

**Vulnerability and Viability: The Intersectionality among Small Scale fisheries (SSF) in
James Town and Teshie Nungua - Ghana**

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that the thesis may be made electronically available to the public.

Abstract

Small-scale fisheries (SSFs) contribute to food security and income for millions of people around the world. Women in small-scale fisheries communities, on the other hand, are often marginalized and vulnerable because of the cumulative effects of sea-level rise, resource overexploitation, aquaculture, coastal and inland habitat loss, overfishing, lack of livelihood alternatives, as well as food insecurity, occupational displacement, and outmigration. This study explored vulnerability pathways arising from intersectionality changes in small-scale fisheries (SSF) in the James Town and Teshie communities in Accra. The study objectives were to understand the issues of intersectionality within small scale fisheries, to examine how intersectionality impacts or increases vulnerability among small-scale fisheries, and, to identify how these intersectionality-influenced vulnerabilities in the small-scale fisheries can be addressed. The study employed a mixed methods approach to answer research questions. Findings revealed that the occurrences of intersectionality in small-scale fisheries are shaped by a variety of human-induced and natural cause. Agricultural runoff, high fuel prices, leadership bias in the allocation of fishing equipment, discrimination against women, and the introduction of various chemical feeds are examples of the human-induced and natural causes. It was recommended that the political/partisan furore must be aggressively tackled by leaders within fishing communities. Most importantly much education must be sunk into appointees and community to eschew greed and selfish interests and seek the interest of all. Overall, the study contributes to the long-term governance of SSFs by elaborating on how fisherfolk vulnerability is linked to intersectionality and its consequences. Furthermore, the study offers some insight into how SSF viability might be attained through small-scale fishing communities' coping and adaptive responses to intersectionality.

Keywords: Intersectionality, Viability, Vulnerability, Small-Scale Fisheries

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Dedication

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Chapter One

Introduction: The Problem and Its Background

1.1 Background to the study

Intersectionality is the interrelated nature of social categorizations such as race, class, and gender as they apply to a given individual or group, which is thought to create overlapping and interdependent discrimination or disadvantage systems (Corus & Saatcioglu, 2015). Intersectionality theory has its origins in the writings of American Black feminists who questioned the notion of a universal gendered experience and maintained that race and class influenced Black women's experiences as well (Sokoloff & Dupont, 2005). Rather than identifying gender, race, and class as independent social categories, intersectionality asserts that these oppressive systems are mutually constructed and collaborate to produce inequality. (Bilge, 2010). While intersectionality has had an impact on feminist theory and Critical Race Theory, it has had little impact on the literature on fishing inequality (Cronin & King, 2010).

Women's presence can be seen and felt in all phases of fish production, fish processing, as well as fish distribution, and they contribute to wealth generation, preservation of aquatic ecosystems, and the maintenance of households and communities in rural and coastal regions (Gopal et. al., 2020). The work of women usually goes unrecognized in official statistics, sector policies and development activities and programs. However, the FAO (2018) reports that women constitute half the workforce in fisheries aquaculture economies around the world.

Other studies indicate that in developing countries, women produce between 60 to 80 percent of the food and women are responsible for half the food production in the world. (Ukeje, 2004). In Nigeria for instance, there is a growing realization of the critical role of women in food production and agriculture as well as a growing realization of the need for empowerment of women empowerment deemed essential for bringing about sustainable development at a faster rate hence their role and relevance cannot be downplayed. Akumbomi (2011) opines that no nation can achieve its potential without investing and adequately developing the capabilities of women. In the interest of long-term development, it is essential to ensure women's empowerment. In many developing countries, like Ghana, women have much less access to jobs, power, income, and education.

Women play, globally, a major role in carrying out many activities in inland and marine fisheries, particularly in small-scale fisheries. About 50% of the labour force in small-scale

fisheries are made up of women (FAO 2012). Women are involved in the harvesting of fish as well as other aquatic plants and animals, post-harvest handling, processing, and trading of fish. In the sector, women are primarily engaged in post-harvest activities in fish value chains (Harper et al., 2013; Weeratunge et al., 2010).

Women's empowerment and collective action for sustainable fisheries is critical (Torre et al. 2019). Fish, besides providing an important source of nutrition for households, creates important livelihood opportunities for over 60% of women in post-harvest fisheries (World Bank 2012; Teh & Sumaila, 2013; FAO, 2019). Women in Africa and Asia contribute to over 60% of seafood availability to the markets. In Ghana, women make up about 70% of the labour force in the harvesting and post-harvest sectors (FAO 2016).

Fish as a natural resource, has economic benefits to the livelihoods of lots of women particularly in coastal Ghana. Torell et al. (2016) record that in Ghana over 33,000 women along the coast depend on the fisheries as their main source of livelihood. However, the populace in the fishing communities remain economically poor. Majority of the disadvantaged are women and children (Wrigley-Asante 2008). The Ghana Living Standard Survey (GLSS 6), reports that while the poverty situation is declining in other ecological zones, it is not the case for the coastal zones as they witness the reverse. The incidence of poverty is shown to have increased in urban and rural coastal zones in Ghana (GLSS, 2014).

Women, regardless of all the help they offer, are usually excluded from fishing-related spaces. This is usually due to cultural taboos regarding institutionalized gender practices like the exclusion of women from official statistics and exclusion from participation in the sector management bodies. The trend resonates clearly with the writings of feminists on this subject, especially in relation to the use of intersectionality as a means to explore how women are marginalized structurally (Staunæs, 2003) as well as how ethnicity, regional, class, gender disparities combine to produce social difference (Bilge, 2010). In Sri Lanka like in Ghana, the fishing industry is associated with men, while women are mostly seen to play supporting roles. As such fishermen, community leaders and fishery officials (all men) normally dismiss the main involvement of women in the fishery sector and related livelihoods. This study casts its lens on intersectionality, exploring the various factors that account for discrimination among women in small scale fisheries in Ghana which in turn increases vulnerability. Also the study explores how these factors can be addressed in order to make it viable for women to engage effectively in the sector.

Intersectionality is also a way of recognizing the diversity of people's lived experiences. Because these are matters in which identity is highly intertwined, it comes up frequently in discussions about feminism and activism. Gender, color, economic status, and citizenship are just a few of the many layers that determine our life (Sgroi et al., 2020). Medicine is a field where racial bias is particularly evident. Women of color, American Indians, and Alaska Natives are two to three times more likely than white women to die after childbirth. This could be attributed to a lack of medical treatment, yet Black women are three times more likely than white women to die during childbirth, even in states with the lowest pregnancy-related mortality rate (Mayor, 2001).

According to the findings, the race has a significant impact on the medical care that pregnant women receive. It might not be scary to give birth at a hospital as a white lady. Nevertheless, a Black or Native woman may be frightened of the same thing. Understanding how race and gender interact do help to establish an opinion on intersectionality (Rosenthal & Lobel, 2014).

When one considers the salary inequality in America, one can see how race and gender intersect. According to information compiled by the National Partnership for Women and Families, white women earn approximately 79 cents for every dollar earned by a white man, Black women earn approximately 63 cents, and Latina women earn only 55 cents (Rosenthal & Lobel 2014). White women are encouraged to speak out against the gender pay gap, but they must do it in solidarity with women of color, who face even more biases because of their race (Olson, 2020).

Awareness of intersectionality requires an understanding of gender distinctions indicated by Mezzapelle and Reiman (2021). Cisgender persons or those without gender dysphoria are not always aware of the problems faced by transgender people, whose genders do not always match their physical bodies. For example, violence against cisgender women is considerably less than violence against transgender women. Transgender people are 3.7 times more likely to face police violence than cisgender survivors and victims, according to information published by the National Coalition of Anti-Violent Programs. This same research reveals an increase when racism and transphobia are combined. According to the study, transgender individuals of colour were six times more likely than white cisgender survivors and victims to encounter physical abuse from the police (Langenderfer-Magruder, et al., 2014).

In African communities, women are known to face a lot of discrimination although women play a vital role in their communities in relation to livelihoods; thus, supporting many families. This notwithstanding, women continue to endure various forms of marginalization, making them vulnerable (Gopal et. al., 2017; Scholaert, 2021; World Fish, 2016; Ameyaw et. al., 2020). In Ghana, most women along the coast who belong to fisherfolk families are noted to be among the most marginalized and usually live in poverty. Studies over the years show that the fishing sector is known to be the preserve of men. Women, even though known to play major role in the sector continue to be unrecognized and marginalized, thus increasing their vulnerability. Many intersectionality factors might account for this and that sets the basis for this study. It is for this reason the study is carved to investigate the intersectionality factors that account for the marginalization of women in the fishery sector and how these factors are perpetuated.

1.2 Statement of Problem

Davis (2008, p.68), refers to intersectionality as the interaction between gender, race, and other categories of difference in individual lives, social practices, institutional arrangements and cultural ideologies, and the outcomes of these interactions in terms of power. In many countries, ethics, gender, and other identity traits have dominated livelihood discussions as well as how power and ownership are viewed. These forms of identity are known as intersectionality. Other forms of intersectionality are class, religion, age, political identity etc. Inequalities are likely to increase among groups that are marginalized based on these traits. As such, these forms of discrimination have the tendency of making people vulnerable. This research intends to find out the vulnerability and viability of small-scale fisheries (SSF) in James Town and Techie communities in Ghana. To achieve this goal, the researcher will find answers to the following research objectives/questions.

1.3 Research Objectives/Questions

This study explored issues of intersectionality in the fisheries sector and linked it to vulnerability and viability in relation to women through the following objectives and sub-questions:

1. To understand the issues of intersectionality within small scale fisheries in James Town and Teshie communities.
 - RQ a. What are the forms of intersectionality that exist?
 - RQ b. What forms of intersectionality exist in the fishing sector in Ghana?
 - RQ c. How does intersectionality affect women in the communities?

- RQ d. What proportion of household income is derived from fish caught or produced locally?
2. To examine how intersectionality impacts or increases vulnerability among small scale fisheries in James Town and Teshie communities.
- RQ a. How has intersectionality impacted vulnerabilities among the sectors?
- RQ b. How has intersectionality increased vulnerability among women in the sector?
- RQ c. How have these vulnerabilities affected women and related livelihoods?
3. To identify how these vulnerabilities in the small-scale fisheries can be addressed.
- RQ a. How can these vulnerabilities be made viable?
- RQ b. What governance or policy implications do vulnerabilities pose?
- RQ c. What were the key rules, regulations, instruments, and measures employed to achieve the management issues in intersectionality prior to this research?

1.4 Research Design and Methodology

This thesis employed a mixed method research design, blending both qualitative and quantitative research approaches. Data was taken making use of a survey and focus group discussions. Literature on existing studies was also used extensively. A descriptive-interpretive methodology was used in the evaluation of the results (Creswell & Clark, 2017).

1.5 Rationale

The aim of the study is to investigate intersectionality in the small-scale fisheries and how it makes women vulnerable. Poverty level in Ghana is high and women are highly affected. Along the costal stretch of Ghana exists many women caught in the poverty line. Most of these women engage in small scale fishing which is noted as lucrative if done well. Thus, the number of women who still live in poverty along the coastal areas in Ghana is a worry. Could it be that there are certain elements unknown to women that act against their inability to engage in full time fishing activities? Are there factors in the fishing communities that continue to make women vulnerable? This study is important for community and governmental institutions in the fight for giving women equal representation in the fishery industry in Ghana. It will aid policy makers in taking decisions that will help women. For women in the fishing communities, this study offers an opportunity for them to express their views in a manner that that will contribute to enacting rules to ensure the women are given the necessary platform to be active in the small-scale fishing industry.

Fishing Industry in Ghanaian Communities

The marginalized people in the fisheries business would be informed through this study about issues relating to overcoming challenges associated with intersectionality by educating them and also be appraised with recommendations to improve their services for better-quality service delivery in the fishing industry. The leaders in the industry are expected to lead the implementation of the recommendations through training for efficient service. It is the desire of every business groups to satisfy its customers and add value to its investment to which the findings of this research will be apt since the results can lead to improvements in the maximization of wealth in the fishing industry.

Community and Governmental Institutions

This study is important for community and governmental institutions in the fight for giving women equal representation in the fishery industry in Ghana. It will aid policy makers in taking decisions that will help women. For women in the fishing communities, this study offers an opportunity for them to express their views in a manner that will contribute to enacting rules to ensure the women are given the necessary platform to be active in the small-scale fishing industry.

Researchers

This research aims to add to the existing body of knowledge on the topic of intersectionality and vulnerability. This study will benefit the fishing industry by providing insight into the impact of human privileges, discrimination, and victimization in service delivery. This will be widely publicized through periodicals.

1.6 Ethical Considerations

To ensure that the study proceeds smoothly, the researcher ensured that confidentiality was maintained and identities well protected. The voluntary participation of potential respondents was sought. There was also anonymity with regards to revealing participants' names and respondents were at liberty to discontinue their participation at any time. Pseudonyms were used when transcribing and analysing data.

1.7 Organization of the Study

The study is organized into five chapters. The first chapter provides an overview of the study and it comprises the background, the problem statement, the objectives and the rationale of the study, ethical considerations and a brief description of the methodology. The second chapter

reviews related literature on Small Scale Fisheries (SSF) generally as well as in Ghana. Chapter three discusses the theoretical underpinnings of the study and outlines the methods employed as well as the data collection and analysis process. This included the choice of, and description of, study areas, sampling design and the method of analysis. Chapter four is the presentation and analysis of the data while chapter five presents the summary, recommendations, policy implications, and conclusions.

2 Chapter Two

Review of Literature

2.1 Introduction

The literature review for this study was conducted along the research objectives and research questions. This chapter thus explores literature on intersectionality forms that exist, forms of intersectionality existing in the fishing sector, how the intersectionality affects women in the communities, and the proportion of household income from the fishing. The chapter also explores the impact of intersectionality on vulnerability, how intersectionality increases vulnerabilities among women, and how vulnerabilities affected women and related livelihoods. Again, the viability of vulnerabilities, the effect of governance or policy implication, and the rules, regulations, instruments, and measures for the management of intersectionality. The above literature sections are so important in this research works in SSF because the literature might confirm or reject the new findings from this research.

2.2 Intersectionality

This section discusses the literature on intersectionality forms that exist, forms of intersectionality existing in the fishing sector, how the intersectionality affects women in the communities, and the proportion of household income from the fishing in business.

2.2.1 Origin and Forms of Intersectionality

Intersectionality, sometimes referred to as victimhood, is the differential treatment of persons based on their gender, ethnicity, social status, and sexuality. Intersectionality is a common way of thinking about the relationship between oppressive regimes and numerous identities and social placements in power and privilege hierarchies. The term was coined by Kimberlé Crenshaw, an American feminist, in 1989, and has become a primary analytical framework used by feminist researchers across disciplines to discuss the structural identities of race, class, gender, and sexuality (Cooper, 2015). Crenshaw (1989) opined that woman were discriminated against not because they were women, nor because they were black; rather, they were discriminated against because they were black women because she was looking at minority populations. She popularized the concept and expanded it to assist scholars think about several identities and how these could overlap in ways that aren't apparent when looking at single identity categories. In her book *Mapping in the Margins*, Crenshaw (1995) distinguishes three types of intersectionality: structural, political, and representational intersectionality.

Structural intersectionality occurs when social systems that generate and organize diverse social groupings, such as gender and ethnicity, interact with unintended implications. Domestic violence shelters that refuse to accept non-English speaking women, for example, may be unable to meet the diverse needs of poor women, immigrants, women of color, and trans people. When political movements aimed at attaining justice for diverse groups, such as feminism and antiracism, interact to exclude or diminish the interests of a subset of those groups, or to support another sort of injustice, this is referred to as *political intersectionality*. When images or tropes are used to represent a group while neglecting or distorting the complexity of the group, *representational intersectionality* emerges. Early representations of feminism as concerned with the exploitation and isolation of the "housewife" disguised the fact that women of color and working-class women are not, overall, stay-at-home mothers.

In addition to the three categories, Crenshaw focused on experiencing intersectionality, which she defined as the experience of belonging to several social groups that cannot be broken down into distinct experiences. She also asserts that intersectional identity refers to affiliation with two or more groups that interact. Highlighting the distinction between over- and under-inclusion of identity markers, Crenshaw and Williams (2000) expands on the concept of horizontal and vertical forms of intersectionality. The term "over-inclusion" refers to the extent to which marginalized groups' experiences are claimed by bigger mainstream groups. For example, when considering gender, a small group of women's experiences may be "over-included" to the point where the aspects of the circumstances that make it an intersectional problem are absorbed into a gender framework without any attempt to acknowledge the role that racism or other forms of discrimination may have played in contributing to the situation in question (Crenshaw & Williams 2000). Similarly, it would be deemed under-inclusion if a minority of women's experiences were scarcely addressed or recognized as a "gender" problem by the greater group of women.

Individuals with overlapping identities who are marginalized due to structural barriers fall within structural forms of intersectionality (language barriers, poverty, citizenship status, etc.). Structural intersectionality can be subordinating or dynamic (changing in different settings). Political intersectionality, on the other hand, is seen as located within at least two subjugated groups that frequently pursue opposing political goals (Cooper, 2015).

In gender theory, theorizing the junction of different inequalities has become topical. These could have far-reaching implications for social theory. Feminist analysis has progressed beyond the long-standing critique of classical sociology's focus on class, beyond the creation

of a separate set of gender studies alongside ethnicity, disability, age, sexual orientation, and religion, and toward the theoretical recognition of the importance of the intersection of multiple inequalities, though there are still significant differences in how this should be done (Hancock, 2007; Phoenix & Pattynama, 2006; Verloo, 2006; Walby, 2009). Other social literature examines the topic of intersectionality using terms such as cosmopolitanism (Beck, 2006), multiculturalism (Phillips, 2009), anti-racism, hybridity (Gilroy, 2004), identity, and nationalism (Brubaker, 1996; Calhoun, 1995). There is a shared interest in how to conceive and theorize the relationships between various social groupings and projects that shape one another. Although there has been a long tradition of similar analysis before this term was coined, recent gender theory has tackled these themes under the banner of 'intersectionality' (Hartmann, 1976).

The interconnectedness of social divisions has been studied for at least two decades in terms of the development of social ties and their impact on people's lives (Anthias & Yuval-Davis, 1992; Collins, 1998). Intersectionality refers to "the interaction between gender, race, and other categories of difference in individual lives, social practices, institutional arrangements, and cultural ideologies, and the outcomes of these interactions in terms of power" (Davis, 2008, p. 68), based on black feminist work that criticizes the treatment of gender and race as two separate dimensions of discrimination. The notion has been utilized to emphasize how marginalized groups are (Stauns, 2003) and to comprehend how race, class, ethnicity, and geographical differences mix with gender to form social difference (Bilge, 2010; Collins, 2000).

In its most basic form, intersectionality asserts that a society's distinguishing categories, such as race/ethnicity, gender, religion, sexual orientation, class, and other markers of identity and difference, do not operate independently, but rather interact as interlocking or intersectional phenomena (Zinn & Dill, 1996; Crenshaw & Williams, 1995). Intersectionality goes beyond looking at the gender components of racial discrimination, George (2001), says of intersectionality and its analytical contribution. It aims to provide a framework for examining how gender, ethnicity, class, and all other types of identification and distinction, in various circumstances, produce situations where men and women are subject to abuse and discrimination" (Andersen et al, 2004). Furthermore, intersectionality theory has shown to be particularly effective in assisting scholars in moving away from debating race, gender, and class disparities as opposing factors (i.e., the declining significance of race versus the increasing significance of class). As a result, intersectionality theory proposes a method for

moving "beyond the oppositional, hierarchical divisions that frequently emerge from single axis studies" (Williams, 2004).

The idea of intersectionality, in theory, brings macro- and micro-sociological investigations together. "It investigates the manner in which numerous systems of power are involved in the production, organization, and maintenance of inequalities" at the macro or structural level (Bilge, 2010, p. 60). It entails the interplay between social categories and sources of power and privilege at the micro level, as well as how structural inequities affect individual lives to generate unique combinations (Henderson & Tickamayer, 2009). However, most intersectionality literature (Bilge, 2010; Collins, 2000; Stauns, 2003) emphasizes macro-processes and overemphasizes structural inequalities, compromising subjective dimensions and understanding of individual agency and identity formation at the individual level (Long, 2001, Stauns, 2003).

2.2.2 Intersectionality Existence in the Fishing Industry

Intersectionality emphasizes the interaction of gender, class, age, race, ethnicity, location, educational level, and social categories in many contexts and places (DeVault, 2000). Some scholars use this notion or perspective as a theoretical framework in examining the role of women in the fish processing business in Iceland Urquhart et al., (2014) and in small-scale fisheries in Kerala, India (Nayak, 2017). It also helps to better understand environmental changes and adaptation techniques in an ecologically and economically vulnerable lagoon, such as Chilika in India, as well as the roles of men and women in resource management (Iwasaki & Shaw 2010). Women and men working in the same industrial plants may have distinct habits and perspectives due to cultural obstacles that restrict women or differences in education, class, or ethnic affiliations (Oleck & Reilly, 2017).

Yingst and Skaptadottir (2018) investigate the similarities and variations in work, labor division, and other characteristics of job satisfaction among Icelandic, Filipino, and Polish women employed in fish processing factories in Iceland's Westfjord region. Using an intersectional viewpoint, the authors emphasize the interplay of gender, nationality, and degree of education, and show how labor recruitment in highly gendered processing factories has shifted from relying on local women to hiring primarily female workers from other countries. Differences in nations influence women's perspectives on the long-standing gender divide or work. Women in the Philippines regard men's work to be heavier and agree to the gender division of labor, in contrast to Icelandic and Polish women, who wonder why women are

barred from men's employment with greater income and prestige (Hatt, 1997). Nationality, level of education, and language skills all have a major impact on job satisfaction. All women, regardless of nationality or education, emphasize the significance of having a good salary (Simpson, 2015). A paper underlines the significance of correctly qualifying and defining the notion of women in the industrialized Icelandic processing industry, as well as how the conditions of origin impact their view about their current work. It is commonly recognized that more research on the division of labor, job satisfaction, and quality of life among women of various ethnicities and educational backgrounds is required (Rashid, et al., 2020).

Galhera and Candia Veiga (2018) examined how technological advances and innovations, as well as growing worldwide demand for seafood, are influencing the global fish-food economy. These changes have an impact on fishing, men's and women's jobs, and the collective life of three religious communities in Kerala, India. The paper demonstrates how gender and religion lead to different coping strategies in various households in response to economic changes, and how these coping strategies are shaped by the intersections of local gender norms, different ideologies due to different religions, and globalization processes in the entire fishing sector. As a result of various configurations of gender, labor, culture, identity, and economic processes, both external and internal variables contribute to the development of diverse tactics for men and women.

Khan et al. (2018) study some gendered consequences of environmental and industrial (aquaculture) changes in the Chilika lagoon small-scale fisheries system in India using an intersectional framework. The authors explain how women from two different tribes and castes have differing opinions of the lagoon's primary causes of development. They also look at how environmental changes affect household livelihoods and how men and women cope. The essay discusses several methods of dealing with environmental changes and shows that low caste women had a greater percentage of work and were migrant laborers. According to the authors, out-migration is a new phenomenon, particularly for women. The research connects social and economic changes to environmental changes while also examining the profound implications of change for fishers' caste-based society, gender roles, and division of work.

2.2.3 Effects of Intersectionality on women in the community

Fisheries and aquaculture contribute considerably to livelihoods around the world, with an estimated 200 million people directly or indirectly relying on them by 2008 (FAO/IFAD/WB, 2009). According to research, employment in this field is growing. The Big Numbers Project

(BNP) estimates that 25-27 million people work in small-scale catch fisheries in poor nations, including Ghana, with another 68-70 million working in post-harvesting (FAO, World Bank and WorldFish, 2008). Revised estimates of employment in fisheries could imply that the sector is largely a female one, challenging the long-held view that fisheries is a male domain, given that women make up the majority of those involved in post-harvesting in many nations. Based on available national statistics and case studies, preliminary BNP data for nine major fish producing countries suggest that women make up 47 percent of the labor force in the fisheries sector (including post-harvesting) (FAO, World Bank and WorldFish, 2008). These values may be higher if gleaning and aquaculture statistics were included.

In fisheries and aquaculture, gender differences can lead to decreased labor productivity within the industry and inefficient labor allocation at the household and national level. Women's access to fisheries resources and assets is restricted by customary beliefs, norms, and laws, as well as unfavorable state regulatory structures (FAO, 2006; Porter, 2006; Okali & Holvoet, 2007), confining them to the lower end of supply chains within the so-called "informal" sector in many developing countries (FAO, 2006; Porter, 2006; Okali & Holvoet, 2007). This means that, just like in agriculture, forestry, and manufacturing, women are likely to make up a disproportionate proportion of the poor in this sector. Access to resources has been further restricted due to environmental degradation and the depletion of aquatic resources. Climate change is projected to aggravate these discrepancies (Brody et al., 2008).

While women face most of the consequences of gender inequity, these costs are shared by all members of society and are a source of persistent poverty. Addressing gender disparities through increasing women's wages and educational levels, as well as their access to information and decision-making processes, improves the household's and society's human potential. Measures to improve governance, including increased voice and accountability, as well as public sector capability to respond to gender-specific demands, are critical for long-term transformation. Women's earnings go into the local economy, and in some cases, they are used as capital to help male producers improve their productive assets. There is mounting evidence that countries that have made significant progress toward gender equality have also seen higher levels of economic growth and/or social well-being in general (World Economic Forum, 2006; 2007). There is a growing body of research on how countries with greater gender equality can be more competitive in trade (Belghazi & Baden, 2002; World Economic Forum, 2006; 2007; Accountability, 2007).

Women in West Africa contribute significantly to the fisheries sector and play a critical role in its continued viability. Despite this, they are rarely involved in fisheries management. Changes

in fisheries policy and procedures have a direct influence on women who rely on fishing for their income and the upkeep of their families. As a result, there is an incentive for women to be active change agents in the fishing industry. Women working in the fishing industry, on the other hand, confront numerous challenges. Time, as a result of domestic and reproductive obligations, education (literacy), access to cash, cultural rules, mobility owing to household responsibilities, and discriminatory laws, among other impediments, limit women's participation (Matsue et al., 2014; FAO, 2015).

Even though women make up half of the entire workforce in the fishing industry (Pomeroy & Andrew, 2001), they are generally invisible contributors with disenfranchised voices (Béné et al., 2016). Men run the fisheries sector, and cultural norms and traditions maintain male-dominated discourse (and shape gender disparities) (Medard et al., 2002). Due to a paucity of gender disaggregated statistics and data on fish caught by female gleaners in global fisheries, total fisheries productivity, and the contribution of fisheries to household income and food security are underestimated (FAO, 2016). This is especially relevant because women's fishing efforts contribute disproportionately to household food security because seafood captured by women is more likely to be consumed by their family. Furthermore, women's earnings are more likely to be spent on food and other home needs. Failure to document trends and risks to fisheries biodiversity by capturing women's knowledge of fisheries at sea and on land is a missed chance to incorporate valuable ecological and economic local knowledge and incorporate valuable ecological and economic local knowledge (Harper et al., 2013; Santos, 2015).

Men dominate fisheries inputs such as boats, engines, nets, and decisions regarding when, where, and how to fish in West Africa. Women, on the other hand, oversee and make decisions on post-harvest activities such as where to sell, how to advertise, and how to process, among other things. Shellfish gleaning in coastal wetlands is one exception, where women are more likely to select how to harvest, process, and market the product. The cash created by women's fish production, transformation, and selling is critical for the overall fishing industry's survival (Britwum, 2009). Husbands and wives are economically intertwined, and a considerable amount of the proceeds from fish sales is invested in fisheries inputs like fuel and fishing gear.

2.3 Household Income and Fishing

Some of the articles in this topic collection are about livelihood and gender. Households in fishery communities facing resource fluctuation or depletion must create several ways to

safeguard their livelihoods. The livelihood method strives to improve rural development strategy by identifying what the poor have rather than what they lack, as well as understanding people's imaginative solutions to secure livelihoods (Salagrama, 2006). Livelihoods are diverse and comprise a variety of actions aimed at obtaining the intended outcome. It also emphasizes that women's employment opportunities differ from those of men (Ellis, 2000).

Adaptive tactics used by fishing households to ensure livelihoods are common in both the North and South of the world. Alternative livelihoods are frequently found in Northern countries in the hunt for a salary-based career for the woman so that the man can continue fishing (FAO, 2020). In Southern countries, households' livelihoods may be derived from a broader range of options, such as fish harvesting, migratory labor performed by household members, minor trading, farming, and other activities (Food and Agriculture Organization of the United Nations, 2001).

Barclay et al. (2018) in their paper examine gender and shell money and jewelry in Langalanga, Solomon Islands traditional division of labor women were expected to work within the household, occupied with tasks related to the family and the manufacturing of shell money. Men, on their side, harvested fish and dived to gather shells at sea. This traditional division of labor changed due to external factors and resource depletion. In this changing situation, men let women dive, trade shell money, and manage the family earnings. Women let men engage in the manufacture of shell money since the shell business brought a better income to the household compared to men's traditional fisheries activities. However, the development of women's new skills challenged the local culture. The paper dealing with five households also looks at multiple aspects of how gender, place, civil status, and class lead to different adaptations for the village people (Teke Lloyd, 2018).

Salmi and Sonck-Rautio (2018) investigated the division of labor and the strategies of men and women in Finland's small-scale fishing. The household is a major and significant work unit for livelihoods in general in this type of fishery. The study exemplifies how men's and women's roles have evolved over a period. Previously, community participation in fisheries was common, and women contributed more directly to fishing activities. Women, especially fisherwomen, were later employed in industrial fish facilities (When women go fishing: Women's labor in Vietnamese fishing communities, 2004).

Women were sometimes involved actively in the processing and marketing of domestic fisheries products. Wives are visible at the local level, but they are invisible in official statistics since the tasks indicated are not recorded (Aguiar & Waldfogel, 2016). Furthermore, small-scale fisheries are declining, making it difficult to sustain livelihoods. Some members of the household choose alternative means of income, such as working for public or private companies. Women's regular income frequently sustains the household's livelihood, allowing males to continue fishing (Salmi & Sonck-Rautio, 2018)

2.4 The impact of Intersectionality on Vulnerability in Small-Scale Fisheries

This section also explores the literature on the impact of intersectionality on vulnerability, how intersectionality increases vulnerabilities among women, and how vulnerabilities affected women and related livelihoods.

Intersectionality allows us to read vulnerability as a feature of all socioeconomic groups. It is the result of various and interconnected societal stratification processes that result in multiple dimensions of marginalisation (Kuran, 2020). Intersectional analysis reveals clusters of individuals with extremely high vulnerability, and having a greater number of vulnerability factors was associated with an increased risk of police abuse in general (Friedman, 2021). In two ways, an intersectional framework has implications for research and policy, both broadly and specifically for marginalized groups. Climate change research and policy, for example, would benefit from a more active articulation of intersectionality in its models of adaptation and vulnerability by identifying groups at high risk for negative outcomes such as distress and displacement (Versey, 2021).

Small-scale fishing for decades has been a source of income to coastal dwellers. Coastal communities all over the world rely on marine resources as a source of income. These resources are widely acknowledged to make multiple contributions to societies, cultures, and the economy, particularly in terms of employment, food security, income, and revenues (Allison et al., 2001; Allison et al., 2009; Zeller et al., 2006; Béné, 2006; Teh et al., 2011; Belhabib et al., 2015; Belhabib et al., 2015). Small-scale fisheries, according to Pauly (2011), have the potential to be the fisheries of the future in terms of conservation. It is hypothesized that because coastal communities are connected to their natural resources and hence feel a sense of belonging, they will engage in less damaging fishing methods. Even though small-scale fisheries provide significantly more advantages than large-scale industrialized fisheries (Pauly,

2006), they are routinely overlooked and neglected in mainstream policy around the world (Chuenpagdee, 2011; Thorpe, 2004; Zeller et al., 2006).

Limited access to resources, poor resource availability, overfishing, degradation of the marine environment, poor governance, climate phenomena, competition with industrial fisheries, globalized markets, and marginalization are among challenges that many fishing communities face around the world (Allison et al., 2005; Andrew et al., 2007; Chuenpagdee, 2011; Schuhbauer & Sumaila, 2016; Song et al., 2018; Stoll et al., 2018; Bavinck et al., 2018; Chuenpagdee et al., 2019).

These difficulties have a direct impact on small-scale fishermen's ability to survive and adapt to changing conditions. Sources of vulnerability must be understood at the individual and community levels for small-scale fisheries to offer their full benefits to society (Adger, 1999; Andrew et al., 2007; Salas et al., 2019). This may lead to the investigation of possible routes for moving from vulnerability to viability. Resources volatility, financial unpredictability, and environmental danger are all significant concerns for coastal towns. Because of the bad state of the oceans, resource-dependent fishermen are forced to change their habits, such as shifting to new fishing grounds or venturing further offshore (Salas et al., 2004; Saldaa et al., 2017; Naranjo-Madriral & Bystrom, 2019). In these circumstances, fisher people face constant challenges to their fundamental requirements, rendering them vulnerable. In some circumstances, coastal fishing households can diversify their sources of income (IMM et al., 2005; Frangoudes, 2011). In other circumstances, people use migration as a livelihood strategy to lessen their vulnerability, migrating inside or outside of the country (Islam, 2011; Kheang, 2013) in response to economic possibilities presented in other regions, serving as a 'pull factor' (Islam & Herbeck, 2013). The capabilities, assets, and activities required for a living are defined as a livelihood (Chambers & Conway, 1992; DFID 2001).

People's livelihoods are recognized to be diversified and multifaceted, encompassing a variety of assets or capitals that they utilize to deal with challenges to their well-being (Chambers & Conway, 1992; White & Ellison, 2007). People can draw on five capital assets: human, natural, financial, social, and physical, according to the sustainable livelihood framework (DFID, 2001). Literature-based schemes divide up the primary variables that determine livelihood sustainability and highlight the several domains in which people can be negatively influenced (Moser, 1998; White & Ellison, 2007). Moser, for example, created an asset vulnerability paradigm to address poverty and vulnerability in an urban study. The suggested paradigm

identifies five assets: tangible assets like labor, human capital, and productive assets (focused on housing); and intangible assets like household relations (e.g., household composition and structure, as well as household cohesiveness) and social capital (e.g., cooperation and cohesion within the community). Assets or resources have been linked to social identities and power relations at several levels, including among households, the community, and the state, in the context of small-scale fisheries (Allison and Ellis 2001; White & Ellison 2007).

Within fishing communities, resource users with strong social capital (e.g., kinship networks) can get access to a variety of assets, including financial capital in the form of loans and natural capital in the form of fishing grounds (Johnson, 2013). The configuration used to find sources of vulnerability in one study corresponds to the framework proposed by the Department for International Development (DFID, 2001). As stated previously, human capital is defined as the skills, knowledge, and health that allow people to pursue their livelihood. Natural capital refers to the natural resources (such as land, trees, and fish stocks) that are used to generate resource flows and services that are valuable for people's livelihoods.

The financial capital that people employ to achieve their livelihood goals is referred to as financial capital. The networks, trust relationships, or membership that enable for cooperation are referred to as social capital. Finally, physical capital refers to the necessities of life, such as fundamental producer commodities and infrastructure (DFID 2001; IMM et al. 2005). Domains are the term used in this study to describe capital assets. The natural domain refers to natural fishing resources; the social domain refers to kinship, associations, and networks within the fishing community; the economic domain refers to savings, access to credits, loans, and profits; the institutional domain refers to the role of community-based rules and state regulations that influence access to natural or financial resources; and the technological domain refers to the key assets required to develop fishing as a business (e.g., boats, gears, infrastructure).

Khan et al. (2018) investigates some gendered implications of environmental and industrial (aquaculture) changes in the Chilika lagoon's small-scale fisheries system in India using an intersectional perspective. The authors discussed how women from two different communities, each belonging to a different caste, have differing perspectives on the lagoon's key drivers of change. They also look at how environmental changes affect household livelihoods and men and women's coping mechanisms. According to the authors, out-migration is a new phenomenon, particularly among women. The research discusses the fundamental

ramifications of change for fishers' caste-based culture, gender roles, and labor division while also relating social and economic changes to environmental changes.

2.5 How Intersectionality Increases Vulnerabilities among Women

Over the decades, the impact of social divisions in respect of the production social relations have on people's lives has been constantly analysed (Collins, 1998). The origin is traced from black feminist work which criticized race and gender as separate ways of discrimination which they termed intersectionality (Davis, 2008). Intersectionality as a concept has been used by many to describe how certain groups are marginalized and to understand how class, ethnicity, race, regional disparity may combine with gender to create social differences (Staunaes, 2003, Bilge, 2010; Collins, 2000).

The concept can theoretically be analysed in two ways; macro and micro-sociological. At the macro level, intersectionality deals with the ways by which multiple systems of power are involved within the production, organization and maintenance of inequality (Bige, 2010). At the micro levels, intersectionality deals with interactions that exist between sources of power and privilege and social categories. It also deals with how individual lives are affected by structured inequalities (Henderson & Tickamayer, 2009). This study focused on the structured inequalities that go on in SSF industry in the local areas of Ghana, looking at how these inequalities affect women.

Feminists and gender researchers, as well as scholars from other disciplines, have developed an interest in the gender niche over time and have contributed significantly to study in this field (Bennett 2005; Kleiber et al. 2014; Frangoudes & Keromnes, 2008; Frangoudes 2013a; Yodanis 2000; Williams 2008). Women and gender research, on the other hand, has not been equally apparent across disciplines. Researchers have made significant contributions to the social and cultural sciences by emphasizing the role of gender and gender relations in order to better understand human interactions in fisheries and coastal communities. In agriculture and agricultural research, a gender lens has had a significant impact, whereas in fisheries research, gender subjects and viewpoints have taken a long time to develop and adopt. Gender research in fisheries and coastal communities nowadays includes topics such as fisherwomen, women in fishing households and processing work, seaweed collectors, gatherers of other species such as shellfish and gender relations (Frangoudes et al. 2013b; Gopal et al., 2017).

Despite the fact that women participate in a large number of sea-related activities, academics have yet to effectively reflect the topic's interest and importance. Women and gender in fisheries articles had a hard time being published in high-impact fisheries journals. This is changing, thanks to the fact that gender equality has now been acknowledged as one of the goals of international treaties and agreements connected to natural resources (e.g., Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication 2015; UN 2018). Gender inclusion in research and development programs is also requested by national and transnational research (e.g., EU Research Programmes) and development organizations (e.g., UN authorities).

Intersectional issues such as labor and migration, changes in job opportunities (e.g., paid and unpaid contributions of women in fisheries and aquaculture), organizations such as unions and public participation, property rights in fisheries, resource management, and capacity building are among the topics covered. To help us challenge, discuss, and further develop notions and views proposed and used by gender and feminist researchers, such a broad focus is required. In addition, the regional diversity of women's and men's experiences in fisheries and coastal communities must be captured. Gender research has drawn on a variety of fields, and this collection on gender, fisheries, and coastal communities provides an excellent opportunity to bring these disparate viewpoints together, confront them, and reconcile them. Limited data has hampered research on gender and women in fisheries and aquaculture (Harper et al. 2017; Kleiber et al., 2014; Frangoudes, 2011), mostly because fisheries research has been slower than others to acknowledge the importance of gender within their scope. Despite the fact that research on households and communities highlighted women's presence in fisheries, as important workers for fishing boats, processing plants, and the household, few cultural and social researchers (for example, ethnologists, anthropologists, and sociologists) studied sexual or gender division of labor within fisheries (Gerrard, 1975; Porter, 1991).

2.6 How Vulnerabilities Affected Women and Related Livelihoods

Small-scale fisheries are extremely varied. Male's and female's identities are framed by culture and values just as much as material situations, resources, or livelihoods are. Beyond women in the fishing industry, there is a case to be made for all women who travel to sea (Kleiber, et al., 2014).

Gustavsson (2021) investigated culture, values, and meaning behind gender identities in small-scale fishing in Wales' Llyn Peninsula. The researcher demonstrated how culture and beliefs

impact women's and men's roles through gendering everyday life in fisheries, families, and communities. The authors demonstrate that these viewpoints might be useful for understanding livelihood strategies by using Bourdieu's (1986) idea about capitals as a theoretical term (Nicolopoulou, 2014). The examples offered are about how males are linked to fishing techniques and spaces, primarily at sea, referring to cultural capital, male capital, and fishing capital. Women are linked to land-based activities, which are also linked to emotional capital in the form of caring and homemaking duties, including sacrificing leisure and holidays to allow men's fishing (Kim, 2019). In this approach, women indirectly contribute to the generation of household economic capital. Based on their findings, the authors call for a more in-depth examination and discussion of all spaces involved with fishing, including boats, homes, and other features, to fully comprehend the complexities of small-scale fishing (Gustavsson & Riley, 2018).

Icelandic women have been involved in fishing and other sea-related occupations for hundreds of years and can provide examples of women's sea-related activities (El Agami, 2018). Women have been fishermen and skippers, which contradicts the popular belief that fishing is mostly a male occupation. Modernization and technological intensification of fisheries drove women to leave the business, although they returned after WWII. They now do other occupations on fishing and commercial vessels (Knuth, 1991). The study also found that there are few books, reports, and articles regarding sea-women, who are primarily female fishermen and sailors, at least in the Nordic countries. Because these novels are frequently written in local tongues, their availability is limited outside national borders. It also indicates that a female-oriented lens, which is not limited to fishing and fisheries, broadens the scope of marine studies (Gerrard & Kleiber, 2019).

2.7 Vulnerability in the Small-Scale Fisheries

This section discusses the literature on the viability of vulnerabilities, the effect of governance or policy implication, and the rules, regulations, instruments, and measures for the management of intersectionality.

2.7.1 Vulnerability to Viability (V2V)

According to Nayak and Berkes (2019, p. 207), “vulnerability was assessed in the framework of SSF as multidimensional, complex, highly active and interactive”. Vulnerability can be defined as types of recurrences or attributes of exposures and affectability as well as people’s

ability to adjust to such dangers. Women along the coastal sector in Ghana engage in fishing activities, however, not much research has been done on the intersectionality they encounter on a daily basis. The main vulnerability concepts to tackle in this study, in line with V2V aims are resilience, well-being and livelihood capital concepts.

Gunderson and Holling (2002) are resilience theorists who stated that systems are not static. They opined those systems undergo a process of change through order and chaos. These theories emerged to challenge the assertion that systems are static and can reach a state of equilibrium (Botkin, 1990). Carefully building resilience through adaptive measures is a method of managing vulnerability. Women in the small-scale fisheries industry are not given much recognition because their adaptive capacity to withstand social, community, political and economic resilience is weak and as a result, make women vulnerable (Walker et al, 2004). As such, building strong adaptive capacities (social, political, economic) is essential to reducing the vulnerability created by intersectionality.

Another V2V concept vital to this study is livelihood capital. Assets are essential in reducing vulnerability and lack of assets is known to increase vulnerability in SSF communities. For women to escape from marginalization, capital is of importance; social, human, monetary, physical. In this case, how intersectionality has brought about vulnerability in terms of capital mobilization, with reference to women is of much importance to the study. Along the coastal plain of Ghana, it is well noted that women have less capital pull and are characterized with poverty (Wrigley-Asante, 2008). Giving women living in these areas the same platform to engage in SSF will eventually increase their capital pull factor.

Well-being or social well-being concept of V2V can be gleaned in this study. Well-being is defined as “a state of being with others, where human needs are met, where one can act meaningfully to pursue one’s goals and where one enjoys a satisfactory quality of life” (Nayak & Berkes, 2019, p.207). Material, social and emotional well-being are elements of the three measurements of well-being (Sen, 1999; McGregor, 2008-as in by Nayak and Berkes, (2019). These can affect both vulnerability and viability depending on the setting (Coulthar et al., 2011). Humans will always think about things that will make them comfortable, and how they are well placed socially as well as their emotional state (Berkes & Nayak, 2018). In all these, capital and assets are of importance as the presence of these can empower people and strengthen viability (Fischer 2014).

Research into vulnerability and viability has given visibility to SSF for about two decades. Although vulnerability has its origins in climate science and policy, it has also been widely debated in the literature (Adger, 1999; Cinner et al., 2012; Belhabib et al., 2016; Senapati & Gupta, 2017; Nayak & Berkes, 2019). In the realm of risk management, vulnerability is defined as the degree of sensitivity to a physical effect, as well as the capacity to respond to that impact (Blaikie et al. 1994; Khattabi & Jobbins, 2011). According to O'Brien et al. (2007), there are two sorts of climate change vulnerability interpretations: *result* vulnerability and *contextual* vulnerability.

When any linear result of expected climate change impacts on a biophysical or social unit is countered by adaptation measures, outcome vulnerability is evaluated. Contextual vulnerability, on the other hand, is defined as a complex process of climate-society interactions. Early research on vulnerability in fisheries attempted to highlight it as a result of a combination of natural and technological disasters beyond human control (Dyer & McGoodwin 1999). However, many other difficulties, in addition to climate-related ones, have an impact on people's livelihoods. As a result, specialized vulnerability schemes link this notion to the community, transcending specific physical stressors (Adger, 2006; Khattabi & Jobbins, 2011; Bennett et al., 2016).

From the standpoint of social vulnerability, several economic, social, institutional, and technological issues might limit people's capacity to earn a living. When people in small-scale fishing communities are not structured, such as when fishing cooperatives are absent, they may be less able to collectively deliberate and act on problems (Khattabi & Jobbins, 2011). The vulnerability knowledge area has a long history in human geography, primarily in the fields of disaster, global environmental change, famine, and poverty (Adger, 1999, 2006; Kelly & Adger, 2000; Cutter et al., 2013). Vulnerability is a crucial factor in poverty studies (Chambers, 1989; Béné, 2009), even though vulnerability and poverty are not synonymous. Several writers have suggested that, while small-scale fisher folk may not be the poorest of the poor (in terms of money), they are the most vulnerable due to their high vulnerability to environmental, health-related, and economic shocks and disasters (Béné, 2003; Allison et al., 2006; Jentoft & Eide, 2011). This latter viewpoint is based on the notion that vulnerability encompasses different insecurity as well as risk, shock, and stress exposures (Chambers 1989; McCulloch & Calandrino, 2003; Béné, 2009; Salas et al., 2011).

Small-scale fishing communities' vulnerability is linked to their heavy reliance on natural resources and strong affinity to coastal places, as previously indicated (Allison et al. 2006; Islam 2011; Salas et al. 2011; Chuenpagdee et al., 2019). People who work in the fishing industry, regardless of gender or age, are involved in various aspects of the fish chain, sometimes overlapping duties in pre-harvest, harvest, and post-harvest operations (Edwards et al., 2019). Because post-harvest activities are fully dependent on harvest activities, multiple causes of vulnerability, such as interruption of marketing networks, fish losses, and severe weather conditions, affect both fishers and processors (Tindall & Holvoet, 2008; Pedroza & Salas, 2011).

It is also generally recognized that vulnerability affects men and women differently. Women are more vulnerable to natural disasters, sexually transmitted illnesses, and social isolation, to name a few (Béné & Merten, 2008; Arora-Jonsson 2011; Ayantunde et al., 2015). In the 2004 Indian Ocean Tsunami, for example, fatality and the likelihood of post-disaster death were twice as high for women (Birkmann et al., 2007). As a result, it's critical to comprehend the differences between men and women who work in small-scale fisheries in terms of how they feel vulnerable conditions in their surroundings. Early viability studies in small-scale fisheries measured a fishery's financial or economic viability (Béné et al., 2001).

However, depending on the kind of study, when analysing financial viability or economic performance, small-scale fisheries should be regarded differently than their large-scale equivalents. This is because small-scale fisheries provide traditional, cultural, and social qualities in addition to profit (Berkes et al., 2001; Pollnac & Poggie, 2008; Trimble & Johnson, 2013). Small-scale fisheries are officially classified in Mexico as operations carried out by indigenous and non-indigenous fishermen who sell most of their catch at local markets but save a portion for personal consumption. Fishermen use tiny boats known as 'pangas,' gillnets, hook and-line, hookah diving, traps, and a variety of small bottom-trawl nets are the most used fishing devices. Large-scale fisheries, on the other hand, comprise vessels with a covered deck, an inboard engine, mechanical winches, and fishing devices such as otter trawls, purse-seiners, and longlines. There are two sorts of fleets: an offshore fleet that targets tuna and billfish, and a big coastal fleet that targets shrimp and tiny pelagic fish like sardines (CONAPESCA, 2017).

Vulnerability assessment methods are usually pre-determined, based on available data and expert knowledge (Adger 2006; Moser 2010). Vulnerability assessments are frequently quantitative, relying on measurable qualities or attributes to generate scores or indices to

describe a system's level of vulnerability (Allison et al., 2009; Senapati & Gupta 2017). Although expert-driven assessments can distinguish communities based on their level of vulnerability and provide some useful insights for policy intervention (Alwang et al. 2001; Yohe & Tol, 2002; Allison et al., 2009), studies show that long-term solutions to addressing vulnerability must be community specific (Alwang et al., 2001; Yohe & Tol 2002; Allison et al., 2009; Barrett, 2013; Sowman & Raemaekers, 2018). It is also suggested that a country-level vulnerability study may overlook sub-national spatial and social distinctions, as well as local factors that allow for adaptability (Adger, 2006; Cutter et al., 2013). As a result, qualitative evaluation should be employed in conjunction with such research to provide insights and perceptions of vulnerability, particularly from the perspective of local populations (Adger, 2006). This technique also addresses one of the key flaws in most vulnerability assessments: the lack of consideration of vulnerable people's viewpoints on what defines their vulnerability, either in the study design or in the actual evaluation (Salas et al., 2011; Ayantunde et al., 2015; Sowman & Raemaekers, 2018).

Viability assessments, on the other hand, have traditionally been conducted primarily from a financial standpoint, with a focus on profit maximization (Schuhbauer & Sumaila 2016). As a result, economic methods such as socio-economic indicators (Ünal & Franquesa 2010) and economic models of production have been widely used in analysing the feasibility of fishing enterprises (Adeogun et al. 2009). (Gustavson 2002).

Another approach for determining how economically feasible a business is, is cost-benefit analysis, which incorporates temporal considerations into the evaluation of net benefits (Tisdell, 1996). However, the viability theory, a mathematical method based on Aubin's 1991 viability kernel, is the most widely used tool for analysing economic viability (Schuhbauer & Sumaila 2016). In the case of small-scale fishing, viability extends beyond financial gains, as being viable requires that favorable socioeconomic conditions are always accompanied by social well-being.

Some studies have looked into the viability of social capital as a meaningful property that improves community well-being (McKenzie, 2004; Brooks et al., 2010). For example, capital accumulated in migrant networks (migration) has a significant impact on the viability of a given fishery, both in terms of landings and employment (Marquette et al. 2002); or cooperation among fishers and between fishers and institutions, both of which have a positive impact on ecosystems and livelihood viability (Salas et al., 2015). Thus, there are various advantages to

involving communities in determining both vulnerability and viability solutions, as they can become genuine agents in working toward better livelihoods rather of being perceived solely as a problem (Chuenpagdee 2011). While pre-determined methods to assess the factors or stressors that make fishing people vulnerable predominate in the literature (Béné, 2009; Mills et al., 2011; Cinner et al., 2012; Brugère & De Young, 2015; Freduah et al., 2017; Islam et al., 2014; Quiros et al., 2018), other methods are designed to be more participatory by involving local people in the identification of the key constraints or challenges in their community. This latter strategy allows them to participate in the diagnostic procedure (Eriksson et al., 2016; Karr et al., 2017; Sowman & Raemaekers, 2018).

Participatory techniques, according to Brockhaus et al. (2013) and Prokopy et al. (2013), are useful when the goal of the study is to change people's behavior in reaction to causes of stress. One of the advantages of participatory vulnerability assessments is that they concentrate on the experiences of people or communities who have been affected by climate stress and other shocks in their own situations (Ayantunde et al., 2015; Schwarz et al., 2011). As a result, participatory methods and technologies are effective tools for identifying problems and encouraging local people to discover solutions in their own communities (Eriksson et al. 2016). The participatory approach recognizes, among other things, that fishermen play an important role in resource governance (Jentoft & McCay 1995; Béné & Neiland 2006; Jentoft et al., 2011; Salas et al., 2019), and that the positive influence of participation means that they can perceive and understand the socioeconomic and political conditions in which they live, providing relevant knowledge to solve problems (Chambers 1995; Barrett 2013). Participatory, bottom-up approaches could be considered to increase local people's empowerment in this regard, which may be preferable than relying on outside specialists through standard assessment methods (Chambers, 1995; Sowman & Raemaekers, 2018).

Overall, self-identification of causes of vulnerability is crucial for the creation of measures that meet case-specific, local needs, avoiding one-size-fits-all solutions that are frequently the product of externally driven vulnerability assessments (Ayantunde et al., 2015; Sowman & Raemaekers, 2018). As a result of the necessity for stakeholders to be included in processes that lead to excellent judgments on difficult topics, interest in participatory research has developed (Chambers 1994a, 1995; Seixas et al., 2019). Researchers and participants learn together, rather than the former extracting information from the latter, thanks to the approaches used. Pastoralism, agriculture, mining, farming, forestry, tourism development, urban and rural planning, and environmental education have all used participatory approaches to research

(Esilaba et al., 2001; Robottom & Sauv , 2003; Bationo et al., 2007; Esteves, 2008; Coppock et al., 2011; Bele et al., 2013; Ramrez, 2015; Bai et al., 2016). These applications have been found to clarify, addressing, and achieving management goals such as planning, soil fertility management, and tourism development, among others (Bellon et al., 1999; Nembrini et al., 2006).

2.8 Effects of governance style and Implications for policy

The research gains extra insight by focusing on the various architectures of policy projects and arenas. The implications of intersectionality for the formation of the project, and indeed the policy field itself, are of importance here (rather than only the clients within that policy field). One example is the expansion of the policy field of gender-based violence to include forced marriage, in which the approach to intersectionality within the policy terrain shapes the formation of the policy arena itself. There are projects that bring together various civil society organizations, such as the project to eradicate child poverty in the United Kingdom or the project to promote human rights. Projects are the meeting places for various social forces to form alliances and shifting coalitions on one subject while opposing each other on another. There are policy domains in many public services, such as health and education, that are informed by the interests of numerous equality strands but are not reducible to any of them. The tension between structural and political intersectionality is best handled by recognizing that these concerns are both separate and intertwined. They must not be mixed together or reduced to one another.

The distinction between horizontal and vertical types of intersectionality is another sort of intersectionality discussed in the literature (Donaldson & Jedwab, 2003). Within-group differences (such as the interaction between Vietnamese, Chinese, Japanese, and others when discussing "Asians," or Jamaicans, Antiguans, black British, or black Americans when discussing "blacks") are described by horizontal intersectionality. Differences between groups are referred to as vertical intersectionality (such as blacks compared to Asians). Although both vertical and horizontal forms of intersectionality are significant, each interjects different sorts of information into scholarly discourse, which has the ability to explain diverse policy results even among groups that are geographically similar.

2.9 Rules, Regulations, Instruments, and Measures for the management of intersectionality

Issues of intersectionality, especially those that restrain women from attaining their goals in in society require government interventions if they are to change. Government plays a leading role in creating paths where women are more cherished and allowed to develop in the local community. In recent years, there has been a growing emphasis on fisheries and other natural resource governance. Interactive governance is one of many governance ideas used in a variety of societal systems, including coastal and small-scale fisheries (Jentoft & Chuenpagdee 2015). Interactive governance is defined by Kooiman et al. (2005, p.17) as "the entire of public and private contacts taken to solve society problems and create societal opportunities." It entails the development and execution of ideas that guide interactions and the upkeep of institutions that facilitate them. However, the interactive governance theory has been applied to various socioeconomic sectors and fields of research, such as coastal zone management (Pittman and Armitage 2016), forestry (Derkyi et al., 2014), animal husbandry (Löf 2016; Onyango 2016), and the biofuel business (Pittman & Armitage, 2016; Di Lucia, 2013). The application of interactive governance to small-scale fisheries begins with the recognition that this sector has a set of problems that are akin to wicked problems (Rittel and Webber 1973; Jentoft and Chuenpagdee 2009; Jentoft 2018), in that they are inherently complex, sometimes part of a larger problem, and difficult to solve.

Traditional management approaches that overlook external hazards are ineffective in small-scale fisheries because they are exposed to external threats. There thus is a push to broaden the scope of governance beyond management (Kooiman et al. 2005). To enhance the system's position, this involves new forms of interaction such as cooperation, partnerships, social learning, and knowledge co-production (Berkes 2011). Fisheries frameworks and theoretical approaches range from ecological and people-oriented (Allison & Ellis 2001; Fletcher et al., 2005; Garcia et al., 2008) to broader approaches that view fisheries systems through the lens of governability (Allison and Ellis 2001; Fletcher et al. 2005; Garcia et al. 2008). Elinor Ostrom's socio-ecological system theory (Ostrom 2007), which, like interactive governance theory, works with complex systems, is another important governance method. The foundation of these two techniques is one of the key differences between them. The socio-ecological system method and its associated resilience thinking have an ecological base, but the interactive governance approach has a political and social science background. Furthermore, the socio-ecological system concept argues that natural and human systems are intertwined.

Interactive governance theory, on the other hand, provides a framework for investigating the various interactions between society and the ecosystem, which may include decoupling the natural and social systems to be governed, as well as investigating the interactions between these two systems and the governing system. Finally, scholars working on socio-ecological systems typically offer problem-solving prescriptions, whereas interactive governance focuses on system description first and foremost, but also provides an analytical framework based on the 'governability' concept, which refers to the overall quality of governance (Bavinck et al., 2013).

The natural and social systems that are being managed, as well as a governing mechanism and the interactions between the two, are all covered by the interactive governance theory (Jentoft & Chuenpagdee 2015). The people in the fish chain make up the social system to be managed, while governments, markets, and civil society organizations make up the governing system. Both the governing system and the system to be ruled must be compatible for a governing endeavour to be successful. Governance is prone to fail if the governing system overlooks the nature of the system to be managed (Jentoft & Chuenpagdee, 2009). The interactive governance theory makes several assumptions about governance design. To begin with, the theory asserts that both the governing system and the system to be governed have inherent features, such as diversity, complexity, dynamics, and size, and that understanding these properties is crucial for governance. The heterogeneity and number of components in a system determine diversity, whereas the complexity of the system defines how the components interact. The way the governing system and the system to be regulated are connected and interact is referred to as dynamics. These relationships may be influenced by external factors, and as a result, they tend to shift over time. Interactive governance goes on to say that the spatial and temporal scale of both systems and their interactions could be a problem for governance (Jentoft & Chuenpagdee 2009; Kooiman & Bavinck, 2005). The theory of interactive governance distinguishes three types of governing modes: top-down or hierarchical governance, in which governments play a controlling role; co-governance, in which the state and user groups share power; and self-governance, which is considered the prerogative of communities (Kooiman et al., 2005).

Many small-scale fisheries are managed top-down around the world, however there is a strong signal for governance transition and change toward participatory and co-governance (Jentoft & Chuenpagdee, 2015). According to interactive governance theory, no single method of governance is preferable or guarantees optimal outcomes. Instead, it claims that each situation necessitates a unique diagnostic in order to identify the most appropriate approach. Given the

complexity of fisheries systems and the potential for trade-offs, governance decisions are likely to have a significant influence on the ecosystem as well as the people involved. As a result, from the standpoint of interactive governance, affected actors must participate in discussions and decision-making based on the concerns and principles that underpin the system's governance (Bavinck et al., 2013).

The third point to consider is the governance order in which various actions are carried out. Daily problem-solving and everyday decision-making take place in the first order. The second order refers to the institutional design and structures that support first-order acts while also considering the meta order, which is comprised of values, images, and 28 underlying governing principles (Jentoft and Chuenpagdee 2009; Chuenpagdee, 2011). Ecosystem health, social justice, livelihoods and employment, and food security are the interconnected meta-concerns outlined in this approach, which also appear in conversations concerning fisheries around the world. They're all linked to human well-being, both now and in the future. Governments ought to recognize that dealing with small scale fisheries requires greater grassroots involvement and they thus must work towards meeting their needs.

2.10 Conceptual Framework /Research Paradigm / Definition of Terms

A conceptual framework is a textual or visual depiction of a variable's expected connection (Maxwell, 2005). This research conceptual framework describes and illustrates the three concepts that describe why the research topic under consideration is relevant. This section discusses intersectionality, vulnerability, and the regulations that govern the fishing industry. The research paradigm (as shown in Figure 2.1). The paradigm outlines Vulnerability, Laws in Fisheries, Intersectionality and Demographic Profile, also, there are operational definitions of words used in the research and these are captured below.

2.10.1 Intersectionality

It is based on Crenshaw's (1989) concept that women are discriminated against not because they are women or because they are black, but because they are black women and members of a minority community. She popularized and expanded the notion to help scholars consider several identities and how they could overlap in ways that aren't obvious when looking at single identity categories. It is relevant to this study because it introduces the concept of intersectionality among small-scale fisheries businesses in the fishing towns of James Town and Techie.

2.10.2 Vulnerability

Brugère (2015) proposed the concept of potential impact and adaptive capability, which results in vulnerability. The concept implies that all impacts that may occur as a result of nature, the degree to which fisheries production systems are exposed to climate change, and the degree to which national economies are dependent on fisheries, making them sensitive to any change in the sector, plus the system's ability or capacity to modify or change to cope with changes in actual or expected climate stress, will result in vulnerability.

This concept is relevant to this study because the industry is exposed to climate change, and the degree to which it is linked to a community economy, as well as its ability to modify such changes to meet the climate stress, necessitate the adoption of this concept.

2.10.3 Laws in Fisheries (Rules, Regulations, Instruments, and Measures for the management of intersectionality)

Cochrane et al. (2011) advocated a concept based on an integrated process of information gathering, analysis, planning, consultation, decision-making, resource allocation, and formulation and implementation, with enforcement as needed, of regulations or rules that govern fisheries activities in order to ensure the continued productivity of the resources and the accomplishment of other fisheries objectives.

Intersectionality states that oppressive systems such as gender, race, and class are jointly formed and combine to promote inequality, which is why this idea is important to this research. This intersectionality has influenced feminist theory and Critical Race Theory, as well as the fishing industry in James Town and Techie, necessitating the need to control the industry through regulations that govern fishing activities.

2.10.4 Research Paradigm

The research paradigm is as shown in Figure 2.1. The paradigm is showing Vulnerability, Laws in Fisheries, Intersectionality and Demographic Profile. The two independent variables are Vulnerability, Laws in Fisheries. The dependent variables are Intersectionality and a Demographic profile.

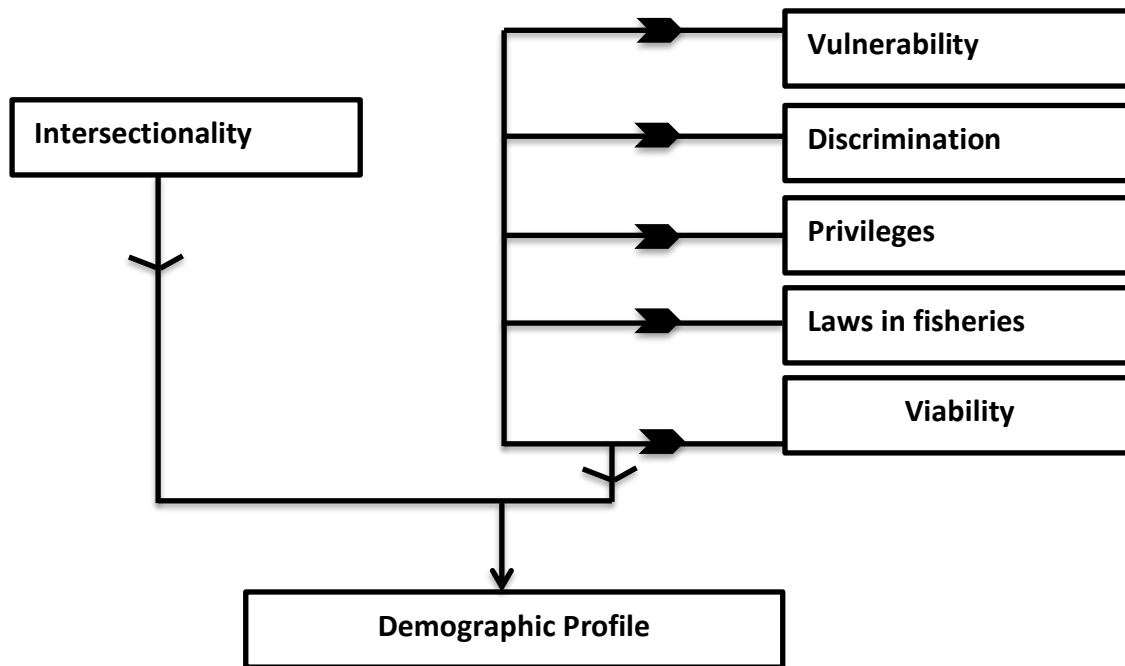


Figure 2.1: *The Research Paradigm*

2.11 Definition of Terms

The following section presents the operational definition of words used in this research.

Fish. any of the approximately 34,000 species of vertebrate creatures found in fresh and salt seas around the world (phylum Chordata).

Fisheries. The science of producing fish and other aquatic resources for human consumption.

Fishing Sector. is a group of fishermen who have banded together to advocate community-based administration of their specific fishery under the federal government's supervision.

Governance. the system that controls and operates an organization, as well as the mechanisms that hold its people accountable through ethics, risk management, compliance, and administration.

Household income. Any revenue brought in by individuals over the age of 15 living under the same roof is included in the family income. The household income is the sum of all earnings before taxes.

Instrument. a measuring device used to calculate the current value of a quantity under observation.

Intersectionality. the interrelated nature of social categorizations such as race, class, and gender as they apply to a given individual or group, which is thought to create overlapping and interdependent discrimination or disadvantage systems.

Livelihood. A livelihood is defined as a set of activities essential to daily life that are carried out throughout one's life.

Measures. a strategy or plan of action devised to achieve a specific goal.

Policy. a specific course of action chosen from among alternatives and in light of given circumstances to guide and determine present and future decisions.

Regulation. is the administration of complex systems in accordance with a set of rules and trends.

Rules. one of a set of explicit or understood rules or principles governing behavior or procedure in a specific area of activity.

Small-Scale. restricted in scope or extent, minor

Viability. The ability of a system to maintain or recover its potentialities.

Vulnerability. being exposed to the prospect of being attacked or harmed, either physically or emotionally, is a trait or state.

Women. a female individual linked with a specific location, activity, or occupation.

Discrimination. The unjust or prejudicial treatment of different categories of people or things, especially on the grounds of race, age, or sex.

Privilege. A special right, advantage, or immunity granted or available only to a particular person or group.

3 Chapter Three

Research Methodology

3.1 Introduction

This chapter examines the choices and strategies that were employed by way of methodology throughout the entire study period. It begins with the profile and choice of the study areas in order to gain some understanding of the prevailing background issues. The nature of the research problem and its accompanying questions in addition to existing knowledge and information, justifies and makes appropriate the methodology and the selection of research methods acceptable for the study.

According to Pernice (1994) some factors that require careful consideration include (a) contextual differences between countries of origin and destination (which will be interpreted as paying attention to the socio-cultural background of potential respondents and their position on the coastal stretch). This includes looking at study participants as independent subjects besides what other studies from other countries may present, thus regarding them with a lens from their worldview), (b) the conceptual problems associated with the translation of research instruments, (c) sampling difficulties (d) linguistic problems; (e) observation of etiquette and (f) personality characteristics of researchers (Pernice, 1994). These serve as a guide in the selection or choice of methods to employ to execute this study.

Patridge and Starfield (2007) looked at methodology as the theoretical paradigm or framework within which a researcher works, as well as the tools and resources used to gather and analyze data. The goal of research philosophy, research approach, research strategy, time horizons, and data collection methods used in the study are all described in research methodology (Saunders et al., 2009). To Shoyemi (2014), the choice of research method and methodologies is influenced by the researcher's ideology and worldview, as well as clear description of the research questions and research title.

Saunders et al. (2007) discussed research methodology as a theory of how research should be conducted, encompassing both theoretical and philosophical foundations upon which research is based and the consequences of these for the methodologies employed. The objective of establishing a research methodology is to explain why certain research methodologies were chosen during the research process. This chapter explains in detail how all the processes used in the study were arrived at.

3.2 Research Philosophy

This study was guided by interpretivism philosophy. Interpretivism involves the interpretation of study elements by the researcher. Therefore, this philosophy integrates human interest into a study. Interpretive researchers opine that social construct such as language, consciousness, common meanings, and instruments provide access to reality (Myers, 2008). Interpretivism aligns itself with the philosophical position of idealism. According to interpretivists, it is critical for a researcher to comprehend the differences between persons within a social setting and actors (Saunders et. al., 2012), hence interpretivism studies typically focus on meaning and may use a variety of methodologies to reflect various facets of the topic.

Researchers' interpretations of the various expressions and responses made by actors in the research settings being studied, with and through which those actors express their situations (Schwartz-Shea & Yanow, 2020) clearly shows the relevance of interpretivism in research. This study anchored in interpretivism because the researcher assumed that access to reality is through interactions with the study units. Also, my historical link with the culture of these communities and my experience working with the Local Government of Ghana, helped me with my engagement in interpretivism philosophy.

3.3 Choice and Profile of Study Area

3.3.1 James Town and Teshie Nungua

Jamestown originated as a community that emerged around the 17th-century British James Fort, merging with Accra as the city grew. It is the oldest district in Accra and the best place to experience remnants of colonial rule, fishing, Ghanaian music, dance, art and historic traditions of birth celebrations and festivals (Amerterfio,2015) James Town is filled with visceral sensory experiences that can shock, delight, perplex and confront its visitors, Sitting right on the Gulf of Guinea coast, this densely populated traditional Ga fishing community is a labyrinth of streets and alleyways, constantly filled with the sounds of children playing, the smell of smoking fish mixed with thick ocean salt, Fish and kenkey is the major delicacy.

James Town is primarily a fishing community and is inhabited by the Ga people of Ghana. It is one of the most popular destinations for tourists looking to explore the colonial past of Ghana, the Fishing harbour, James Fort, James Town Lighthouse, Jamestown Café, Ussher Fort, and Brazil House are the six major spots to visits in Jamestown. According to Amerteifio (2015), Jamestown is known for mainly fishing, Fathers usually train their kids on how to fish and the women also engage in old-fashioned methods of curing, smoking and

flavoring fish in smokehouses that make delicacies out of a common catch. This reduces waste at time of bumper catches and avails protein nationwide. There are also several boxing gyms that have nurtured a long line of local kids into champions. These fights create an avenue for amusement and sportsmanship. With time, Jamestown has birthed international greats coming out of Ghana, like Azuma Nelson and Ike Quartey. For entertainment there's the excellent and adjacent gallery (Davidson,2000).

The people of James town celebrate one of the most sought-after festivals celebrated annually ChaleWote Arts Festival, which runs for a week, fuelling a colourful crescendo, artists, and festival guests into one big vibrant experience. The festival is usually around the month of August and explores several mediums of art installations: theatre, music, dance, food, fashion, decor, street performances, and street paintings and inside the historical buildings of Jamestown (Anderson, 2000).

Teshie is a coastal town in the Ledzokuku Municipal Assembly a district in the Greater Accra Region of south-eastern Ghana. Teshie Nungua is the ninth most populous settlement in Ghana, inhabited by the indigenous Ga people of Accra. This means, among other things, that most properties are family homes, handed down through the generations and are usually not for rent. The mixed-income population comprises mainly of fishermen and fishmongers, also there are traders, drivers, and office workers. Housing is in a mix of old in some cases, pre-dating the colonial era and more modern buildings and most is of the compound house type.

The areas are poorly planned and crowded and become muddy during the rainy season (April-July and September-November) due to poor drainage. Teshie is home to the Ghana Military Academy, which is within walking distance from the famous Next-Door Beach Resort, one of Accra's most popular entertainment spots, located on the Beach Road. James Town and Teshie Nungua communities have large family sizes with most members within the age bracket of 26 and 55. Most of the women in these areas are semi-illiterates who dropped out of school in their early years to assist their mothers in the fishing business, a cyclical phenomenon over many years. Discrimination among small-scale fisheries in these communities come along religious, political, ethnic, and gender lines.

3.3.2 State of Fishery Within the Study Area

The state of fishery within the study area is mainly marine capture fishery, which falls under the artisanal sub-sector fishery in Ghana. Small pelagic fish species dominate the catches of

this sub-sector. The artisanal marine-capture fishery sector is the dominant fishery sector in Ghana in terms of landings and fleet capacity. The method of fishery is mostly canoe. The communities under study fall within the greater Accra Region of Ghana, which according to the Bank of Ghana, has 2,781 canoes and 68 landing beaches (BOG, 2008).

James Town and Teshie Nungua communities employ simple fishing equipment and gear such as dugout canoes, and use outboard motors, purse seine nets, beach-seine nets, drift gill nets. Surface set nets, and hooks. The canoes are privately owned by the indigenous people who generally live in the fishing communities. There are no restrictions on Ghanaians entering the artisanal fishing industry.

3.4 Research Choice

Mono-techniques, multi-methods, and mixed methods are three basic research options available to an investigator (Tashakkori et al., 1998). Mono methods refer to the use of a single technique in data gathering and analysis, whether quantitative or qualitative. This method is only utilized inside a single paradigm, either positivistic or interpretivist, and with a single type of data, quantitative or qualitative.

Multi-method studies entail the application of more than one research and data collection method, such as two qualitative or two quantitative components in a study, to meet the project's goals (Saunders et al., 2003). The "Research Onion" (Figure 3.1) established by Saunders et al. (2003) serves as a guideline for the current research investigation.

3.4.1 Research Onion

The research Onion, as shown in Figure 3.1 provides a useful guide to researchers as an effective tool by which methodology can be constructed. In different types of researches the onion may be used in different contexts and it is very effective (Becker et al., 2012).

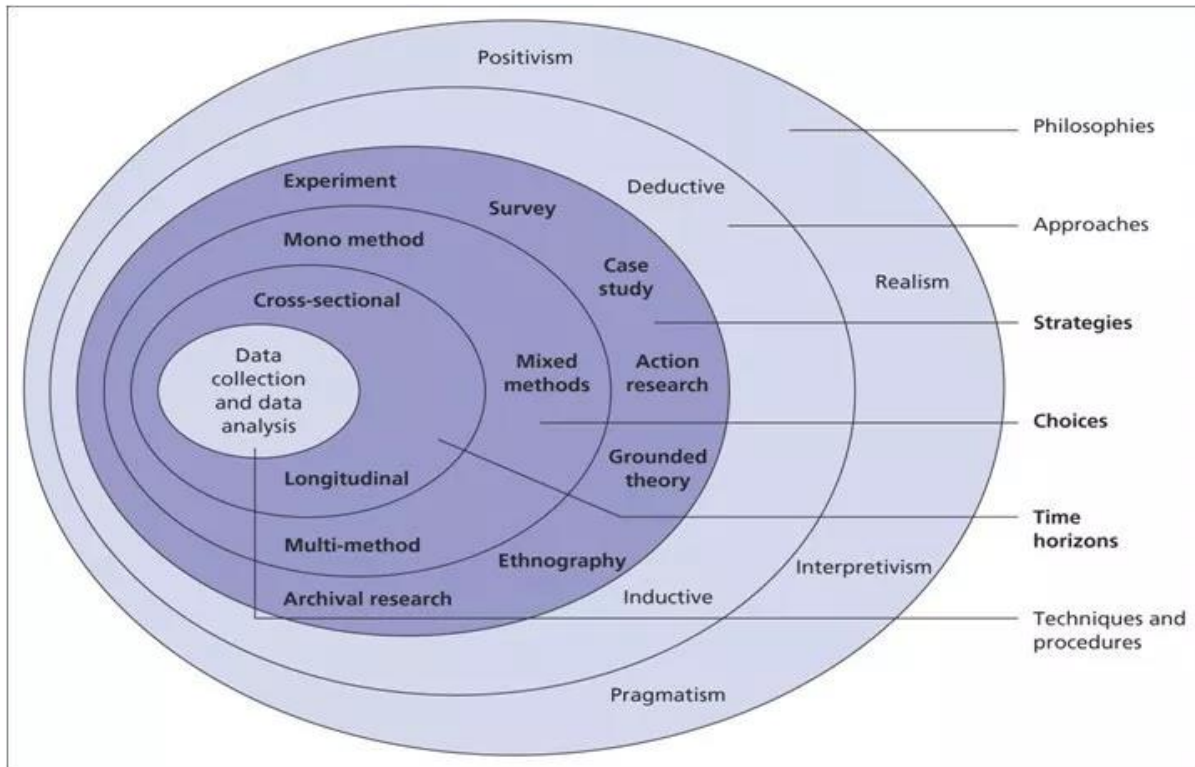


Figure 3.1: *Research Onion* (Source: Saunders et al., 2007)

3.5 Research Design

Research design is outlined by Cresswell and Clark (2007) as the procedures and processes for the collection, analyses, interpretation, and reporting of data in research investigations. The structure of research may be referred to as the glue that ties all of the pieces in a research project together (Akhtar et al., 2016). It is the plan or proposal to do research that involves the convergence of philosophy, inquiry techniques, and specific methods (Creswell & Creswell, 2017). A research design orders the conditions for the gathering and analysis of data in a way that combines relevance to the research purpose with economy and process (Akhtar et al., 2016). Research design acts as the general strategy a researcher adopts to intergret different components of a study in a logical and coherent way, as such, making sure that a research’s aim or problem is addressed (Creswell et al., 2018).

This study employed descriptive-exploratory research design to investigate the vulnerability, viability, and intersectionality among Small Scale Fisheries (SSF) in James Town and Teshie Communities. Descriptive reserach seeks to that describes a population, situation, or phenomenon that is being studied without manipulating variables. Exploratory research is normally conducted to give a clearer and better understanding of a problem (Bhat, 2019). In Ghana, the issues of intersectionality are not well defined and explained. As such, an

exploratory approach will remove all initial biases and enable the researcher to research into the real intersectionality issues in the fishing industry. The research design used in this study will also allow respondents to express themselves to the benefit of the research and the community they reside.

Mixed method approach was used to collect and analyze data from the respondents. The procedures began with qualitative data collection, supported with quantitative data, and concludes with an integrative phase linking data from both the qualitative and quantitative data taken. This offered the researcher the opportunity to use different data collection methods to collect accurate data for the study. Interview and focus group discussion will be the main data collecting methods to be used. The study areas for the study were Teshie and James town fishing communities in Ghana.

Qualitative research is concerned with complete, detailed descriptions of the subject matter and collects and works with non-numerical data. It aims to provide an explicit rendering of the structure, order, and broad patterns found among a group of participants. Qualitative research does not control variables or enforce the researcher's operational definitions of variables on the respondents. Instead, the meaning emerges from the respondents. It is more flexible to the extent that it can be adjusted to suit the situation. Concepts, data collection methods, and data collection tools can be adjusted as the research advances. The mixed methods aimed to get a better understanding through first-hand experience, truthful reporting, and quotations from actual discussions (Crossman, 2019).

3.6 Research Approach

3.6.1 Target Population and Sampling Approach

The target population for the study were the residents who live and work in small scale fisheries at James Town and Teshie Nungua communities. These communities were selected based on the massive nature of the fishing activities within the communities in the Greater Accra of Ghana. Bryman and Bell (2015) see population as the world of units from which the sample is to be chosen. The researcher was unable to determine the population within the James Town and Teshie Nungua communities with certainty because there were no national data in terms of the number of residents in the two communities.

3.6.2 Sampling Technique

The sample selection is normally chosen from the universe of nations, cities, regions, firms etc. According to Rashid (2010). The listing of all units in the population from which the sample will be selected is called the sampling frame. The section or segment of the population that is chosen for research is called the sample.

As indicated, the population of the study units were unknown. The study, therefore applied Cochran (1977) formula to determine the sample frame. According to Cochran, where the population is larger and unknown in research, a formula can be used to determine the sample frame and size as shown below.

$$n = p (1 - p)^2 / e^2$$

Where

n = sample size

p = the population proportion

Q = proportion of failure ($p-1$)

e = acceptable sampling error

With an estimated target population proportion of 100 percent (target population with 100% chance to either influencing the treatment) and a confidence level of 90%, the sampling size was 272 ($= (1)(1 - 1)(1.65)^2 / (0.1)^2$). Random sampling technique was used to select respondents from the study area. The method provided equal opportunity for everyone within the fishing community who was willing to be part of the respondents (Bryman & Bell, 2015).

3.6.3 Sample Size

Out of the 272 sampled units, 150 respondents willingly participated in the study. This, therefore, resulted in a sample size of 150. Of these, 100 were survey respondents while 50 formed the sample for the interviews and focus group discussions. To identify the category required, several visits were made to the study areas on different days and at all hours prior to embarking on data collection to ascertain those who were residents of the community. The criterion for selection of respondents was their engagement or involvement in small scale fisheries in James Town and Teshie. Data was collected from both male and female in order to capture the peculiar issues experienced by both parties in order to get a clear understanding of the intersectionality undertones in the fishing communities.

3.6.4 Instrumentation

The data requirements of the study involved mixed method where data were gathered using both qualitative and quantitative methods. Data collection consisted of comprehensive review of literature on fishing communities on intersectionality, household survey and focus group discussions (FGDs). Out of the 272 sampled units, 150 respondents participated in the study. The response rate (55%) was adequate representation of the target population, thus allowing the generalization of the findings. Creswell asserted that a response rate of over 60% is good and sufficient for research and representation.

The methods employed for the qualitative aspect of the study were focus group discussions, interviews, and field notes. According to Creswell and Clark (2007) interview-based studies are valuable for exploring the way of modelling, measuring, and disclosing intangibles by getting into the real-life situation where the phenomenon occurred. A semi-structured interview guide was prepared, and interviewer had the chance to introduce follow up questions as and when required. All interviews were recorded and transcribed to aid in the analyses.

The procedure of data analysis covered familiarization, reflection, open coding, axial coding, and selective coding. It is important to mention that some quantitative data and qualitative data were interlinked in the process of presenting the data and analysis of data. Some aspects of the survey supported the qualitative interviews and focus groups in terms of the descriptions used to make clear the category of people in the study area as well as in the identification of codes. In this research, a semi-structured interview guide was drawn emanating from research objectives and research question as shown in the appendices.

3.6.5 Survey

The study conducted a Survey (Latour, 1999; Walliman, 2016) to gather data from fishers; women, men and government officials at the place suggested by them. Interview protocol and questionnaire for a survey were used. This allowed the respondents to answer questions on the issues that were essential to them regarding the purpose of the study. The questions were both close-ended and open-ended questions. These guided the survey, allowing for adjustments where possible. Specifically, questions focused on intersectionality, gender, vulnerability, viability and governance issues and outcomes. The researcher planned and conducted the survey at a convenient time and place per the instruction of the respondents after seeking prior consent and appointment from the respondents. Where necessary, verbal consent were taken alongside reading out the rights, purposes, recruitment procedures data privacy and withdrawal.

3.6.6 Focus Group Discussions

Focus group discussions were conducted to learn about a range of opinions and experiences that the respondents have on the purpose of the study. The focus group discussions were conducted based on themes such as intersectionality, gender and fishing, governance implications etc. Random sampling technique was used to select 2-4 members in each focus group. The respondents represented different factors that contributed to issues of intersectionality and the fishing sectors.

Consent from the respondents were taken prior to group discussions. The purpose of the group discussion, norms and time requirement for the discussion were read to the respondents. Respondents were also informed about the procedure of data privacy and withdrawal procedure. Data were systematically collected. This systematic way of collecting data help in discovering dimensions of the emerging themes and their interpretation (Campbel et.al., 2008). The systematic collection helped to understand intersectionality in James Town and Teshie Nungua communities and explain what make women vulnerable and viable.

3.6.7 Questionnaires

The study questionnaire was couched around the research objectives with follow up questions. The quantitative data enabled the use of descriptive statistics whilst the qualitative sought to bring to fore the rich understanding and insights into issues that the quantitative data usually is unable to extract, so they complemented each other. The use of questionnaire was advantageous because it was highly confidential because of its anonymity and also enabled the researcher to reach the sampled units within a short time. The questionnaire was self-constructed based on the study objectives. The questionnaires were validated by the Ethics Review Board of University of Waterloo.

Measurement

The measurement procedures utilized were divided into two sections with both open and close ended questions for the survey. Section one discussed the issues related to SSF and Section two discussed the gender issues which were on five-point Likert scale ranging from 1= *Strongly disagree* to 5= *Strongly agree*. The data collection methods used in the study are summarized in Table 3.1.

Table 3.1*Data Collection Methods*

Objectives	Key Research Questions	Data Collection Method(s)
1. To understand the issues of intersectionality within small scale fisheries in James Town and Teshie communities	a. What are the forms of intersectionality that exist? b. What forms of intersectionality exist in the fishing sector in Ghana? c. How does this intersectionality affect women?	Survey Focus Group Discussions
2. To examine how intersectionality impacts or increases vulnerability among small scale fisheries in James Town and Teshie Communities	a. How has intersectionality impacted vulnerabilities among the sector? b. How has intersectionality increases vulnerability among women in the sector? c. How have these vulnerabilities affected women and related livelihoods?	Survey FGDs
3. To identify how these vulnerabilities in the small-scale fisheries can be addressed.	a. How can these vulnerabilities be made viable? b. What governance or policy implications does these poses?	FGDs Household Survey

3.7 Data Gathering Procedures

Data were gathered from the fishing communities on intersectionality using house hold survey through interviews and questionnaire and focus group discussions (FGDs) procedures after the determination of the validity of the research instruments. Though some responses might be biased on sensitive issues, these procedures were chosen because they were capable of gathering bulky amount of data, allow respondents considerable time to analyse their responses. The implementation process for the survey involved several different activities.

Research assistants (3) volunteered to assist in the data gathering activity. These assistants were undergraduate students in Ghana. It was imperative to orient the research assistants. The key goal of the orientation was to train the assistants on the tenets of the study. Through zoom meetings, the assistants were trained on how the survey must be conducted, such as the protocols of seeking audience with the study participants, appreciation of participants' busy

schedules, interviewing skills, writing of code numbers on each completed response for ease of identification, data entry into a pre-designed excel matrix, among others.

The data were gathered during the Covid-19 pandemic. As a result, one opinion leader in the James Town and Teshie Nungua community was contacted to assist the research team gain access to the respondents. Telephone numbers were gathered from the residents who were into the fishing business by the opinion leader. The research team created a WhatsApp group where respondents, who were willing and ready, were added.

The researcher and the research assistants engaged respondents on the WhatsApp platform. Interviews were conducted on the platform and responses were noted and captured by the research team. Focused group discussions were held at the convenience of the focused groups. Google form questionnaire were also sent via the WhatsApp platform to solicit respondents. Most of the respondents were semi-illiterate. The research assistants interpreted the survey instruments in their local language to enhance understanding. Four research assistants made use of their personal computers to code responses. Data coded by the research team were compiled for statistical treatment after the submitted data were rechecked by the researcher.

3.8 Analysis of Data

3.8.1 Qualitative Data

For analysing the qualitative data NVIVO software was used. This software was helpful in compiling results in a more appropriate manner to avoid errors (Richards, 2008). This study used thematic analysis in which information from interviews were transcribed, key quotes highlighted, coded and sorted into themes (Jones et.al., 2011) All the relevant information related to ethical perceptions and word of mouth (WOM) will code avoiding losing any relevant information. This systematic way of collecting data will help in discovering dimensions of the emerging themes and their interpretation.

3.8.2 Thematic Analysis using NVIVO Software

As defined by Braun and Clarke 2006, “Thematic analysis refers to the process of identifying, analysing and reporting patterns or themes contained within the data”. Thematic analysis is classified under the qualitative descriptive design. Broadly speaking, they are a set of techniques used to analyse textual data and elucidate themes. Their key characteristic is the systematic coding of data, examining of meaning, and provision of a description of the social reality through the creation of a theme (Mojtaba Vaismoradi, 2016).

Thematic analysis is aimed at identifying themes or patterns in the data that are relevant and using these themes to address and answer research questions (Clarke & Braun, 2013).

Braun & Clarke (2006) emphasized that thematic analysis is the first qualitative method that has equipped the researcher with the core skills which will be beneficial for conducting many other kinds of analysis. Another added advantage is that it is a method rather than a methodology (Clarke & Braun, 2013). Thus, this indicates that, unlike many qualitative methodologies, it is not associated with a particular epistemological or theoretical perspective. As a result of the above, this study has followed the 6-steps framework proposed by Braun & Clarke (2006) for conducting thematic analysis. Arguably, this framework is known for its flexibility and is considered as the highly effective strategy/method in social sciences, possibly due to a reason that it proposes a distinct and valuable basis for conducting thematic analysis (Moira Maguire & Brid Delahunt.2017)

3.8.3 Braun & Clarke's six-phase framework for doing a thematic analysis

Step 1: Familiarity with the data.

The first step in any qualitative analysis is transforming all sorts of data including interview transcripts, observation and field notes, documents, photographs, video, websites, e-mail correspondence, and so on into a textual format. By reading and re-reading the transcripts, researchers can attain an overall understanding of data and basic concerns linked with the fact under study. The awareness of it helps them to concentrate on the fundamental constructs established and shown in the data. In this initial stage of data analysis, researchers transcribe the information, take notes and study them again and again to define the tendency of the participants' viewpoints that later be followed by direct quotations from the transcription (Ryan GW, Bernard HR. 2003).

The capacity to develop concepts depends on researchers' proximity to data through immersion. Immersion is obtained by vigilant study of transcripts and itemizing sound, recurrent concepts, and main concerns in data. Recurring items of interest like infrequent, significant, or contradictory responses from researchers' perspectives are highlighted. Subsequently, they search for concepts in the data to distinguish explicit and implicit concepts in the transcription depending on their opinion. (Hunter A, et al 2002). Nevertheless, a researcher must not be too much affected by their personal opinion as it may result in missing significant information. Thus, one should remain focused on the data and consider all the

possible meanings and should work on those clues that closely connect these stances for theme development.

Step 2: Generate initial codes.

Moving forward to the next step, the data has been transformed in a meaningful and systematic way. Coding has been used as an element of data reduction in most qualitative approaches (Green J, et al 2007). The process of coding reduces a lot of data into meaningful and manageable chunks. There are different ways to assign code and the method is determined by the individual perspective of the researcher and the phenomenon under study.

In this study, the researcher has addressed the specific research questions and analysed the data by following a theoretical thematic analysis as opposed to the inductive analysis where every single need to be coded. Keeping in view the research questions, only those segments of data that were considered relevant were captured.

Step 3: Searching for themes.

As stated earlier, a theme is a pattern that captures something significant or interesting about the data and research question. Braun & Clarke (2006) explains that there is no specified rule about the formation of a theme. A theme is characterized by its significance. As such, while working on a small data set, there are chances of overlapping between the coding stage and theme identification stage.

In this case, various codes were examined and most of them fit together into a theme. For example, several codes were formulated related to small-scale fisheries issues of intersectionality that make them vulnerable. These were high prices of fish equipment, fuel, and no support from the government in terms of loans and subsidies.

Step 4: Review of themes.

In this step, the identified preliminary themes are developed after a close and intensive review and modification. At this stage, it is essential to gather all the data that is relevant to each theme and check for its practicality. The next step is to think about whether the themes work in the context of the entire data set. We read the data associated with each theme and considered whether the data did support it. Themes should be coherent, and they should be distinct from each other.

A researcher should be able to answer whether themes make sense, whether the data support the theme, whether too much is being fitted into the theme, in case overlapping themes are

considered, whether there are themes within themes (sub-themes) and whether there are other themes within the data, before finalizing a particular theme.

Step 5: Defining themes.

At this step, the final refinement of the themes takes place, and the aim is to “...Identify the ‘essence’ of what each theme is about.” A researcher should have his standpoint on what the main theme says whether the sub-themes relate to the main theme and ways of the relationship.

In this study, the effects of discrimination/privilege on women was the main issue that was linked with other themes. Fisherwomen and fishermen were interviewed. Their responses were s with their knowledge possession. It is due to the unsupportable environment from the Government and the leader of the community, due to which the livelihood of the fishing community suffered a lot. At the same time, most of the customers reported limited knowledge regarding the social activities of the restaurants.

Step 6: Writing up.

Usually, the endpoint of doing thematic analysis in research is to comprehend in a report, journal article, or dissertation. Based on the guidelines provided from the above sections, a researcher can summate the viewpoints of the participants under study.

3.8.4 Quantitative data analysis

In this study, the quantitative data measured the intersectionality among Small Scale Fisheries in James Town and Teshie communities. Responses from the quantitative data collected, through the self-contracted questionnaire, were analysed using SPSS 22. The quantitative data enabled the researcher to profile the study participants and to generate descriptive information to support the qualitative data. Demographic characteristics of study participants helped the researcher to gain better understanding about certain characteristics of the target population. This portion of research contains respondents’ characteristics such as age, gender, and educational levels.

The research will use statistical techniques including Descriptive statistics, to determine the convergent and the divergent validity (discriminant validity, including technique impacts) of their measures (Robinson et al, 1991) and reliability need to build composite or aggregate scale scores by summing/averaging items on multi-item measures.

4 Chapter Four

Intersectionality and Issues of Vulnerability at James Town and Teshie

4.1 Introduction (Background of Data Taken)

Globally, activities especially in small scale fisheries revolve primarily around women. It is believed that about 50% of the labour force in SSF is primarily women (FAO, 2012). From the harvesting of fish to handling after harvest processing, as well as trading of fish, women are largely involved and cannot be taken out of the equation. Women usually engage in the sale of fish whether it is fresh, dried, smoked, or salted (Harper et al. 2013; Weeratunge et al. 2010). It is important to note that women in Ghana make up about 70% of the labour force in the harvesting and post-harvest sectors (FAO 2016), and as such empowering women for collective action in sustainable fisheries is essential (Torre et al. 2019), while fish, aside from being an important source of nutrition, creates livelihood opportunities for over 60% of women in post-harvest fisheries (World Bank 2012; Teh & Sumaila 2013; FAO, 2019).

Chapter four presents the results, interpretation and discussion of the findings in relation to the research questions that were formulated. The study objectives are presented and thoroughly discussed for clarity and distinguishing between the findings emanating from each objective. Objective one sought to “To understand the issues of intersectionality within small scale fisheries in James Town and Teshie communities”. To achieve this objective, the researcher conducted focus group discussions alongside a questionnaire survey. Intersectionality in this study looked beyond racial discrimination to explore what George (2000) describes as a framework for the examination of how gender, ethnicity, class, and other types of identification in various situations and circumstances (*in our case SSF situations*) are created where men and women are subjected to abuse and discrimination. The gendered dimension is highlighted because women in SSF in Ghana have been increasingly side-lined over the years and this study seeks to explore how vulnerabilities can be turned into viability.

4.2 Socio -Demographic Background of Respondents

The participants of the study were from the Teshie and James town fishing communities in Accra. These are communities that have been actively engaged in fishing over decades (Amerteifio, 2015). Research questions were answered using a questionnaire survey and focus group discussions. The participants’ background took cognizance of their ages, educational background, and work experience. In the study, both qualitative and quantitative methods were

employed. The sample size for the qualitative study was fifty, twenty-five from Teshie and twenty-five from Jamestown who were engaged in small-scale fishing and were into different fishing businesses in their various communities. For the quantitative study, 100 respondents were circulated between genders with 50 percent male and 50 percent female. This was because what men in SSF thought about their female counterparts and the opportunities that were either granted or denied them was important to the researcher to drive government action and policy.

4.2.1 Demographic Information

The survey results on respondents' gender, age, family members, primary occupations, and secondary occupations are first presented before looking at the final details that were obtained from the focus group discussions. Respondent details are presented in Table 4.1.

4.2.2 Respondent Details

Respondents were evenly distributed between the two communities with 50 from each community and care taken to select an equal number of females as well as an equal number of males as shown in Table 4.1. Eight (8) respondents were between the age brackets of 15 – 25, 45 respondents fell within the brackets of 26 – 35, 39 of the respondents were between the ages of 36 – 45, while 8 respondents were in the 46 – 55 bracket.

In terms of the number of family members they had, a varied range was described by respondents. Eighteen (18) respondents have 1 – 3 members in the family, while eleven (11) respondents had between 4 – 7 family members. The majority of respondents (41%) however had 8 – 11 family members while 26 percent of respondents reported 12 plus family members. Four members, being the least in representation had no family members, thus were single.

Table 4.1*Respondents' Details*

		N=100	Percentage	
Sex of Respondents			Males	Females
Teshie	50		25	25
James Town	50		25	25
Total	100		50	50
Family Members		Number	Frequency	Percentage
		None	4	4
		1-3	18	18
		4-7	11	11
		8-11	41	41
		12+	26	26
		Total	100	100
Age Grouping		Number	Frequency	Percentage
		15-25	8	8
		26-35	45	45
		36-45	39	39
		46-55	8	8
		Total	100	100
Fishing as Primary Occupation		Yes/No	Frequency	Percentage
		Yes	95	95
		No	5	5
		Total	100	100
How long have you Been Fishing?		Duration (years)	Frequency	Percentage
		3-4	03	03
		8-10	20	20
		11+	77	77
		Total	100	100
Other occupations		Occupation	Frequency	Percentage
		None	71	71
		Block Moulding	14	14
		Barber	15	15
		Total	100	100

Source: *Field Data 2021*

Survey results indicate that most respondents' primary occupation is fishing. About 95 percent (95%) of respondents mentioned that fishing is their primary occupation, while 5 percent of respondents did not list fishing as a primary occupation.

Results from the survey also showed that most of the respondents have been involved in fishing for more than 11 years that is almost 77 percent of respondents. Twenty (20) percent of respondents have been involved in fishing for about 8-10 years. Only three (3) percent of respondents are early involvers who had been involved in fishing for 3-4 years. Table 4.1 again shows respondent's involvement in activities other than fishing. Seventy one (71) percent of survey respondents had no alternative jobs/occupations besides the fishing. Fifteen (15) percent of respondents have, on some occasions, been involved in block moulding, while six (6) percent of respondents stated that they sometimes doubled as barbers.

4.3 Objective One: Intersectionality/Discrimination within SSF

The first objective of the study sought to understand the issues of intersectionality within small scale fisheries in the study areas. Table 4.2 captures modes of discrimination in small scale fisheries, privileges experienced by fish farmers, forms of discrimination, as well as forms of privileges encountered in Small Scale Fisheries. Discrimination among small-scale fisheries is due to many reasons. Most identified mode of discrimination is along the lines of partisan politics. About fifty one (51%) percent of survey respondents expressed their concern regarding partisan politics. Based on this factor alone, a large gap exists which breeds discrimination among SSF. Some respondents (23%) identified that there is some discrimination in terms of biasness in the distribution of equipment. Government officials were also identified as favouring those who were friends, family, and those known to their relatives. Some also disclosed that they usually hear that Government is distributing fishing equipment, but it had never been operationalized as far as they were concerned thus leading to about twelve (12) percent indicating that information flow was a problem.

4.3.1 Privileges in SSF

The privileges that small-scale fisheries experienced had about thirty-nine (39%) percent of the respondents indicating that they have been able to feed their children through the fishing activities. Twenty-one (21%) percent of respondents stated that they have been rewarded for catching more fish. About 22% felt their savings/income from the fisheries was a great

privilege while 7% had sold boats/canoes. However, about eleven percent (11%) of respondents did not see any gains or privileges from their occupations.

The forms of privileges experienced in SSF in the study areas followed a similar pattern as that of forms of discrimination. In small-scale fisheries, class is considered as one of the major privileges with thirty-six (36%) of respondents indicating so. Besides this they identify gender bias (25%), religion (8%), political ties (3%), and all other categories occupying twenty-eight (28%) percent of the entire sample. Respondents thus review from the survey that the forms of privileges specifically related to fishing are based on factors such as being able to feed their children. Gender also plays a role in privileges. Religion is also a contributing factor in the sense that people got favour in fishing. Respondents reveal from the survey that the forms of privileges specifically related to fishing are based on factors such as being able to feed their children. Gender also plays a role in privileges. Religion is also a contributing factor in the sense that people got favour in fishing.

4.3.2 Forms of Discrimination:

The forms of discrimination experienced by respondents were along religious, political, ethnic, and gender lines. Table 4.2 shows the forms of discrimination in small-scale fisheries (SSF) identified by respondents. Partisan politics is considered one of the major forms of discrimination with seventy-four (74%) percent of respondents saying so. Religion is also considered the second most important factor of discrimination with twelve (12) percent. Gender bias and ethnic ties were nine (9%) percent and five (5%) percent respectively.

Table 4.2*Discrimination in SSF*

	Frequency	Percentage
Modes		
Male Bias	12	12.0
Lack of Information	14	14.0
Equipment sharing	23	23.0
Partisan Politics	51	51.0
Total	100	100
Privileges Experienced (benefits)		
Able to feed children	39	39
More fish	21	21
Savings/Income	22	22
None	11	11
Sold boat	7	7
Total	100	100
Forms of Discrimination		
Religion	12	12
Ethnic ties	5	5
Gender bias	9	9
Political Affiliation	74	74
Total	100	100
Forms of Privileges		
Religious	8	8
Political	3	3
Class	36	36
Gender bias	25	25
Others	28	28
Total	100	100

Source: *Field Data 2021*

4.3.3 Intersectionality and its Effects on Small Scale Fisheries

Intersectionality, as understood by the fisher folk concentrated around unfairness experienced as a result political affiliations and leanings. To them, such unfairness was rife in the distribution of fishing equipment and fuel for fishing, religious attachments, victimization, and the use of gendered stereotypes. These views and experiences of the fisher folk is clearly voiced in their expressions of the effects intersectionality has on small scale fisheries.

Asi, was so upset about how political affiliations took the central stage at all times especially when it came to distributions on fishing equipment. She explained intersectionality as

“This is the situation where people are treated unfairly especially by those in positions of power especially when they have to give fishing incentives and they choose to give it to their friends and family instead of sharing fairly to all”.

King also explained intersectionality as

“the situation where instead of premix fuel being distributed fairly to all, it is given to only a few favourite people”.

On the effects of intersectionality on the community, respondents expressed that they faced several challenges including the unavailability of premix fuel, the inability to sometimes feed their family because of being discriminated against, as well as scarcity of fish coming from the fact that most of them did not have the sophistication required to fish.

Some women mentioned that everything got expensive, when there's scarcity and it brings losses to them. They were, thus, unable to gain extra income or profit from the fishing to enable them extend support to their families.

Naa, reports that

“Sometimes it is disheartening to realize that women especially do not get a fair deal when fishing equipment are being distributed. Because of the discrimination females do not go fishing because getting capital to start is difficult and you are looked at in ways that shows or suggests that why do you want to rub shoulders with men? Women must engage in what women are expected to do so all the women are more involved in the post-harvest activities. Men go fishing and women sell the fish that is harvested”.

Korkor confirms this by saying that

“You cannot challenge the men, you will lose out because even the women will question why you want to do otherwise. We have no organized groups to speak on our behalf so to survive we engage what is available, even that is not easy”.

Respondents thus expressed their frustrations at what affects them structurally especially the women.

Nii, on the other hand being a man expressed what concerns him and he said,

“Loans that we need to enhance our production doesn't come readily, thus posing challenges for us. If you are unknown personally to the leaders you are ignored and party faithful as well as family and friends are given priority over being fair to all who qualify. These things have to be stopped otherwise no progress will come”.

The summary of respondents’ understanding of intersectionality and the effects on the fisher folks are as shown in Table 4.3.

Table 4.3

Summary of Respondents’ Understanding of Intersectionality and the Effects on Fisher Folk

Intersectionality		Effects of Intersectionality	
James Town	Teshie	James Town	Teshie
Political	Gender bias	Favouritism	No premix fuel
Religious	Political Affiliation	Scarcity of fish	Discrimination
Ethnicity	Denial of equipment	Victimization	Unable to feed family
Male bias	Hometown ties	Challenges at home Gender Discrimination	Bad fishing days

Source: Field data, 2021

Intersectionality, discrimination, and or victimization have been described to cover several facets of academic work. Discrimination in small scale fisheries has been experienced in several modes and ways in different parts of the world. The Ghanaian experience from the James Town and Teshie fishing communities comes across as quite different compared to what is experienced by others in other parts of the world. It is clear from the findings that the prevailing circumstances and environment of Ghana, plays a huge role in the events that residents experience with discrimination experienced in other parts of the world.

Basically, intersectionality asserts that the distinguishing categories of a society (race/ethnicity, gender, religion, sexual orientation, class etc.), does not operate independently, but they interact as intersectional phenomena (Zinn and Dill 1996; Crenshaw Williams 1995). The identified forms of intersectionality at James Town and Teshie is consistent with what Crenshaw (1989, 1995, 2000), Cooper (2015), Bilroy (2004), Hancock (2007), and others have described on various platforms. The study reveals however, that in Ghana, political influence and attachment has become very prominent in the dealings and activities of individuals. Study participants at all levels indicated partisan politics was a major issue which needs serious attention. This is because the influence that members of the ruling party exert on local small scale fishery businesses has a way of making the lives of the community miserable. It is either “you know someone” or “someone knows you”, and this affects everything from passing on information, sharing of equipment, through to accessing loans to enhance production activities.

Leaders responsible for doing this are known to favour their own family and friends, while leaving those who did not fall within their bracket of friends in the cold.

Gender differences are known as leading to decreased labor productivity and women's access to fisheries resources and assets is often restricted by customary beliefs, norms, and laws, as well as unfavorable societal structures (FAO, 2006; Porter, 2006; Okali & Holvoet, 2007). This is clearly evident in this study particularly looking at resource availability and its redistribution; women clearly are discriminated against in this regard.

These findings will eventually lead us to generate some instructive outcomes to help in the management of SSF. The second objective helps us to examine the impact of intersectionality in terms of vulnerabilities amongst the locals of Teshie and James Town.

4.4 Objective Two (2) Impact of Intersectionality on Small Scale Fisheries

The second objective looked at how intersectionality has affected small scale fisheries. The focus groups were used to steer the discussion and supported with the questionnaire survey. This objective looks at how intersectionality affects or influences vulnerabilities as well as how these vulnerabilities affect women and related livelihoods. Results from focus group discussions on the impact of intersectionality are presented below.

4.4.1 Impact of Intersectionality on Small Scale Fisheries

Participant's response to the impact of intersectionality on their lives revealed some issues. The interest and over reliance on partisan politics weaves a whole network of challenges. Partisan ties and cleavages to the participants served as very bad for business in several ways.

Adokaile revealed that

“There is a lot of influence along party lines on the part of individuals. If you're seen wearing the t-shirt of a party they do not believe in or subscribe to, or even if you are seen to be wearing the colours of a particular party which they are not part of, they won't buy from you and would rather look for their fellow party folks. So, along those lines you can deduce some discrimination and victimization”.

Akwete also revealed that

“We had both good times and bad times; the victimization and discrimination is most pronounced when there is something at stake. At that point one will see that fellow fisher folk

start pitching camp with those who will help them get what they want. Besides this, they are all ok, praying for the very best of fish seasons”.

The impact of intersectionality as explained by the participants is subtle but glaring too as respondents did not readily give details on victimization, but it can be deduced from their explanations. For some of the women, their only request is that they will be okay if their men are given incentives and less expensive fuel to go fishing, they want reduced prices for their fishing equipment, and this is because they (women) have excluded themselves from the fishing chain and only see their husbands and partners as the forefront of the business. It is only when they (men) are successful at sea with a bumper harvest that they will have ready access to fish for their various markets. This will also enable those with shuttles to also get more work to do hence more income.

4.4.2 Impacts of Intersectionality on Vulnerabilities

Individuals engaged in small scale fisheries experience some vulnerabilities and these does not exclude fisher folk in Teshie and James Town. The vulnerabilities experienced by respondents in the two study communities are collated and presented in the Table 4.4 below alongside how these vulnerabilities have been affected by intersectionality.

Table 4.4

Effects of Intersectionality on Vulnerabilities

Vulnerabilities	Impact of Intersectionality on Vulnerabilities
Limited access to resources	With already limited access, those responsible for resource allocation usually favour their friends and family making an already bad situation worse.
Poor Resource Allocation	Respondents consistently complained about how resources/equipment needed are unable to access needs and distribute fairly to meet needs of all.
Overfishing by foreigners (Chinese)	Chinese nationals blamed to be using illegal fishing methods deplete the fish stock thus rendering the locals incapable of getting a good catch. Foreigners use sophisticated equipment which locals cannot afford.
Poor governance	Government blamed for appointing incompetent individuals who do not have the good of the community at heart.

Climate change	This has affected the seasons and affected the type or kind of harvest they used to bring in.
Women marginalized	Women are often left on the fringes of the fishing activities. They do not have a voice to express their challenges. Some will want to be more involved but are overlooked because they are women.

Source: *Field data, 2021*

On vulnerabilities of the fisher folk, the limited access to resources, poor resource allocation, overfishing by foreigners especially the Chinese who use sophisticated equipment thus helping to degrade the marine environment, poor governance on the part of their community leaders and government appointees, climate change, competition with peripheral activities, unheard voices of women, and marginalization form a greater part of the challenges that the fishing communities being studied face, and this happens to be the situation of many fishing communities around the world (Allison et al., 2005; Andrew et al. 2007; Chuenpagdee 2011; Schuhbauer & Sumaila 2016; Song et al., 2018; Stoll et al., 2018; Bavinck et al., 2018; Chuenpagdee et al., 2019).

These difficulties/challenges/obstacles have a direct impact on the ability of small-scale fishermen to survive and adapt to changing conditions.

Moses commented on the activities of Chinese in the waters

“The Chinese have sophisticated equipment which they use to attract even the tiniest fish from miles away. They fish with light which attracts the fish whether matured or not. We have complained several times but nobody seems to care so we do what we can and leave the rest to God. The things that these foreigners engage in on our shores and in our waters, if we start talking about it, we will not finish today. Our security is very poor along those lines and overfishing is the order of the day when it comes to the foreigners on our shores”.

Vulnerabilities ought to be understood at the level of the individual as well as the level of the community if small scale fisheries will be able to give their full benefit to society. This situation was expressed by Adger (2009), Andrew et. al. (2007), as well as Salas et. al. (2019). This situation therefore is not peculiar to the folks at Teshie and James Town and may lead to the investigation of other routes that can move them from vulnerability to viability.

4.4.3 Effects of Vulnerabilities on Women and Related Livelihoods

Livelihoods are known to entail a multiplicity of assets and capitals which individuals utilize to enhance their wellbeing and support their families. According to the DFID (2001) livelihood empowerment framework, individuals usually make use of several capital assets like human, natural, financial, social, and physical assets. The study participants utilize all these assets in their quest for survival even though their alternatives are limited in terms of other activities. The social capital they fall back on takes us to the *who you know* or *who knows you* syndrome earlier explained. Financially, they require some loans to enhance their fishing activities as well as to enable purchase equipment required. Even though some of them venture into other activities like barbering salons, tailoring, petty trading, driving, etc., most of them fish full time without depending on any other activity during the lean seasons. They thus advocate for better storage facilities such that when harvests are good they can preserve some of the fish for later sales and not give them away cheaply to prevent spoilage. Respondents expressed how vulnerabilities have affected Women and Related Livelihoods.

Nyarkoa explained that

Women usually do not have a lot of alternatives in terms of engaging in other activities to support themselves. The only activity we know and were introduced to is smoking fish or selling fish. Men go fishing and we work with the fish that they bring in. If everyone is sitting in an office to work then who will bring fish to the market for some other people to get for food? Everybody has a role to play but we need support so some of us can get loans to help the business. Selling fish is all we do and without financial support you cannot expand the work.

Kwaku also noted that

Sometimes when fishing is not good and harvest is poor, our women also suffer and it affects the home. If there were alternative jobs to do, the days when the harvest is bad our wives can support us but when we cannot get anything else to do and loans too are given to only a select favourite category, it makes life difficult.

Some women only were interested in pointing out that their husbands need loans to get better equipment so that their lives will be enhanced.

Yaaba says

Our husbands need loans and equipment, they also need premix fuel because it is when the harvest is good that our activities will also be good.

The result from the survey on the second objective is presented next. Here the forms of discrimination experienced as well as privileges effects of discrimination, income generation, contributions to fishing etc. are explored.

4.4.4 Forms of discrimination in Small-Scale Fishing

Results show that forms of discrimination among SSF are due to many reasons. Out of which partisan politics was outlined as one of the major form of discrimination experienced. Class is also mentioned as contributing towards discrimination. The respondents discussed some other factors such as gender bias and religious ties.

Partisan politics happens to be one of the leading things that respondents complain about as affecting them. They describe and explain that those who are in charge of the activities in the community are usually appointed by ruling parties. When a particular party is in power, they look out for those who fall along the same party lines as themselves and they do not hide it. This goes beyond the distribution of equipment and transcends even to the sale of the harvested fish.

Nii Boi stated that

Sometimes it's really difficult to detach politics from their everyday activities because it has gone on for so long a time. Even information as to when resources will be available to fisherfolk is hoarded in a way of giving advantage to party faithful members as against non-party members so if you get there late you don't get enough or before you get to know the distribution is over.

King indicated that

I hope and pray that the politics in Ghanaian everyday life will be left for election periods alone because the clinging nature of the politics in Ghana has affected a lot of livelihoods especially those of us who engage in fishing.

Just like the complaints that accompany political activities, religion also plays an effective role when it comes to discrimination. People naturally identify with those they already are in close relationship with and again, in order to also receive some reciprocity some people may go to the extreme in looking out and considering those they share some similarities with.

Jude expresses his frustration and says

Sometimes the religion that we know to exist to bring people together seems to be rather dividing us because if my fellow human being will deliberately overlook me and reach out to others because I worship differently is just pathetic. The way we think about others means that it will take a really great force for us to meet our expectations so we will either force to get those we also know into sensitive and helpful positions or split our families to cover all areas so that at every point in time we will have some hold onto resources. The discrimination is just too much.

Baaba also shared that

Some people feel they are better than others because they are more privileged. We definitely cannot all be the same but it will be beautiful if we were civil to each other and not create patterns that indicate that someone is better than another and because of that ought to be given some favours. We ought to learn to live as one people even though some may be better off than others.

4.4.5 Effects of discrimination

Results revealed, as shown in Table 4.5, that there are numerous effects of discrimination on small-scale fisheries. The most important effect was insufficient capital to project and propel their fishing activities. Forty six (46%) percent of the research participants believed they were discriminated against in terms of capital acquisition. Due to the insufficient amount of money earned in fishing, the fisher folks are not able to cater for all their needs as they would desire. Hence, they do not have enough capital to buy fishing equipment or motors. Another factor that provokes discrimination is the lack of voice because they have no representation as a people. Twenty four (24%) percent believed that their situations would be better if they had representation, while twenty one (21%) percent said there were opportunities that had been stalled for one reason or the other. They explain that because Chinese were allowed to fish at the shores, and because they have enough equipment to fish, opportunities for the locals, are gradually decreasing since they lack sophisticated fishing equipment.

Table 4.5
Forms of Discrimination and Privileges in the Study Communities

Teshie & James Town	Percentage
Discrimination Experienced	
Partisan Politics	67
Gender	14
Class	06
Others	13
Total	100
Privileges Experienced	
Sex/gender	21

Religion	16
Class	08
Who you know/who knows you	37
Others	18
Total	100
Effects of Discrimination	
Insufficient Capital Pool	46
Opportunities stalled/stagnant	21
No representation	24
Persistent Poverty	09
Total	100
Income from fishing (%)	
100%	42
60% - 40%	45
Below 40%	13
Total	100
Contributions towards fishing	
Loans	19
Own canoes	04
Selling fresh/smoked/fried/dried fish	39
Own shuttle for transporting fish	11
Others (time, caring for children)	27
Total	100

Source: *Field Data, 2021*

4.4.6 Percentage of income from fishing and household contributions made to SSF

Majority of the respondents expressed that about 40-60% of their income is generated from fishing. Forty-five (45%) percent of respondents are heavily reliant in this regard while another forty two (42%) also show that their income is 100% reliant on fishing. Only thirteen (13%) percent indicated that their income percentage from fishing is below 40%. In total therefore, respondents are relying heavily on fishing to meet the needs of their family.

As to what contributions they had made towards SSF, participants opined that fishing has made tremendous contributions to the lives of fisher folks in the study areas. Eleven (11%) of them own shuttles that transport fish from one place to another, while nineteen (19%) percent had managed to acquire loans to purchase equipment to support their businesses. Majority (39%), however, are actively engaged in the selling of either fresh, dried, or smoked fish which has been instrumental in the taking care of children, and families. Some (about 4% of respondents) have also been able to acquire their own canoes which is actually considered a luxury. Fishing, therefore, has contributed to their lives in diverse ways irrespective of the challenges inherent.

4.4.7 Household Contributions made towards the economic status of women in fishing

With regards to how they have contributed towards the economic status of women in fisheries, results, as shown in Table 4.6, indicated that majority of the respondents showed much concern about catering for the needs of their children. Fifty-eight (58%) of respondents were of the view that their economic status begins with their ability to cater for their children and older dependents. Apart from catering for the needs of their children, some women had constructed their own houses (7%) and some had purchased properties (land) that were being developed (27%).

Table 4.6

Household Contributions made towards economic status of women in fishing

	Percentage
Economic status of women	
Building my house	7
Land and house	27
None	8
Catering for children	58
Total	100
Discrimination makes women vulnerable	
Yes	71
No	29
Total	100
Discrimination Affects Livelihood	
Feeding challenges	
Low income Generally (peripheral activities)	51
Competing peripheral activities	37
Total	12
	100

Source: *Field Data, 2021*

4.4.8 Effects of Discrimination on the Livelihood of women.

The outcome of the survey shows that discrimination makes women in fishing vulnerable. Seventy-one (71%) percent of participants as against twenty-nine (29%) believed that discrimination puts women in a vulnerable position. How discrimination affects livelihood of women in small-scale fisheries was explored. The major issue identified was those women in SSF are often unable to provide food for their families because of discrimination that is inherent. Fifty-one (51%) percent of respondents complained of challenges with feeding, thirty-seven (37%) percent complained of low income resulting from peripheral fishing activities,

while twelve (12%) percent complained of competing peripheral fishing activities which had a negative effect on their core (primary) activities.

4.4.9 Objective Three (3) Addressing Vulnerabilities

The last objective sought to identify how these vulnerabilities experienced in small scale fisheries can be addressed. Here the role of the local communities as well as the role of government was explored. Objective three (3) was achieved making use of results from focus group discussions and the questionnaire survey.

4.4.10 Vulnerability to Viability

This session set off to understand how vulnerabilities could be turned around from the perspective of the local people. From the focus group discussions it was revealed that participants wanted the bias in their activities broken down such that fishing will be accessible to all who had the desire to go into it without having to seek some special favours from anyone to ensure success in their chosen occupations. Some of them had fixated views about their lives and irrespective of the explanations given to get them give varied responses to issues raised, they still stuck to their views on getting support and not how their present circumstances may be transformed. They were also of the opinion that women ought to have some representation in mainstream fishing so that they could channel their grievances and challenges through their leaders.

Anyama revealed that

“We do not have any support or say in anything that is done in this community. If we do not take the fish that is harvested through the various processes there will be no one to deal with the harvest they bring in so they must admit that we are important if they are to succeed. At the moment we do not attend any meeting to do with the job so if there was a representative it will be at least a consolation for us. This must be taken into serious consideration; something must be done about it”.

The community leaders, as far as they were concerned, were like stooges to the parties in power and not really bothered about their welfare.

Asi recalls

“I only heard of a meeting once and even that only the fishermen were involved, nothing came out of that meeting. They had had several discussions with their assembly man but this had

also yielded nothing so critically speaking the community had not supported them in any meaningful way. This makes it difficult to see how we can confidently move out our present predicament. We can only pray and hope for the best''.

Atuquaye however was optimistic about their circumstances and says

“we are only making do with what we have and trying our very best to thrive amidst our difficulties and challenges. We may not clearly see how the future might turn out but I definitely am confident that current situations will change for the better in the not-too-distant future”.

4.4.11 Governance or Policy Implications

Participants had nothing encouraging to say about what the government had done for them so far, besides the usual political bias with regards to favouring the party faithful to have an advantage over others. They however had much to say about what government could still do to support them.

Aku talked about leadership falling into the right hands, she wanted a situation whereby those that were given some amount of power will love the communities they are required to oversee. She says

“When selfish people find themselves in such positions they don't care about the welfare of the entire community but only consider how they can use their positions to enrich themselves”.

Koo had this to say

“These days there is advanced technology that can be employed to enhance fishing. If government values us and what we do to support our communities and countries, they will support us by introducing some of these technology to us and give us the training required to make this occupation better. If we stick to only what our forefathers did and passed on to us, our progress will never come and foreigners will continue to take advantage of us”.

Other demands they believed government could assist with were reducing the price of fishing equipment, introducing subsidies, getting rid of biases in the system thus ensuring fairness in passing on information, fairness in distribution of equipment, access to loans etc. being able to restrain the overbearing Chinese with sophisticated fishing equipment is one huge project that they look forward to.

Adom said that

“Sometimes the bait these Chinese uses are poisonous and injurious to the health of the fish as this ends up killing them, when humans consume these poisoned fishes they introduce complications to us which are not immediately obvious but harm humans in the long term”

4.4.12 What government should do to tackle challenges

Respondents explained that government should facilitate them to get rid of the challenges. Government they said should *ban illegal fishing* by formulating policies relating to small-scale fisheries. They should *restrain the Chinese* from fishing at places where the locals or natives in the fishing communities carry out their fishing activities. Furthermore, they explained that government should *provide loans, provide subsidies on fuel and equipment* for fishing so that they can earn, save money, and cater for the needs of their families.

All these they believe if government will address will help change their lives to enable them to create a secure environment for their spouses and children, life these days is challenging because of the several obstacles they are confronted with. The questionnaire survey also explored similar questions and supports the information given by the focus group discussions.

4.4.13 Discrimination makes women Vulnerable

The survey revealed that discrimination makes women vulnerable due to the major reason that they are unable to provide food for their family (Table 4.5). Sixty-one (61%) percent of participants felt disenchanted with the fact that they could not provide food for their families. The inability to increase their income was also a source of vulnerability for women particularly. Thirty percent (30%) of respondents saw their inability to increase their income as contributing to the state of their welfare while nine percent (9%) were concerned about being unable to fish

4.4.14 How Vulnerability can be addressed

How to address outlined vulnerabilities according to respondents is very possible. Table 4.6 presents how study participants responded to questions in the survey. Ninety six percent of respondents see the vulnerabilities as issues that could be addressed. Only four percent felt the vulnerabilities were impossible to be addressed. They had lost confidence in the system because of their experiences and failings in the way things had been organized over the years. However, from the responses and expectations of the majority of respondents, all is not lost because there is the firm belief that these vulnerabilities can be addressed.

Table 4.7***Discrimination and Increased Vulnerability of women***

	Percentage
How Discrimination Increases Vulnerability	
Unable to Fish	09
Unable to Increase Income	30
Unable to Provide Food for the Family	61
Total	100
Can Vulnerabilities be addressed?	
Yes	96
No	04
Total	100
How can Vulnerabilities be Addressed	
Making Fishing Accessible to all	59
Women Representation in Mainstream Fishing	11
A Voice for Women to Express their Views	20
Creating opportunities for Women to Increase their income	10
Total	100
Addressing Vulnerabilities so far – What the Community has done	
Meetings	01
Discussions with Assembly Man	17
No Support	82
Total	100
What Government has Done	
Building Harbours	10
Nothing	90
Total	100
What Government can do	
Government not needed	04
Give leadership to the Right People	05
Use of Modern Technology	06
Provide Subsidies	37
Reduce the price of Fishing Equipment	22
Restrain Chinese from Fishing in our waters	26
Total	100

Source: *Field Data, 2021*

4.4.15 Addressing Vulnerabilities

Solving vulnerabilities requires a firm approach without fear or favour. Respondents express their views on how these vulnerabilities could be addressed. Fifty nine percent (59%) of respondents thought that fishing should be made accessible by all who were interested. The explanation is that there may be some women who are interested in going fishing too, however

it is a preserve for men so making it accessible to all has the capability of helping to reduce the vulnerable status of some community members. Sometimes too access to needed equipment and accessories can also make it easier for those who know nobody to also get something meaningful to do with their lives. There should be fairness in dealing with all community members and not only dealing with a select few.

Twenty percent of participants opined that women should be given a voice to speak to issues that plague them, this is because being a patriarchal society it does not matter the ideas or knowledge you may have, Being a female limits your ability to speak to issues that concern them, being actively involved in post-harvest activities, they must be part of some decisions and sales that affect women so that needs of women too may be covered and not left unattended to. Another eleven percent believed that representation of women in mainstream fishing will help bridge the vulnerability gap, while ten percent of (10%) respondents of respondents wanted opportunities to be created for women to increase their income/earnings. Respondents believe that bridging the gap on vulnerabilities require that there is equity in the activities women engage in especially when they have to deal with fresh fish, smoked fish, and fried fish. How do they even preserve or store their produce, so they do not go bad after some days. Being able to preserve will eventually boost their earnings because they then will not have to give away their produce cheaply or throw away those that cannot be kept at all.

4.4.16 Response to Vulnerabilities

Respondents were asked about what their communities have done so far to support them, in terms of dealing with the vulnerabilities they were confronted with. Their responses indicate that that nothing so far has been done by the community for SSF. An overwhelming majority of eighty two percent (82%) reported that there has been no support by the community. Seventeen percent (17%) recalled that they only call meetings, but nothing so far has been done.

Community response to vulnerabilities is described as nothing to report on because there has been no attempts to address the needs of the communities in terms of vulnerabilities. Even though some respondents recalled that some community meetings had been called to help address concerns, nothing tangible had resulted from the engagements so far.

Respondents were also asked about what help the Government has given them. They believed government has not done anything holistically to support them. Ten percent (10%) said the

government was building harbours while ninety percent (90%) said the government has done nothing for SSF to help them address their difficulties. Response from government also took a similar turn as they only recalled that government has only started building a harbour to help their activities but as to when it will be done no one can tell and how it will help other people is currently unknown but hopefully it will churn out other employment avenues for residents. An overwhelming majority (90%) however said government has not taken any definite strides to support or help them address their vulnerabilities.

Respondents were asked about what kind of facilities the government can provide to help them deal with their difficulties. Thirty seven percent (37%) of participants pointed out that the government should provide subsidies to those engaged in SSF as the subsidies will support them and help to relieve them of the challenge with not having enough to get required tools for their work. They also want the subsidies to be fairly distributed to all to prevent the breeding of discontent among the community members. About twenty two percent (22%) of respondents wanted the government to reduce the prices of fishing equipment, while twenty six percent (26%) said the Chinese should be restrained from fishing in their waters. Other issues raised were that the right people should be given the responsibility of providing subsidies by five percent (5%) of respondents. Another six percent believed government should ensure that modern technology is made available to fisheries so that they can fish with ease. This is necessitated by the conviction that the Chinese get better harvest because their fishing equipment are modern, and they do not rely on the simple canoes that the residents usually use in their fishing activities. If they have access and get better harvests, then the ripple effect will be experienced by their families and the community as a whole. Four percent (4%) of respondents however believed that there's nothing that government can do to help them.

4.4.17 Vulnerabilities

Ninety three percent (93%) of respondents said nothing had so far been done or attempted to help resolve the vulnerability challenge. Some concerns raised have been attributed to gender bias (18%) in community dealings, lack of concern (41%) by community leaders and successive governments, and selfishness (41%) on the part of some community members themselves, community leaders, and governments. The respondents explain that community leaders even do not come to the seashore. They were described as selfish and were not bothered about the progression of the fishing community. There is a lot of bias; thus granting favourable conditions to those who are close to them.

Results show that local leaders should be aided via training after assuming leadership status to help clean the seashores after rains and storms. Thirty nine percent (39%) of participants thought this was very necessary. The fair distribution of equipment and support in repairing damaged canoes was expected by thirteen percent (13%) and sixteen percent (16%) of respondents. Sixteen percent (16%) however believed that the local leaders should help them to secure loans and provide subsidies so that people can easily buy equipment for fishing. Availability of fishing equipment was required by twelve percent (12%) while four percent (4%) believed local leaders simply didn't care and as such could not be bothered about anything.

Respondents were asked whether women should be given a voice in order to enable them to speak to issues affecting them, and the responses show a positive concern with regards to giving women a platform to enable them to express themselves. Seventy four percent (74%) of respondents agreed, eighteen percent (18%) strongly agreed, while eight percent (8%) disagreed with the assertion.

Study participants were of the view that that gender plays a critical role in the allocation of resources in their communities. Sixty five percent (65%) of respondents agreed to this, twenty three percent (23%) strongly agreed, and twelve percent (12%) disagreed that gender plays a crucial role in the allocation of the resources in the community.

Table 4.8 captures the responses of respondents to how vulnerabilities may be resolved in the communities.

Table 4.8***Resolving Vulnerabilities***

	Percentage
Anything done so far?	
Yes	07
No	93
Total	100
If No, Why?	
Bias	18
Lack of Concern	41
Selfishness	41
Total	100
What can Local Leaders do?	
Fair Distribution of Equipment	13
Cleaning the Seashore	39
Give Loans	16
Support in Repairing canoes	16
Make Fishing Equipment Available	12
They just don't Care	04
Total	100
Studying Gender Related Issues are Important	
Strongly agree	24
Agree	69
Disagree	07
Total	100
Women Should be Given a Voice in their Communities	
Strongly Agree	18
Agree	74
Disagree	08
Total	100
Gender Plays a Role in the Allocation of Resources in the Community	
Strongly Agree	23
Agree	65
Disagree	12
Total	100

Source: *Field Data, 2021*

Table 4.9 shows respondents views about gender education. They mostly agreed with the importance of education for all. Seventy five percent (75%) of respondents agreed that gender education was a necessity, seventeen percent (17%) strongly agreed to create more awareness

and opportunities in society while eight percent (8%) disagreed that gender education was necessary.

Table 4.9

Gender Education Essential in Fishing Communities to Create Opportunities for all

	Percentage
Gender Education Necessary in Communities	
Strongly Agree	17
Agree	75
Disagree	08
Total	100
Government Should Consider Gender Issues when Enacting Policies	
Strongly Agree	10
Agree	82
Disagree	08
Total	100

Source: *Field Data, 2021*

Respondents were also asked whether government and community leaders should factor in gender issues when they develop policies to govern communities. About eighty two percent (82%) of respondents agreed that consideration of gender issues were essential, ten percent (10%) of respondents strongly agreed while eight percent (8%) disagreed since they did not deem the education as very necessary.

4.5 Conclusion

Chapter four concludes by appreciating the challenges that both survey and focus group discussions revealed. Prominent among these were the influence posed by partisan ties and affiliations and the request for the Chinese to be restrained from fishing in local waters especially banning them from using unapproved fishing methods which come with health implications for those who consume the fish.

5 Chapter Five

Summary of Findings, Conclusions and Recommendations

5.1 Introduction

The chapter presents the summary of findings, conclusions, recommendations, as well as policy implications that will help to solve some of the challenges or obstacles experienced or encountered by individuals engaged in small scale fisheries. This final chapter concludes the study.

5.2 Summary of Findings

The data collected and presented, in consideration with the study objectives and research questions, form the basis of analysis. The study collected data from 150 respondents who lived at the Teshie-Nungua and James Town fishing communities in Ghana.

The study examined intersectionality in small SSF in James Town and Teshie fishing communities and found that intersectionality in the form of discrimination and victimization is a common occurrence in these communities. Prominent among the issues raised was the issue of political affiliation and bias which was so ingrained in the lives of individuals that any slight provocation could lead to a downslide in their everyday activities as shoppers and customers refuse to have anything to do with you. This seemed to be a regular occurrence at both James Town and Teshie.

The study also established that the Chinese, with their sophisticated fishing equipment, had infiltrated their waters and made the local folks highly vulnerable. The state-of-the-art equipment gave the Chinese the upper hand because they could reel in bumper harvests at any given time. The unapproved and poisonous substances used by the Chinese as bait also affected the already vulnerable community members because their harvest is affected as this means lean or no harvest which leaves their homes and families in a state of despair sometimes.

The study, again, found the glaring gender bias in the fishing communities. Only the men fish so women are expected to support their spouses and partners even though all post-harvest processes revolve around them. Their efforts are thus not recognized and there is the call for women to get representation in mainstream fishing activities. It is believed that a representative will carry their challenges and grievances across to the wider group so that they can be

understood better. Women basically hope to be able to care for their families efficiently such that their children will be able to grow up healthy and not malnourished.

In examining how the vulnerabilities that exist in small scale fisheries could be addressed in the study communities, the study found unanimous belief that education on gender will be useful to ensure that there is equity and inequality will be minimized. The study found that this will greatly enhance the image of the local community with a ripple effect on neighbouring communities thereby boosting their outlook to life.

The study further identified governments as not helpful in addressing vulnerabilities. Community members want an impartial governing system which will consider the needs of community as a whole and not individual family and friends. The study found that government appointees lack supervision, so they do what they like which deepens discrimination and victimization because of the “who you know” and “who knows you” syndrome. The study identified a tall order as respondents expect government to rise and deal with the ills in the system. Government is expected to above all introduce people who will treat everyone equally and have the community and Ghana at heart and not their family and friends. They are also required to deal with the Chinese infiltration menace which is a disaster awaiting to strike.

5.3 Conclusion

The core of this study was to explore intersectionality and viability. The data collected through the survey and focus groups using the mixed-methods and analysed revealed that different forms of discrimination exist among SSF with the most pronounced form being partisan politics as it reflected in both survey and focus groups discussions making it clear that these issues indeed plague the communities. There were several challenges confronting the communities with the most critical being the inability of fisher folks to get enough food for themselves, for their children and their inability to responsibly cater for the needs of their families.

The outlined challenges and obstacles effected the livelihoods of those engaged in SSF in the Teshie community and James town. Their total dependency and major source of income was from fishing but unfortunately, community leaders had not been supportive. They were described as biased. Governments have also not been seen to be carrying out their responsibilities creditably, particularly its role to facilitate SSF in terms of providing subsidies and providing loans. Concerns raised regarding the role of the Chinese also resounded as they

were seen to be fishing in the waters supposed to be the preserve of the locals, causing local folks to lose their livelihoods due to their inability to harvest a lot of fish.

The study concludes that deliberate attention by stakeholders to address the vulnerability and discrimination of women in small scale fisheries, coupled with government and local authorities' intervention to ensure that sanity prevails along the coastal towns and fishing communities as well as effective supervision from the local authorities to deal with unfair biases in the fishing industry are requisite elements to promote viability of women in small scale fisheries in Ghana. The better the activities of governments and local authorities in providing equal opportunities and level playing fields for the fishing industry, the higher the level of viability of women and men in operating in the small-scale fishing sector. Also, intersectionality in this study, has been more linked to discrimination, vulnerability, privileges, and viability in addition to what has already been written in literature.

5.4 Recommendations, Policy Implications, and Future Studies

Viability of women in the small-scale fisheries is vital because these individuals play key roles in the lives and homes of most Ghanaians in the provision of food. The activities of these groups also contribute to the gross domestic product (GDP) of the Ghanaian economy. In recognising the predicament of small-scale fisheries and the urgent need to address the vulnerability and discriminations facing them, the study makes the following recommendations.

1. A clear and positive move by government and government appointees to deal with the Chinese who have infiltrated the local communities to fish.
2. Education for all appointees to eschew greed and selfish interests and seek the good of all community members without fear or favour.
3. As difficult as it is, efforts to break down the partisan furore or fervour by instilling discipline and punishing those who behave this way to ensure that love for each other is upheld. This will promote growth which will propel development. The key is education
4. There should be more education and training on gender issues to encourage equity in all dealings in coastal communities as most of these communities are actively engaged in small-scale fisheries.

5.4.1 Policy Implications

It is believed that there is a lot of dormant policy documents sitting idle in the books. It will be good and serve the interest of small-scale fisheries and the country as a whole if there is a solid policy document that can serve all engaged in SSFs. This study serves as a guide to help draw up that document which will help to bring some sanity in SSF in Ghana.

5.4.2 Future studies

This study explored how vulnerabilities in intersectionality can be made viable. It will be interesting to in the future look at the educational plan of parents who raise their children in these communities. What are their plans for the children in this community and what are the aspirations of the children in these communities? These issues will be worth exploring in the future.

References

- Adeogun, O. A., Abohweyere, P. O., Ogunbadejo, H. K., Tanko, A., & L., J.-S. (2009).
- Adger, W. N. (1999). Social Vulnerability to Climate Change and Extremes in Coastal Vietnam. *World development*, 27(2), 249–269.
- Adger, W. N. (2006). Vulnerability. *Global Environmental Change*, 16(3), 268–281.
- Adger, W. N., & Vincent, K. (2005). Uncertainty in adaptive capacity. *Comptes Rendus Geoscience*, 337(4), 399–410.
- Aguiar, L., & Waldfogel, J. (2016). Even the losers get lucky sometimes: New products and the evolution of music quality since Napster. *Information Economics and Policy*, 34, 1-15. <https://doi.org/10.1016/j.infoecopol.2015.12.003>
- Akumbomi B., E., (2011). Assessing the effects of small-scale industries on the livelihoods of Women: Case study on Savelugu community in the Northern Region of Ghana.
- Bilge, S. (2010). Recent feminist outlooks on intersectionality. *Diogenes*, 57(1), 58–72.
- Allen, K. (2003). Vulnerability reduction and the community-based approach. In Pelling (Ed.), *Natural Disasters and Development in a Globalising World* (pp. 170–184).
- Alliance, G. of M. (2008). NOAA The Gulf of Mexico at a Glance.
- Allison, E. A., Horemans, B., & Béné, C. (2006). Vulnerability reduction and social inclusion: strategies for reducing poverty among small-scale fisherfolk. 30 January – 2 February, St. Lucia, South Africa.
- Allison, E. H., Adger, W. N., Badjeck, M.-C., Brown, K., Conway, D., Dulvy, N. K., et al. (2005). Effects of climate change on the sustainability of capture and enhancement fisheries important to the poor: analysis of the vulnerability and adaptability of fisherfolk living in poverty. Final technical report. Marine Policy.

- Allison, E. H., & Ellis, F. (2001). The Livelihoods Approach and Management of Small-Scale Fisheries The livelihoods approach and management of small-scale fisheries. *Marine policy*, 25(September), 377–388.
- Allison, E. H., Perry, A. L., Badjeck, M. C., Neil Adger, W., Brown, K., Conway, D., et al. (2009). Vulnerability of national economies to the impacts of climate change on fisheries. *Fish and Fisheries*, 10(2), 173–196.
- Alwang, J. D. P. S. N. 0115, Siegel, P. B., & Jorgensen, S. L. (2001). Vulnerability: A View from Different Disciplines. Discussion Paper Series No. 0115. Social Protection Unit. Washington DC.
- Andrew, N., Béné, C., & Hall, S. (2007). Diagnosis and management of small-scale fisheries in developing countries. ... and Fisheries, (227), 227–240.
- Appendini, C. M., Salles, P., Mendoza, E. T., López, J., & Torres-Freyermuth, A. (2012). Longshore Sediment Transport on the Northern Coast of the Yucatan Peninsula. *Journal of Coastal Research*, 285, 1404–1417
- Arceo-Carranza, D., & Chiappa-Carrara, X. (2017). Feeding ecology of juvenile marine fish in a shallow coastal lagoon of south-eastern Mexico. *Latin American Journal of Aquatic Research*, 43(4), 621–631.
- Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners*, (35), 216–224.
- Arora-Jonsson, S. (2011). Virtue and vulnerability: Discourses on women, gender and climate change. *Global Environmental Change*, 21(2), 744–751.
- Assies, W. (2008). Land tenure and tenure regimes in Mexico: an overview. *Journal of Agrarian Change*, 8(1), 33–63.
- Aubin, J. P. (1991). *Viability Theory*. Springer Verlag, Birkhaeuser.

- Ayantunde, A. A., Turner, M. D., & Kalilou, A. (2015). Participatory analysis of vulnerability to drought in three agro-pastoral communities in the West African Sahel. *Pastoralism*, 5(1), 13.
- Bagsit, F. U., & Jimenez, C. N. (2013). Gender roles in the mangrove reforestation programmes in Barangay Talokgangan, Banate, Iloilo, the Philippines: A case study where women have sustained the efforts. *SPC Women in Fisheries Information Bulletin*, (23), 40–44.
- Bai, K., Peng, H., Wu, J., Yang, Y., Zhang, E., Luyuan, D., et al. (2016). Good practice using intraspecific crop diversity to manage pests and pathogens in China. In B. Sthapit, H. Lamers, R. Rao, & A. Bailey (Eds.), *Tropical fruit tree diversity: good practices for in situ and on-farm conservation* (pp. 112–126). Abingdon, Oxon (UK): Routledge.
- Bailey, C., & Jentoft, S. (1990). Hard Choices in Fisheries Development. *Marine Policy*, 14(4), 333–344.
- Barclay, K. (2012). The Social in Assessing for Sustainability : Fisheries in Australia. *Cosmopolitan Civil Societies: An Interdisciplinary Journal*, 4(3), 38–53.
- Barclay, K., McClean, N., Foale, S., Sulu, R., & Lawless, S. (2018). Lagoon livelihoods: Gender and shell money in Langalanga, Solomon Islands. *Maritime Studies*, 17(2), 199-211. <https://doi.org/10.1007/s40152-018-0111-y>
- Barnett, A. J., & Eakin, H. C. (2015). “We and us , not I and me”: Justice, social capital, and household vulnerability in a Nova Scotia fishery. *Applied Geography*, 59, 107–
- Barrett, S. (2013). Local level climate justice? Adaptation finance and vulnerability reduction. *Global Environmental Change*, 23(6), 1819–1829.
- Bationo, A., Waswa, B., Kihara, J., & Kimetu, J. (2007). *Advances in Integrated Soil Fertility Management in Sub-Saharan Africa: Challenges and Opportunities*. (A. Bationo, B. Waswa, J. Kihara, & J. Kimetu, Eds.). Springer, Dordrecht.

- Batllori, S. E., Febles, P. J. L., & Díaz, S. J. (1999). Landscape change in Yucatan's Northwest Coastal Wetlands (1948–1991). *Research in Human Ecology*, 6, 8–20.
- Bavinck, M. (2011). Wealth, Poverty, and Immigration. The Role of Institutions in the Fisheries of Tamil Nadu, India. In S. Jentoft & A. Eide (Eds.), *Poverty Mosaics: Realities and Prospects in Small-scale Fisheries* (pp. 173–191). Dordrecht: Springer.
- Bavinck, M., Chuenpagdee, R., Diallo, M., van der Heijden, P., Kooiman, J., Mahon, R., & Williams, S. (2005). *Interactive fisheries governance – A guide to better practice*. Delft: Eburon Academic Publishers.
- Bavinck, M., Chuenpagdee, R., Jentoft, S., & Kooiman, J. (2013). *Governability of Fisheries and Aquaculture. Theory and Applications*. Dordrecht: Springer.
- Bavinck, M., Jentoft, S., & Scholtens, J. (2018). Fisheries as social struggle: A reinvigorated social science research agenda. *Marine Policy*, 94(May), 46–52.
- Beck, M. W., Shepard, C. C., Birkmann, J., Rhyner, J., Welle, T., Writting, M., et al. (2012). *World Risk Report*.
- Bele, M. Y., Sonwa, D. J., & Tiani, A. M. (2013). Supporting local adaptive capacity to climate change in the Congo basin forest of Cameroon: A participatory action research approach. *International Journal of Climate Change Strategies and Management*, 5(2), 181–197.
- Belhabib, D., Lam, V. W. Y., & Cheung, W. W. L. (2016). Overview of West African fisheries under climate change: Impacts, vulnerabilities, and adaptive responses of the artisanal and industrial sectors. *Marine Policy*, 71, 15–28.
- Belhabib, D., Sumaila, U. R., & Pauly, D. (2015). Feeding the poor: Contribution of West African fisheries to employment and food security. *Ocean and Coastal Management*, 111, 72–81.

- Bellon, M. R., Gambara, P., Gatsi, T., Machededze, T. E., Maminimini, O., & Waddington, S. R. (1999). Farmers' taxonomies as a participatory diagnostic tool: soil fertility management in Chihota, Zimbabwe. CIMMYT Economics Working Paper No.13. El Batan, Texcoco, Mexico.
- Béné, C. (2003). When Fishery Rhymes with Poverty : A First Step Beyond the Old Paradigm on Poverty in Small-Scale Fisheries. *World Development*, 31(6), 949–975.
- Béné, C. (2006). Small-scale fisheries: assessing their contribution to rural livelihoods in developing countries.
- Béné, C. (2009). Are Fishers Poor or Vulnerable? Assessing Economic Vulnerability in Small-Scale Fishing Communities Are Fishers Poor or Vulnerable? Assessing Economic Vulnerability in Small-Scale Fishing Communities, 0388(March).
- Béné, C., Doyen, L., & Gabay, D. (2001). A viability analysis for a bio-economic model. *Ecological Economics*, 36(3), 385–396.
- Béné, C., Kodio, A., Lemoalle, J., Mills, D., Morand, P., Ovie, S., et al. (2009). Participatory diagnosis and adaptive management of small-scale fisheries in the Niger River Basin, (60), 1–161.
- Béné, C., & Merten, S. (2008). Women and Fish-for-Sex: Transactional Sex, HIV/AIDS and Gender in African Fisheries. *World Development*, 36(5), 875–899.
- Béné, C., & Neiland, A. E. (2006). From Participation to Governance. Challenge.
- Bennett, E. (2005). Gender, fisheries, and development. *Marine Policy*, 29(5), 451–459.
- Bennett, E., Rey Valette, H., Maiga, K. Y., & Medard, M. (2004). Room for Manoeuvre: Gender and Coping Strategies in the Fisheries Sector.
- Bennett, N. J., Blythe, J., Tyler, S., Ban, N. C., & Bennett, N. J. (2016). Communities and change in the anthropocene : understanding social-ecological vulnerability and

planning adaptations to multiple interacting exposures, 907–926.

Berkes, F. (2011). Implementing ecosystem-based management: evolution or revolution ?
Fish and Fisheries, 1–12.

Berkes, F., Mahon, R., McConney, P., Pollnac, R., & Pomeroy, R. (2001). Managing small-scale fisheries: alternative directions and methods. Ottawa: International Development Research Centre.

Berkhout, F., van den Hurk, B., Bessembinder, J., de Boer, J., Bregman, B., & van Drunen, M. (2014). Framing climate uncertainty: socio-economic and climate Scenarios in vulnerability and adaptation assessments. *Regional Environmental Change*, 14(3), 879–893. 2

Bilge, S. (2010). Recent feminist outlooks on intersectionality. *Diogenes*, 57(1), 58-72.

Birkmann, J., Officer, A., & Assessment, V. (2007). Measuring revealed and emergent vulnerabilities of coastal communities to tsunami in Sri Lanka, (July 2006), 82–105.

Blaikie, P., Cannon, T., Davis, I., & Wisner, B. (1994). *At Risk: Natural Hazards, People's Vulnerability and Disasters*. London: Routledge.

Bradley, J. E., Mayfield, M. V., Mehta, M. P., & Rukonge, A. (2002). Participatory evaluation of reproductive health care quality in developing countries. *Social Science & Medicine*, 55(2), 269–282.

Brahm, G. N. (2019). Intersectionality. *Israel Studies*, 24(2), 157–170.

Brockhaus, M., Djoudi, H., & Locatelli, B. (2013). Envisioning the future and learning From the past: Adapting to a changing environment in northern Mali. *Environmental Science & Policy*, 25, 94–106.

Brooks, K. J., Marshall, J. A., Fromm, J. G., & Bennison, S. G. (2010). Integration of Socio-Economic Sustainability Criteria into a Reporting Framework for the

Australian Aquaculture Industry, FRDC Project No. 2007/010.

- Brooks, N., Adger, W. N., & Kelly, P. M. (2005). The determinants of vulnerability and adaptive capacity at the national level and the implications for adaptation. *Global Environmental Change*, 15(2), 151–163.
- Brugère, C. 2015. Climate change vulnerability in fisheries and aquaculture: a synthesis of six regional studies FAO Fisheries Circular No. 1104. Rome, FAO. 88 pp
- Brugère, C., & De Young, C. (2015). Assessing climate change vulnerability in fisheries and aquaculture: available methodologies and their relevance for the sector. FAO Fisheries and Aquaculture Technical Paper (FAO)no. 597. FAO.
- Burke, L., Maidens, L. (2004). Reefs at risk in the Caribbean. World Resources Institute.
- Burns, D., Howard, J., Lopez-Franco, E., Shahrokh, T., & Wheeler, J. (2013). Working with us: How communities and organizations can catalyse sustainable change.
- Calhoun, S., Conway, F., & Russell, S. (2016). Acknowledging the voice of women: implications for fisheries management and policy. *Marine Policy*, 74, 292–299.
- Carrà, G., Peri, I., & Vindigni, G. A. (2014). Diversification strategies for sustaining small-scale fisheries activity: A multidimensional integrated approach. *rivista di studi sulla sostenibilita*, 1, 79–99.
- Chambers, B. (1996). *The power of participation: PRA and policy*. Brighton.
- Chambers, R. (n.d.). 20 PRA, PLA, and Pluralism: Practice and Theory. *The SAGE Handbook of Action Research*, 297–318.
- Chambers, R. (1983). *Rural Development: Putting the Last First*. Longmans: London.
- Chambers, R. (1989). Vulnerability, Coping and Policy. *IDS Bulletin*, 20(2), 1–7.

- Chambers, R. (1992). Rural Appraisal: Rapid, Relaxed and Participatory, IDS Discussion Paper 311.
- Chambers, R. (1994a). Participatory Rural Appraisal (PRA): Challenges, Potentials and Paradigm. *Studies Development*, 22(10), 1437–1454.
- Chambers, R. (1994b). The Origins and Practice of Rural Appraisal, 22(7), 953–969.
- Chambers, R. (1995). Paradigm shifts and the practice of participatory research and development. In N. Nelson & S. Wright (Eds.), *Power and Participatory Development* (pp. 30–42). London: Intermediate Technology.
- Chambers, R. (1997). *Whose Reality Counts? Putting the First Last*. London: Intermediate Technology Publications.
- Chambers, R., & Conway, G. (1992). *Sustainable rural livelihoods: Practical concepts for the 21st century*. IDS Discussion Paper 296, Brighton.
- Chatikobo, P., Choga, T., Ncube, C., & Mutambara, J. (2013). Participatory diagnosis and prioritization of constraints to cattle production in some smallholder farming areas.
- Chuenpagdee, R. (2011a). A matter of scale: prospects in small-scale fisheries.
- Chuenpagdee (Ed.), *World small-scale fisheries: contemporary visions* (pp. 21–36). Eburon, Delft.
- Chuenpagdee, R. (2011). *World small-scale fisheries: contemporary visions*. the Netherlands: Eburon, Delft.
- Chuenpagdee, R. (2011b). Interactive governance for marine conservation: An illustration. *Bulletin of Marine Science*, 87(2), 197–211.
- Chuenpagdee, R., & Jentoft, S. (2009). Governability Assessment for Fisheries and Coastal Systems: A Reality Check. *Human Ecology*, 37(1), 109–120.

- Chuenpagdee, R., & Jentoft, S. (2011). Situating Poverty: A Chain Analysis of Small-Scale Fisheries. In S. Jentoft & A. Eide (Eds.), *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries* (pp. 27–42). Dordrecht: Springer Netherlands.
- Chuenpagdee, R., & Jentoft, S. (2015). Exploring Challenges in Small-Scale Fisheries Governance. In S. Jentoft & R. Chuenpagdee (Eds.), *Interactive Governance for Small-Scale Fisheries: Global Reflections* (pp. 3–16). Cham: Springer International Publishing.
- Chuenpagdee, R., Jentoft, S., Bavinck, M., & Kooiman, J. (2013). Governability -- New in Fisheries Governance. In M. Bavinck, R. Chuenpagdee, S. Jentoft, & J. Kooiman (Eds.), *Governability of Fisheries and Aquaculture: Theory and Applications* (pp. 3–8). Dordrecht: Springer Netherlands.
- Chuenpagdee, R., & Juntarashote, K. (2011). Learning from the Experts: Attaining Sufficiency in Small-Scale Fishing Communities in Thailand. In S. Jentoft & A. Eide (Eds.), *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries* (pp. 309–331). Dordrecht: Springer Netherlands.
- Chuenpagdee, R., Salas, S., & Barragán-Paladines, M. J. (2019). Big Questions About Sustainability and Viability in Small-Scale Fisheries. In S. Salas, M. J. Barragán-Paladines, & R. Chuenpagdee (Eds.), *Viability and Sustainability of Small-Scale Fisheries in Latin America and The Caribbean* (pp. 3–13). Cham: Springer International Publishing.
- Cinner, J. E. (2011). Social-ecological traps in reef fisheries. *Global Environmental Change*, 21(3), 835–839.
- Cinner, J. E., Mcclanahan, T. R., Graham, N. A. J., Daw, T. M., Maina, J., Stead, S. M., & Wamukota, A. (2012). Vulnerability of coastal communities to key impacts of climate change on coral reef fisheries. *Global Environmental Change*, 22(1), 12–20.

- Cochrane, K. L., Andrew, N. L., & Parma, A. M. (2011). Primary fisheries management: a minimum requirement for provision of sustainable human benefits in small-scale fisheries. *Fish and Fisheries*, 12(3), 275-288.
- Cole, E. R. (2020). Demarginalizing women of color in intersectionality scholarship in psychology: A Black feminist critique.
- Coppock, D. L., Desta, S., Tezera, S., & Gebru, G. (2011). Capacity Building Helps Pastoral Women Transform Impoverished Communities in Ethiopia, (DECEMBER), 1394–1399.
- Cornwall, A. (2008). Unpacking ‘Participation’: models, meanings, and practices. *Community Development Journal*, 43(3), 269–283.
- Cornwall, A., & Jewkes, R. (1995). What is participatory research? *Social Science & Medicine*, 41(12), 1667–1676.
- Corus, C., & Saatcioglu, B. (2015). An intersectionality framework for transformative services research. *The Service Industries Journal*, 35(7-8), 415-429
- Coulthard, S., Johnson, D.S., McGregor, J.A. 2011. Poverty, sustainability, and human wellbeing: a social wellbeing approach to the global fisheries crisis. *Global Environmental Change*. 21(2): 453- 463.
- Crenshaw, K. (1989). Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics. *u. Chi. Legal f.*, 139.
- Cronin, A., & King, A. (2010). Power, inequality and identification: Exploring diversity and intersectionality amongst older LGB adults. *Sociology*, 44(5), 876-892.
- Cutter, S. L., Boruff, B. J., & Shirley, W. L. (2013). Social Vulnerability to Environmental Hazards. *Social Science Quarterly*, 84(2), 242–261.

- Cutter, S. L., Mitchell, J. T., & Scott, M. S. (2000). Revealing the Vulnerability of People and Places: A Case Study of Georgetown County, South Carolina. *Annals of the Association of American Geographers*, 90(4), 713–737.
- Davis, K. (2008). Intersectionality as buzzword: A sociology of science perspective on what makes a feminist theory successful. *Feminist Theory*, 9(1), 67–85.
- De la Torre-Castro, M., Fröcklin, S., Börjesson, S., Okupnik, J., & Jiddawi, N. S. (2017). Gender analysis for better coastal management – Increasing our understanding of social-ecological seascapes. *Marine Policy*, 83(December 2016), 62–74.
- Deb, A. K., Haque, C. E., & Thompson, S. (2015). ‘Man can’t give birth, woman can’t fish’: gender dynamics in the small-scale fisheries of Bangladesh. *Gender, Place & Culture*, 22(3), 305–324.
- Delisle, A., Namakin, B., Uriam, T., Campbell, B., & Hanich, Q. (2016). Participatory diagnosis of coastal fisheries for North Tarawa and Butaritari island communities in the Republic of Kiribati.
- Derkyi, M., Ros-Tonen, M. A. F., Kyereh, B., & Dietz, T. (2014). Fighting Over Forest: Toward a Shared Analysis of Livelihood Conflicts and Conflict Management in Ghana. *Society and Natural Resources*, 27(3), 281–298.
- DeVault, I. A. (2000). Narratives serially constructed and lived: Ethnicity in cross-gender strikes 1887–1903. *Complicating Categories: Gender, Class, Race and Ethnicity*, 33–52. <https://doi.org/10.1017/cbo9780511563867.003>
- DFID. (2004). Migration and development: how to make migration work for poverty reduction.
- DFID, D. for I. D. (2001). Sustainable livelihoods guidance sheets.
- Di Lucia, L. (2013). Too difficult to govern? An assessment of the governability of transport biofuels in the EU. *Energy Policy*, 63, 81–88.

Dyer, C. L., & McGoodwin, J. R. (1999). "Tell them we're hurting": Hurricane Andrew the culture of response, and the fishing peoples of South Florida and Louisiana. In A. Oliver Smith & S. M. Hoffman (Eds.), *The Angry Earth: Disaster in Anthropological Perspective* (pp. 213–231). New York: Routledge.

Economic Viability of Small-scale Marine Capture Fisheries in the Bonny Area, Rivers State, Nigeria. *Marine Resource Economics*, 24(2), 195.

Edwards, P., Pena, M., Medeiros, R. P., & McConney, P. (2019). Socioeconomic Monitoring for Sustainable Small-Scale Fisheries: Lessons from Brazil, Jamaica, and St. Vincent and the Grenadines. In S. Salas, M. J. Barragán-Paladines, & R. Chuenpagdee (Eds.), *Viability and Sustainability of Small-Scale Fisheries in Latin America and The Caribbean* (pp. 267–293). Cham: Springer International Publishing.

El Agami, N. L. (2018). Manganese mineralization related to the Red Sea rift system: Examples from the Red Sea coast and Sinai, Egypt. *Geological Setting, Palaeoenvironment and Archaeology of the Red Sea*, 473-490. https://doi.org/10.1007/978-3-319-99408-6_21.

Ellis, F. (2000). *Rural livelihoods and diversity in developing countries*. Oxford University Press.

Eriksson, H., Adhuri, D. S., Adrianto, L., Andrew, N. L., Apriliani, T., Daw, T., et al. (2016). An ecosystem approach to small-scale fisheries through participatory diagnosis in four tropical countries. *Global Environmental Change*, 36(December 2015), 56–66.

Esilaba, A. O., Byalebeka, J., Nakiganda, A., Mubiru, S., Ssenyange, D., Delve, R., et al. (2001). *Integrated nutrient management in Iganga district, Uganda: diagnosis by participatory learning and action research*. Kampala, Uganda.

Espinoza-Tenorio, A., Espejel, I., Wolff, M., & Zepeda-Domínguez, J. A. (2011). Contextual factors influencing sustainable fisheries in Mexico. *Marine Policy*, 35(3), 343–350.

- Esposito, M., De Roma, A., La Nucara, R., Picazio, G., & Gallo, P. (2018). Total mercury content in commercial swordfish (*Xiphias gladius*) from different FAO fishing areas. *Chemosphere*, *197*, 14-19.
- Esteves, A. M. (2008). Mining and social development: Refocusing community investment using multi-criteria decision analysis. *Resources Policy*, *33*(1), 39–47.
- Fanning, L., Mahon, R., McConney, P., Angulo, J., Burrows, F., Chakalall, B., et al. (2007). A large marine ecosystem governance framework. *Marine Policy*, *31*(4), 434–443.
- FAO. (2015). *Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication*. Rome.
- FAO (2016) *Fishery and aquaculture country profile- Republic of Ghana*.
- FAO. (2020). *The state of world fisheries and aquaculture 2020: Sustainability in action*. Food and Agriculture Organization of the United Nations.
- Fedler, J., & Hayes, C. (2008). Economic Impact of Recreational Fishing for Bonefish, Permit and Tarpon in Belize for 2007. *Friends of Turneffe Atoll*, (April), 20.
- Figuerola-Espinoza, B., Salles, P., & Zavala-Hidalgo, J. (2014). On the wind power potential in the northwest of the Yucatan Peninsula in Mexico. *Atmosfera*, *27*(1), 77–89.
- Fischer, E.F. 2014. *The Good Life: Aspiration, Dignity, and the Anthropology of Wellbeing*. Stanford, California: Stanford University Press.
- Fletcher, W. J., Chesson, J., Sainsbury, K. J., Hundloe, T. J., & Fisher, M. (2005). A flexible and practical framework for reporting on ecologically sustainable development for wild capture fisheries. *Fisheries Research*, *71*(2), 175–183.

- Food and Agriculture Organization of the United Nations. (2001). What is the code of conduct for Responsible fisheries? Food & Agriculture Org.
- Frangoudes, K. (2011). Women's contribution in small-scale fisheries in the European Union. In R. Chuenpagdee (Ed.), *World small-scale fisheries: contemporary visions* (pp. 101–115). Eburon Academic Publishers, Delft.
- Frangoudes, K., & Gerrard, S. (2018). (En) Gendering change in small-scale fisheries and fishing communities in a globalized world. *Maritime Studies*, 17(2), 117-124.
- Frangoudes, K., Marugán-Pintos, B., & Pascual-Fernandez, J. J. (2013). Gender in Galician Shell-Fisheries: Transforming for Governability. In M. Bavinck, R. Chuenpagdee, S. Jentoft, & J. Kooiman (Eds.), *Governability of Fisheries and Aquaculture: Theory and Applications* (pp. 241–261). Dordrecht: Springer Netherlands.
- Freduah, G., Fidelman, P., & Smith, T. F. (2017). The impacts of environmental and socio-economic stressors on small scale fisheries and livelihoods of fishers in Ghana. *Applied Geography*, 89, 1–11.
- Freire, P. (1973). *Pedagogy of the oppressed*. New York: Seabury.
- Friedman, J., Syvertsen, J. L., Bourgois, P., Bui, A., Beletsky, L., & Pollini, R. (2021). Intersectional structural vulnerability to abusive policing among people who inject drugs: a mixed methods assessment in California's central Valley. *International Journal of Drug Policy*, 87, 102981.
- Fröcklin, S., Jiddawi, N. S., & de la Torre-Castro, M. (2018). Small-scale innovations in coastal communities: shell-handicraft as a way to empower women and decrease poverty. *Ecology and Society*, 23(2).
- Future of fishing for a vulnerable atoll: Trends in catch and catch-per-unit-effort in Tokelau's domestic marine fisheries 1950–2016. *Frontiers in Marine Science*, 476.

- Füssel, H.-M. (2007). Vulnerability: A generally applicable conceptual framework for climate change research. *Global Environmental Change*, 17(2), 155–167.
- Füssel, H.-M., & Klein, R. J. T. (2006). Climate Change Vulnerability Assessments: An Evolution of Conceptual Thinking. *Climatic Change*, 75(3), 301–329.
- Gammage, S. (2004). The tattered net of statistics. In K. G. Kumar (Ed.), *Gender Agenda Women in Fisheries: a Collection of Articles from SAMUDRA Report* (pp. 36–40). India: International Collective in Support of Fishworkers (ICSF).
- Garcia, S. M., Allison, E. H., Andrew, N. J., Béné, C., Bianchi, G., de Graaf, G., et al. (2008). *Towards integrated assessment and advice in small-scale fisheries: principles and processes*. Rome: FAO.
- Gerrard, S., & Kleiber, D. (2019). Women fishers in Norway: Few, but significant. *Maritime Studies*, 18(3), 259-274. <https://doi.org/10.1007/s40152-019-00151-4>
- Gezon, L. L. (2012). Why gender matters, why women matter. In M. L. Cruz-Torres & P. McElwee (Eds.), *Gender and sustainability: Lessons from Asia and Latin America* (pp. 231–243). Tucson: University of Arizona Press.
- Gopal, N., Hapke, H. M., Kusakabe, K., Rajaratnam, S., & Williams, M. J. (2020). Expanding the horizons for women in fisheries and aquaculture. *Gender, Technology, and Development*, 24(1), 1-9.
- Gustavson, K. (2002). Economic production from the artisanal fisheries of Jamaica, 57(May 2001).
- Gustavsson, M. (2021). Women’s belongings in UK fisheries. *Gender, Place & Culture*, 1-15. <https://doi.org/10.1080/0966369x.2021.1873748>
- Gustavsson, M., & Riley, M. (2018). Women, capitals, and fishing lives: Exploring gendered dynamics in the Llŷn peninsula small-scale fishery (Wales, UK). *Maritime Studies*, 17(2), 223-231. <https://doi.org/10.1007/s40152-018-0102-z>

- Haenn, N. (2018). Mexican anti-poverty program targeting poor women may help men most, study finds. <https://theconversation.com/mexican-anti-poverty-program-targeting-poor-women-may-help-men-most-study-finds-97917>
- Hall, S. J. (2011). *Climate change and other external drivers in small-scale fisheries: practical steps for responding*. Oxfordshire, UK: CABI Publishing, Wallingford.
- Hanson, A. M. (2016). Women's ecological oral histories of recycling and development in coastal Yucatán. *Gender, Place & Culture*, 23(4), 467–483.
- Hardin, G. (1968). The tragedy of the commons. *Science*, (162), 1243–1248.
- Harper, S., Zeller, D., Hauzer, M., Pauly, D., & Sumaila, U. R. (2013). Women and fisheries: Contribution to food security and local economies. *Marine Policy*, 39(1), 56–63.
- Hatt, S. (1997). Men's jobs, women's jobs. *Gender, Work and Labour Markets*, 65-82. https://doi.org/10.1057/9780230372306_5
- Heritage, N. (2018). *Women in the Inshore Fishery*.
- Hernández-Becerril, D. U., Alonso-Rodríguez, R., Álvarez-Góngora, C., Barón-Campis, S. A., Ceballos-Corona, G., Herrera-Silveira, J., et al. (2007). Toxic and harmful marine phytoplankton and microalgae (HABs) in Mexican Coasts. *Journal of Environmental Science and Health - Part A Toxic/Hazardous Substances and Environmental Engineering*, 42(10), 1349–1363.
- Herrera-Silveira, J. A., Comin, F. A., Aranda-Cirerol, N., Troccoli, L., & Capurro, L. (2004). Coastal water quality assessment in the Yucatan Peninsula: management implications. *Ocean & Coastal Management*, 47(11), 625–639.
- Herrera-Silveira, J. A., & Morales-Ojeda, M. (2010). Subtropical Karstic Coastal Lagoon Assessment Southeast Mexico. The Yucatan Peninsula Case. In M. J. Kennish & H. W. P. (Eds.) (Eds.), *Coastal Lagoons: Critical Habitats of Environmental Change* (CRC Marine., pp. 307–333). Boca Raton, FL: CRC press.

- Hospital, J., & Beavers, C. (2012). *Economic and Social Characteristics of Bottomfish Fishing in the Main Hawaiian Islands*. Honolulu, Hawaii.
- Howes, M. (1992). Linking paradigms and practice: key issues in appraisal, monitoring and evaluation of British NGO projects. *Journal of International Development*, 4(4), 375–396.
- Hughes, S., Yau, A., Max, L., Petrovic, N., Davenport, F., Marshall, M., et al. (2012). A framework to assess national level vulnerability from the perspective of food security: The case of coral reef fisheries. *Environmental Science & Policy*, 23, 95–108.
- IMM, CFDO, & CBNRM, L. (2005). *Understanding the Factors that Support or Inhibit Livelihood Diversification in Coastal Cambodia*. Exeter, UK.
- INEGI. (2005). *Censo de Población y Vivienda. Principales resultados por localidad (ITER)*. Instituto Nacional de Estadística y Geografía.
- INEGI. (2014). *Censo de Población y Vivienda. Principales resultados por localidad (ITER)*” Instituto Nacional de estadística y Geografía.
- Intergovernmental Panel on Climate Change (IPCC). (2001). *Climate Change 2001: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Third Assessment Report of the IPCC*.
- IPCC. (2007). *Climate Change*. Cambridge, UK: Cambridge University Press.
- Islam, M. M. (2011). Living on the Margin: The Poverty-Vulnerability Nexus in the Small-Scale Fisheries of Bangladesh. In S. Jentoft & A. Eide (Eds.), *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries* (pp. 71–95). Dordrecht: Springer Netherlands.
- Islam, M. M., & Chuenpagdee, R. (2013). Negotiating risk and poverty in mangrove fishing communities of the Bangladesh Sundarbans. *Maritime Studies*, 12(1), 7.

- Islam, M. M., & Herbeck, J. (2013). Migration and Translocal Livelihoods of Coastal Small-scale Fishers in Bangladesh. *The Journal of Development Studies*, 49(6), 832–845.
- Islam, M., Sallu, S., Hubacek, K., & Paavola, J. (2014). Vulnerability of fishery-based livelihoods to the impacts of climate variability and change: insights from coastal Bangladesh. *Regional Environmental Change*, 14(1), 281–294.
- Iwasaki, S., & Shaw, R. (2010). Chapter 2 state-based fisheries management in Chilika lagoon. *Integrated Lagoon Fisheries Management: Resource Dynamics and Adaptation*, 25-58. [https://doi.org/10.1108/s2040-7262\(2010\)0000003009](https://doi.org/10.1108/s2040-7262(2010)0000003009)
- Jentoft, S. (2014). Walking the talk : implementing the international voluntary guidelines for securing sustainable small-scale fisheries, 1–15.
- Jentoft, S., & Chuenpagdee, R. (2009). Fisheries and coastal governance as a wicked problem *Journal of Environmental Planning and Management*, 33, 553–560.
- Jentoft, S., & Chuenpagdee, R. (2015). *Interactive Governance for Small-Scale Fisheries Global Reflections*. Switzerland: Springer International Publishing.
- Jentoft, S., & Chuenpagdee, R. (2015). Assessing Governability of Small-Scale Fisheries. In S. Jentoft & R. Chuenpagdee (Eds.), *Interactive Governance for Small-Scale Fisheries: Global Reflections* (pp. 17–35). Cham: Springer International Publishing.
- Jentoft, S., Eide, A., Bavinck, M., Chuenpagdee, R., & Raakjær, J. (2011). A Better Future: Prospects for Small-Scale Fishing People. In S. Jentoft & A. Eide (Eds.), *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries* (pp. 451–469). Dordrecht: Springer Netherlands.
- Jentoft, S., & McCay, B. (1995). User participation in fisheries management: lessons drawn from international experiences. *Marine Policy*, 19(3), 227–246.

- Jiménez-Badillo, L. (2008). Management challenges of small-scale fishing communities in a protected reef system of Veracruz, Gulf of Mexico. *Fisheries Management and Ecology*, 15(1), 19–26.
- Joerin, F., Desthieux, G., Beuze, S. B., & Nembrini, A. (2009). Participatory diagnosis in urban planning: Proposal for a learning process based on geographical information. *Journal of Environmental Management*, 90(6), 2002–2011.
- Johnson, D. (2013). Livelihoods in the Context of Fisheries -- A Governability Challenge. In M. Bavinck, R. Chuenpagdee, S. Jentoft, & J. Kooiman (Eds.), *Governability of Fisheries and Aquaculture: Theory and Applications* (pp. 67–86). Dordrecht: Springer Netherlands.
- Kaplan-Hallam, M., Bennett, N. J., & Satterfield, T. (2017). Catching sea cucumber fever in coastal communities: Conceptualizing the impacts of shocks versus trends on social-ecological systems. *Global Environmental Change*, 45, 89–98.
- Karr, K. A., Fujita, R., Carcamo, R., Epstein, L., Foley, J. R., Fraire-Cervantes, J. A., et al. (2017). Integrating Science-Based Co-management, Partnerships, Participatory Processes and Stewardship Incentives to Improve the Performance of Small-Scale Fisheries. *Frontiers in Marine Science*, 4, 345.
- Kawarazuka, N., Locke, C., McDougall, C., Kantor, P., & Morgan, M. (2016). Bringing gender analysis and resilience analysis together in small scale fisheries research: Challenges and opportunities.
- Kelly, P. M., & Adger, W. N. (2000). Theory and Practice in Assessing Vulnerability to Climate Change and Facilitating Adaptation. *Climatic Change*, 47(4), 325–352.
- Keskitalo, E. C. H. (2009). Governance in vulnerability assessment: the role of globalising decision-making networks in determining local vulnerability and adaptive capacity. *Mitigation and Adaptation Strategies for Global Change*, 14(2), 185–201.

- Khatabi, A., & Jobbins, G. (2011). Vulnerability and adaption of traditional fisheries to climate change. In R. Chuenpagdee (Ed.), *World Small-scale Fisheries: Contemporary Visions* (pp. 63–80). Eburon.
- Khan, F. N., Collins, A. M., Nayak, P. K., & Armitage, D. (2018). Women’s perspectives of small-scale fisheries and environmental change in Chilika lagoon, India. *Maritime Studies*, 17(2), 145-154.
- Kheang, S. (2013). *Vulnerability and migration of small-scale fishing and fishing-farming households around Tonle Sap Lake*. Chulalongkorn University.
- Kim, J. H. (2019). A study of social capital for sustainable fishing community - Focused on the case of Soraepogu fishing village association -. *The Journal of Incheon Studies*, 31, 53-79. <https://doi.org/10.46331/jis.2019.08.31.53>
- Kimiti, J. M., Esilaba, A. O., Vanlauwe, B., & Bationo, A. (2007). Participatory Diagnosis in the Eastern Drylands of Kenya: Are Farmers aware of their Soil Fertility Status? In A. Bationo, B. Waswa, J. Kihara, & J. Kimetu (Eds.), *Advances in Integrated Soil Fertility Management in sub-Saharan Africa: Challenges and Opportunities* (pp. 961–968). Dordrecht: Springer Netherlands.
- Kleiber, D., Frangoudes, K., Snyder, H. T., Choudhury, A., Cole, S. M., Soejima, K., ... & Porter, M. (2017). Promoting gender equity and equality through the small-scale fisheries guidelines: experiences from multiple case studies. In *The small-scale fisheries guidelines* (pp. 737- 759). Springer, Cham.
- Kleiber, D., Harris, L. M., & Vincent, A. C. (2014). Gender and small-scale fisheries: A case for counting women and beyond. *Fish and Fisheries*, 16(4), 547-562. <https://doi.org/10.1111/faf.12075>
- Kleiber, D., Harris, L. M., & Vincent, A. C. (2015). Gender and small-scale fisheries: a case for counting women and beyond. *Fish and Fisheries*, 16(4), 547-562.

- Klein, R. J. T., & Nicholls, R. J. (1999). Assessment of Coastal Vulnerability to Climate Change. *Ambio*, 28(2), 182–187.
- Kolding, J., Béné, C., & Bavinck, M. (2014). Chapter 22 Small-scale fisheries - importance , vulnerability , and deficient knowledge ., 1–21.
- Kooiman, J. (2003). *Governing as Governance*. London: Sage Publications.
- Kooiman, J., & Bavinck, M. (2005). The governance perspective. In J. Kooiman, S. Jentoft, R. Pullin, & M. Bavinck (Eds.), *Fish for life: interactive governance for fisheries*. Amsterdam, Netherlands: Amsterdam University Press.
- Kooiman, J., & Bavinck, M. (2013). Theorizing Governability -- The Interactive Governance Perspective. In M. Bavinck, R. Chuenpagdee, S. Jentoft, & J. Kooiman (Eds.), *Governability of Fisheries and Aquaculture: Theory and Applications* (pp. 9–30). Dordrecht: Springer Netherlands.
- Kooiman, J., Bavinck, M., Jentoft, S., & Pullin, R. (2005). *Fish for life* (Amsterdam.). Amsterdam.
- Kosamu, I. B. M. (2015). Conditions for sustainability of small-scale fisheries in developing countries. *Fisheries Research*, 161, 365–373.
- Kozanayi, W. (2005). From glory to shambles: the rise and fall of the Romwe initiative ACM News Zimbabwe. *Keeping the Momentum: Sustaining Projects/Processes When Outside Support Has Been Withdrawn*.
- Kusakabe, K., Sereyvath, P., Suntornratana, U., & Sriputinibondh, N. (2006). Women in fish border trade: the case of fish trade between Cambodia and Thailand. In P. S. Choo, S. J. Hall, & M. J. Williams (Eds.), *Global Symposium on Gender and Fisheries* (Seventh Asian Fisheries Forum, 1–2 December 2004 (WorldFish., pp. 91–102). Penang, Malaysia.

- Lambeth, L., Hanchard, B., & Aslin, H. et al. (2002). An overview of the involvement of women in fisheries activities). (eds), ICLARM - WorldFish Center, Penang. In M. J. Williams, N. H. Chao, P. S. Choo, K. Matics, M. . Nandeessa, M. Shariff, & E. T. and J. M. C. W. I. Siason (Eds.), in Oceania. In: Global Symposium on Women in Fisheries (Sixth Asian Fisheries Forum, 29 November 2001) (pp. 127–142). Kaohsiung, Taiwan.
- Lokuge, G., & Hilhorst, D. (2017). Outside the net: Intersectionality and inequality in the fisheries of Trincomalee, Sri Lanka. *Asian Journal of Women's Studies*, 23(4), 473-497.
- Rohe, J., Schlüter, A., & Ferse, S. C. (2018). A gender lens on women’s harvesting activities and interactions with local marine governance in a South Pacific fishing community. *Maritime Studies*, 17(2), 155-162.
- Löf, A. (2016). Locking in and locking out: a critical analysis of the governance of reindeer husbandry in Sweden. *Critical Policy Studies*, 10(4), 426–447.
- Long, R. D., Charles, A., & Stephenson, R. L. (2017). Key principles of ecosystem-based management : the fi shermen ’ s perspective, 244–253.
- Lwenya, C., & Yongo, E. (2012). The Fisherman’s Wife: Vulnerabilities and Strategies in the Local Economy; The Case of Lake Victoria, Kenya. *Signs: Journal of Women in Culture and Society*, 37(3), 566–573.
- Mangubhai, S., Nand, Y., Reddy, C., & Jagadish, A. (2021). Politics of vulnerability: Impacts of COVID-19 and Cyclone Harold on Indo-Fijians engaged in small-scale fisheries. *Environmental science & policy*, 120, 195-203.
- Marín, A. (2019). Adaptive Capacity to Coastal Disasters: Challenges and Lessons from Small-Scale Fishing Communities in Central-Southern Chile. In S. Salas, M. J. Barragán-Paladines, & R. Chuenpagdee (Eds.), *Viability and Sustainability of Small-Scale Fisheries in Latin America and The Caribbean* (pp. 51–78). Cham: Springer International Publishing.

- Marquette, C. M., Koranteng, K. A., Overå, R., & Aryeetey, E. B.-D. (2002). Small-scale Fisheries, Population Dynamics, and Resource Use in Africa: The Case of Moree, Ghana. *AMBIO: A Journal of the Human Environment*, 31(4), 324–336.
- Marshall, N. A., Tobin, R. C., Marshall, P. A., Gooch, M., & Hobday, A. J. (2013). Social Vulnerability of Marine Resource Users to Extreme Weather Events.
- Martin, A., & Sherington, J. (1997). Participatory research methods—Implementation, effectiveness and institutional context. *Agricultural Systems*, 55(2), 195–216.
- Martínez-Portilla, G. (2008). Caracterización de la ictiofauna asociada a los paisajes marinos del Puerto de Sisal, Yucatán. *Ciencias Marinas*. CINVESTAV, IPN.
- Mascarenhas, J., Shah, P., Joseph, S., Jayakaran, R., Devavaram, J., Ramachandran, V., et al. (199) Participatory Rural Appraisal: Proceedings of the February 1991 Bangalore PRA Trainers Workshop. RRA Notes Number 13. London.
- McCulloch, N., & Calandrino, M. (2003). Vulnerability and Chronic Poverty in Rural Sichuan. *World Development*, 31(3), 611–628.
- McKenzie, S. (2004). *Social Sustainability: Towards Some Definitions*, Hawke Research Institute Working Paper Series. Adelaide.
- Meyer-Arendt, K. J. (1993). Shoreline changes along the north Yucatan coast. *Coastal Zone: Proceedings of the Symposium on Coastal and Ocean Management*, 103–117.
- Mills, D., Béné, C., Ovie, S., Tafida, A., Sinaba, F., Kodio, A., et al. (2011). Vulnerability in African small-scale fishing communities. *Journal of International Development*, 23(2), 308–313.
- Mollett, S., & Faria, C. (2018). The spatialities of intersectional thinking: fashioning feminist geographic futures. *Gender, Place & Culture*, 25(4), 565-577.

- Monfort, M. C. (2015). The role of women in the seafood industry. GLOBEFISH Research Programme 119. Rome.
- Moser, C. O. N. (1998). The asset vulnerability framework: Reassessing urban poverty reduction strategies. *World Development*, 26(1), 1–19.
- Moser, S. C. (2010). Now more than ever: The need for more societally relevant research on vulnerability and adaptation to climate change. *Applied Geography*, 30(4), 464–
- Mosse, D. (1994). Authority, gender, and knowledge: Theoretical reflections on the practice of participatory rural appraisal. *Development and Change*, 25, 497–526.
- Mutumukuru-Maravanyika, T., Mills, D. J., Asare, C., & Asiedu, G. A. (2017). Enhancing women's participation in decision-making in artisanal fisheries in the Anlo Beach fishing community, Ghana. *Water Resources and Rural Development*, 10, 58–75.
- Nadel-Klein, J., & Davis, D. L. (1988). *To Work and To Weep: Women in Fishing Economies*. Social and Economic Papers No. 18. St. John's.
- Nayak, P. K., & Berkes, F. (2019). Interplay Between Local and Global: Change Processes and Small-Scale Fisheries. In R. Chuenpagdee & S. Jentoft (Eds.), *Transdisciplinarity for Small-Scale Fisheries Governance: Analysis and Practice* (pp. 203–220). Cham: Springer International Publishing.
- Nembrini, A., Billeau, S., Desthieux, G., & Joerin, F. (2006). GIS and participatory diagnosis in urban planning: a case study in Geneva. In *GIS for sustainable development*, Boca Raton (FL) (pp. 451–465). Taylor & Francis.
- O'Brien, K., Eriksen, S., Nygaard, L. P., & Schjolden, A. N. E. (2007). Why different interpretations of vulnerability matter in climate change discourses Why different interpretations of vulnerability matter in climate change discourses, 1(7), 73–88.
- Onyango, P. (2016). Nomadic Pastoralism and Natural Resource Use Conflicts in East Africa. In P. Z. Pius Zebhe Yanda & C. G. Mung'ong'o (Eds.), *Pastoralism and*

- Climate Change in East Africa (pp. 123–156). Tanzania: Mkuki na Nyota Publishers.
- Ostrom, E. (2007). A diagnostic approach for going beyond panaceas. *Proceedings of the National Academy of Sciences*, 104(39), 15181–15187.
- Ostrom, E. (2009). A General Framework for Analyzing Sustainability of Social-Ecological Systems. *Science*, 325(5939), 419–422.
- Pacheco, Y. (2010). Limpian de PET la costa de la Peninsula de Yucatan. *SIPSE Noticias*.
- Pain, R. (2004). Social geography: participatory research. *Progress in Human Geography*, 28(5), 652–663.
- Park, P. (2001). Knowledge and participatory research. In P. Reason & H. Bradbury (Eds.), *Handbook of action research: Participative inquiry and practice* (pp. 81–90). London: Sage Publications.
- Paton, D., & Johnston, D. (2001). Disasters and communities: vulnerability, resilience and preparedness. *Disaster Prevention and Management: An International Journal*, 10(4), 270–277.
- Pauly, D. (2006). Major trends in small-scale marine fisheries, with emphasis on developing countries, and some implications for the social sciences. *Maritime Studies*, 4(2), 7–22.
- Pauly, D. (2011). Foreword. In R. Chuenpagdee (Ed.), *World Small-Scale Fisheries Contemporary Visions* (pp. 15–17). the Netherlands: Eburon Academic Publishers, Delft.
- Pedroza, C. (2013). Middlemen, informal trading, and its linkages with IUU fishing activities in the port of Progreso, Mexico. *Marine Policy*, 39, 135–143.
- Pedroza, C. (2019). Seafood Supply Chain Structure of the Fishing Industry of Yucatan, Mexico. In S. Salas, M. J. Barragán-Paladines, & R. Chuenpagdee (Eds.), *Viability*

and Sustainability of Small-Scale Fisheries in Latin America and The Caribbean (pp. 353–378). Cham: Springer International Publishing.

Perea-Blázquez, A., & Flores-Palacios, F. (2016). Participación de las mujeres en la pesca: nuevos roles de género, ingresos económicos y doble jornada. *Sociedad y Ambiente*, 1(9), 121–141.

Pittman, J., & Armitage, D. (2016). Governance across the land-sea interface: A systematic review. *Environmental Science and Policy*, 64, 9–17.

Pollnac, R. B., & Poggie, J. J. (2008). Happiness, Well-being and Psychocultural Adaptation to the Stresses Associated with Marine Fishing. *Human Ecology Review*, 15(2), 194–200.

Ponce-Díaz, G., Weisman, W., & McCay, B. (2009). Promotion and management of marine fisheries in Mexico. In G. Winter (Ed.), *Toward sustainable fisheries law: A comparative analysis* (pp. 233–252). Gland: IUCN.

Prokopy, L. S., Mase, A. S., & Perry-Hill, R. (2013). Assessing vulnerabilities and adaptation approaches: useful to usable tools. *Climate Vulnerability: Understanding and Addressing Threats to Essential Resources*, 2, 129–137.

Quentin Grafton, R., Kompas, T., McLoughlin, R., & Rayns, N. (2007). Benchmarking for fisheries governance. *Marine Policy*, 31(4), 470–479.

Quiros, T. E. A. L., Beck, M. W., Araw, A., Croll, D. A., & Tershy, B. (2018). Small-scale seagrass fisheries can reduce social vulnerability: a comparative case study.

Ocean and Coastal Management, 157(February), 56–67.

Ramírez, E. D. (2015). Tourist participatory diagnosis of a case study in the Restrepo municipality, Colombia. *Spanish Journal of Rural Development*, VI (Special 1), 1–16.

- Revollo-Fernández, D., Aguilar-Ibarra, A., Micheli, F., & Sáenz-Arroyo, A. (2015). Exploring the role of gender in common-pool resource extraction: evidence from laboratory and field experiments in fisheries. *Applied Economics Letters*, 23(13), 912–920.
- Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, (4), 155–69.
- Robottom, I., & Sauvé, L. (2003). Reflecting on participatory research in environmental education: Some issues for methodology. *Canadian Journal of Environmental Education*, (8), 111–128.
- Salas, S. (2000). Fishing strategies of small-scale fishers and their implications for fisheries management. University of British Columbia, Vancouver, B.C.
- Salas, S., Bjørkan, M., Bobadilla, F., & Cabrera, M. A. (2011). Addressing Vulnerability: Coping Strategies of Fishing Communities in Yucatan, Mexico. In S. Jentoft & A. Eide (Eds.), *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries* (pp. 195–220). Dordrecht: Springer Netherlands.
- Salas, S., Chuenpagdee, R., & Barragán-Paladines, M. J. (2019). Drivers and Prospects for the Sustainability and Viability of Small-Scale Fisheries in Latin America and the Caribbean. In S. Salas, M. J. Barragán-Paladines, & R. Chuenpagdee (Eds.), *Viability and Sustainability of Small-Scale Fisheries in Latin America and The Caribbean* (pp. 543–559). Cham: Springer International Publishing.
- Salas, S., Fraga, J., Euan, J., & Chuenpagdee, R. (2015). Common Ground, Uncommon Vision: The Importance of Cooperation for Small-Scale Fisheries Governance. In S. Jentoft & R. Chuenpagdee (Eds.), *Interactive Governance for Small-Scale Fisheries: Global Reflections* (pp. 477–493). Cham: Springer International Publishing.
- Salas, S., Huchim-Lara, O., Guevara-Cruz, C., & Chin, W. (2019). Cooperation, Competition, and Attitude Toward Risk of Small-Scale Fishers as Adaptive Strategies: The Case of Yucatán, Mexico. In S. Salas, M. J. Barragán-Paladines, &

- R. Chuenpagdee (Eds.), *Viability and Sustainability of Small-Scale Fisheries in Latin America and The Caribbean* (pp. 101–123). Cham: Springer International Publishing.
- Salas, S., Sumaila, U. R., & Pitcher, T. (2004). Short-term decisions of small-scale fishers selecting alternative target species: a choice model. *Canadian Journal of Fisheries and Aquatic Sciences*, 61(3), 374–383.
- Salas, S., Torres-Irineo, E., & Coronado, E. (2019). Towards a métier-based assessment and management approach for mixed fisheries in South-eastern Mexico. *Marine Policy*, 103, 148–159.
- Salas, S., & Torres, R. (1996). *Factors Affecting the Success of Fisheries Management in a Mexican Fishery*. Vancouver, Canada.
- Saldaña, A., Salas, S., Arce-Ibarra, A. M., & Torres-Irineo, E. (2017). Fishing operations and adaptive strategies of small-scale fishers: insights for fisheries management in data-poor situations. *Fisheries Management and Ecology*, (24), 19–32.
- Sanogo, D., Ndour, B. Y., Sall, M., Toure, K., Diop, M., Camara, B. A., et al. (2017). Participatory diagnosis and development of climate change adaptive capacity in the groundnut basin of Senegal: building a climate-smart village model. *Agriculture & Food Security*, 6(1), 13.
- Santos, A. N. (2015). Fisheries as a way of life: Gendered livelihoods, identities and perspectives of artisanal fisheries in eastern Brazil. *Marine Policy*, 62, 279–288.
- Santoyo-Palacios, A. B. (2017). *Esbozo monográfico de Sisal, Yucatán. México*.
- Schuhbauer, A., Chuenpagdee, R., Cheung, W. W. L., Greer, K., & Sumaila, U. R. (2017). How subsidies affect the economic viability of small-scale fisheries. *Marine Policy*, 82, 114–121.
- Schuhbauer, A., & Sumaila, U. R. (2016). Economic viability and small-scale fisheries - A review. *Ecological Economics*, 124, 69–75.

- Schwarz, A., Béné, C., Bennett, G., Boso, D., Hilly, Z., Paul, C., et al. (2011). Vulnerability and resilience of remote rural communities to shocks and global changes : Empirical analysis from Solomon Islands, 21, 1128–1140.
- Senapati, S., & Gupta, V. (2017). Socio-economic vulnerability due to climate change: Deriving indicators for fishing communities in Mumbai. *Marine Policy*, 76, 90–97.
- Shields, S.A. Gender: An Intersectionality Perspective. *Sex Roles* **59**, 301–311 (2008).
- Simpson, J. A., & Weiner, E. S. C. (1989). *The Oxford English Dictionary*, volume XII Poise-Quelt. Oxford University Press Oxford, New York, Toronto.
- Singh, N. M. (2012). Democratizing Spaces across Scales. Women’s Inclusion in Community Forestry in Orissa, India. In *Gender and sustainability: Lessons from Asia and Latin America* (pp. 50–70). Tucson: University of Arizona Press.
- Song, A. M., Bodwitch, H., & Scholtens, J. (2018). Why marginality persists in a governable fishery---the case of New Zealand. *Maritime Studies*, 17(3), 285–293.
- Song, A. M., & Chuenpagdee, R. (2015). Eliciting Values and Principles of Fishery Stakeholders in South Korea: A Methodological Exploration. *Society & Natural Resources*, 28(10), 1075–1091.
- Sowman, M., & Raemaekers, S. (2018). Socio-ecological vulnerability assessment in coastal communities in the BCLME region. *Journal of Marine Systems*, 188, 160–171.
- Staunæs, D. (2003). Where have all the subjects gone? Bringing together the concepts of intersectionality and subjectification. *NORA: Nordic Journal of Women’s Studies*, 11 (2), 101–110. Bilge, 2010).
- Stoll, J. S., Crona, B. I., Fabinyi, M., & Farr, E. R. (2018). Seafood Trade Routes for Lobster Obscure Teleconnected Vulnerabilities. *Frontiers in Marine Science*, 5(July), 1–8.

- Sumaila, U. R. (2017). *Small-scale Fisheries and Subsidies Disciplines: Definitions, Catches, Revenues, and Subsidies*. Geneva.
- Taylor, P., Bennett, N. J., Dearden, P., & Peredo, A. M. (2014). Vulnerability to multiple stressors in coastal communities: a study of the Andaman coast of Thailand, (June 2015), 37–41.
- Teh, L. S. L., Teh, L. C. L., & Sumaila, U. R. (2011). Quantifying the overlooked socio-economic contribution of small-scale fisheries in Sabah, Malaysia. *Fisheries Research*, 110(3), 450–458.
- Thompson, P., Wailey, T., & Lummis, T. (1983). *Living the Fishing*, History Workshop Series. (Routledge.). London.
- Thorpe, A. (2004). *Mainstreaming Fisheries into National Development and Poverty Reduction Strategies: Current Situation and Opportunities*.
- Tindall, C., & Holvoet, K. (2008). From the Lake to the Plate: Assessing gender vulnerabilities throughout the fisheries chain. *Development*, 51(2), 205–211.
- Tisdell, C. (1996). Economic indicators to assess the sustainability of conservation farming projects: An evaluation, 57, 117–131.
- Tolentino-Arévalo, O., Markantoni, M., Espinoza-Tenorio, A., & Mesa-Jurado, M. A. (2019). Drivers of Adaptive Capacity to Climate Change in Coastal Fishing Communities of Tabasco, Mexico. In S. Salas, M. J. Barragán-Paladines, & R. Chuenpagdee (Eds.), *Viability and Sustainability of Small-Scale Fisheries in Latin America and The Caribbean* (pp. 125–147). Cham: Springer International Publishing.
- Torell, E., A. Owusu, and A. Okyere Nyako. 2016. *Gender mainstreaming in fisheries management: A training manual*. The USAID/Ghana Sustainable Fisheries Management Project (SFMP). Narragansett, RI: Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island.

- Torre, J., A. Hernandez-Velasco, F.F. Rivera-Melo, J. Lopez, and M.J. Espinosa-Romero. (2019) Women's empowerment, collective actions, and sustainable fisheries: Lessons from Mexico. *Maritime Studies*.
- Trimble, M., & Berkes, F. (2013). Participatory research towards co-management: Lessons from artisanal fisheries in coastal Uruguay. *Journal of Environmental Management*, 128, 768–778.
- Trimble, M., & Johnson, D. (2013). Artisanal fishing as an undesirable way of life? The implications for governance of fishers' wellbeing aspirations in coastal Uruguay and south-eastern Brazil. *Marine Policy*, 37, 37–44.
- Triyanti, A., Bavinck, M., Gupta, J., & Marfai, M. A. (2017). Social capital, interactive governance and coastal protection: The effectiveness of mangrove ecosystem-based strategies in promoting inclusive development in Demak, Indonesia. *Ocean and Coastal Management*, 150, 3–11.
- Turner, B. L., Kasperson, R.E. Matsone, P. A., McCarthy, J. J., Corellg, R. W., Christensene, L., Eckleyg, N., et al. (2003). A framework for vulnerability analysis in sustainability science. In *Proceedings of the national academy of sciences* 100(14), (pp. 8074–8079).
- Ukeje, E. (2004). Modernizing small holder agriculture to ensure food security and gender empowerment: Issues and policy. *Int Group Twenty-Four Res Pap*, 23.
- Ulloa, M. J., Álvarez-Torres, P., Horak-Romo, K. P., & Ortega-Izaguirre, R. (2017). Harmful algal blooms and eutrophication along the Mexican coast of the Gulf of Mexico large marine ecosystem. *Environmental Development*, 22(August 2016), 120–128.
- UN-OCEANS. (2016).
- Ünal, V., & Franquesa, R. (2010). A comparative study on socio-economic indicators and viability in small-scale fisheries of six districts along the Turkish coast. *Journal of Applied Ichthyology*, 26(1), 26–34.

- Utete, B., Phiri, C., Mlambo, S. S., Muboko, N., & Fregene, B. T. (2018). Vulnerability of fisherfolks and their perceptions towards climate change and its impacts on their livelihoods in a peri-urban lake system in Zimbabwe. *Environment, Development and Sustainability*, 1–18.
- Vandendriessche, S., Messiaen, M., O’Flynn, S., Vincx, M., & Degraer, S. (2007). Hiding and feeding in floating seaweed: Floating seaweed clumps as possible refuges or feeding grounds for fishes. *Estuarine, Coastal and Shelf Science*, 71(3–4), 691–703.
- Villanueva García Benítez, J., & Flores-Nava, A. (2019). The Contribution of Small-Scale Fisheries to Food Security and Family Income in Chile, Colombia, and Peru. In S. Salas, M. J. Barragán-Paladines, & R. Chuenpagdee (Eds.), *Viability and Sustainability of Small-Scale Fisheries in Latin America and The Caribbean* (pp. 329–352). Cham: Springer International Publishing.
- Vincent, K. (2007). Uncertainty in adaptive capacity and the importance of scale. *Global Environmental Change*, 17(1), 12–24.
- Walker, B., Holling, C.S., Carpenter, S.R., Kinzig, A.P. 2004. Resilience, adaptability and transformability in social–ecological systems. *Ecology and Society*. 9 (2): 5.
- Wang, M., & Hu, C. (2016). Mapping and quantifying Sargassum distribution and coverage in the Central West Atlantic using MODIS observations. *Remote Sensing of Environment*, 183, 350–367.
- Weeratunge, N. A. K. Snyder, and P.S. Choo. (2010) Gleaner, fisher, trader, processor: Underestimated gendered employment in fisheries and aquaculture. *Fish and Fisheries* 11: 405–420
- Weeratunge, N., Béné, C., Siriwardane, R., Charles, A., Johnson, D., Allison, E. H., et al. (2014). Small-scale fisheries through the wellbeing lens. *Fish and Fisheries*, 15(2), 255–279.

- White, R., Coghlan, A. R., Coulter, A., Palomares, M. L. D., Pauly, D., & Zeller, D. (2018).
- White, S., & Ellison, M. (2007). Wellbeing, livelihoods, and resources in social practice. In I. Gough & J. A. McGregor (Eds.), *Wellbeing in Developing Countries: New Approaches and Research Strategies*. Cambridge, UK: Cambridge University Press.
- Williams, M. J. (2008). Why look at fisheries through a gender lens? *Development*, *51*(2), 180-185.
- Wisner, B. (2006). Self-assessment of coping capacity: participatory, proactive and qualitative engagement of communities in their own risk management. In J. Birkmann (Ed.), *Measuring vulnerability to natural hazard: towards disaster-resilient societies* (pp. 328–40). Tokyo: United Nations University Press.
- Woelk, G. B. (1992). Cultural and structural influences in the creation of and participation in community health programmes. *Social Science & Medicine*, *35*(4), 419–424.
- Wu, S. Y., Yarnal, B., & Fisher, A. (2002). Vulnerability of coastal communities to sea-level rise: A case study of Cape May County, New Jersey, USA. *Climate Research*, *22*(3), 255–270.
- Yohe, G., & Tol, R. S. J. (2002). Indicators for social and economic coping capacity moving toward a working definition of adaptive capacity. *Global Environmental Change*, *12*(1), 25–40.
- Zarco-Perelló, S., Mascaró, M., Garza-Pérez, R., & Simoes, N. (2013). Topografía y comunidad coralina de los arrecifes de Sisal, Banco de Campeche, Yucatán, México. *Hidrobiológica*, *23*(1), 28–41.
- Zeller, D., Booth, S., & Pauly, D. (2006). Fisheries Contributions to the Gross Domestic Product: Underestimating Small-scale Fisheries in the Pacific. *Marine Resource Economics*, *21*(4), 355–374.
- Zou, L.-L., & Wei, Y.-M. (2010). Driving factors for social vulnerability to coastal hazards in Southeast Asia: results from the meta-analysis. *Natural Hazards*, *54*(3), 901–929.

Appendices

Appendix 1: Focused Group Discussion Guide for Community Leaders-Women

Dear Respondent,

Thank you for your interest in this research. We are working with Helena Yeboah to gather information on: **Vulnerability and Viability: The intersectionality among Small Scale Fisheries in James Town and Teshie communities, Accra-Ghana.** The information that you provide during this discussion is highly appreciated and will be used for academic purposes and for other purposes such as sharing findings with the community. Then, "As a reminder, your identity will be confidential in any reports, etc."

Part I: Issues of intersectionality within small scale fisheries in James Town and Teshie communities.

1. What are the forms of discrimination that exist in your fishing community?
2. What are the forms of privileges that exist in your fishing community?
3. How does this discriminations and privileges affect women?
4. How much do you earn from fishing activities?

Part II: How intersectionality impacts or increases vulnerability among small scale fisheries

5. How has discrimination/privilege resulted in some challenges related to women among the small-scale fishing sector?
6. What are the main cross-cutting factors in your community that singularly or cumulatively impact women's status in the society in relation to fisheries?
7. How has discrimination/privilege increased challenges among women in the sector?
8. How have these challenges affected women and related livelihoods?

Part III: How these vulnerabilities in the small-scale fisheries can be addressed.

9. How can these challenges be solved to help women in the small-scale fishing sector?
10. What governance or policy implications does these poses?
11. What were the key rules, regulations, instruments, and measures employed to achieve the management issues in discrimination/privilege prior to this research?

Part IV: General gender questions

11. Should women be given more voice in your community?
12. Does gender play a role in how resources are allocated in your community?

13. Is gender education needed in your community in other to create opportunities for all?

14. Should government and your community factor in gender issues when drawing regulations and policies?

Thank You!

Appendix 2: Household Survey

Dear Respondent,

The purpose of this questionnaire is to gather information on: **Vulnerability and Viability: The intersectionality among Small Scale Fisheries in James Town and Teshie communities, Accra-Ghana.** Your contribution towards completion of this questionnaire will be highly appreciated and the information provided will be used for academic purposes only and shall be treated with the utmost confidentiality it deserves.

We are going to start with some questions about you so that we can describe who participated in our survey. When we are describing who participated, we will not identify people directly.

INSTRUCTION: PLEASE TICK ONE APPROPRIATE ANSWER AND WRITE WHERE APPLICABLE

Part I: Demographic Information

1. Gender. Male Female Prefer not to say
2. Age. 15-25 26-35 36-45 46-55 56+
3. How many family members do you have?
None 1-3 4-7 8-11 12+
4. Age grouping of your family members
15-25 26-35 36-45 46-55 56+
5. Is fishing your primary occupation? Yes No
6. If not a fisher, what do you do?
7. How long have you been fishing? Below 1 year 2-4 years 5-7 years 8-10 years 11+
8. Which other occupations are you engaged in during the year? Please specify
.....

Part II: Issues of intersectionality in small scale fisheries

9. What do you know about discrimination in the small-scale fishing in your community?
.....
.....
10. What do you know about privileges in the small-scale fishing in your community?
.....
.....
11. What are the forms of discrimination that exist in your community?

Sex [] Religion [] Tribe [] Partisan Politics [] Class [] Gender [] Physical Appearance [] other, please specify..... Please explain further

12. What are the forms of privileges that exist in your community?

Sex [] Religion [] Tribe [] Partisan Politics [] Class [] Gender [] Physical Appearance [] other, please specify..... Please explain further

13. What are the forms of discrimination that affect women in your community relating to fishing?

Sex [] Religion [] Tribe [] Partisan Politics [] Class [] Gender [] Physical Appearance [] other, please specify..... Please explain further

14. What are the forms of privileges that affect women in your community relating to fishing?

Sex [] Religion [] Tribe [] Partisan Politics [] Class [] Gender [] Physical Appearance [] other, please specify..... Please explain further

15. Who are the privileged people that do fishing in your community? Men [] Women [] Youth [] All [] Others

16. What are some of the effects of discriminations against women in your community?

Insufficient capital pool [] Lack of fishing opportunities [] No voice or representation [] Continues poverty among women [] others, please specify Please explain further.....

17. As a woman, what percentage of your income come from fishing activities?

100% [] 90%-70% [] 60%-40% [] below 40% []

18. What contributions do you make to fisheries activities as a woman?

19. What contributions does fisheries make to your economic status as a woman (including income)?

Part III: Intersectionality impact on vulnerability among small-scale fisheries

20. Has this discrimination made you vulnerable? Yes [] No [] If yes, how, and what, please explain. If no, why, please explain.....

21. How does this discrimination make you vulnerable as a woman? Not able to do fishing [] Not able to increase income [] Not able to provide for my family [] Unable to defend my rights [] others, please specify

22. How has discrimination affected women's livelihood? Unable to provide money for feeding
[] Low income due to peripheral fishing activities [] Low income due to competing peripheral
fishing activities [] Unable to have voice in the family due to low-income status, others,
please specify

Part IV: Addressing vulnerability in the small-scale fisheries.

23. Do you think these vulnerabilities can be addressed? Yes [] No [] Others

24. What are the ways fishers can solve or tackle these vulnerabilities or challenges?

Make fishing accessible to all [] Make women represented in mainstream fishing [] Make
women have a voice in expressing views and talents [] Create a community where women
can increase their income [] others, please specify

25.. What have you or the community done to address some of these vulnerabilities?
.....

26. What has the government done to help you deal with the vulnerabilities?
.....

27. What can the government do to help in tackling these vulnerabilities or challenges?
.....
.....

28. Has anything been done to solve these vulnerabilities in the past by your local community
leadership? Yes [] No []

29. If YES to the question above, please state what was
done.....
.....

30. If NO please state why.
.....
.....

31. What can be done by your local leaders to make fishing viable to women in your
community?
.....

Part V: General questions on gender

Please Tick the Appropriate Box Against Each Statement Indicating Your Rating Of The Statement From Question 22.

1----Strongly agree, 2----Agree, 3----Disagree, 4----Strongly disagree

32. Study into gender related issues are important.

1.Strongly Agree [] 2.Agree [] 3.Disagree [] 4.Strongly disagree []

33. Women should be given more voice in your community.

1.Strongly Agree [] 2.Agree [] 3.Disagree [] 4.Strongly disagree []

34. Gender plays role in how resources are allocated in my community.

1.Strongly Agree [] 2.Agree [] 3.Disagree [] 4.Strongly disagree []

35. Gender education is needed in my community in order to create opportunities for all.

1.Strongly Agree [] 2.Agree [] 3.Disagree [] 4.Strongly disagree []

36. Government and my community should factor in gender issues when drawing regulations and policies.

1.Strongly Agree [] 2.Agree [] 3.Disagree [] 4.Strongly disagree []

37. Do you have any questions for me?

Thank You!

Appendix 3: Interview Guide

Issues of intersectionality within small scale fisheries in James Town and Teshie communities

1. What are the forms of discrimination that exist in your fishing community?
2. What are the forms of privileges that exist in your fishing community?
3. How does this discriminations and privileges affect women?
4. How much do you earn from fishing activities

How intersectionality impacts or increases vulnerability among small scale fisheries

1. How has discrimination/privilege resulted in some challenges related to women among the small-scale fishing sector?
2. What is the main cross-cutting factors in your community that singularly or cumulatively impact women's status in the society in relation to fisheries?
3. How has discrimination/privilege increased challenges among women in the sector?
4. How have these challenges affected women and related livelihoods?

How these vulnerabilities in the small-scale fisheries can be addressed

1. How can these challenges be solved to help women in the small-scale fishing sector?
2. What governance or policy implications does these poses?
3. What were the key rules, regulations, instruments, and measures employed to achieve the management issues in discrimination/privilege prior to this research?

Should women be given more voice in your community?

1. 12. Does gender play a role in how resources are allocated in your community?
2. 13. Is gender education needed in your community in other to create opportunities for all?
3. 14. Should government and your community factor in gender issues when drawing regulations and policies?

