Framework’. However, the researchers has found it evident that the enjoyment of basic needs were of great importance after TC Winston, both in Mudu Village itself, but also through the provision of humanitarian assistance by the Fiji Government and the Fiji Red Cross Society. During the first days after the cyclone, the residents had to take on measures such as collecting food crops and fruit in the plantations and as well as rainwater to drink, as the residents were deprived of such basic needs. These measures were of vital importance for the survival of the community, as humanitarian assistance was not accessed until at least four days after the cyclone. By the
assistance of a variety of organizations and institutions, including Australian Aid, New Zealand Air Force, Fiji Red Cross Society and the Fiji Government, the residents in Mudu Village were able to maintain their basic needs and initiate the recovery process after TC Winston. Humanitarian assistance was thus a vital part of the recovery process and the ability for the community to ‘bounce back’ after TC Winston. Based on this, the researchers have drawn the conclusion that Mudu Village faced difficulties to fulfill basic needs in the first days after the cyclone.

The researchers are of the opinion that Mudu Village has the capacity to fulfill the food demand within the community on everyday basis. However, the dependence on natural resources has led to the conclusion that in case of major natural disasters or climatic changes with heavy impacts on the plantations, the villagers may not be able to fulfill their food supply without extensive assistance from stakeholders.

7.2 Food Production and Income Opportunities

A vital component to community resilience in Mudu Village, has shown to be the access to and management of the local plantations. The use of natural resources and economic capital has been outlined in the chapter ‘Analytical Framework’ as access to income and employment opportunities, the management of natural resources and the ability to control assets and financial means as well as availability of knowledge and information.

In accordance with the findings of the thesis, the main occupations in Mudu Village are farming and domestic work, as well as the making and selling of handicrafts. Mudu village is heavily dependent on local agriculture in order to produce food, but also to gain income by exporting crops to Viti Levu. As farming constitutes the main source of income in Mudu Village, the lack of income and employment opportunities has led to a rather high level of vulnerability which was demonstrated after TC Winston, as large parts of the plantations were damaged and limited the resident’s ability to gain income. The lack of alternatives in income and employment opportunities may hinder community resilience as it can stagnate the villagers’ ability to ‘bounce back’ after a stress or shock. The consequences of TC Winston have led to hardships for the residents in Mudu Village to reach the same amount of income as they had before the cyclone. The access to natural resources was deprived after TC Winston, which was visible in the decrease of the diversity among crops. The dependence of local agriculture as a source of food and income, is clearly visible in Mudu Village, as the plantations secure the villagers food production as well as income opportunities.
One can draw the conclusion that the limited access to income and employment opportunities and lack of alternatives in Mudu Village has hindered the ability for community resilience. Further, it can be argued that the ability for Mudu Village to be resilient decreased in the first six months after TC Winston, however, as presented in the findings, the villagers are at this stage able to manage and maintain the natural resources again, albeit to a lower level. The high level of self-sufficiency enables for a local food production, which decreases the residents need for acute disaster relief in the form of external provision of food.

7.3 Support Systems

Community resilience outlines social network as an important element to resilience. The researchers would like to point out that Mudu Village is characterized by a high level of solidarity, where social support and social influence was demonstrated in many interviews. As evident in the findings, religion is shown to be of importance for many of the residents in Mudu Village, which enables for support and collective values among the residents, and thus facilitated the psychological recovery process after TC Winston. Several villagers further stated that after TC Winston, it was of great importance to support each other and to work as a team rather than individually when collecting food from the plantations and finding shelter. In addition, tools for basic comforting skills were provided by stakeholders, which eased the recovery process after TC Winston. Furthermore, the villagers capacity to support each other has thus increased, which has enhanced a stronger support system in the community.

The concept of community resilience further acknowledges the issue of accessing external actors such as non-governmental organizations and governmental institutions. When applying the concept of community resilience to Mudu Village, it has become clear that prior to TC Winston, the community had limited access to such stakeholders. The need for internal social support has thus increased, as Mudu Village heavily relies on the shared morals, values and beliefs present in the community. The geographical remoteness of Koro Island has been a major contributor to the limitation of external connections as the lack of telephone network, internet services and constraints in transportation services is present. However, such remoteness has, as mentioned above, resulted in a great dependence on the communities in Koro Island where, for example, local systems of buying and selling root crops and canned food has occurred.
As presented in the findings, TC Winston led to an extensive amount of humanitarian assistance, where several stakeholders laid focus on the communities in Koro Island. It has further become clear that several organizations and institutions has maintained their work in Koro Island even after the immediate disaster relief, as the villagers were unable to initiate the recovery process during the first six months. It is evident that Mudu Village previously has put dependence on social support within the community rather than on external actors, and has maintained a social network based on the affinity that is present in the community. However, due to the positive experience with a variety of organizations that worked in the village in the aftermath of TC Winston, it can be argued that these stakeholders can be vital for community resilience and benefit the community in the future as it may allow for faster disaster response and thus shorten the recovery process. This argument is based on the fact that several actors has gained knowledge of the capacities and needs of the communities in Koro Island, including Mudu Village, which may lead to a greater chance of assessing the needs required for initiating a recovery process in case of a future disaster.

Lastly, it can be estimated that community resilience in Mudu Village has increased after the extensive provision of humanitarian assistance, due to the ongoing contact with many stakeholders and the maintenance of an internal support system.

7.4 Disaster Preparedness in Mudu Village

The need for community knowledge and response in resilient communities has been highlighted in the chapter ‘Analytical Framework’. The concept incorporates knowledge and information as important components to a community’s capacity to respond to hazards. In Mudu Village, such knowledge and information is mainly gathered at the local schools and health care facility, the church and through radio in order for the residents to have the ability to prepare for disasters.

As presented in the findings, several respondents considered that they were unprepared when TC Winston hit. The researchers has found it clear that a variety of important components to community resilience were lacking at that time, as the respondents did not recognize the importance of preparing for tropical cyclones. Furthermore, such components includes the ability to assess the degree of the hazard, take on measures to prepare and store food and water as well as secure property and houses. Due to the large amount of humanitarian assistance provided in the aftermath of TC Winston, the residents in Mudu Village has accessed valuable tools to increase the
community knowledge. Several of the organizations present in the community provided
the villagers with information and knowledge about first aid, basic health and hygiene, as
well as information regarding how to build cyclone-proof homes.

The access to humanitarian assistance in the aftermath of TC Winston, and
the current presence of such organizations has given Mudu Village a safety-net in case of
a future disaster. The residents has received water containers and tools aiming to maintain
safe drinking water, and the villagers are now increasing the amount of root crops planted
in order to make sure they have enough access to food. Further, other tools such as ropes
to stabilize the roofs on their homes and spades to dig streams to direct water flow back
to the ocean in case of flooding, has been provided. Such tools and measures have
increased the villagers preparedness for future disasters.

Another important factor to community response, is the ability to use past
experiences as a tool for preparedness. In accordance with the findings, many of the
respondents consider themselves more prepared now as compared to a few years ago,
something that several based on the experiences of TC Winston. It is evident that together
with the training and tools received from non-governmental organizations and
governmental institutions, the residents’ perception of disaster preparedness has
increased.

7.5 Answers to Research Questions

Based on the findings of the study, it has become clear that the residents in Mudu Village
have faced difficulties in the recovery from TC Winston in 2016. In order to investigate
the level of community resilience in Mudu village, the researchers has aimed to answer
three research questions relevant to the topic.

The first research question addresses Mudu Village’s recovery from TC
Winston, and aimed to create a broader understanding of the current situation in the
community. At the time the researchers were present in the community, the residents had
not yet fully recovered from the cyclone. This was evident in several of the interviews
that were executed in Mudu Village, yet it was also evident in the interview with the Fiji
Red Cross Society. Indications show that during the first year after the cyclone, the
villagers struggled to fulfill their basic needs, which was vital for the recovery process.
At the current situation, the lack of proper access to education and religious facilities has
resulted in frustrations in Mudu Village, and thus created barriers to the psychological
recovery from TC Winston. The reminder of the cyclone is constantly present in the
community, as the damaged church and school are visible on a daily basis. However, based on the answers from the interviews, indications has shown that even though the community has not yet fully recovered from TC Winston, the impacts are at this stage less visible than they were during the first year after the cyclone. Furthermore, it has also become clear that the recovery process is continuous and that the situation in the community improves with time.

The researchers would like to argue that the residents in Mudu Village have recovered to a degree which allows for a sufficient standard of living with the fulfillment of all basic needs. The residents are able to provide themselves with a satisfactory amount of food and a sufficient income, as well as access to strong wind-proof housing, clean water supply, sanitation systems, education facilities and medical services. The community is yet to reach the same capacity of the plantations as before TC Winston in order to increase exports and income, which will allow for a higher standard of living.

The second research question refers to Mudu Village’s preparedness towards natural disasters in relation to the extensive amount of humanitarian assistance which was provided after TC Winston. It is proven that the recovery process in Mudu Village was highly influenced by the organizations and institutions providing assistance within the community. This is indicated in several of the interviews where respondents claimed that humanitarian assistance was a necessity for initiating the recovery process. Further, it can be argued that such humanitarian assistance has had a positive impact on the villagers’ knowledge and capacities regarding disaster preparedness, as the residents has been provided with a variety of tools to secure the houses. It has also become clear that the villagers has learned important measures such as securing food and water access during disasters, as well as information on what to bring when evacuating their homes. In this sense, the preparedness towards natural disasters in Mudu Village has increased after the extensive amount of humanitarian assistance in the aftermath of TC Winston.

Lastly, the third research question addresses the capacity to cope with natural disasters in Mudu Village. Based on the previous arguments outlined above, the researchers have found that the capacity to cope with natural disasters has increased since TC Winston in 2016. The past experience of TC Winston has led the residents in Mudu Village to become more vigilant, which has resulted in a variety of preventive measures. Furthermore, the capacity to cope with natural disasters has mainly been influenced by increased disaster preparedness and the knowledge on how to act during disasters, but also by the influence of social support and networks in the community. It can also be
claimed that the knowledge received from the Fiji Government and other non-governmental organizations regarding building methods of strong wind-proof houses, is valuable in the recovery process of a potential disaster.

However, the issue of Mudu Village dependence on natural resources as the main source of food production and income opportunity has been addressed above. It is thus indicated that the vulnerability to natural disasters is rather high, as the plantations stands for vital components to the functioning of the community. It is, however, difficult to estimate the exact outcome or capacity of the community in a future recovery process, but it can be argued that, based on the contention above, the residents in Mudu Village will be able to cope with less extensive natural disasters in the future.

7.6 Community Resilience in Mudu Village

The concept of community resilience and the ability to ‘bounce back’ after a stress or shock has been shown to be a vital component to a community’s ability to cope with a natural disaster. The researchers has found that Mudu Village fulfills several elements which are needed for community resilience, however, it has also been demonstrated that the community’s dependence on natural resources has resulted in vulnerability and exposure. The researchers have thus drawn the conclusion that Mudu Village does not fully fulfill all of the seven characteristics to community resilience outlined in ‘Analytical Framework’. The argument has built upon the findings from the interviews with the respondents in Mudu Village, the Fiji Red Cross Society and at the Climate Change and International Cooperation Division at the Fiji Government.

Based on the findings of the thesis, it can be argued that Mudu Village has, at the current state, a greater chance to cope with a future disaster compared to prior to TC Winston. Community resilience is evident in several contexts in the village, where the social support systems, knowledge regarding disaster preparedness and response is considered to be strong. Mudu Village’s capacity to respond to future natural disasters has been highly influenced by the previous experience from TC Winston, and it is clear that TC Winston resulted in a change of mindset in Mudu Village. This has been shown through the fact that caution is taken upon cyclone warnings on the radio. Further, as presented in the findings, it is also proven that the change in lifestyle within the community is a major contributor to the attitude towards future disasters. Furthermore, it can be contended that the connections with a variety of non-governmental organizations
and governmental institutions may have the ability to facilitate the recovery process after an extensive natural disaster in the future.

The dependence and use of natural resources in Mudu Village has not only resulted in a high level of self-sufficiency where the local food production accounts for the main source of food in the village, but has also led to opportunities to gain income by exporting root crops. As stated previously, such dependence has shown to be particularly vulnerable to natural disasters and climatic changes which was evident during the recovery process after TC Winston. Further, the study has discovered that the disaster preparedness in the community has increased, which includes the preparation and expansion of the plantations and the variety of root crops. However, such preparedness is unlikely to obviate the community’s vulnerability and exposure to extensive natural disasters such as severe tropical cyclones, where loss of plantations and nutritious soil can lead to protracted consequences. It can thus be argued that the lack of alternative food sources and income opportunities constitutes the main hindrance to community resilience in Mudu Village.

In conclusion, the researchers would like to state that Mudu Village is resilient to the extent that the community has the ability to prepare for, cope with and recover from a minor natural disaster that does not heavily impact the natural resources and the plantations. The reliance on natural resources increases vulnerability as the villagers has not been able to take any extensive measures in order to decrease the exposure to natural disasters. Together with the remoteness of the island, the community is facing difficulties in finding alternative food sources and income opportunities. In order to increase community resilience in Mudu Village and the capacity to cope with extensive natural disasters, further measures such as pot planting and alternative farming methods are crucial. Resilience-building by stakeholders may also increase Mudu Village’s chances to resilience on community as well as individual level.
8 Conclusion

This undergraduate thesis was written as a part of the Peace and Development Programme at Linnaeus University during the spring of 2018.

The objective of the thesis was to investigate community resilience in Mudu Village in Koro Island, Fiji, and the capacity to cope with a natural disaster. This was done by looking at the recovery process after Tropical Cyclone Winston, which struck Fiji in February 2016. The study further aimed to investigate how the extensive amount of humanitarian assistance impacted the disaster preparedness in Mudu Village, in the aftermath of TC Winston.

The findings have shown that TC Winston has resulted in severe damage and destruction in Mudu Village, which has led to extensive impacts on the community. The finding has further presented that the recovery process in Mudu Village is continuous, and that additional measures are needed in order to reach full recovery. It has been clear that the disaster preparedness among the residents in Mudu Village has increased since TC Winston, which has been linked to the assistance received by several stakeholders that were present in the community. Furthermore, such preparedness has also been linked to the residents’ experiences of TC Winston, which has resulted in particular precautions for tropical cyclones. It has further been indicated that the mindset of the residents in Mudu Village has changed since TC Winston, where many of the respondents considered themselves to have a better life now, despite the decrease in their standard of living. The change of mindset was particularly associated to the strengthened faith in God and increased social support among the villagers, which can be argued to expand the ability to cope with a future natural disaster.

The study has indicated that due to the increase in disaster preparedness and support systems, Mudu Village has a higher capacity to cope with a natural disaster at the current stage, compared to a few years ago. However, the dependence on natural resources as the main source of food and income, has led to a high level of vulnerability towards natural disasters and climatic changes in Mudu Village. This has further been outlined as the main hindrance to community resilience in Mudu Village. The study has thus resulted in the conclusion that Mudu Village does not fulfill all characteristics to community resilience. However, the researchers have argued that Mudu Village is likely to cope with and recover from a natural disaster of a lesser extent, where natural resources and plantations are left intact. The researchers are of the opinion that in order to increase community resilience in Mudu Village and thus the capacity to ‘bounce back’ after a
disaster, several measures regarding food production and income opportunities needs to be taken.

In order to broaden the understanding of community resilience in rural villages, a deeper and more comprehensive study is needed. The impact of climate change and its effect on SIDS and other vulnerable communities is perceived to worsen, where natural disasters and the rising sea-level poses a direct threat to the survival of such communities. Therefore, the concept of community resilience can be argued to be a vital component to disaster recovery and adaptation, where the assumption that fully resilient communities may be able to cope without extensive amounts of humanitarian assistance, can be tested. A study of greater coverage may allow for valuable knowledge on coping mechanisms within rural communities exposed to the consequences of climate change.
9 Bibliography


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Appendices

Interviews with respondents in Mudu Village, Koro Island, Fiji:

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Interview with the Climate Change and International Cooperation Division at the Fijian Government:

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Interview with the Disaster Unit at Fiji Red Cross Society:

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Interview Guide for the Respondents in Mudu Village

This interview is part of an undergraduate study at Linnaeus University in Växjö, Sweden and we are very happy that you have agreed to participate. Your view and answers of the questions that will be asked, are of great importance for us and for this study.

The interview will last for 30-60 minutes and will be audio recorded in order to make sure your answers are correctly stated in the final document, if that is fine with you. Your answers will be used as one of the sources for the study, and will only include the questions asked and your answers to them.

We are asking for your opinion on the following questions, and therefore there is no right or wrong answers to any of the questions. Finally, if there are any questions you wish not to answer, you have the right to skip that question or stop the interview at any time.

Personal Questions

- How old are you?
- What does an ordinary day for you look like?
- How long have you lived in Koro Island?
- Do you have any education? If so, to what level?

Natural disasters

- What is natural disasters to you?
- Do you think Fiji has experienced natural disasters? If yes, why? What kind?
- Some people would say that Fiji and Koro Island are very vulnerable to natural disasters. What do you think about this?
- Are you affected by heavy rainfalls, flooding and droughts? If yes, how do you handle these situations?
- Would you say that natural disasters are affecting your everyday life and income opportunities?

Tropical Cyclone Winston

- Were you in Koro Island when the cyclone hit?
- Were your community/village affected by TC Winston? How?
- How did you prepare when you first heard there was a cyclone coming?
- When the cyclone hit, how did you protect yourself and your family?
• Did you have enough food and water during the cyclone?
• When the cyclone was over, what did you do? What was the most important thing?
• Did you have enough food and water after the cyclone?

Humanitarian Assistance
• Did you and your village receive any assistance after TC Winston? What kind of assistance did you get?
• When did you receive assistance?
• How did you get food and shelter until assistance arrived?
• Do you think you received assistance fast enough?
• Did you get everything you needed from the assistance? In what way?
• If no, what was missing?
• Do you feel like you could have been fine without the assistance?

Coping after TC Winston
• What did you think about the destruction from TC Winston? How did you handle the situation?
• Do you think your life has changed since the cyclone? How?
• Do you think your life situation is better or worse since the cyclone?
• After the cyclone, did you feel like you had control over the situation?
• From your perspective, what has been difficult since the cyclone? What have you done to make it better?
• Do you have the same standard of living now as you had before Winston?
• Do you still have the same possibility to grow crops/food since TC Winston?
• If a cyclone would come today, how would you handle this? Would you be prepared? How?

Resilience
• Are you worried that you will be affected by natural disasters in the future? What kind of natural disasters?
• If yes:
  - is the fear of natural disasters affecting the decisions you make everyday? How?
  - In what way have you managed to deal with such fear?
• If no:
- How come?
  ● If there ever is a future disaster, would you know what to do?
  ● Would you say you are prepared for a future disaster?
  ● If yes, what makes you feel prepared?
  ● If no, what makes you feel unprepared?
  ● For how long would have food and water during and after a natural disaster?
  ● How long would you be able to continue with the same life without leaving the village? In what way?
  ● What are the most important things/resources in the village?
  ● Do you need to go to Suva to buy things, or do you have everything you need on Koro?