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## Illegal Unreported and Unregulated Fishing and Overfishing Policymaking in a Caribbean Island Country

Anya J. Moses  
*Walden University*

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# Walden University

College of Health Sciences and Public Policy

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Anya Moses

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## Review Committee

Dr. Christopher Jones, Committee Chairperson,  
Public Policy and Administration Faculty

Dr. Lynn Wilson, Committee Member,  
Public Policy and Administration Faculty

Dr. Glenn Starks, University Reviewer,  
Public Policy and Administration Faculty

Chief Academic Officer and Provost  
Sue Subocz, Ph.D.

Walden University  
2023

Abstract

Illegal Unreported and Unregulated Fishing and Overfishing Policymaking in a

Caribbean Island Country

by

Anya Moses

MBA, Walden University, 2015

BS, State University of New York-Plattsburgh, 2003

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration

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May 2023

## Abstract

Small island developing states, especially those within the Caribbean community, are faced with the challenges of overfishing and illegal, unregulated, and unreported (IUU) fishing activities. Despite global legal reforms, enforcement continues to be ineffective. In the policymaking process, the perspectives of those critically impacted are rarely taken into consideration. The purpose of this qualitative study was to explore the issues leading to the lack of inclusion of fisherfolk knowledge in the policymaking process and policies that promote SDG 14. The goal was to explore the importance of fisherfolk involvement in the policymaking process. The research question focused on identifying the direct effects that overfishing and IUU activities have on the fishing community and the perceived reasons why policies are not effectively implemented. The theoretical framework for this study was the advocacy coalition framework. A qualitative phenomenological study design was used, employing a purposeful semi structured interview process with 14 registered fisherfolk. Data obtained from the interviews were coded and categorized for thematic analysis and comparison. Findings showed that participants lacked proper training and sufficient knowledge of current fishing policies. Also, interaction with government officials was scarce, leaving most fisherfolk with limited knowledge in their understanding of IUU fishing and overfishing. The implications for positive social change may include bringing awareness to SIDS policymakers on the importance of inclusion of the fishing community as a means for efficacious long-term sustainable fishing policies, and economic and social independence for fisherfolk.

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## Dedication

To my fellow fisherfolk, and fisheries officials, who dedicated their time to assist me in this project, thank you. To my family members who automatically without a choice, become editors, reviewers, and subject matter experts, thank you. To my mother, Athenia Henry, my aunts, especially Dr. Cleopatra Doumbia-Henry who guided me into this subject, and brother, Pat Henry, Esq. Thank you all for always believing in me and providing that unconditional love and support, I dedicate this to you.

And to my son, Gian, while you are still too young to understand, reaching for the stars, setting realistic goals, and proving that we all have the calling to create social positive change in whatever avenue we choose can be accomplished.

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## Chapter 1: Introduction to the Study

Ocean/marine life sustainability has become a major focus among small island developing states (SIDS) due to illegal, unreported, and unregulated (IUU) fishing and overfishing activities. Transform (2000) asserted that while there are IUU fishing and overfishing policies in place for SIDS to adhere to, little is done regarding effective enforcement and governance. The lack of enforcement and active involvement from stakeholders during the policymaking phase has resulted in deeper issues and concerns which could be preventable (Hutahaean, 2016). The changing oceanic ecosystem has affected food supply, local fisherfolk, as well as the larger economy substantially due to IUU (Hutahaean, 2016; Transform, 2000). The fisherfolk within SIDS are critical stakeholders regarding knowledge holding on the impact of overfishing and IUU fishing activities (Barner et al., 2015; Brissett, 2018). Further, fisherfolk can positively contribute information that may lead to improved collaborative and sustainable policies to address the issue of overfishing and IUU (Fabinyi et al., 2015; Ruttenberg et al., 2018) but are absent from current policies and reforms.

The United Nations Convention on the Law of the Sea (2021) established an international legal foundation for the protection of the use of living and nonliving resources across global oceans. Despite arguing against overfishing, the Food and Agriculture Organization (FAO) of the United Nations (FAO, 2019a), does not provide legally binding constructs specifically toward fisheries. Overfishing is further compounded by governments' lack of efficient and enforceable marine catch regulations (Krueck et al., 2017). The process of overfishing has greatly impacted economic and

environmental factors that impacts the ability to address sustainability globally. However, the United Nations Convention on the Law of the Sea (UNCLOS, 2021) has made a significant impact by passing enforceable international laws to address the issue of unsustainable fisheries practices globally, despite the difficulty of enforcement.

IUU fishing is a broad term that encompasses fishing and overfishing activities that do not adhere to established laws and regulations. Participation in such activities without the required licenses, appropriate gear, and disregard for prohibitions regarding protecting oceanic life contribute to the challenge of addressing IUU fishing. Addressing this issue is also complicated by geographical constraints such as the size of the ocean, insufficient patrol enforcement, and poor regulations as identified by National Marine Fisheries Service (NOAA Fisheries, n.d.). Though IUU fishing is not endemic to one location, it is important to gain knowledge from local fisherfolk who may provide useful data that will contribute to a larger formulation of policies to address IUU fishing.

Overfishing and IUU fishing may lead to loss of biodiversity, inability to meet food security demands, and impact local fisherfolk as well as the entire global population. (Allison & Horemans, 2006; Lindley & Techera, 2017). Addressing overfishing and IUU fishing requires a renewed focus on biodiversity loss, which includes improving collaborative policies and measures to combat overfishing and encroachment as a means of creating positive changes through long-term socioeconomic growth (Allison & Horemans, 2006; Lindley & Techera, 2017). By bringing awareness to these issues, SIDS can work collaboratively to create biodiversity and sustainability-based policies through a

means of joint policy creation that empowers SIDS stakeholders to create positive change.

The oceans, which provide a daily source of socioeconomic development and nutrition for SIDS in the Caribbean, are under grave threat from overfishing and encroachment (Intergovernmental Panel on Climate Change, 2019; Parris, 2016). Previous researchers identified the causes and effects of overfishing and encroachment in these areas (see Barner et al., 2015; Brissett, 2018; Fabinyi et al, 2015, McConney et al, 2017; Torres-Guevara, et al, 2016). However, the reviewed literature lacks the perspectives of fisherfolk regarding the impact of overfishing and IUU fishing activities.

This study is important because I effectively combined stakeholders so that ideas can emerge, crystalize, and multiply in accordance with the notions of Prasad et al. (2013). By working collaboratively with policymakers, fisherfolk, environmentalists, and other key stakeholders in the fishing industry, SIDS can be positioned to implement progressive reforms with the use of “local knowledge and modern science” (UNEP, 2014, pp. 8-9) to strengthen fishing policies and improve the lives of their people. The positive change that may result from this study includes the participation of fisherfolk in policy creation which, based on their perception and experience may ultimately create positive change regarding issues of overfishing and IUU fishing that threaten to substantially impact global economies and environments.

The findings of this study may also contribute to positive social change through the creation of fishery-based policies grounded in shared knowledge between the scientific community and indigenous people and resources. Positive social change is

more likely to occur when apathy is turned into action that is guided by those that are marginalized and most critically impacted. Heightened awareness can serve as a guide for those responsible for creating policies so that they can tailor information for effective social change. (Thomas et al., 2009). By drawing on the direct experiences and inclusion of those directly affected by overfishing and IUU fishing, awareness to the inequalities and disparities that exist may be increased, if those emerge from the results.

### **Background**

Overfishing and IUU fishing have severe economic consequences for SIDS. It is important to distinguish the differences between overfishing and IUU fishing to provide a comprehensive understanding of the problem. Overfishing involves activities that result in the depletion of marine life and reduction of environments that are conducive for adult fish to reproduce and maintain a sustainable population (Fonteneau, 2004). The term IUU refers to fishing and overfishing activities that while occurring do not fall under established laws and regulations (IUU Watch, n.d.; NOAA fisheries, n.d.).

Natural disasters are a central issue that increases the difficulty of addressing IUU fishing. Over the past 2 decades, there has been an increase in devastating natural disasters that have left many islands with a semblance of their former economic output (Zhang & Managi, 2020). Disaster displacement will be one of the biggest challenges that many economies will face in the 21st century, according to Heimann (2015). All global populations should be prepared for the possibility of mass migration from countries that are too weak to sustain economic growth and development (Heimann, 2015). As a result,

sustainability is also a key concern regarding conflicts between governments due to disagreement regarding overfishing and IUU fishing.

Environmental sustainability is a broad term that includes both the protection of living and non-living resources as well as the protection of food resources (Alam et al., 2020). Increasing global conflicts ultimately leads to a decrease in sustainability and increase of unsustainable practices that influence food insecurity (Alam et al., 2020; Klein et al., 2019; Lassa et al., 2018). The inability to maintain and sustain local fisheries may create a domino effect that impacts global economies as well as decreases food security, and environmental sustainability (Mal et al., 2018; McKnight et al., 2018). Oceanic issues are also forming due to increasing heat, habitat degradation, and acidification that substantially impact fisheries in various ways leading to seasonal migratory changes and food insecurity (Mal et al., 2018; McKnight et al., 2018).

In previous studies, researchers documented overfishing and IUU fishing in SIDS. For example, Barner et al. (2015) and Brissett (2018) examined Sustainable Development Goal 14 (SDG-14) for the Caribbean. Goal 14 highlighted collaborative economic regionalism as a motivating factor for better ocean and marine policy implementation (Barner et al., 2015). Similarly, Fabinyi et al. (2015) and Ruttenberg et al. (2018) provided differing perspectives on the topic regarding the key factors leading to local poverty, inequality, and sustainability discourse. Ruttenberg et al. examined the scientific methods and mechanisms for proper ecological assessment in determining proper “zoning and fisheries management” (p. 1), while Fabinyi et al. approached the assessment from a local perspective of small-scale fishers dealing with inequality and the damaging effects



of IUU and overfishing on their livelihoods. Fabinyi et al. and Ruttenberg et al. included common themes indicative of the consequences of dealing with island states and their inhabitants if overfishing and IUU fishing are not addressed. Their major concerns included the decline of economic growth, increased levels of poverty, the decreasing quality of marine life, and the climate for sustainability.

Other researchers have provided examples of the methodological frameworks that can be used to guide the understanding of overfishing and IUU fishing in SIDS. For example, Islam et al. (2017), Krueck et al. (2017), Lubchenco et al. (2016), and McConney et al. (2016) offered models that align well with the methodological framework used in this study focused on IUU fishing and overfishing in SIDS. However, other researchers have focused on the historical understanding of fishing governance. McConney et al. (2017) and Torres-Guevara et al. (2016) addressed the historical importance of fishing governance within the Caribbean Community (referred to as CARICOM states) and the importance of including fisherfolks and key actors' experiences and recommendations during the policymaking process. Together, these conceptualizations provide insight regarding governance as well as the impact of stakeholders that are excluded from the policy creation process.

Overall, overfishing and IUU fishing have been previously recognized in the reviewed literature; however, the inconsistent process of addressing these issues via policy implementation and enforcement is also evident. There is also a dearth in studies assessing the impact of overfishing and IUU fishing activities and how they directly affect the reliability of the oceans as a sustainable living mechanism (FAO, 2010). In the

reviewed literature, there is a lack of information regarding the experiences of members of the fishing community (i.e., fisherfolk) of SIDS.

### **Problem Statement**

SIDS and fisherfolk face a critical challenge with overfishing and IUU fishing activities that hinder them from effectively using their ocean resources (Ruttenberg et al., 2018; Seeman et al., 2018; Zhang & Managi, 2020). Currently, global fiscal reforms through institutions, such as the FAO (2021), are helping to promote “the implementation of the Code of Conduct for Responsible Fisheries” (para. 3). Specifically, regarding SIDS, these reforms address governance, accountability, and implementation to assist with the global agenda of improving food security and, socioeconomic status (Cohen et al., 2019; Kalina et al., 2019; Pauly, 2018). However, such reforms are not currently enforced and consequently, overfishing and IUU fishing continue to deplete ocean and marine resources and, by extension, the local standard of living (Lestari et al., 2020). Additionally, these reforms do not include the perspectives of fisherfolk that are integral to gaining a renewed perspective from the population most critically impacted.

The larger economic impact of overfishing and IUU fishing is the threat to legitimate businesses and weakened local communities. Overfishing and IUU fishing problems have led to the loss of income and business failures of small-scale fisheries and have impeded the efforts to rebuild already depleted stocks (Kalin et al., 2019; Lestari et al., 2020; Roy, 2019). Increasing income gaps, growing levels of poverty, and dependency on welfare programs in an already weakened state's economy appear to be an

effect of overfishing and IUU (Ruttenberg et al., 2018; Roy, 2019). The income which was once derived by small-scale fisherfolk has dissipated due to overfishing and IUU.

My research may serve as a model to raise awareness of the benefits of including fisherfolk during the policy-making process regarding marine life. This inclusion must incorporate marginalized fisherfolk who may be the most disenfranchised due to overfishing and IUU. Their participation in the policy-making process provides a platform to voice their grievances and suggestions to benefit larger policy changes (Bowman et al., 2021; McConney et al., 2017). Inclusiveness would show that fisherfolk are represented and actively involved, and not merely acknowledged as stakeholders. Previous literature has indicated the need for the inclusion of affected fishing communities (FAO, 2005). My research placed emphasis on reducing the vulnerabilities of small-scale fisheries and fisherfolk to further provide for equitable inclusion of fisherfolk within the discourse of the “blue” economy.

The lack of collaborative regional efforts and inefficient training of fishery officials have been identified as some of those key factors, which may be best improved through the inclusion of fisherfolk perspectives (Bowman et al., 2021). The literature review for my research helped me identify themes including the legal framework, marine living resource management, economic development, and environment (see Bowman et al., 2021; Brissett, 2018; Cohen et al., 2019) as the foundation elements guiding this research. However, previous researchers have yet to examine the issue of governance relating to overfishing and IUU fishing from the fisherfolk perspective in small island developing states. The problem this study addressed is that despite the importance of

fisherfolk perspectives for improving overfishing, their perspectives regarding the impact of overfishing and IUU fishing activities are absent from current policies and reforms.

### **Purpose of the Study**

The purpose of this qualitative study was to explore the issues leading to the lack of inclusion of fisherfolk knowledge in the policymaking process and policies that promote SDG 14. Unsustainable fishing affects not only fisherfolk but also the reliability of the oceans as a source of food. (World Wildlife Fund, (n.d.)). I explored fisherfolk and other key stakeholders' involvement in the policymaking process and identify the difficulties in the implementation of established UN SDGs for the sustainability and conservation of oceans, seas, and marine resources. To address the knowledge gap, a qualitative interview process was adopted. My research may contribute to positive social change by demonstrating a renewed understanding of the challenges that require future public policy adaptation and implementation regarding IUU and overfishing practices.

### **Research Question**

The following research question is the focus of this study: What are the issues leading to the lack of inclusion of fisherfolk knowledge in the policymaking process and policies that promote SDG #14?

### **Theoretical Framework**

The theoretical approach guiding this qualitative research study was the advocacy coalition framework (ACF). The ACF model was developed by Weible and Sabatier (2010) to explain advocacy and shareholder relationships in policy formation and implementation. The ACF model aided in framing the exploration of environmental

phenomenon and the relationship that exists between stakeholders. This model also assisted in framing the multiplex interrelations amongst stakeholders, lawmakers, the public, occurrences, stipulated timeframe, and the cumulative results. In the ACF framework, different policy actors share similar beliefs, forming common and sustainable partnerships (Santa, 2013). As a viable theory for analyzing policy processes, the advocacy coalition framework is effective in environmental policies (Weible & Sabatier, 2010). The ACF approach is ideal for considering fishing practices and collaborative efforts with policymakers due to the alignment towards policy processes and stakeholder relationships for environmental concerns.

Researchers have used this approach to understand how groups and individuals interpret and communicate "policy narrative content" (French et al., 2017, para 7). I identified underlying reasons for the lack of proper ocean and marine policy implementation. I also addressed approaches in combating overfishing and IUU fishing activities with the consideration of the fisherfolk experiences from the Commonwealth of Dominica.

### **Nature of the Study**

A qualitative approach using interpretive thematic analysis was my choice of methodology for this research. Creswell and Creswell (2017) and Gilbert (1997) advocated for qualitative research to explore and understand the experience and meaning of everyday phenomena more deeply. I used interpretive qualitative research to gain exploratory data regarding the meaning and perceptions of fisherfolk about the lack of governance and IUU/overfishing. The ACF posed as a guide when considering the

implications of the findings of this study. This qualitative approach may provide insight and understanding on fisherfolk's perspective and collaborative efforts to work with other societal actors for the creation of more effective fishing policies. This may help to bring focus to the role that all societal actors play to achieve effective policies for their societies (Barclay et al., 2017). The qualitative approach provided rich data that demonstrates fisherfolks' perspectives and possible approaches for creating positive social change for effective fishing policies.

The participants interviewed for this study comprised of emerging policy actors – the resource users (fisherfolk) from the Island of the Commonwealth of Dominica. Purposeful sampling was used in this study as the population targeted has similar characteristics and experiences in the phenomenon being studied (see Rudestam & Newton, 2015). The data collection and sampling methods were nonexperimental with an exploratory/descriptive approach to identifying problems in current ocean and marine policies. Data was collected through semi structured interviews with participants. As the researcher, I was the instrument and recorded participant interviews. The resultant interview data was transcribed and uploaded into NVivo 12, which is an organizational software for thematic analysis. I conducted thematic analysis upon the textual data to assess for emergent themes (see Rudestam & Newton, 2015) The lived experience and participant understanding of current fishing policies was presented thematically in Chapter 4. In Chapter 5, the implications of the findings were presented in relationship with congruent research regarding overfishing and IUU fishing practices.

### **Assumptions**

I assumed that the material collected were accurately analyzed through an inductive methodological process. I assumed that the knowledge and experiences of fisherfolk are important to the accuracy and reliability of information. During the data collection phase, I assumed that the participant responses are void of other outside influences as their account was based on personal and informed experiences within the fishing industry. The assumption of this study was that the due diligence of gathering data and the purpose of the study was aligned with the recommendations of the research (see Tracy, 2019). The inductive approach was guided by the collection of raw textual data, which in this study was approached through semistructured interviews. The assumption was that this textual data was used for the development of themes that will address the research question and purpose of the study.

### **Scope and Delimitations**

The scope of this study was focused on members of the fishing community (fisherfolks) of SIDS. In line with this population, my research explored how overfishing and IUU fishing activities were perceived by key actors and stakeholders who depend upon the reliability on the oceans for sustainable living. As such, necessary delimitations to this research included a criterion focused on members of the fishing community in SIDS. The scope of the study was limited to assessing the impact of overfishing and IUU fishing activities through the perspectives of fisherfolk.

A secondary delimitation was the environmental and geographical limitations of small island nations. Small island nations are uniquely situated in geographically remote

regions with decreased resources outside of fishing (FAO, 2019a). SIDS reliance on fishing is key to financial success and nutrition for the communities. As such, the delimitation towards SIDS was necessary as it enabled an analysis of IUU fishing within communities that rely on fishing for their livelihoods. These delimitations were necessary as they provided the opportunity to collect data directly related to the purpose of the study. Additionally, the delimitations address a critical gap in the literature that previously studied fisherfolk communities. Authorities (e.g., Leedy & Ormrod, 2010; Simon, 2011) argued that delimitations help control the focus of a study, and in my research the scope was limited to a narrow slice of the global IUU phenomenon. I sampled the population of a single SIDS state in the Caribbean. In the next section, the limitations of this study are presented.

### **Limitations of the Research**

There are two key limitations of this study. Firstly, the study was limited by the number of participants that were expected to participate. The small sample size was limited to ensure that a qualitative perspective was included within this study focused upon participants considerations and opinions, which is a key characteristic of qualitative research (see Tufford & Newman, 2012). The findings were extended through a discussion of the findings from the perspective of previous related literature as well as recommendations for practice and research. Research bias was also a limitation of this study. I employed bracketing, which is a form of journaling throughout the data collection and data analysis process (Tracy, 2019). Bracketing served as a means of identifying my biases and recording as a means of reflexively mitigating the bias



(Tufford & Newman, 2012). As the researcher, I carefully considered my own biases during the study through journaling and clearly declaring my own opinions or perceptions that could impact the findings of the study. In qualitative research, it is not possible to fully eliminate bias, but noting and declaring bias can aid in reducing opinionating ideologies throughout dissertation findings (Tufford & Newman, 2012). My research was also limited by the geographic range which may not represent all of SIDS.

### **Significance of the Study**

This project is unique as it explored the issues leading to the underrepresented or misrepresented knowledge from fisherfolk in the policymaking process and policies that promote SDG 14. This research may bring awareness to issues that directly affect fishing policies and their implementation with respect to overfishing and IUU. The intention of my research was to bring attention to the effects that encroachment of fishing and IUU fishing has in the jurisdiction of the Commonwealth of Dominica. The Commonwealth of Dominica fisheries, like other SIDS, have faced a huge strain on sustainable measures to conserve the ocean and marine life (fishing) and the threat to sustainable fisheries.

The Commonwealth of Dominica occupies a central position within the Eastern Caribbean archipelago. The Commonwealth of Dominica is bordered by French territories of Guadeloupe and Martinique (to the North and the South; see Nations Framework Convention on Climate Change; UNFCCC, 2015). The Commonwealth of Dominica spans 750.6 square kilometers, with the largest expanse at the Windward and Leeward groups of the Eastern Caribbean (UNFCCC, 2015). The region of the Commonwealth of Dominica includes dense forests, lakes, waterfalls, and ranging

topography. The natural land includes 45,000 hectares of land, with 365 streams and rivers. A total of 20% of the Commonwealth of Dominica is considered protective national territory, which include the Morne Trois Pitons National Park and the Central and Northern Forest reserves (UNFCCC, 2015).

The Commonwealth of Dominica is classified as one of 47 SIDS that face climate and sustainability vulnerability (UNFCCC, 2015). The region has been impacted by significant hurricanes since the 1970s which impacted the infrastructure of the Commonwealth of Dominica. The topographic changes have resulted in a shift of majority of the population within narrow coastal areas on the south and west sides. A total of 44,000, or 62%, of the population of Commonwealth of Dominica live on the coastal regions (UNFCCC, 2015).

Research results may enable policymakers and other key stakeholders to become more cognizant of information that can help create long-term sustainable fishing practices for SIDS in the CARICOM islands. With proper ocean and marine implementation policies, fisherfolks and small rural fishing communities can better utilize their ocean resources (Okafor-Yarwood, 2017; Wright et al., 2017). The findings of my research may assist fishing communities to become more self-reliant, attain social mobility, develop self-worth, dignity, and potentially have long-term economic independence—ensuring that future generations benefit. My research may help shed light on the issues of overfishing and IUU fishing and their impact on SIDS and fisherfolk livelihoods. It is hoped that the dissemination of the results and findings can support sustainable pathways for fisherfolk

in SIDS, benefiting both the fisherfolk and the global population that is dependent upon the sustainability of this planet.

### **Summary**

The problem this study addressed is that fisherfolk perspectives regarding the impact of overfishing and IUU fishing activities are absent from current policies and reforms. The purpose of this qualitative study was to explore the issues leading to the underrepresented or misrepresented knowledge from fisherfolk in the policymaking process and policies that promote SDG 14. The guiding research question addressed the issues leading to the underrepresented or misrepresented knowledge from fisherfolk in the policymaking process and policies that promote SDG 14. In this chapter, the theoretical framework, the ACF model was introduced and reviewed. A qualitative approach and a thematic analysis model for data analysis were also reviewed. I collected data through semi structured interviews.

The assumptions of the study were also presented, which included the inductive approach that gathers information based on participants perceptions and construction of reality. The scope and the delimitations were also reviewed, which included a focus on members of the fishing community (fisherfolk) of SIDS in a single state of the Caribbean. The limitations of the study included researcher bias and the limitations of the small sample size. Finally, the studies posed significance was reviewed, which includes a focus on improving the understanding of encroachment of fisherfolk perspectives to inform the sustainability of long-term fisheries. Chapter 2 addresses evidence-based literature that explored the issues that underlie ineffective sustainable fishing practices. A discussion of

existing barriers that hinder the success of current oceanic and fishing policies are presented.

## Chapter 2: Literature Review

The purpose of this qualitative study was to explore the lack of inclusion of fisherfolk knowledge in the policymaking process and policies that promote SDG 14. I explored fisherfolk involvement in the policymaking process and assess the difficulties of implementation of the United Nations SDG 14 relating to the conservation and sustainable use of the ocean's seas and marine resources (see United Nations, n.d.). Research directly related to the study's research problem and research question is addressed in this chapter. Conducting a thorough literature review was critical for establishing a context and assessing empirical research regarding the purpose of the study (see Snyder, 2019). A robust literature review also provided a critical analysis that assessed gaps in the literature (see Rewhorn, 2018). Conducting a comprehensive literature review was critical to the authenticity of my research. The first step was assessing and describing the appropriate methods used for locating relevant research.

### **Literature Search Strategy**

My search strategy for the most comprehensive and appropriate literature review consisted of relying on research published in peer-reviewed journals following a set keyword and database approach. I searched for articles that addressed fishing policy in the geographic regions outside of the Caribbean. These regions served as useful analogs that helped me develop consistent themes that could be applied regarding fishing policies in the Caribbean. The use of the following search terms uncovered literature published in the past 5 years: *overfishing in developing nations, illegal, unreported and unregulated fishing, global marine policies, fishing governance, marine and ocean life in developing*

*nations, and marine or fishing global agencies. General terms used included United Nations sustainable development goals, policy implementation, overfishing, illegal fishing, developing States, Caribbean countries, small island developing states, fisherfolks, fishermen, blue economy, sustainable marines, and sustainable fisheries.* For compiling relevant literature, search terms were used in different search databases. The research databases used were Emerald Insight, ProQuest, Sage Journal, Google Scholar, and EBSCO. The resultant articles were used to assess researcher references for more relevant articles that were not initially identified. While the Walden library provided great access to the most popular databases, I also amplified my search by subject-based, multidisciplinary, multidatabase search tools, as well as books.

In the chapter ahead, I begin by addressing advocacy coalition theory as the theoretical foundation of my research and analysis and explain why it is a suitable theory for this study. The theoretical foundation is followed by a review of the blue economy and the challenges to fishing sustainability. This is followed by an analysis of the role of fisherfolk and fisheries in the blue economy, poverty, inequality, and sustainability, and fishing practices. This is followed by a review of zoning and fisheries management and implementation of the UN SDG 14.

### **Theoretical Foundation**

The purpose of this qualitative study was to explore the issues leading to the underrepresented or misrepresented knowledge from fisherfolk in the policymaking process and policies that promote SDG 14. I chose the ACF to help explain the policy process in which fisherfolk, overfishing, and IUU fishing are embedded in. The ACF

theory framed the consideration of the phenomenon regarding using progressive collaborations between fisherfolk to increase the sustainability of long-term fisheries. The goal of using this framework was to provide a lens in which I, as the researcher, could assess the phenomenon regarding a larger societal application. A focus was placed on exploring the community's lived experience and perceptions of the best fishing practices considering collaborative efforts between the fishing community and policymakers.

Since its inception, ACF application has increased in empirical and policy-related practices (Cisneros, 2021). Researchers employed the ACF framework to examine policy changes on topics such as the environment, political discourse, energy, public health, illegal drugs, and trafficking, and domestic violence (Jenkins-Smith et al., 2014). Researchers have used ACF to understand how groups and individuals interpret and communicate interactions between policymakers, stakeholders, actors, and communities (Jones & McBeth, 2010). My research may help identify some underlying reasons for the lack of proper ocean and marine policy implementation, the management of marine resources, and the approach to combating overfishing and IUU fishing activities from the perspective of key and emerging policy actors, community fisherfolk.

In this section, a discussion of the ACF founding tenants and constructs was provided. In modern settings, the ACF has been used in terms of assessing how to best meet the needs of the environment as well as the intersection between public policy issues that frame larger structural issues (Markard et al., 2014; Weible et al., 2012). Central to the ACT, are the *coalitions*, *belief systems*, and *learning* in these settings. The modern usage of the ACF is guided by the following seven tenants.

First, policy subsystems are central to ensuring that policy processes are appropriate for each geographical area and issue. Next, the subsystem actors should be considered as active members of the policy inclusion program. This may include government officials, private or nonprivate organizations, experts, scholars, consulting firms, think tanks, and media among others (Allison & Cho, 2020). The ACF also assumed that policy actors are rational and can process the needed information to enact policy creation. Additionally, subsystems can include multiple coalitions of policy actors based on similarities in beliefs. Policies often reflect and translate the beliefs of one or more coalitions (Weible & Sabatier, 2010). The ACF also emphasized that subsystem affairs are guided by the day-to-day actions and experiences of actors. Finally, as a means of understanding policy processes, a long-term perspective is required to ensure that change occurs for future generations (Weible & Sabatier, 2010). These founding constructs are used to frame environmental research and policy creation by focusing on shared beliefs, common values, and methods for effective social change. Together, these are effective models for researchers to view complex issues, such as issues that affect marine and fishing practices in SIDS.

The ACF framework is guided by innovations towards how to best address larger systematic issues while also generating better policy changes across the globe (Sabatier et al., 2019). One way that offers a guiding light towards the contemporary assessment of ACF is the *Tragedy of the Commons*, which is an economic perspective that provides insight into the modern issue surrounding SIDS (Sabatier et al., 2019). The Tragedy of the Commons is a description that considers the behaviors that are conducted across the



globe, which ultimately may lead towards overexploitation of resources (Sabatier et al., 2019). The processes that impact global populations include greenhouse gases, overfarming, usage of nonrenewable resources, deforestation, and overfishing (Sabatier et al., 2019). Each of these processes impacts the climate which can increase the risk of reduced sustainability of the earth. This is central to the understanding of the ACF, which illustrates that issues that are pervasive across the globe will ultimately impact the outcomes of the human population negatively (Sabatier et al., 2019).

In terms of this doctoral dissertation, the effort has been made to bring the ACF into the framework of the fishing community and SIDS. For example, Sparks (2021) noted that increasing the ability to aid SIDS through the empowerment of the fisherfolk is accomplished ideally through the efforts of ACF which brings both policy and the needs of the people together. Similarly, Allison and Cho (2020, p. 12) argued that scholarship that is guided towards activism must center on decolonization through focusing on the perspectives of stakeholders, such as the fishing community and fisherfolk.

In this setting, Allison, and Cho (2020) argued that there is a need to better improve reflections of fisherfolk, environmental changes, and SIDS through the ACF framework. In this study, I will expand on this theoretical framework through a modern setting that explores the experiences of members of the fishing community, particularly fisher folk of SIDS regarding the direct impact that overfishing activities have on the reliability of the use of the oceans as a sustainable living mechanism through the ACF setting.

### **Key Variables Literature Review**

Ocean and marine life sustainability are a critical consideration among SIDS due to overfishing and IUU fishing activities. Encroaching fishing activities threaten SIDS from effectively using their ocean resources (Okafor-Yarwood, 2017). Despite current policies to reduce IUU, encroachment continues in SIDS (FAO, 2021). As a result, many islands face increasing concerns regarding depleted fisheries and the overall change in ocean ecosystems (e.g., coral reef depletion, species extinctions). Global fiscal reform through the FAO of the United Nations, is designed as a model for increased awareness for proper implementation of the Code of Conduct for Responsible Fisheries (FAO, 2021) in SIDS. Generally, the global financial reform provides a framework for increasing awareness and ensuring that the Code of Conduct for Responsible Fisheries is implemented (FAO, 2021). Ideally, these models meet demands for effective fisheries governance, accountability, and implementation to improve human lives, increasing food security, and reducing the levels of poverty (Covert, 2017). However, the success of sustainable measures requires a focus upon the SDG 14 (Barner et al., 2015; Brissett, 2018). Ideally, focus on SDG-14 in the Caribbean Islands would create a collaborative economic regionalism as a motivating factor for better ocean and marine policy implementation. To explore the issues that underlie sustainability measures and operate as barriers, a review of the most common factors contributing to poor sustainability is presented in the following section.

## **Blue Economy and Barriers to Sustainability**

Multiple factors present as opportunities and barriers to ensuring the sustainability practices for fisherfolk in SIDS. Most critical are issues of structural inequality that serve to increase poverty and reduce opportunities or even impetus for the sustainability of fishing efforts (Appeldoorn, 2008; Cinner & McClanahan, 2006; Hughes et al., 2012). In this section, a review of these barriers was discussed. First, the general concept of the *blue economy* is presented to provide an overview of the economic variables that serve to provide barriers and opportunities for SIDS fisher folk sustainability practices.

The term blue economy originated in the past 2 decades in response to the growing realization of the impact and intersection of ocean lifeway practices with the global economy (Smith-Godfrey, 2016; Patil et al., 2016). The blue economy simply refers to coastal and ocean resources that are used for economic and financial needs, such as shipping, tourism, energy, and fisheries (Patil et al., 2016). However, an element of the blue economy that is not considered “marketable” is the innate qualities of biodiversity and carbon storage, which are critical to human survival, but are often overlooked as a resource that cannot be exploited for financial gain (Pauly, 2018). In terms of any economy, critical considerations must be made towards the use of ocean resources and the value we place on the intangible benefits (e.g., biodiversity and protection of species).

In terms of the blue economy, governance strategies are increasingly developing in academic literature and public policy (Silver et al., 2015). Silver et al. (2015) reviewed data collection regarding the UN conferences on sustainable development to illustrate definitions of blue economy governances and strategies for management of the human-to-

ocean relationships. A key concern noted in the proceedings was the gradual reduction of public property that could be protected through global efforts. The ocean and associated assets are increasingly privatized, which reduces the ability to develop governing strategies. Further, Silver et al. (2015) noted that fisherfolk play a key role in sustainability efforts as collaborative efforts could serve as a means of governance through community relationships. Similarly, Smith-Godfrey (2016) argued for an approach to blue economy governance that considers both the quality of ocean life, and the benefits that many fisherfolk and low-economic groups gather from associated resources.

Conversely, Golden et al. (2017) argued that an academic conversation of blue economy and governance lacks a focus towards the true issue, which is ensuring the blue economy is driven by a green initiative that is based on sustainable efforts to keep the planet clean from non-renewable energies and methods that deplete natural resources. To provide a review of relevant factors considered in the blue economy, Table 1 illustrates the economic sectors, revenue, ocean services, and activities.

**Table 1***Overview of the Blue Economy*

Types of activity	Ocean service including R&D	Economic sector or industry
Harvesting of living resources	Seafood, marine biotechnology	Fisheries and aquaculture Pharmaceuticals, chemicals, etc.
Extracting of nonliving resources, generation of new resources	Minerals, gravel, and energy freshwater	Oil and gas Renewables, desalination
Construction of the built environment	Transport and trade Tourism and recreation	Airports defense structures, bridges Shipping Port infrastructure and services
Commerce, tourism, and trade	Instrumentation and personnel Carbon Sequestration Coastal protection	Tourism Coastal development Electronics, research
Ocean observations and forecasting indirect contribution to economic activities and environments	Waste disposal for land-based industry Existence of biodiversity	Blue carbon, habitat protection, restoration, assimilation of nutrients, solid waste, protection of species, habits

*Note.* Adapted from Golden et al. (2017)

According to Golden et al. (2017), governance requires a focus on community and national collaboration and a focus on green initiatives. Notably, 154 billion dollars of the annual gross revenue is contributed to fisheries and aquaculture in the pan-asian regions. To address the growing blue economy, a focus on public and private partnerships through green initiatives is considered ideal to create positive change (Golden et al., 2017).

Collaboration is one measure noted to be effective for reducing overfishing in SIDS. Collaborative efforts take into consideration the formation of a legal framework that encompasses changes to policies with traditional/local fishing practices. This engagement by government and fishery stakeholders gives the assurance of fairness in the regulatory system and fisheries institutions, with more ownership given to those directly affected. However, researchers (see Fabinyi et al., 2015; Islam et al., 2017; Ruttenberg et al., 2018) argued for a more robust examination of key issues affecting the fishing community to ensure sustainable maritime policies. Collaborative policies can ultimately lead to renewed understanding regarding how to address poverty, inequality, and sustainability (Fabinyi et al., 2015; Ruttenberg et al., 2018). Research from Ruttenberg et al. (2018) and Fabinyi et al. (2015) demonstrated that collaborative procedures can improve fishery management through inclusion of fisherfolk perspectives. In the same vein, Islam et al. (2017), Krueck et al. (2017), Lubchenco et al. (2016), and McConney et al. (2016) argued that reducing IUU fishing and overfishing in SIDS requires a collaborative approach through fisherfolk and the scientific community.

Collaboration and alliance efforts towards intergovernmental organizations, such as the UN Framework Convention on Climate Change and the UN World Ocean

Assessment from the UN General Assembly was considered ideal. (UNFCCC, 2015). Golden et al.'s (2017) most critical contribution to academic literature was the emphasis from a purely economic view towards a focus on green initiatives. However, as in previous assessments in this section, the consideration, and perspectives of fisherfolk were absent.

Lawrence (as cited in Bertazzo, 2018) stated that the blue economy does not exclude human management:

We talk about fisheries management a lot, but really, it's the management of fishers that we're doing - we're managing the people, not the resources. And that's why it's so critical to understand what people value the most, how they make decisions, and what incentives they respond to. (para 5)

For effective collaboration to take place among governing bodies, those directly affected should have a voice in the policymaking process.

When considering the reviewed work of Silver et al. (2015), Smith-Godfrey (2016), and Golden et al. (2017), the voice of fisherfolk is absent, which points to a critical gap in practice and praxis across academic literature. However, the comments of Lawrence and Bhalla (2018) pointed to an intersection between blue economy discourses and the habits of fisherfolk. As such, to provide a detailed review of economic issues, the place for fisheries and fisherfolk in the blue economy is discussed in the following subsection.

### **Fisherfolk in the Blue Economy**

As noted, economic explorations of the blue economy are narrowing towards the needed discourse with fisherfolk, which contributes largely to the fishery aquaculture economy (Golden et al., 2017). Cohen et al. (2019) noted the need to consider how fisherfolk and fisheries can exist in the blue economy through a healthy and sustainable model. In the blue economy, fisherfolk and fisheries serve a critical role, to support the lifeways and financial support of 47 million individuals (Cohen et al., 2019; Kelleher & Mills, 2012). However, Cohen et al. (2019) noted that considerations of how these lifeways continue to support the economic needs of fisherfolk is rarely considered. A theoretical ban or elimination of fisheries would be unfeasible and if implemented would harm millions of individuals that depend upon fishery lifeways. The same concerns for fisherfolk economies are mirrored by Béné et al. (2010). Béné (2015) and Pamalakaya-Pilipinas (2015) argued that food security will decrease if the objectives of fisherfolk are not considered. Cohen et al. (2017) argued that the benefits of a small fishery include providing micro-nutrients for consumers, contributing to the needed financial needs of families and small communities, and providing a level of agency for communities that face significant socio-economic inequalities.

Fisherfolk and fisheries also provide opportunities for female financial gain (Njuki & Leone, 2019). Njuki and Leone (2019) noted that fisherwomen in regions of Kenya are a considerable portion of the blue economy. Forty-seven percent (47%) of women in these regions gain financial earnings that contribute to their families and local economies. Traditionally, in many regions, female financial earnings are disproportional



to men; however, fisheries provide a means of decreasing gender inequality. Yet, current efforts to increase sustainability for fisherfolk fail to consider these factors when assessing the blue economy (Njuki & Leone, 2019). Similarly, in a consideration of the blue economy in the Indian Ocean, Roy (2019) argued that governance strategies for fisherfolk should include the inclusion of stakeholders to explore how policy can be implemented and economic stability can be insured for fisherfolk lifeways.

Similarly, Appeldoorn (2008) noted that overfishing activities in the Caribbean are related to poor ecosystem-based strategies. Appeldoorn (2008) examined fisheries impact across coral reef ecosystems in Puerto Rico, the United States, and the Virgin Islands. For data collection, the strategies used by the US Regional Fishery Management Council were examined to assess current approaches to reduce overfishing issues. Appeldoorn (2008) concluded that there was a critical lack of consideration of policy that would benefit fisherfolk and reduce overfishing. Further, implementation of current fishing strategies was lacking, which compounded the overfishing phenomenon and increased coral reef destruction. The author concluded that future studies should assess fisherfolk needs, socioeconomic issues for relevant populations, and applicable strategies for reducing overfishing. The work of Appeldoorn (2008) further emphasized the need for the proposed study and illustrates that within the past 17 years (e.g., since the publication release) recommendations for fisherfolk inclusion are lacking in academic research.

In exploring the fisherfolk place in blue economy discourse, the most common factor brought to attention is the importance of the economy for these communities'

continued success (Njuki & Leone, 2019; Roy, 2019). Pamalakaya-Pilipinas (2015) and Cohen et al. (2017) argued for the benefits that fisheries provide to the local and global economies, however, when assessing the blue economy considerations of fisherfolk is absent. Academic literature that includes fisherfolk direct perspectives towards sustainability efforts is not available in the reviewed literature. However, exploring the qualities of fisherfolk lifeways as they relate to sustainability efforts and the blue economy is essential to this review of the literature. As such, the current explorations relating to socioeconomic status, poverty, sustainability, and fisherfolk habits are presented in the following section.

### **Poverty, Inequality, Sustainability and Fishing Habits**

In considering fishing habits and fisherfolk lifeways, the disproportionate socioeconomic variables which provide the impetus for continued unsustainable fishing practices are a noted issue in academic literature. The link between social inequalities and fishing habits is notably connected to the current unsustainable practices in the fisherfolk lifestyle (Cinner & McClanahan, 2006). Overfishing in fisheries in regions such as Papua New Guinea is found to be correlated to socioeconomic factors (Cinner & McClanahan, 2006). Increased reliance on fishing is noted to lead to a decrease in sustainability and food resources.

Lozano et al. (2019) explored issues that surround small-scale fisheries through assessing the industrial changes, as well as policy efforts across the globe. For their efforts, a systematic review was conducted through an assessment of 1,723 articles that were published during the period of 1960 and 2015. The resulting 434 articles were

thematically coded to assess for key themes. The central findings indicated that the increasing reliance on technology as well as lack of sociocultural focus has led to an increasing issue regarding the reduction of our environmental tools and an increase of reliance on technology and destruction of natural resources. Lozano et al. (2019) noted that it is critical to creating change relying on both sociocultural and technological knowledge.

Lozano et al. (2019) illustrated that there is a need to better understand the experiences of fisherfolk which can better increase our understanding of how to meet the needs of fisherfolk and the natural environment. Cinner and McClanahan (2006) noted that increasing poverty and lack of proper resources led to overfishing activities, which are now improperly regulated by governing authorities. Thus, illustrating the intersection between economy, inequality, and poverty in overfishing strategies. The same concerns are noted in South Africa, in which some communities rely on marine fishing for sustenance (Kalina et al., 2019). Kalina et al. (2019) noted that international policies, after the 9/11 attacks in the United States, led to a focus on fishing in a small marine region. Local fishers are excluded from many fishing regions and are often forced to illegally fish for food sustenance and income. However, explorations of the blue economy fail to consider the importance of fishing lifeways in examples such as South Africa. Further, the absence of the adaptation of local policies in international policy considerations further perpetuates the issues of proper fishing sustainability (Kalina et al., 2019).

Similarly, Maharaj (2017) provided an overview of subsistence needs for fisherfolk in South Africa. In efforts to increase tourism and reduce fishing efforts, Durban beachfront in South Africa restricted access to fisherfolk. As Kalina et al. (2019) corroborated, fisherfolk were subsequently shut off from their only access to food and income. Thus, fisherfolk reacted in protest as well as illegal efforts to fish. Maharaj (2017) provided one of the few reflections from fisherfolk that is critical to this exploration. In interviews with fisherfolk, one participant noted, “by taking away the livelihood of the fishermen the rich will get richer while the poor get poorer” (p. 752). Maharaj (2017) provided one example of how fisherfolk can be incorporated in discussions of blue economy, social inequality issues, and the importance of incorporation of fisherfolk perceptions. However, the reflections of fisherfolk were mainly focused on their understanding of social inequality and the traditional history of their fishing sights. These perspectives are critical but further interviews are needed to assess how these perceptions can contribute to fisherfolk methods for increasing sustainability methods.

Hughes et al. (2012) noted that the risk for marine life damage is increasing nationally due to the flux of coral reef fisheries. The authors also provided a foundational review of coral reef fisheries and considered the impact of their destruction upon food security issues and the ability of countries to adapt to the continued lack of food. The authors further addressed a vulnerability index to explore how a set of 27 countries were contributing to marine life destruction through fishing habits. Countries with the most notable risk were Indonesia, Liberia, Malaysia, and Sri Lanka. Hughes et al. (2012) also

argued that increasing unsustainable fishing habits are most critically linked to low-income countries, which have poor resources to increase sustainability.

Historically, fisherfolk from SIDS face economic disparities leading to their lowered socioeconomic status. Researchers have argued that inequalities fishers face is due to the marginalization of government assistance, income instability, and lack of occupational alternatives (Fabinyi et al., 2015; Islam et al., 2017). As global depletion of marine resources plagues SIDS, a vacuum of income disparities and inequality are created. Resultantly, these critical actors are cynical of the necessary changes needed for proper fishing practices. Similarly, Wamukota et al. (2014) asserted that inequality begins with fisherfolk having a lack of bargaining power over more powerful influencers on the price of fish. Further perpetuating a lack of market integration, giving fisherfolk no other choice but to accept their place in the policymaking process. Fabinyi et al (2015) also argued that the concern over local inequalities overshadowed fisherfolk's awareness and ability to implement proper sustainable fishing practices.

Fisherfolks concern over inequality led to deliberate efforts for noncompliance as they continue to face indebtedness and poverty (Islam et al., 2017). As inequality increases as a concern within the fishing community, sustainable fishing practices become secondary priorities. Seemingly, the models of increasing equitable methods may serve to bridge the gap of poverty and economic freedom by providing adequate support. Through these new support models, policies and local fisherfolk will realign priorities and create sustainable fishing practices and implementation. However, as it stands, the current models would not serve to decrease poverty and hence stand as a key issue of

fisherfolk protest to sustainable fishing methods. To assess current practices, the following discusses zoning and fisheries management in SIDS.

### **Zoning and Fisheries Management**

Data from specific geographic regions across the globe provided insight regarding the impact of global changes on fisherfolk and SIDS. Ramnarine-Ramsawak and Suite (2018) explored data from the Caribbean islands across Trinidad. The authors noted that the Godineau River supports the natural environment of the regions. The river is critical to the natural environment and guides the soil water intrusion as well as the natural balance of the soils that support agriculture. However, the construction of national highways across the country destroyed mangroves that line the river and increased flooding, which has also impacted the economy of local fisherfolk. Ramnarine-Ramsawak and Suite (2018) explored mitigation measures and noted that the most ideal methods would include the following procedures:

1. Restore old sluice gates and install new ones to limit saltwater intrusion which affects flora, fauna, and therefore fishermen
2. Replant red mangroves to restore areas and protect them from floods and storms
3. Choose new strains of crops which can withstand the saltwater intrusion into the soil
4. Provision of Public Education Programs
5. Provision of incentives for healthy and green practices

The work of Ramnarine-Ramsawak and Suite (2018) demonstrated that there are possibilities that can impact the climate, the people, and the economy positively, but there remains a lack of understanding of how the local community views these measures, which again point towards the needs for inclusion of perspectives from community members that may be directly impacted.

To understand key factors affecting fishers state of inequality it is important to consider zoning and fisheries management intersection with local poverty and sustainability discourse. For example, Ruttenberg et al. (2018) examined the scientific methods and mechanisms for proper ecological assessment in determining proper fishery management practices. The authors argued that overexploitation is related to a lack of control by local fisheries which serves to deepen seeds of poverty. The authors further asserted that it is critical to conserving and creating policies that protect marine life to provide security for the locals and increase economic and financial stability. Overfishing has also been a major cause of the lack of marine border protection within SIDS. Thus, it is important to note that the lack of fisherfolk involvement during the policymaking process compounds the issues of implementation. Overfishing has also been a major cause for the lack of marine border protection within SIDS as it continues to be a threat to the overall diversification and functioning of global sustainable ecosystems (see Krueck et al., 2017).

Proper fisheries management is critical for the sustainability of proper fishing policies and socioeconomic independence for communities. The lack of proper fisheries management directly affects how fisherfolk are affected through marginalized inequality.

As social-ecological systems, fisheries directly affect who can fish, how much can be fished, when, and where fishing can be done. As a result, when there is a breakdown in this system, those grossly affected are the fishers and their communities (Smith et al., 2019). Strong fisheries management systems ensure that fishers are included in governing activities and increase transparency and equitable outcomes for all those affected. Further, a more desirable tradeoff system is addressed from a social and economic perspective (Smith et al., 2019). With this approach, key stakeholders, and actors (fisherfolk) can feel liberated from marginalization and focus on practicing sustainable fishing that is advantageous for long-term fisheries performance.

In sum, researchers such as Appeldoorn (2008) and Cinner and McClanahan (2006) noted that the incorporation of fisherfolk perspectives is not addressed in recent academic literature. For example, in the past five years (e.g., 2016-2020), research had been focused upon historical evidence of overfishing, assessment of impacted species, and the importance of reducing overfishing (see Seeman et al., 2018). Consequently, raising the need for immediate consideration of fisherfolk perspectives in SIDS regarding overfishing. Notably, previous researchers identified legal framework, marine living resource management, economic development, and environmental theme(s) that served as the foundation for the focus of the background study (see Shamsuzzaman & Islam, 2017). Yet, previous researchers failed to examine the development of governance of IUU and overfishing from the fisherfolk perspective. As a result, I hope to contribute to the body of knowledge needed to address this problem by bringing awareness to public policy administrative decision makers in implementing sustainable and effective policies that



affect IUU and overfishing. In the proceeding section, an overview of zoning and fisheries management is presented.

### **Implementing SDG 14: Life below water**

SDG 14 is a blueprint that is guided towards conserving the oceans, the sea, as well as marine resources. The guidance of the program is to ensure sustainable development. The United Nations (2020) demonstrated a set of key outlines that may best meet these concerns.

The goal of the program is to decrease ocean acidification, address global marine key biodiversity issues, as well as align the progress of sustainable fisheries. After COVID-19 in 2020, there have been new changes to the plan that are considered crucial to resiliency as well as meeting the 17 goals of the plan (UN, 2020). The seventeen goals of the plan include life below water alongside addressing issues such as poverty and hunger that are intrinsically tied within the difficulties faced in the current unsuitable environment (UN, 2020). Central to this plan is addressing SIDS as well as the well-being of the fisherfolk:

Small-scale fishers, who account for more than half of total fishery output in developing countries, continue to be among the most marginalized food producers. Moreover, evidence suggests that the COVID-19 crisis is already affecting their livelihoods adversely, as global demand for seafood dwindles and transportation restrictions prevent market access. At the same time, small-scale producers fulfill a critical role in providing food for local communities. It is more important than ever for countries to support small-scale fishers as key contributors

to sustainable food systems. This can be achieved by adopting specific initiatives to implement the internationally agreed Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (UN, 2020, para 2).

In this statement, there is a guidance towards addressing small SIDS further throughout Oceania and across other developing regions. The United Nations noted that the share of sustainable fishers averages 1.55 percent and 1.11 percent across 2011 and 2017 in terms of the local communities. In this setting, the rising value of these fisheries is evident, however, the local communities and indigenous peoples are failing to receive economic benefit, but instead are becoming increasingly marginalized (UN, 2020).

Fish stocks are the central portion of addressing how to better life below water. According to the UN (2020), the biological sustainable level of the fisheries has decreased from 90.0 in 1974 to 2015 at 65.8 % in 2017. This is a central decrease in the sustainability of these fisheries. In particular, the fish stock has dropped across certain portions of these global settings. For example, in the Southeast Pacific there was a 45.5% decrease in fish stocks (UN, 2020). However, the sustainability of the fisheries continues to decrease. The initiative developed by the UN (2020) indicated that the current methods for increasing the sustainability of fisheries are failing effectiveness.

The UN (2020) deemed the development of sustainable fishing policies and practices as a pivotal issue that also impacts food security for developing nations. The universalization of a global economic system is important for addressing economic and environmental issues. For example, the current global economy is perpetuated by

inequality that stifles regional and global socio-economic growth in many Caribbean countries (Brissett, 2018). The global economic system can be reformed to target inequality and increase sustainability efforts for fisherfolk. Ultimately, years of overfishing and illegal, unregulated, and unreported fishing, compounded by climate changes, decreased healthy sustainable oceans (see Brissett, 2018). The United Nations and other marine-focused organizations, such as Conservation International, and International Fisheries Conservation Program, identified methods for creating sustainable global fishing policies, however, success in implementation ultimately lies with individual countries (see Barner et al., 2015).

According to the FOA (2019), the depletion and disruption in ocean ecosystems increased at alarming rates due to climate and environmental changes. It also noted that as the world population increases, especially in developed nations, food sustainability decreases. These changes lead to encroachment and overfishing in vulnerable parts of the world. Nearly three billion people rely on fishing as their main protein intake (20%). However, in small islands, this reliance exceeds 50% (FAO, 2021). For SIDS, a drastic decline in small-scale fisheries makes sustaining food difficult, which leads to food insecurity and increased reliance on outside economic opportunities (FAO, 2021).

The Commonwealth of Dominica fisheries also lack from oversight regarding sustainability practices. Nationally Determined Contributions (NDC) which were established to address climate crises as well as provide renewed focus on how to address sustainability of fisheries are present within the Commonwealth of Dominica. According

to the 2015 United Nations Framework Convention on Climate Change (UNFCCC), the Commonwealth of Dominica is:

[The Commonwealth] of Dominica hereby communicates its Intended Nationally Determined Contribution (INDC), in accordance with the relevant paragraphs of Decisions 1/CP.19 and 1/CP.20, towards achieving the ultimate objective of the Article 2 of the Convention, which provides up-front information to facilitate the clarity, transparency and the understanding of the INDC. Dominica is also pleased to provide additional accompanying information relating to mitigation, adaptation planning/management and support for implementation.

The NDC indicated that there will be a proposed 8.1% reduction in fishing procedures to improve the sustainability practices and improve green growth across the Commonwealth of Dominica. The NDC report also recognized that the Commonwealth of Dominica is in a “vulnerable positions economically, socially, culturally, and environmentally” (UNFCCC, 2015, p. 1) due to the increased risk of natural disasters and ecological fragility that impacts SIDS. As a result, the NDC was ideally implemented in 2016 and will end in 2030. In turn, the Commonwealth of Dominica is ideally supported through access to the following national policies and strategies: (a) National Climate Change Adaption Policy (2002), (b) National Capacity Self-Assessment (2004), (c) Growth and Social Protection Strategy, (d) Commonwealth of Dominica Low Carbon Climate Resilient Development Strategy and Compendium Strategic Program on Climate Resilience (2012), (e) Commonwealth of Dominica National Energy Policy (2014), and (f) Commonwealth of Dominica Sustainable Energy Plan (2014).

Voluntary National Reviews which are critical for the oversight of harmful fishing practices are also absent from the Commonwealth of Dominica's fisheries. As a result, there is a continued need to provide a foundation regarding how to address these issues which could later include the development of NDCs and VNRs for the Commonwealth of Dominica fisheries.

Other policies designed to address fisheries and sustainability are also lacking implementation within the Commonwealth of Dominica. For example, the Intergovernmental Conference on Marine Biodiversity of Areas Beyond National Jurisdiction from the UN (2021) founded a legally binding instrument to ensure the Law of the Sea is implemented to address sustainability among regions without national jurisdiction. The FOA (2021) indicated that the Commonwealth of Dominica fall within the domain of large pelagic fisheries, which is a form of marine fisheries that foster yellowfin tuna, dolphin fish, kingfish, and swordfish (National Report of the Commonwealth of Dominica, 2001). As of 2001, the National Report of the Commonwealth of Dominica report recorded 509 canoes, 402 keel fishing vessels, 50 fiber glass fishing vessels, 3 long-lie fishing vessels, and 1,800 part-time and 435 full-time fisherfolk. The fishing activity primarily occurs from January to June. Table 2 represents an overview of the fishing practices within the Commonwealth of Dominica as reported by the NRCD (2001):

**Table 2***Fishing Practices Within the Commonwealth of Dominica*

Fishery Type	Production	Outcome/Sustainability
Reef Fisheries	168.3 tons	In addition to heavy fishing pressure, there are negative impacts on habitat from non-fishing, land-based sources of pollution
Deep Slope Fisheries	58.5 tons	In addition to heavy fishing pressure, there are negative impacts on habitat from non-fishing, land-based sources of pollution
Coastal Pelagic Fisheries	485 tons	In addition to heavy fishing pressure, there are negative impacts on habitat from non-fishing, land-based sources of pollution
Fishery for Migratory Pelagic	367 tons	Small size of boats Lack of use of navigational aids Fishing fleet presently operates within a 12-mile radius of the island.

*Note.* Source NRDC (2001).

Regarding more recent policies and plans for IUU and overfishing among the Commonwealth of Dominica, is the Commonwealth of Dominica National Biodiversity Strategy and Action Plan (CDNBSAP) that has guided policy previously (Ministry of Environment, Natural Resources, Physical Planning, and Fisheries, 2013). According to the CDNBSAP (2013), current threats to biodiversity and sustainability among the Commonwealth of Dominica are (a) loss of agricultural lands due to development, (b) environmental impact assessments are lacking or entirely absent, (c) national budget constraint impacts sustainability, and (d) there are weak legislative frameworks that integrate the importance of biodiversity conservation.

Current policies to combat IUU and overfishing in SIDS lack implementation and enforcement. This is largely due to a lack of proper resources and government support, which destabilizes proper reform and reduces the ability to combat offenders (see Bissett, 2018). Barner et al. (2015) suggested an empirical scientific approach to create mandated catch limits and rights-based approaches to fishery management. However, such inclusion of empirically based policy is yet to be realized in SIDS. However, the inclusion of fishers' lived experiences in creating a collaborative effort with policymakers through scientific approaches and policy amendments may serve to fill the gap noted by Barner et al. (2015). Further, such models are critical to ensuring that localities are held responsible and that key stakeholders will ensure proper facilitation. The examination of marginalization due to inequality is also explored as it relates to the lived experiences of fisherfolk in SIDS.

## Summary and Conclusion

IUU fishing activities drastically affect the ability of SIDS to use ocean resources. Throughout the literature review, relevant assessments were identified that explored the evolution of this issue and current intervention strategies. Researchers have argued that the development of SDG 14 is a motivating factor for the implementation of improved marine and ocean policy. Researchers have identified factors leading to the current phenomenon, such as poverty, inequality, and lack of effective sustainability discourse. In this same vein, marginalization was a consistent variable in academic literature, with a focus on income instability and the lack of alternatives for fisherfolk communities. Some research has been applied to assessing the factors that lead to inequality. They include over exploitation as a key factor that leads to continued poverty.

However, in terms of the perspectives of fisherfolk, only a few researchers assessed their perspectives on inequality. Researchers have also not sufficiently considered how awareness raising and public policy can be ideal tools for evaluating and reducing IUU and overfishing. Notably, there is a lack of academic literature that includes assessments of the perspectives of fisherfolk. As such, the purpose of this study, was to understand the experiences of members of the fishing community (fisherfolk) of SIDS, the impact of overfishing and IUU fishing activities, and how they directly affect reliability on the oceans as a sustainable living entity, and the misrepresentation of fisherfolk awareness and knowledge of the Law of the sea. This knowledge gap identified in this literature review will need to be filled. I explored fisherfolk and other key stakeholders' involvement in the policymaking process and identify the challenges for the



implementation of SDG 14 for the sustenance and conservation of the ocean, seas, and marine resources. Chapter 3 provides the materials and methods for this study. This includes a rigorous discussion of the instrumentation, sample, and population, as well as data analysis.

### Chapter 3: Research Method

The underlying reasons for the lack of proper ocean and marine policy implementation, the mismanagement of marine resources, and overfishing and IUU fishing activities by key and emerging policy actors, including resource users (fisherfolk) is a growing concern. The problem I addressed in this study is that fisherfolk perspectives regarding the impact of overfishing and IUU fishing activities are absent from current policies and reforms despite the importance of these perspectives for improving overfishing and IUU. This problem has impeded the efforts to address the needs of small-scale fisheries (see Islam et al., 2017). Previous researchers have also failed to examine the issue of governance relating to overfishing and IUU fishing from the fisherfolk perspective in SIDS.

The purpose of this qualitative study was to explore the issues leading to the underrepresented or misrepresented knowledge from fisherfolk in the policymaking process and policies that promote SDG 14. My research also examined the perceptions of the effects of these activities on fisherfolk and the opportunities for improved sustainability. I explored the lived experiences of fisherfolk to identify the difficulties for the implementation of established UN SDGs for the sustainability and conservation of oceans, seas, and marine resources. The study results may provide a greater understanding of fisherfolk perceptions of the impacts of IUU fishing and overfishing on their livelihoods and means to effect proper fishing policies.

This chapter describes the methodology and research design that I used to answer the research question. The section contains an interpretive description of key research

methods and an examination of the fundamental reasons for the lack of proper implementation of fishing policies by the Dominican fishing community. This chapter addresses the research design and rationale, my role as a researcher, the methodical approaches, the trustworthiness of the research findings, and ethical considerations.

### **Research Design and Rationale**

A qualitative approach provided exploratory data that addressed the phenomena of IUU fishing and overfishing activities from the perspectives of fisherfolk. The research problem, purpose, and questions informed my decision to select the method and design for my study. The primary research question to be answered is “What are the issues leading to the underrepresented or misrepresented knowledge from Small Island Developing States fisherfolk in the policymaking process and policies that promote SDG 14?”

The main themes of focus in this study are the IUU fishing and overfishing, the impacts of overfishing and encroachment on the livelihoods of the fishing community, barriers to fishing sustainability and the blue economy, and implementing SDG-14. My goal was to gain a comprehensive understanding of the experience and perceptions of fishing communities about IUU fishing and overfishing activities in SIDS. A qualitative method was chosen to gain participants experiences and perceptions through the collection of nonnumerical data that frames the lived experiences of stakeholders who are directly experiencing and involved in IUU fishing and overfishing in SIDS (see Richards & Hemphill, 2018).

The selected research method was relevant in collecting data and information within natural settings using narratives, recordings, and field notes. The flexibility of this method was preferred over the structured quantitative method because it allowed me to provide relevant input to gain quality data and information that improved the credibility of the study (see Richards & Hemphill, 2018). The structured nature of the quantitative method made it inappropriate for my research. Through my study, I sought to gain deeper insights into the study phenomenon and did not collect numerical data for statistical analysis (see Anfara & Mertz, 2014).

The phenomenological research design was appropriate for addressing the posed research question regarding the perceptions of fisherfolk regarding policymaking and policies that promote SDG 14. Phenomenology, as defined by Husserl (1970), considers the construction of social meaning through the lived experiences of individual (Korstjens & Moser, 2017). Phenomenology is a qualitative approach relevant to exploring lived experience and perceptions of individuals who have experienced the phenomenon of study. This research design facilitates the development of meanings connected to the phenomenon of study (Bryman, 2016). Phenomenological design was ideal for gathering information from participants and exploring how meaning was constructed among these shared lived experiences (see Bryman, 2016). Ethnography is focused on observing the phenomenon over time hence was not a suitable design for this research (Flick, 2018). Grounded theory is focused on developing a theory to explain the phenomenon, which was not the focus of this research but rather on exploring the lived experiences and perceptions of fishing communities in SIDS on IUU fishing and overfishing activities

(see Richards & Hemphill, 2018). The narrative research was used to generate a sequential theory about the perception and experiences of fishing communities in SIDS.

Transcendental and hermeneutic phenomenology is the guiding phenomenological design (Bevan, 2014). Transcendental is descriptive whereas hermeneutic is an interpretive type of phenomenology. Transcendental phenomenology is also known as the interpretive phenomenology approach because it involves making meaning of the descriptions provided by participants to make sense of the provided information (Cypress, 2018). Hermeneutic phenomenology design is also known as pure or descriptive phenomenology because it presents descriptions as presented by participants without any interpretation.

My study was based on transcendental phenomenology rather than hermeneutic phenomenology to present descriptions as reported by respondents (see Smith, 2015). This design was relevant in exploring the lived experience and perceptions as well as shared meanings of fishing communities who have experience with IUU and overfishing activities. The use of the transcendental phenomenological method allowed me to explore the construction of meaning from fisherfolk regarding issues leading to the underrepresented or misrepresented knowledge from fisherfolk in the policymaking process and policies that promote SDG 14. The use of the phenomenological approach led to an interpretation of these lived experiences that may elucidate useful information to promote SDG 14 through the perceptions of fisherfolk who directly experience or witness IUU fishing and overfishing practices.

### **Role of the Researcher**

This research was motivated by my interest in environmental sustainability, specifically marine life. My specific role as a qualitative researcher in this study included the selection of participants, collection of data and information through interview questions, and analysis of collected data and information. During this study, I adopted the observer-participant role, as Cypress (2018) noted is the main role of a qualitative researcher in data collection. Data and information was collected from 14 fisherfolk through semi structured interviews. As Marshall and Roosman (2016) recommended, I observed participants during the interview for their body language, took field notes, guided participants through the interview process, and maintained objectivity throughout the process. Further, Marshall and Roosman noted that the additional role of the researcher should include transcription of data, coding into themes, compiling, analyzing, and translating data and information. In line with the recommendations of Marshall and Roosman, as a qualitative researcher, I attempted to build trust with the participants during interviews.

It is also important that I reduced personal bias likely to compromise the credibility of study findings. Accordingly, I did not have personal or professional relationships with any of the research participants. I refrained from interfering with participants' responses throughout the interviews. Consistent with Applebaum's (2014) recommendations, field notes were used to capture any reactions. Birt et al. (2016) emphasized that a journal is useful in tracking all actions of the study thereby reducing bias, which I employed. A reflexive practice should include journaling which is

completed during data collection and analysis (Deggs & Hernandez, 2018). For reflexivity, I discussed my personal bias throughout the data collection and analysis process. Each experience during the process of data collection was fully accounted for greater transparency and credibility of results. I encouraged competence and clarity during the interview process without influencing its outcomes (see Birt et al., 2016).

### **Methodology**

A qualitative methodological approach and transcendental phenomenological design were the guiding frameworks for this research.

#### **Participant Selection Logic**

Fourteen fisherfolk were recruited from the fishing community in the Commonwealth of Dominica. Smith (2015) recommended that a small sample of five to 15 participants in qualitative phenomenology is effective in providing a broadly detailed and diverse account of the phenomenon of research to saturation. The logic for choosing fisherfolk was attributed to their direct experience of IUU and overfishing activities in SIDS. Like other SIDS, Dominica fisheries have faced a huge strain on sustainable measures to conserve the ocean and marine life (Palinkas et al., 2015; Smith, 2015) and this is a threat to sustainable fisheries and the achievement of SDG-14. A purposive recruitment technique used to select a sample of fisherfolk.

The following inclusion criteria were used for participant selection: (a) fisherfolk in Dominica with at least 5 years of experience in the fishing industry, (b) directly or indirectly affected, involved, or benefited from IUU or overfishing activities, (c) experienced with 5 or more years of fishing work, and (d) registered with the Dominica

Fishing Association. The Ministry of Agriculture and Fisheries posted recruitment flyers through their regional hubs and provided a list of registered fisherfolk. Interested participants who contacted me were asked the inclusion criteria to ensure eligibility to participate in the study. Participants were informed about the topic and the purpose of the study. Initially, about 20-25 participants were sampled from the list for telephone screening, and ultimately 14 participants were recruited for the research. A demographic questionnaire was emailed to participants to fill out before their interviews. A sample of 10-12 participants was deemed suitable for this research based upon previous recommendations for a transcendental phenomenological study (see Bevan, 2014; Cypress, 2018; Smith, 2015). To achieve saturation, I aimed for a sample of 10-12 participants; I was able to interview a total of 14 participants.

### **Instrumentation**

Data was collected using a semi structured interview guide. According to Bearman (2019), a semi structured interview is a preferred tool for collecting research data via Zoom, Teams, WhatsApp, and Skype, which was adopted within this study. Interview questions were structured on the primary research question and literature review themes. The interview guide was based upon the guiding research question as well as from drawing from the key themes presented in the review of literature. I crafted the tool through the guidance of key themes listed in the literature and the research question. I employed an expert panel to guide and review the developed interview protocol (see Castillo-Montoya, 2016 and Doody & Doody, 2015). The interview guide was reviewed by an expert panel of three or more professionals with terminal degrees. The expert panel



had 5-7 days to review the data collected and return feedback to the researcher. The reviewed feedback was incorporated within the instrumentation along with guidance from the dissertation committee (see Bearman, 2019).

### **Recruitment Procedures, Participants, and Data Collection**

The recruitment process took place after the Ministry of Agriculture and Fisheries posted recruitment flyers through their regional hub system. A purposive sampling technique was used to recruit 14 participants. The purposive sampling approach was applied in screening to select participants that met the inclusion criteria. I also ensured that sample saturation was met through gathering data until no new themes were present through data collection (see Tracy, 2019). Thus, 14 participants are ideal for this study to gain rich and insightful data in relation to the research problems and questions. However, as the researcher, I gathered information until it is apparent that a saturation of information was satisfied (e.g., the same themes continually arise) from data analysis (see Sandelowski et al., 1997).

The recruitment process began with a request to fisheries officials that they post a recruitment flyer in local fisheries offices. Interested participants who contacted me were asked if they met the inclusion criteria to ensure eligibility. Participants were informed about the topic and the purpose of the study. Initially, about 20-25 participants were purposively sampled from the telephone screening and ultimately 14 participants were recruited for the research. At any time during the interview process, I reminded each participant that their participation was voluntary and that they had the option to quit at any point in time.

The information gathered from participants were kept private and confidential by securing them using passwords for electronic information and securely locked for hard copy materials. To conceal their identity, alphanumeric letters were used to identify participants instead of their real names. Some information that would likely reveal participants' identities were redacted to maintain confidentiality (see Resnik, 2018). The information from interviews was treated with the utmost confidentiality. All collected data and information such as transcripts, field notes, and consent forms was secured from unauthorized third parties and only accessible by the research committee and researcher when required (see Strijker et al., 2020). Collected data will be kept for five years and then it will be destroyed.

### **Data Analysis Plan**

I explored the lived experience and perceptions of fisherfolk regarding the IUU and overfishing. I collected detailed information on the experiences and perceptions of fisherfolk on the ocean and marine fishing activities in SIDS. Following the guidelines of Richards and Hemphill (2018), a thematic analysis of these accounts was conducted to answer the research question. Through thematic analysis of collected information and data from interviews, I adopted the following steps:

1. I read each transcript repeatedly to understand and make initial notes of important ideas and thoughts.
2. I developed a codebook that clearly delineates the initial codes, categories, and themes developed.

3. This was followed by the formation of initial themes and emerging ones derived from the interview transcripts.
4. Initial and new themes in the transcripts that are similar were grouped together.
5. I identified common themes relevant for answering the research questions for analysis.
6. Finally, a report was written to address the research problem and research question (based on Pietkiewicz & Smith, 2014).

The coding occurred through the assistance of the organizational software, NVivo. NVivo provides a set of tools and useful organizational procedures that is useful for tagging similarities and text to complete the data analysis procedure. While using NVivo, I manually identified similarities in textual information across each participant. I marked these codes in the software. After identifying initial codes, I grouped codes into categories (Pietkiewicz & Smith, 2014). After grouping codes into categories, I assessed the reviewed data for emergent themes. The reviewed themes were defined and listed in Chapter 4. During this process, I developed a codebook that clearly lists and links codes, categories, and emergent themes. All tables associated with coding and themes are available in the appendices to demonstrate the trustworthiness of the study in Chapter 4.

### **Issues of Trustworthiness**

Trustworthiness is an important component in ensuring credibility, dependability, transferability, and confirmability (Richards & Hemphill, 2018). According to Connelly and Peltzer (2016), these elements are essential in gaining confidence in research

methods and procedures, and the study outcome. As the researcher, it was my responsibility to safeguard the confidentiality and information of each participant securely. My experience in research work and area of study was also essential in enhancing the credibility of study outcomes through my input (see Richards & Hemphill, 2018). However, I was cautious to minimize personal bias.

Transferability in qualitative research is synonymous with generalizability in quantitative research. This concept relates to the applicability of the findings to practice, the population of interest, and future research (Connelly & Peltzer, 2016). The main essence of sampling in research is to transfer its outcomes to the various contexts and settings such as the general population from which the sample was selected and in practice (Lincoln & Guba, 1985). In this case, the findings needed to be extensively applicable in practice to fisherfolk and other stakeholders to address issues of IUU and overfishing activities in small island developing states.

The transferability of results is enhanced through appropriate methodological approaches. Evidence supporting the application of findings to other populations, contexts, and times is provided to readers. I provided in-depth and detailed descriptions of the study sample and sampling methods, data collection instruments and procedures, interview location, times, and relevant methodologies used in carrying out the research (see Korstjens & Moser, 2018). These descriptions of research design and methods are crucial evidence to readers and other scholars about the transferability of study outcomes.

The concept of dependability is synonymous with reliability in quantitative studies. The measures used in the research need to consistently generate similar results in

a replicated study. Research errors are the main threats to dependability and will be prevented using a detailed methodological description and audit trail (Connelly & Peltzer, 2016). I attempted to provide a clear and detailed procedure used in the study as supporting evidence that the right methodology was followed and could as well be replicated by other researchers. The inclusion criteria were utilized to ensure that the appropriate participants were selected for the interviews. An audit trail was used consisting of notes and materials to document the decisions and assumptions of my study, as suggested by Rose & Johnson (2020).

Confirmability is the fourth component of trustworthiness in qualitative research referring to the extent to which the researcher can confirm findings. It is as simple as explaining decisions made in the research. Thus, research data and its interpretations are factual and derived from collected data rather than the imagination of the inquirer (see Hadi & Closs, 2016). Evidence of methods and procedures adopted were presented as evidence to support the findings, which include the use of direct quotations.

### **Ethical Procedures**

Every research effort involving humans must consider ethical aspects to provide protection from potential physical and psychological harm to improve the credibility of results. These requirements include approval from relevant bodies, maintaining the confidentiality of participant information, privacy of participants' identities, consent, voluntary participation with inducement, and acknowledging all borrowed materials (Strijker et al., 2020). Walden's Institutional Review Board approval was received prior to beginning the research. The approval number for this study is 05-10-22-0099783.

Participation in the study was not incentivized and was voluntary. During the telephone screening stage, participants were informed about the purpose of the research and that withdrawal was allowed at any stage of data collection without giving notice. Acceptance confirmed their consent to voluntarily participate in the interview. The participants had the option to voluntarily exit the study at any point for any reason.

### **Summary and Conclusion**

The purpose of this qualitative phenomenological study was to critically examine the experiences of members of the fishing community (fisherfolk) of SIDS regarding the impact of overfishing and IUU fishing activities. My research assessed the effects of these activities on their livelihoods and the sustainability of the oceans as a source of food and sustainable oceans. The focus of the methodology chapter was to identify and justify the research design and methods relevant to answering the research question and attaining its purpose. It provided a detailed methodology and research design executed by me to answer the research questions of the study. The goal was to bring awareness of the core underlying grass-root issues and relevant actions for improving governance and regulations to reduce IUU fishing as well as overfishing activities. The qualitative method and transcendental phenomenological designs were used to guide this research. The purposive sampling technique was used to recruit 14 participants. A face-to-face video conferencing semi-structured interview was administered to each participant in their natural settings using Teams video conferencing. A thematic analysis of these accounts was conducted to answer the research question. I ensured that all four components of trustworthiness in qualitative research of credibility, dependability,

transferability, and confirmability was used. In conclusion, the proposed research methods and design were effective in answering the research question and achieve the purpose of the study. The study findings could be applied in practice to improve legal fishing and provide the basis for future studies in this area.

## Chapter 4: Results

The intent of this qualitative study was to investigate which issues have contributed to the underrepresented and/or misrepresented knowledge of fisherfolk in policymaking and the development of policies that promote the UN SDG 14. My research may also contribute to positive social change by bringing awareness to small island developing states policymakers on the importance of inclusion of the fishing community as a means for effective long-term sustainable fishing policies, and economic and social independence. I addressed the problem to fulfill the purpose of this study with the guiding research question: What are the issues leading to the lack of inclusion of fisherfolk knowledge in the policymaking process and policies that promote SDG 14?

The chapter begins with a discussion on the setting summary of the data collection process and data analysis strategy. Interviews via Microsoft Teams were used with experienced local fisherfolk from five constituencies to obtain qualitative data. The interviews provided insightful data that addressed the research question. A thematic analysis process was used to develop findings through broad themes. Illustrative quotes are cited to support these broad themes and used as a guide for the discussion in Chapter 5. Lastly, in this chapter, steps to prove the trustworthiness of the findings are discussed.

### **Research Setting**

This study was conducted on the island of the Commonwealth of Dominica (also called Dominica). The fishing industry in Dominica has traditionally been one of the main sectors for food security (Pinnegar, 2019). During the time of this study, there was 912 registered fisherfolk with the Fisheries Division (Caribbean Regional Fisheries



Mechanism, 2020). Fourteen registered fisherfolk with personal experience met the age criteria. All 14 participants were men. During the recruitment phase, participants were advised of a more secure and private location within the capital of Roseau. However, due to the timing of the men's return from fishing, interviews were completed in their homes or in their local fisheries office in a quiet and secure area. Many of the participants indicated that they had participated in similar research studies which focused more on catch and practices used. All interviewees were agreeable to participate and appeared eager to share their experiences with the government's policies and what they believed could be done to improve the fishing industry.

### **Demographics**

The 14 participants in this study were all fisherfolk with a variety of years of experience in fishing. Eight had formal high school or college degrees, and five participants had only grade school education. Only one participant had a registered fishing business. A purposive recruitment technique was used to select a sample of participants. The interviews took place in July 2022. Each participant was given a \$25 dinner voucher. The Table 3 summarizes their demographic information.

**Table 3**

*Demographics of Interviewed Participants*

Participant	Village location	Age	Years in the fishing industry
P1	Fond Cole	32	12
P2	Fond Cole	55	28
P3	Fond Cole	60	20
P4	Mahaut	42	22
P5	Mahaut	45	15
P6	Mahaut	62	25

P7	Mahaut	41	17
P8	Newtown	45	20
P9	Newtown	63	29
P10	Newtown	48	18
P11	Portsmouth	32	10
P12	Portsmouth	45	18
P13	St. Joseph	65	40
P14	St. Joseph	59	38

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### **Data Collection**

Interviews were conducted via Teams either from the privacy of the participant's home or within a private area at their fisheries location. Fourteen participants were interviewed from five different villages/parishes – Fond Cole, Mahaut, Newtown, Portsmouth, and St. Joseph. During the initial recruitment phase, I used my interview guide which comprised sample interview questions as part of the process. This was to ensure that participants had a clear understanding of the theme of the interview and that they were comfortable in giving responses. Prior to the collection of any data, all participants consented to be interviewed and recorded. Informants were informed that they could choose to withdraw at any time for any reason or without repercussions/reproach. I worked to create an atmosphere of trust, a no-judgment zone, and an overall comfort level to create rapport with participants to get them to be themselves. By applying this approach, I successfully executed all interviews and obtained a rich collection of data.

My overall goal before and during the interview process was to ensure that the participants felt that their contributions were valuable. According to Quinney et al. (2016), interviews, where participants can establish trust with the interviewer, may

provide valuable data which would “align the process of data collection with the research methodology” (p. 6). At the time of this study, only one participant (P11) had a registered fishing business – provided cleaning, scaling, seal-packed seasoned fish, and other services requested by customers.

The 14 participants who volunteered for this project qualified based on the inclusion criteria. To meet the inclusion criteria, participants should have at least 5 years of experience in the fishing industry and direct fishing experience; must have been directly or indirectly affected, involved, or benefited from IUU or overfishing activities; and must be registered with the Dominica Fishing Association. The recorded interviews used a semi structured process.

### **Data Analysis**

I followed the six-step thematic analysis methodology outlined by Richards and Hemphill (2018). I used this approach to find commonalities and determine trends within the data collected to establish trustworthiness. I began by immersing myself in the data by listening to each recording three times for the accuracy of the information captured. From there, I developed a codebook containing initial codes. In this codebook, I determined primary codes to address the research question on IUU, personal context, policy, SDGs, sustainable fishing, and training. I then reviewed the initial themes. I grouped together emerging codes to determine categories. Lastly, I identified emerging themes based on combining codes grouped under each category.

### **Evidence of Trustworthiness**

Trustworthiness is an important component in ensuring credibility, dependability, transferability, and confirmability (Richards & Hemphill, 2018). In this research, I have ensured that “confidence in data, interpretation, and methods used to ensure the quality of a study” (Connelly, 2016, p. 435), followed the right procedures worthy to be considered trustworthy by readers and fellow researchers.

#### **Credibility**

Credibility in the context of qualitative research is the ability to confirm that the findings are consistent with reality and are credible (Billups, 2015; Shenton, 2003). To establish credibility, I ensured that the questions asked remained credible and honest, ensuring that participants’ responses remained consistent with the issues that lead to the lack of inclusion of fisherfolk knowledge in the policymaking process and policies that promote SDG 14. To further promote trustworthiness and creditability, I ensured that participants had the ability to speak freely about what they believed to be true when answering questions. To avoid personal bias and to gain in-depth and insightful information from each interviewee to the best of my ability, I engaged in reflexivity as recommended by Chan et al. (2013) and Billups (2015). I engaged dispassionately, and neutrally, in response to participants’ answers to my questions.

#### **Transferability**

Transferability is the ability of a qualitative study’s findings to be used in other settings or frameworks (Hanson et al., 2011). In this case, the findings needed to be extensively applicable in practice to fisherfolk and other stakeholders to address issues of

IUU and overfishing activities in small island developing states. The descriptions of the study sample and sampling methods, data collection instruments and procedures, interview location, times, and relevant methodologies used in carrying out my research have been provided, as recommended by Korstjens and Moser (2018). My goal was to be as transparent and informative about my approach and procedures as possible.

### **Dependability**

Dependability in a qualitative study is the ability to replicate the same methods in other settings or contexts, giving similar results. (Connelly & Peltzer, 2016). Research errors are the main threats to dependability and I prevented this by using a detailed methodological description and audit trail (see Connelly & Peltzer, 2016). As a result, I utilized the inclusion criteria which ensured that the proper participants were selected. Lastly, an audit trail was generated, consisting of notes and materials to document the decisions and assumptions of my study, as suggested by Rose and Johnson (2020).

### **Confirmability**

Confirmability established the extent to which a researcher can confirm that their findings and interpretations are factual and derived from collected data rather than the imagination of the inquirer (Hadi & Closs, 2016). In this study, I ensured that the participant's opinions and views were reflected in the results and data. I attempted to bracket or otherwise avoid bias or judgment of the participants themselves, or of their responses.

## Research Results

Eleven themes emerged in the data. These themes were grouped into four categories: personal context, training, IUU and SDGs, and policy. All themes are summarized in Table 4.

**Table 4**

*Summary of Themes*

Categories	Themes
Personal Context	<ol style="list-style-type: none"> <li>1. Most participants view fishing as a form of livelihood</li> <li>2. Participants expressed that they were introduced to fishing at a young age and continue fishing out of enjoyment</li> </ol>
Training	<ol style="list-style-type: none"> <li>3. Some participants have received a variety of training including training on safety, training from the government, and digital training.</li> <li>4. Participants described needing more hands-on training and training on the business aspects of fishing</li> </ol>
IUU and SDGs	<ol style="list-style-type: none"> <li>5. There is little understanding of the UN Sustainable Development Goals</li> <li>6. Illegal Unregulated and Unreported fishing is understood as foreign nations fishing in other sovereign waters by participants.</li> <li>7. There are mixed opinions on whether over-fishing is occurring</li> </ol>
Policy	<ol style="list-style-type: none"> <li>8. Although some participants describe sustainable fishing as</li> </ol>

Categories	Themes
	respecting fishing seasons, most are unaware of the meaning of sustainable fishing
	9. Participants are aware of certain government requirements including needing a license, life jackets, and fines for not complying. However, many are unaware of the policies in place
	10. The Coast Guard is commonly cited as the enforcing agency, but participants mention the CG is not adequately enforcing policy
	11. Policy issues mentioned include that it is inconsistent, there is little help from the government, and there is no reporting of fishing violations.

### Category 1: Personal Context.

Two themes emerged and were grouped under Category 1: personal context. Participants viewed fishing as a form of livelihood, expressed they were introduced to fishing at a young age, and continue fishing out of enjoyment. These themes are summarized below.

**Table 5**

#### *Themes for Category 1*

Theme	<i>n</i> of transcripts contributing to sub-theme ( <i>N</i> =5)	<i>n</i> of references to sub-theme in the data
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Theme 1: Fishing as a form of livelihood	5	11
Theme 2: Introduced to fishing at a young age and continue fishing out of enjoyment	4	8

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***Theme 1: Fishing as a Form of Livelihood***

Participants in five of the interviews described 11 times how fishing contributes to their livelihood. P3 said, “Fish(ing) for me is to make my money.” P1 said, “Fishing for me is a profitable industry... Well, (fishing) is important to me because fishing is basically what helps me to pay off certain debts... it brings in income. Bills and other things must be paid.” Finally, P2 said:

Fishing is what I depend on. And if you fish, at the end of the day, you are going to get good results. But fishing is basically the main part of my life. That is what gives me the food on my table, everything. I chose fishing as the best way of employment for me.

There was a consensus that fishing is a profitable industry. Fishing provides workers with a solid income to take care of their families, food for their households, and a product to sell.

***Theme 2: Introduced to fishing at a young age and continue fishing out of enjoyment***

Theme 2 was referenced by participants in four of the interviews a total of eight times. In general, participants began fishing at a young age for a variety of reasons, and many continue to fish into adulthood because they love fishing. Fisherfolk described



fishing at a young age, P13 stated, “I would say as a fisherman, I was born to (do it). I tell you that I didn’t really make it at school. Why? Because I love fishing.” Another participant (P10) discussed being around fishing at an early age, stating, “I’ve been around fishing for like maybe over 22 years.”

Fisherfolk also discussed being influenced by their family to continue the tradition of going into the fishing industry. P9 said they would go fishing with their sister as a child. Another participant (P6) discussed being born into a fishing family, and how it was the obvious choice. P6 said:

Well, I just figure my dad was the main influence on (going into fishing). I (did) not really choose fishing. I’ve been fishing basically my whole life. So, all my life all I knew was fishing. Fishing was my everything. So, it's like I almost didn't have that choice or say.... I can engage in other occupations such as construction, but fishing is more fun.

It was a consensus observation that many fishers started at a young age within the fishing industry and continue to have a love for it.

## **Category 2: Training**

Category 2 encompasses themes based on training. Some participants have received a variety of training, but more is needed. Themes 3 and 4 are described in Table 6.

**Table 6***Themes for Category 2*

Theme	<i>n</i> of transcripts contributing to sub-theme ( <i>N</i> =5)	<i>n</i> of references to sub-theme in the data
Theme 3: A variety of training including safety, training from the government, and digital training	4	11
Theme 4: More hands-on training, specifically on the business aspects of fishing	5	11

***Theme 3: A variety of training including safety, training from the government, and digital training***

Safety training, digital training, or varied government training are mentioned 11 times in four of the transcripts. When asked about what training they had received, P9 said, “It was a long time ago. But a little basic training, navigation training, and safety at sea. We did that with the Coast Guard four years ago.” Another participant (P5) discussed training on types of fish, “they called the meeting...to help us identify different types of fish, such as the red snapper.” From the results, participants confirmed that they received some form of training from the government.

Additionally, fisherfolk discussed receiving access to media training specifically from outside organizations such as the Red Cross. P11 said:

Well, they had a program to when we get certified. So, I did receive some training as well from Red Cross and then some guy came from the Ministry of Finance. So, we did research training. Yeah, that's putting into getting our ID cards from the fisheries division.

***Theme 4: More hands-on training, specifically on the business aspects of fishing***

Theme 3 described training already received, but theme 4 discusses the training that is still needed. Fisherfolk who participated in the study described needing more hands-on training, especially on the business aspects of fishing. This theme was referenced 11 times in five interviews. P1 expressed that fisherfolk need hands-on training in place of digital training:

Well, to be honest, the first thing they should be doing is taking people on the sea so they can learn hands-on – practical experience. The ocean is like a battlefield. Because when you are outside there anything can happen with those rough waves. People are entering the waters with the incorrect fishing gear and most times do not have ID cards.

P1 however, described their experience as having hands-on training, and how they believe it can be more valuable than the classroom, “most of my training was hands-on. You go out there, you gain experience, and you grow with the experience while learning different things. It's not like I need that for the job. So, training you in a classroom...give you the basic truth in fishing techniques, but to learn it, you must go out there at sea and face the elements.”

In addition to hands-on training, participants described needing business training.

P4 said:

Proper training for fishermen, a lot needs to be done. Even our practices need to be more standardized, as well as financial management. I said where's the focus for business management so that we can sustain our business for future generations? Most fishermen lack business management skills and are not able to have proper catch practices or financial control. That's why many are still very poor...so, we need training aspect for especially training on safe navigation. I mean, within one week, a person can become a fisherman, with their ID cards, and be on the sea the next day.

Similarly, when asked what training was needed, P1 stated, "you make them know how to process the fish, how to even sell it as well." Policymakers should consult fisherfolk to better understand which trainings are in place and what needs to be implemented.

### **Category 3: Illegal, unregulated, and unreported fishing and the UN sustainable development goals.**

Category 3 encompasses IUUs and the UN SDGs. Perhaps the biggest finding was a lack of knowledge among participants about what these two concepts mean, suggesting better policies could be in place to protect fisherfolk. Four themes emerged from category 3 and are summarized below.

**Table 7***Themes for Category 3*

Theme	<i>n</i> of interviews contributing to sub-theme ( <i>N</i> =5)	<i>n</i> of references to sub-theme in the data
Theme 5: There is little understanding of the UN Sustainable Development Goals	2	9
Theme 6: Illegal unregulated and unreported fishing is understood as foreign nation fishing in other sovereign waters	5	15
Theme 7: Mixed opinions on whether over-fishing is occurring	5	16
Theme 8: Some participants described sustainable fishing as respecting fishing seasons; most are unaware of the meaning of sustainable fishing	5	16

***Theme 5: There is little understanding of the UN sustainable development goals***

The first theme that emerged under category 3 was the observation that participants were unaware of what the UN SDGs are. Table 5 suggests that there are two transcripts representing this theme, but all other participants were noticeably confused when asked if they were familiar with the SDGs and unable to describe what they are.

When asked about the SDGs, participant 14 stated, “So I cannot answer. I cannot give you the answer.” Another participant answered, “I do not know to be honest with you.” A third participant said, “To be honest, I don't know of no activity they do that. I can tell you some of what they should do, but I don't know.”

The lack of knowledge of the UN SDGs by fisherfolk is concerning. The government has not done its part in properly educating the public and stakeholders. This is a barrier to enabling fisherfolk to participate in policy-making that could lead to the country achieving its commitment to SDG 14.

***Theme 6: Illegal unregulated and unreported fishing is understood as foreign nations fishing in other sovereign waters***

Theme 6 emerged under category 3 and highlighted that participants view IUU as foreign nations fishing in other sovereign waters. This was discussed fifteen times in five interviews. Participant 8 described that foreign fisherfolk threaten their waters because they have more advanced technology including bigger boats and proper nets. They said, “life is threatened by a foreigner because they are faster, with bigger engines...you wanna be fair and you don't wanna go to that area and know that your life is in danger.”

This was echoed by P9 who said, “when the French fishermen come, they will come with big boats.” They went on to say: “the French will come outside of Dominica on the Atlantic side and go deeper than us because they have bigger boats than us, bigger and faster engines than us”.

Finally, P2 recognized that foreign vessels are entering their seas, saying, “Foreign ships go to another person’s country like Dominica. It’s happening. They cast longer and bigger nets, taking our fish in large quantities”

***Theme 7: Mixed opinions on whether overfishing is occurring***

Theme 7 highlights the difference of opinion on overfishing. Some participants believed overfishing is occurring, and others do not. There were 16 references in the data, with seven suggesting over-fishing is occurring, and nine saying the opposite.

P1 described overfishing as, “people from other countries or even in Dominica fishing too much, they keep taking and leave nothing behind. Another participant (P8) described how over-fishing by foreigners is financially detrimental to their livelihood. They said, “they come into your waters, take all our fish, and sell them in their country. It brings no income to our country.”

Other participants disagreed. Participant 9 said, “What I would say overfishing is a bad fishing practice...but overfishing in Dominica? I don't think that's really an issue for us.” Participant 2 stated directly, “No, we’re not overfishing in Dominica.” Educating fisherfolk on what it means to overfish, and how it is considered IUU fishing, could positively impact the fishing industry in Dominica.

***Theme 8: Some participants described sustainable fishing as respecting fishing seasons—most are unaware of the meaning of sustainable fishing***

Sustainable fishing was discussed in three interviews, and there were eight references in the data. Some participants described overfishing as the need to respect

seasons, but others are unaware of what it means. This echoes most themes in that the government is not adequately informing fisherfolk.

Participant 5 discussed respecting seasons, saying, “Yeah, I think it is the responsibility of the fishermen to respect when the time for fishing begins and ends. You cannot just fish without giving dem fish time to grow or mate. It is also the officials to remind and inform the public of the seasons for fishing adequately.” Others are simply unaware. Participant 3 simply said, “I don’t know the answer” when asked about sustainable fishing.

#### **Category 4: Policy**

The final category is policy, and there are three themes grouped under category 4. The first incorporates policies that are in place, the second discusses the coastguard, and lastly, covers policies that are needed. Themes 9 and 10 are summarized in the following table.



**Table 8***Themes for Category 4*

Theme	<i>n</i> of participants contributing to subtheme ( <i>N</i> =5)	<i>n</i> of references to subtheme in the data
Theme 9: Participants are aware of certain government requirements including needing a license, life jackets, and fines for not complying. However, many are unaware of the policies in place	5	25
Theme 10: The Coast Guard is commonly cited as the enforcing agency. <i>However, policies are not adequately enforced</i>	4	12
Theme 11: Policy issues: inconsistent, little help from the government, and lack of reporting of fishing violations	5	25

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***Theme 9: Participants are aware of certain government requirements***

Theme 9 emerged in response to the fourth category of policy. Five interviewees discussed policies in place a total of 25 times. Participants were aware of basic maritime rules such as alcohol being prohibited, fines in place, the need to carry a license, and life jacket requirements.

P2 said, “Fishermen going to fish are not supposed to have alcohol. They are not supposed to be drinking.” Participant 3 said, “Of course they have fines.” Finally, participant 8 said, “You should make sure that you have a life jacket that it’s the law, especially for fishing.”

However, like many other themes, most participants are uninformed. For instance, P1 stated, “I can tell you some of what they should do, but I don't know (what they are doing).” P2 described that while there are fishing regulations and policies in place, little is done by the government in terms of implementation, despite P2 being personally involved in advocacy. P2 said, “Unfortunately, we don't have regulations and I am one of the persons who has been fishing for basically most of my life who's been advocating for regulations.”

***Theme 10: The Coast Guard as the enforcing agency/policies are not enforced***

Participants tend to be aware of the Coast Guard’s responsibility to enforce policy and protect waters, but they also discussed that laws were inadequately enforced. Four interviewees mentioned the Coast Guard a total of seven times. When asked whom they contact when there is an issue, P2 said, “I will call the Coast Guard...” then went on to

say, “we don’t pay attention to those breaking the rules or the following policy. We are supposed to be fishermen, that is the job of the Coast Guard or the government to stop.”

Participant 4 mentioned the need for more Coast Guard personnel, stating, “I think we should have more patrolling outside the border lines...taking shifts and so on.” P4 also stated that “the government (is) not so efficient.”

***Theme 11: Policy issues: inconsistent, little help from the government, and lack of reporting fishing violations***

In the final theme, participants described what policies they believe are lacking. From five interviews, participants discussed policies a total of 25 times. They described the government as not preventing overfishing and not protecting eggs, nets, and small fish. Participant 3 discussed the need for enforcement, “But in terms of the fisherfolk - the fishermen, there really isn’t anyone to inform them that they are overfishing. There is no one really monitoring the sea.” Participant 10 also stated, “And for my community and for where over-fishing is happening, I do not see any changes.”

Participants discussed the need to protect small fish to break the cycle of overfishing.

Participant 1 said:

The older fishermen know when small fishes are caught, to throw them back in the water. However, you see fishermen selling small catch fish so they can make a buck. When it is brought to the attention of the fisheries officials, little or nothing is done to fix the situation. As a culture, we follow the rules. However, the new and upcoming fishermen only see dollar signs and are more prone to adapt to bad fishing practices.

Finally, participants discuss the lack of protection, saying, “So basically they are telling you to go to the government, but nothing is being done.” In general, fisherfolk know basic rules, but little about policy. Further, they believe the government is doing little to protect fisherfolk and enforce regulations.

### **Summary**

The results in this chapter were presented in alignment with the primary purpose of my research which was to explore the issues leading to the lack of inclusion of fisherfolk knowledge in the policymaking process and policies that promote SDG 14. One research question was used to set the tone and direction of this study 14 experienced fisherfolk were interviewed, and the data was collected solely through this process. A thematic analysis process was used to develop eleven themes which were grouped into four categories: personal context, IUUs and SDGs, sustainable fishing, and policy.

The most prominent finding is that fisherfolk are under-informed on policies in place, including what is needed to prevent IUU and promote sustainable development. This provided an emphasis on the need of having fisherfolk, and other stakeholders, involved in the policymaking process that fits culturally. In the following chapter, I discuss policy recommendations to better support, train, inform, protect fisherfolk and promote sustainable fishing for small island developing nations.

## Chapter 5: Discussion and Conclusion

The purpose of this qualitative study was to explore the issues leading to the lack of inclusion of fisherfolk knowledge in the policymaking process and policies that promote the UN SDG 14. Unsustainable fishing affects not only fisherfolk but also the reliability of the oceans as a source of food. This study was essential as it explored fisherfolk and other key stakeholders' involvement in the policymaking process and identify the difficulties in the implementation of established UN SDGs for the sustainability and conservation of oceans, seas, and marine resources.

To attain this objective, I applied a phenomenological qualitative approach, employing interpretative thematic analysis as the methodology for this project. This research method was selected to examine and comprehend the experience and meaning of ordinary things more intimately. The qualitative technique may give insight and knowledge into fisherfolk perspectives and collaborative efforts to work with other social actors for the formulation of more successful fishing policies. I employed interpretative qualitative research to obtain exploratory data addressing the meaning and perceptions of fisherfolk about the absence of governance IUU/overfishing. I was also guided by the ACF for my theoretical model.

From the analysis, 11 themes emerged, which were grouped into four categories: personal context, training, IUU and SDGs, and policy. Regarding personal context, most participants view fishing as a form of livelihood. The second theme on personal context was that participants expressed that they were introduced to fishing at a young age and continue fishing out of enjoyment. In the second category (training), some participants

have received a variety of training including training on safety, training from the government, and digital training. However, a significant number of participants described needing more hands-on training and training on the business aspects of fishing. For the third category (IUU and SDG), there were three themes. First, participants showed little understanding of the UN SDGs. Secondly, participants understood IUU fishing as foreign nations fishing in other sovereign waters. Thirdly, there were mixed opinions on whether overfishing was occurring. The fourth theme in the IUU and SDGs category was that although some participants described sustainable fishing as respecting fishing seasons, most were unaware of the meaning of sustainable fishing. Concerning the final category (policy), there were three themes that emerged from the analysis. First, participants were aware of certain government requirements including the need for a license, life jackets, and fines for not complying. However, many were unaware of the policies in place. The second theme was that the Coast Guard was commonly cited as the enforcement agency, however, from the participant's perspective, enforcement was not effective. Lastly, participants were concerned about policies being inconsistent, specifically with the lack of government assistance and reporting of fishing violations, either from fisherfolks or officials.

### **Interpretation of the Findings**

For the first category (personal context), most participants view fishing as a form of livelihood. These findings are consistent with the literature that overfishing has been attributed to the fact that most of the fisherfolk consider it as a source of livelihood. Kalina et al. (2019) confirmed that when fishermen are restricted from fishing, they are

denied their only source of income. This also conforms with the postulation by Maharaj (2017), who argued that fishing communities protested illicit fishing practices, but when they were denied access to fishing, they argued that "by removing the fisherman's source of income, the affluent would become richer and the poor will become poorer" (p. 752). Other scholars such as Ruttenberg et al. (2018) and Roy (2019) have also associated fishing with economic gain. Overfishing and IUU appear to have undermined the economy of a state that was already struggling, but fisherfolk argued that this is their source of livelihood (Roy, 2019; Ruttenberg et al., 2018). This has resulted in widening economic disparities, a rise in poverty, and a reliance on assistance services. Small-scale fisherfolk revenue has diminished because of overfishing and IUU fishing. Kalina et al. (2019) reported that local fishermen are barred from several fishing zones and are frequently compelled to fish illegally for food and revenue.

From the study, it was evident that participants expressed that they were introduced to fishing at a young age and continue fishing out of enjoyment. The findings conform with the findings by Wadiwel (2019) that a majority of the fisherfolk were introduced to fishing at an early age. Anwar et al. (2021) attributed this trend to overfishing as in most of the communities where fishing is conducted, the fisherfolks and their families are already introduced to this activity. While some are introduced as a form of enjoyment, others are acquainted with this activity to help in providing some form of livelihood to the families (Fahrin et al., 2021). Therefore, the findings from the study regarding the introduction of fisherfolks at an early age are in tandem with the literature.

From the training context, the analysis also revealed that some of the participants had access to a variety of training including safety, training from the government, and digital training. Others stated that they were only accessing basic training such as navigation and safety at sea. From this, it was evident that participants did not even indicate that they were trained on policies set in place. This illustrates that they lacked knowledge about IUU fishing and overfishing policies in place for SIDS to adhere to. This means that little is done regarding effective enforcement and governance, a position that was shared by Transform (2000) in a past study. The findings that there is a need for more hands-on training, specifically on the business aspects of fishing, further demonstrate the ignorance that fisherfolks have towards fishing policies and regulations, which could be attributed to the lack of collaboration. Indeed, Bowman et al. (2021) indicated that there was a lack of proper coordination between the different actors in offering efficient training and inclusion of the fisherfolk perspectives.

The problem of lack of involvement of fisherfolk is also evidenced by the finding that there is little understanding of the UN SDGs. The lack of knowledge of the UN SDGs by fisherfolk is a concern. The government has not done its part in properly educating the public and stakeholders. This is a barrier to enabling fisherfolk to participate in policy making that could lead to the country achieving its commitment to SDG 14. While understanding that Fisherfolks operate in the ocean industry, it is essential that they clearly understand SDG 14, which is a blueprint that is guided towards conserving the oceans, the sea, as well as marine resources. Nonetheless, the findings here confirm the reason why the UN (2020) indicated that the biological sustainable level



of the fisheries has decreased from 90% in 1974 to 2015 at 65.8 % in 2017. Such findings demonstrate the need for more analysis and further research to understand the issues that hinder the implementation of effective training for fisherfolk.

The findings also demonstrated that IUU fishing is understood as foreign nations fishing in other sovereign waters by participants. According to Lestari et al. (2020), IUU covers three broad aspects: illegal fishing, unregulated fishing, and unreported fishing. Lestari et al. (2020) explained that one can be deemed to have acted in such a manner if they fish in different nationalities without permission, have violated the laws and obligations relevant to the fisheries system, or have misreported or failed to report to national authority. In addition, a key component of IUU fishing is the fact that a fishing entity or individual acts in contravention of the conservation and management measures of the nation (Lestari et al., 2020). The fact that participants did not include the aspect of violation of law and policies, which are key components under IUU (Allison & Horemans, 2006, Hutahean, 2016, Transform, 2000, Krueck et al., 2017, and Lindley & Techera, 2017) indicated that they lack knowledge about fishing policies. This problem could also be attributed to the lack of collaboration and coordination between actors as noted by Bowman et al. (2021).

Some participants from the current study indicated that overfishing may not be occurring in the SIDS state in the Caribbean. Such findings contradict the state of overfishing as documented in the literature by Sabatier et al. (2019), and Allison and Cho (2020) who argued that there is a need to better improve our reflections on fisherfolk, environmental changes, and SIDS through the ACF framework due to overfishing.

Appeldoorn (2008) noted that overfishing activities in the Caribbean are related to poor ecosystem-based strategies. Therefore, it may be deduced that some of the participants did not want to agree to the fact that they overfish, probably due to fear of victimization.

From a policy perspective, participants were aware of certain government requirements including needing a license, life jackets, and fines for not complying. However, many were unaware of the policies in place. Further, the Coast Guard was cited as the enforcement agency, but participants mentioned they are not adequately enforcing policy. In addition, it emerged that there were policy issues mentioned that were inconsistent, little help from the government, and a lack of reporting fishing violations. Such findings conform to what was already documented about most of the fishing communities. Indeed, scholars such as Silver et al. (2015), Smith-Godfrey (2016), and Golden et al. (2017) expressed the voice of fisherfolk as being absent, which points to a critical gap in practice. Most governments do not include the fisherfolk in policy formulation or awareness, which necessitate exploration of the appropriate approaches to restore sustainable fishing practices.

The findings that there was a gap between fisherfolks, and the government resonate with the scholarly position. According to scholars' collaborative strategies can eventually lead to increased thinking about how to address poverty, inequality, and sustainability (see Fabinyi et al., 2015; Ruttenberg et al., 2018). Research by Ruttenberg et al. (2018) and Fabinyi et al. (2015) indicated that collaborative processes can improve fisheries management through the inclusion of fisherfolk viewpoints. Similarly, Islam et al. (2017), Krueck et al. (2017), Lubchenco et al. (2016), and McConney et al. (2016)

suggested that eliminating IUU fishing and overfishing in SIDS required a collaborative strategy between fisherfolk and the scientific community. The findings from this study fit the scholarly evidence that there is a need for better collaboration among the different actors in the fishing industry. More importantly, the findings add more knowledge that the ACF framework could be used to examine the fishing policies and improve collaboration focused on the inclusion of fisherfolks.

### **Limitations of the Study**

There are two key limitations of this study. First, the study was limited by the relatively small number of participants that participated. The small sample size was limited to ensure that a qualitative perspective is included within this study focused on participants' considerations and opinions, which is a key characteristic of qualitative research (see Tufford & Newman, 2012). However, the small sample size limits the extent to which findings could be generalized to larger populations. The results were extended through a discussion of the findings from the perspective of previous related literature as well as recommendations for practice and research. Another limitation is research biases. To eliminate research bias, I applied the bracketing approach, a form of journaling, throughout the data collection and data analysis process (see Tracy, 2019). Through bracketing, I expected to identify my own biases and recordings to mitigate such following steps advocated by Tufford and Newman (2012). However, in qualitative research, it is not possible to fully eliminate bias, but noting and declaring bias aided in reducing opinionating ideologies throughout dissertation findings (Tufford & Newman, 2012). My research was also limited by the geographic range which may not represent all

of SIDS. While the study was conducted in only one Caribbean state, the findings restricted the generalization of the findings in larger research settings.

### **Recommendations**

This study was limited in scope and sample size. In this case, I focused on the members of the fishing community (fisherfolk) of SIDS in a single state of the Caribbean. The sample size included only 14 participants who were interviewed about the topic. This had the limitation that the results could not be generalized to other fishing communities. It is imperative to note that despite the problem of overfishing being rampant in many areas, there are varied experiences. Therefore, further research could be conducted in different research settings or using different fishing communities in form of strata. This may also require applying a larger sample size under a quantitative method to gather data that can be generalized to larger fishing communities.

I also applied a qualitative phenomenological approach. While this approach helps to gather in-depth details about the phenomena under study, it has the limitation that the findings could not be presented with statistical evidence. In addition, a qualitative study does not help in relating different variables. As such, while there are many factors that may be at play in hindering collaboration between government agencies and fisherfolk, there is a need to delve further to get the relationship between such variables. Therefore, a quantitative study could be applied to focus more on the relationship between government agencies, policy developers, and fisherfolk.

## **Implications**

The research topic centered on identifying the direct effects of overfishing and IUU fishing on the fishing community, as well as the perceived causes for the ineffective implementation of policies. The implications for positive social change may include creating awareness among SIDS policymakers on the significance of including the fishing community as a method of achieving effective long-term sustainable fishing policies and economic and social autonomy. This research may shed light on factors that directly impact overfishing and IUU fishing rules and their implementation. This research aims to draw attention to the effects of IUU fishing in the Commonwealth of Dominica. The Commonwealth of Dominica's fisheries, like those of other SIDS, have seen an enormous demand for sustainable measures to conserve the ocean and marine life (fishing) and the threat to sustainable fisheries. As such, the Commonwealth of Dominica's fisheries may get aware of the situation and engage other stakeholders to avert the negative effects associated with this problem.

From the research findings, governments and other key stakeholders may be able to develop long-term sustainable fishing methods for SIDS in the CARICOM islands. With appropriate ocean and marine implementation strategies, fisherfolk and small rural fishing communities can exploit their ocean resources more effectively (Okafor-Yarwood, 2017; Wright et al., 2017). The outcomes of this research may aid fishing communities in becoming more self-reliant, achieving social mobility, developing self-worth and dignity, and possibly achieving long-term economic independence, so ensuring the welfare of future generations. This research may assist in shedding light on the

challenges of overfishing and IUU fishing and their impact on small island developing states and the lives of fishers. It is envisaged that the dissemination of the data and discoveries may enable sustainable pathways for fisherfolk in SIDS, which will benefit both the fisherfolk and the world population that depends on the sustainability of this planet.

From a theoretical perspective, this study has affirmed that ACF is an appropriate theory to examine a phenomenon that has a larger societal application. Considering this, I focused on exploring the community's lived experiences and perception of best practices in fishing. From the findings, which resonate with ACF, it can be concluded that the ACF is an important lens that helps to assess larger societal issues such as those involving policy making. From this study, there is an additional perspective that affirms the use of ACF in studying policy examination, particularly those relating to the fishing community.

### **Conclusion**

The study has affirmed that overfishing is evident in the Commonwealth of Dominica, which could be the same phenomenon in many parts of the world. From the studies, a significant amount of the participants indicated that overfishing was still rampant in the Commonwealth of Dominica. This suggests that there are fisherfolk in the Commonwealth of Dominica involved in IUU fishing, yet the authorities are not taking remedial action. This is also compounded by the fact that the policies that are formulated to prevent IUU fishing are not implemented as required. While understanding the negative effects that are associated with IUU, it presents a situation where ecologically sustainable development goals may not be attained soon if appropriate measures are not

set in place. It was also evident from the study that fisherfolks are not aware of the policies that they should follow. Indeed, the majority only consider illegalities as encompassing those who fish from foreign waters. This was a clear indication of the disconnect that existed between fisherfolks and the relevant government agencies.

The study has demonstrated that there lacks proper coordination between the different actors in the fishing sector. While this study explored the fisherfolks, the fact that they lack adequate training and do not understand policies that they should follow depicts that there is a clear lack of collaboration between the different actors. The importance of training and collaboration cannot be overemphasized in this study. According to the participants, they were only taken through basic training, while the authorities are oblivious of the need to increase awareness and implement policies that would prevent IUU fishing.

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## Appendix A: Interview Questions

The following list of questions will be presented through a responsive interview process on experiences through knowledge and perspectives from fisherfolks regarding the issues of overfishing and IUU fishing activities within their oceanic territories. Interviews will also be inclusive of the hindrances of governance and policy implementation. Interviews will begin with addressing the overall research problem. Additional questions will be asked to extract pertinent information related to the research question.

1. Please tell me about yourself and what made you go into fishing?
  - a. How many years have you been a fisherman/woman?
  - b. Are any of your other family members into fishing as well?
  - c. How important is fishing to you?
  - d. Is fishing your only source of livelihood/income
2. Are you part of a fishing association? Why or why not?
  - a. What is preventing you from joining?
  - b. What types of training do you receive from the association?
  - c. Should there be improvements? What do you suggest would be some helpful training sessions?
3. What have you heard about the United Nations Sustainable Development Goals (SDGs) and do you know what they are?
4. Do you understand the terms overfishing? Can you briefly describe what it means?
  - a. Can you give me an example?
5. What does the term illegal, unreported, and unregulated fishing mean to you?

6. What are some of the changes that you have observed because of overfishing/ Illegal Unreported and Unregulated fishing in your community?
7. How does overfishing/IUU affect you personally?
  - a. Can you give me an example or two?
8. What are some of the changes that you have observed because of overfishing/ Illegal Unreported and Unregulated fishing in your community?
9. What are your feelings on sustainable and responsible fishing?
  - a. Do you believe your community benefits from it?
  - b. What about for your family?
10. What are the difficulties you or the fishing community face as a fisherman/woman in practicing/implementing the current marine fishing policies/laws?
  - a. What would make these policies/laws easier to adopt by the fishing community?
11. How effective do you think your government has been in protecting your oceans from overfishing/Illegal, unregulated, and unreported fishing from outsiders?
12. Do you know what some of the current marine policies are in place? Can you name one or two?
13. Has any of your concerns been heard and has there been a solution put forward for it in any fisherfolk meetings?
14. What are some of the strategies adopted by the Dominican Government to combat illegal, unreported, and unregulated fishing/Overfishing?