The contribution of small-scale fisheries to the community food security of one South African coastal community

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Declaration

I hereby declare that the work on which this dissertation/thesis is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university.

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Abstract

Small-scale fisheries contribute to the food security of a significant portion of the global population through direct consumption and indirectly as a vital source of income. Approximately, 50 million individuals involved in capture fisheries are small-scale fishers and they contribute to 80 percent of the global catch that is used for domestic consumption. Small-scale fishers provide their immediate communities with a vital source of protein. The sector enables an income source through full-time or part-time work to vulnerable coastal communities. In South Africa, approximately 28,000 small-scale fishers rely on marine resources for food security and livelihoods; however, continued marginalisation of small-scale fishers through discriminatory fisheries regulations favouring the large-scale fisheries sector and poor reallocation of access rights challenges the contribution of small-scale fisheries for community food security. While there is evidence that suggests small-scale fisheries in South Africa contribute to the food security of coastal communities, there is little know about the extent of the contribution as well as how the sector contributes to community food security and what factors influence community food security outcomes.

The purpose of this research was to examine the contribution of small-scale fisheries to the community food security of one South African coastal community. Lambert’s Bay, Western Cape served as the case study and a mixed methods approach was employed to address three research objectives. Forty household surveys were completed at fisher and non-fisher households to examine the current level of household food security within the community and address the first research objective. Secondly, focus group discussions were completed with men and women to understand perceptions of food security and the food culture of the community. Lastly, the third objective was to examine the potential impacts of a reconfigured market on the local food system. This objective was addressed through a scenario planning workshop that was conducted with fishermen and women.

This research utilised a community food security lens to broadly examine the role of small-scale fisheries to food security. Community food security is a holistic term that builds upon food security, food sovereignty and cultural food security but explores food security at both the household and community level as well as how outcomes are shaped by socio-economic, institutional and environmental drivers. The lens enabled the reframing of food security within the context of a fishing community and provided a scope to address the research objectives.

Overall, Lambert’s Bay case study indicates high levels of food insecurity characterised by significant seasonal variation and low dietary diversity. Reported consumption of fish was relatively low; however, during the Snoek run, findings indicated consumption of fish throughout the community increased. Moreover, the Snoek season, is significant for its
contribution food security indirectly as it provides livelihoods for many individuals. Historically, fishing activities and fish was a key aspect to the cultural identity of Lambert’s Bay. While fish remains a component of culture, the decline in traditional food ways associated with fish suggested a weakening of its cultural significance. Environmental, economic and institutional factors threaten the contribution of small-scale fisheries to the community food security of Lambert’s Bay. Most notably, poor governance in the small scale-fisheries sector has compromised the role of fish for food, livelihoods and culture. Secondly, environmental changes due to climate change and human activities reduce access and availability of fish for food and livelihoods.

The key finding of this research was that small-scale fisheries contributes to the community food security of Lambert’s Bay through direct consumption and indirectly though the provision of livelihoods. Seasonality, unfavourable fishing conditions as well as the presence of Snoek, a migratory species, dictates the role of small-scale fisheries for food security. Poor seasonal fishing conditions negatively impacts the consumption of fish throughout the community as well as income for fishers. Conversely, the Snoek season provides critical livelihoods opportunities for community members and increased consumption of fish throughout the community. Environmental and institutional factors influence food security outcomes derived from small-scale fisheries. In addition, the prevalence of traditional food practices and the functionality of the social economy associated with fish is adversely affected by these drivers. This research contributes to scholarship within the small-scale fisheries and food security sphere as well as food systems research. It highlights the interconnectedness of various factors and the complexity of coastal food systems through the application of a community food security lens. A deeper understanding of the factors that influence food security outcomes in the context of fishing communities is advantageous as it can guide targeted research and initiatives that strengthen the well-being of fisher communities.
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<th>Description</th>
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<tbody>
<tr>
<td>AFN</td>
<td>Alternative food network</td>
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<tr>
<td>ANC</td>
<td>African National Congress</td>
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<td>CSA</td>
<td>Community support agriculture</td>
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<td>CSF</td>
<td>Community supported fisheries</td>
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<tr>
<td>CSO</td>
<td>Civil society organisation</td>
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<tr>
<td>DEAT</td>
<td>Minister of Environmental Affairs and Tourism</td>
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<tr>
<td>FAO</td>
<td>Food and Agricultural Organisation</td>
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<td>FCT</td>
<td>Fishermen’s Community Trust</td>
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<td>FGD</td>
<td>Focus group discussion</td>
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<td>FSC</td>
<td>Forest Stewardship Council</td>
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<td>GHS</td>
<td>South African General Household Survey</td>
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<td>HDDS</td>
<td>Household dietary diversity score</td>
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<td>HDI</td>
<td>Historically disadvantaged individual</td>
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<td>HFIAP</td>
<td>Household food insecurity access prevalence</td>
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<td>HFIAS</td>
<td>Household food insecurity access scale</td>
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<tr>
<td>ICESCR</td>
<td>International Covenant of Economic, Social and Cultural Rights</td>
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<td>IFSS</td>
<td>Integrated Food Security Strategy</td>
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<td>IRP</td>
<td>Interim relief permit</td>
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<td>MCM</td>
<td>Marine and Coastal Management</td>
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<td>MLRA</td>
<td>Marine Living Resources Act No. 12</td>
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<td>MAHFP</td>
<td>Months of adequate household provisioning</td>
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<td>MSC</td>
<td>Marine Stewardship Council</td>
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<tr>
<td>NPFNS</td>
<td>National Policy on Food and Nutrition Security</td>
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<td>PSD</td>
<td>Participatory scenario development</td>
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<td>RDP</td>
<td>Reconstruction and Development Programme</td>
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<td>RSF</td>
<td>Restaurant supported fisheries</td>
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<td>SFTP</td>
<td>Subsistence Fisheries Task Group</td>
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<td>SSF</td>
<td>Small-scale fisheries</td>
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<td>SSFP</td>
<td>Small-scale Fisheries Policy</td>
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<tr>
<td>UDHR</td>
<td>Universal Declaration of Human Rights</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<td>WCRL</td>
<td>West Coast Rock Lobster</td>
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<td>WFS</td>
<td>World Food Summit</td>
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Chapter 1: Introduction

1.1 Background

Over the past five decades great progress in terms of the state of hunger across the global population has occurred; however, approximately 795 million people remain food insecure (FAO, 2015). Food security can be defined as, “having access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life” (World Food Summit, 1996). Strategies to address food insecurity have tended to focus on increased agricultural production; however, there is a growing recognition that other food systems also contribute to the food security of populations (Godfray et al., 2010). Examining the extent of the contribution of systems such as forests or fisheries is pertinent as we look to feed the growing planet. Moreover, observing how populations rely on various resources for food will enable a better understanding to safeguard resources and ensure the well-being of these communities.

Discourse surrounding food security has largely focused on agriculture but evidence of the contribution of fisheries to food security has slowly started to push international decision makers to integrate fisheries into food security strategies (Allison, 2011; Béné et al., 2016; Béné, Barange, & Subasinghe, 2015; Sowman, 2011). The fisheries sector contributes to the global food system through several pathways, from large commercial enterprises that feed the demands of the globalised food system to subsistence fisheries which contributes to household consumption. A subsector, small-scale fisheries (SSF), provides food and nutrition security to a significant segment of the global population through direct consumption and indirectly as a source of income. It is estimated that 56.6 million people were involved in capture fisheries in 2014 and 90% of those in capture fisheries are small-scale fishers (Food and Agriculture Organization of the United Nations, 2016). Fisheries and aquaculture provides an estimated three billion people with 20% of their average per capita intake of animal protein and SSF are estimated to contribute 80% of the total world catch that is used for domestic consumption (High Level Panel of Experts on World Food Security, 2014). While the fisheries sector is not a panacea for addressing global food insecurity as it faces overexploitation, understanding its contribution to the food security of communities across the globe is critical.

SSF contributes towards food security both indirectly and directly. Fish is an excellent source of protein and is often more affordable and accessible to local communities (Allison, 2011; Béné, 2006; High Level Panel of Experts on World Food Security, 2014). Fish is a critical source of food for many populations and often protects individuals and households from poor health and nutrition (Béné, 2006). Involvement in SSF enables individuals to earn an income
thus contributing to food security indirectly. Both full and part-time employment in fisheries provides an income that enables the procurement of key food stocks (Fabinyi et al., 2017).

There are a number of challenges that exist within the SSF sector that negatively impact its contribution to food security. Global fish stocks are in decline and competition against large-scale fisheries is a daily reality as fish is one of the most traded commodities in the world. Global and local value chains are often pitted against small-scale fishers as they have limited financial resources and power (Bjorndal, Child, & Lem, 2014). Fisheries governance and the impact of climate change also impacts access to marine resources for vulnerable populations.

1.2 Rationale

Throughout South Africa, the act of fishing and the consumption of fish is deeply rooted within the culture and traditional practices of small-scale fishing communities (Clark et al., 2002; Isaacs, 2013; Nkomo, 2015; Sowman et al., 2014). Small-scale fishers in South Africa are heavily reliant on marine resources for food and livelihood security, however; limited research has been undertaken to understand the contribution of SSF to food security. A survey conducted in 1999 and 2000 of 20 coastal communities dependent on marine resources showed high levels of food insecurity (Raemaekers et al., 2013). Further, a study of 13 coastal communities in 2010 indicated an increasing dependency on marine resources as the main source of food suggesting that food security was heavily linked to the contribution of small-scale fisheries (Sowman et al., 2014). The South African fisheries sector has generally focused on the privatisation of marine resources, industrialisation and export-oriented markets (Booysen, 2017). Fisheries governance has been largely exclusionary to approximately 30,000 small-scale fishers who rely on inshore fisheries for food and livelihood security (Clark et al., 2002; Sowman et al., 2014). A patchwork of policy reforms following the advent of democracy arose to address the years of marginalisation and to provide rights to small-scale fishers. Efforts culminated with a court ruling that recognized small scale fishers. In 2012, the Small-scale Fisheries Policy (SSFP) was developed and in 2017 implementation commenced (Isaacs, 2013; Sowman et al., 2014).

Given the levels of food insecurity experienced in the coastal communities of South Africa, the reliance on marine resources for food, it is critical to examine the contribution of SSF to food security within the context of political, socio-economic and environmental factors at the community level. The utilisation of a community food security lens enabled an inclusive approach to examine the multiple components of food security and the driving factors. Community food security can be defined as, “a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through sustainable food system that maximizes community self-reliance and social justice.” (Hamm & Bellows, 2003,
It places household food security within the community context acknowledging the role of the food system, socio-economic and environmental drivers and provides space to examine holistic solutions (Hamm & Bellows, 2003; Winne, 2005). Lastly, using a broad scope to examine food security within a coastal community considers traditional cultural food habits related to harvesting, sharing, consumption, and reliance on market and traditional food systems when addressing food security (Harder & Wenzel, 2012; Moffat, Mohammed, & Newbold, 2017; Power, 2008; Rocha & Liberato, 2013).

In sum, through the application of a community food security lens, the contribution of SSF to the food security of one South African coastal community\(^1\) enables a greater understanding of the significance of marine resources for food, livelihoods and culture.

1.3 Aims and objectives

The purpose of this study is to examine the contribution of small-scale fisheries to the food security of one South African coastal community. The research objectives are as follows:

1) Examine the current level of food security within the community.
2) Understand the perceptions of food security and food culture of the community.
3) Examine potential impacts of a reconfigured market on the local consumption of fish.

1.4 Structure of the thesis

The thesis is comprised of seven chapters. The first chapter is an introduction and presents an overview of the study, research objectives and overall aim. This is followed by a chapter that provides an in-depth review of literature that is relevant to the research. The third chapter gives an overview of the research approach and methodologies used to collect and analyse the data. The fourth chapter presents background information and focuses on the governance of food systems and marine resources. Chapter five presents the findings and results obtained from the household survey, focus group discussions and the scenario planning workshop. The sixth chapter discusses the literature set out in chapter two in the context of the research findings. Lastly, the seventh chapter provides a conclusion and highlights emerging themes as well as areas for future research.

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\(^1\) Coastal community refers to the group of inhabitants who are and have been reliant on marine resources for direct and indirect community food security. In this study, community members refers to those individuals community who reside in the area where Coloured fishers resided. In the literature coastal community and fisher community are at times used synonymously.
Chapter 2: Literature Review

This chapter examines three components that are critical for understanding the contribution of small-scale fisheries to the food security of communities. It will also position the research within the current literature. Firstly, the concepts of food security, food sovereignty and community food security are explored to provide an understanding of the terminology adopted and establish the conceptual framework that will be utilised. The chapter then reviews literature on the contribution of fisheries, specifically small-scale fisheries, to food security. Finally, literature pertaining to fisheries value chains and direct marketing schemes as a means to promote small-scale fisheries are reviewed.

2.1 Food Security, Food Sovereignty and Community Food Security

Food security is a multi-dimensional concept, evolving over the past five decades from a simple term describing food production to an all-encompassing description, denoting the multitude of factors that influence food security outcomes for individuals, households and communities (Wakefield, Fredrickson, & Brown, 2015). Following the World Food Conference in 1974, where the concept first emerged, the term has been adapted, redefined and utilised based on the nature of related challenges as well as the realities experienced by those suffering from food shortages. By the early 1990s, the term food security, had over two hundred varying definitions (Maxwell, 1996). Academics, Maxwell and Slater, acknowledged that food security as a term had become a “cornucopia of ideas” (Maxwell & Slater, 2003). For the purposes of this chapter each definition of food security will not be interrogated, but the evolution of the key terms will be examined to establish a uniform understanding and justification for the definition employed in this research.

Food security was defined at 1974 World Food Conference as, “the availability at all times of adequate, world food supplies of basic food stuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices” (United Nations, 1975). During the 1970s and the 1980s, the term had a biophysical focus stemming from the green revolution and policy makers as well as practitioners constructed hunger alleviation programs based around this notion. As it became evident that adequate food supplies did not automatically translate into the alleviation of hunger, an emphasis on access to food signalled a shift in the definition of food security (Maxwell, 1996). The increased production or availability of food may not be a valuable gauge to measure food requirements of a marginalised population but, as Sen suggested, the “entitlement approach” which includes people’s capacity to obtain food by production, trade or other methods may be more appropriate (Sen, 1981; Westengen & Banik, 2016). Sen also highlighted that socio-economic and political conditions impact one’s ability to acquire food, for example, poor transactions along the value chain (Sen, 1981).
Following the inclusion of access and entitlement, a human rights approach lens was applied to food security and the “right to food” movement began pressuring governments to provide resources for food security (hunger) and to protect food insecure individuals from those who may violate their right to food (Westengen & Banik, 2016). The World Food Summit (WFS) endorsed food as a human right and subsequent actions such as the United Nation’s (UN) voluntary guidelines to support the progressive realisation of the “right to food” was developed for national government implementation.

Currently, the most widely used definition of food security is derived from the 1996 WFS, “when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life.” (FAO, 2002, p. 49). This definition further highlights the evolving discourse as it expands upon an availability and production perspective to a more nuanced term inclusive of aspects such as rights and economic access. According to the Food and Agricultural Organisation (FAO), food security is made up of four pillars: availability, stability of the supply, access to and utilisation. Each pillar or key dimension influences food security across levels, when examined closely and together as part of a system, provide a deep understanding of drivers of food insecurity and possible strategies for improvement (Battersby & Haysom, 2019; Charlton, 2016). By the mid-2000s it became widely accepted that food security was a complex issue and as Maxwell stated, strategies must embrace “notions of diversity, complexity and flexibility” (Maxwell, 1996, p. 165).

Similar to the development of the definition of food security is the conceptualisation of food sovereignty. In response to an increasingly globalised food system and the need to safeguard the autonomy of nations with respect to their food policy, the notion of food sovereignty arose. It’s origin is widely believed to originate from La Via Campesina, an international peasant’s organisation, however; some contend the term began in Mexico as part of a government program in the 1980s and it was then adopted by those who joined Via Campesina (Edelman, 2014). In 1996, Via Campesia, the international peasants’ organization defined food sovereignty as, “The right of each nation to maintain and develop its own capacity to produce its basic foods respecting cultural and productive diversity.” (Menezes, 2001, p. 30). Via Campesia shifted their focus in 2002 to local self-sufficiency and framed food sovereignty as the right of individuals to construct their food policies, safeguard domestic agriculture and drive their own level of self-reliance. In 2007, a food sovereignty forum was held in Mali and the Declaration of Nyéléni, defined the term as “the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. It puts those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of
markets and corporation.” (Nyéléni, 2007, p. 7). This declaration was the first definition to include consumption and in addition, it includes the notion of the human right to food similar to the FAO definition of food security (Jarosz, 2014).

Irrespective of the origins of the term, food sovereignty is viewed as a counter movement to neoliberal economic development policies, globalisation and commodification of food embedded in conventional food security policies (Agarwal, 2014; Edelman, 2014; Jarosz, 2014; Nyéléni, 2007). While discourse did tend to follow anti-globalisation rhetoric in dispute of dumping large amounts of subsidised food and inequity in global value chains, the term has progressed, recognising that a shared transnational vision is required, in parallel with the evolving definition of food security (Jarosz, 2014). In general, the difference between the conventional terminology for food security and food sovereignty is that the former focuses on access to food that meets dietary needs while the latter upholds the notion of one’s right to define the system where food is sustainably obtained and ensure it meets cultural needs. As both terms develop and dovetail, they encounter areas of common ground. In the section below, areas of overlap will be highlighted and the complementary roles that both can play in addressing hunger alleviation will be stressed as at the producer level the difference between these two concepts is often blurred.

Food security and food sovereignty are often viewed as opposing concepts; however, academics such as Menezes, Edelman and Jarosz claim they should be viewed as less oppositional and more complementary. The World Forum on Food Sovereignty regards food sovereignty as an essential factor for achieving food security. Menezes highlights that food sovereignty endorses the right of people to decide what they eat and produce but it is not enough to guarantee food security which ensures access to culturally and nutritionally appropriate food for everyone in a socially equitable manner. Food sovereignty is a vital element to food security and both concepts should be compatible (Menezes, 2001). Some academics suggest that food sovereignty and food security stem from the same area of thought, in the context of the early peasant movements when food sovereignty, food security and other terms were used interchangeably (Edelman, 2014).

The overlap and interchangeability of the terms can be related to scale. At the local level, food security goals may align to food sovereignty objectives; however, at the national and international level, discourses may deviate as establishing common ground related to policies is increasingly difficult. Jarosz states, “reframing food security and food sovereignty as relational has the powerful effect of linking food access to autonomy and the transformation or recuperation of food systems that nourish people in multidimensional ways and are deeply anchored in ideas of justice, ethics, responsibility and caring for oneself, others and nature.” (Jarosz, 2014, p. 179).
Conversely, the concept of food sovereignty may conflict with achieving food security and hunger alleviation. For example, individuals may achieve food security, not by exercising self-sufficiency but as landless dwellers, as wages earned enables them to purchase food. Similarly, agrarian transitions may provide farmers with opportunities to grow more economically viable crops and engage with non-local markets. Lastly, governments must implement food security policies in the face of growing urban population that may rely on large scale agricultural production or imports (Agarwal, 2014). While recognising the shortfalls and the perceived idealist notion of food sovereignty, the concept of food sovereignty as a complimentary component to achieving community food security, safeguarding cultural food security while at the same time reconfiguring local food systems and putting producers at the heart of the system, will be embraced during this research.

One of the key elements of food sovereignty is the right to culturally appropriate food. There is also a reference to the importance of access to culturally appropriate food in the WFS’s definition of food security, “when all people…. (have) access to… food which meets their dietary needs and food preferences for an active and healthy life” (FAO, 2002, p. 49). Food security is contextualised by the social, environmental and cultural conditions of the community. Within communities that rely on traditional food systems it is critical to consider how this reliance impacts the four pillars of food security: access, availability, utilisation and stability. Moreover, utilisation of traditional food systems is closely linked to the cultural identity of the community.

Power (2008) proposed another layer of food security, “cultural food security”, as the capacity of individuals to access culturally significant food through traditional methods (Power, 2008). In communities that rely on mixed or social economies for subsistence, the integration of food provisioning through traditional methods, coupled with purchasing at shops, must be considered in relation to food security (Wald & Hill, 2016). For example, the food security of Inuit communities in Northern Canada, while dependent on access to store bought foods, is largely driven by social networks and access to traditional foods (Harder & Wenzel, 2012). Cultural food security is also an important consideration when addressing food security of minorities or immigrants. The failure to obtain culturally appropriate foods and/or foods that were perceived as familiar or the inability to practice traditional food ways is detrimental to food security and well-being of immigrant households (Moffat et al., 2017). Access to resources such as land contributes to achieving cultural food security and reasserts the principles of food sovereignty as well as strengthening community cohesion (Rocha & Liberato, 2013). Related to cultural food security is the concept of nutritional culture. Menezes argues that nations must preserve nutritional culture of their peoples as a means to protect
food sovereignty valorising societies that express food ways that are grounded in local context and are socially and economically sustainable (Menezes, 2001).

A concept that unites food security, food sovereignty and cultural food security is community food security. This holistic term can be defined as, “a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through sustainable food system that maximizes community self-reliance and social justice.” (Hamm & Bellows, 2003, p. 37). In brief, the concept, embraces food sovereignty principles by stressing self-determination and equity, acknowledges the significance of socially entrenched traditional food ways and upholds notions found within popular food security definitions. Community food security builds upon the concept of food security but places the household or individual’s level of food security within the community context acknowledging the role of the food system, socio-economic and environmental drivers and provides space to examine holistic solutions. Employing community food security as a lens can achieve problem identification, the proposal of strategies and implementation (Hamm & Bellows, 2003; Winne, 2005). Furthermore, reframing food security within the community context readjusts the scope and how commonly examined characteristics at the household level such as economic and social, relate to geography, sustainability and social justice (Kaiser, 2017).

Fig 1: The convergence of three concepts. The mutually shared components as indicated by the triangle represents community food security as it is inclusive of elements of food security, cultural food security and food sovereignty.

Community food security research is commonly an interdisciplinary field but tends to sit within the domains of sustainable agriculture, hungry prevention and community development (Kaiser, 2017). Only recently has the concept been applied to fisheries. Examining the local
seafood industry in Newfoundland and its contribution to community food security indicated the significance of social economy networks in the provision of seafood as across all income brackets there was equal access to seafood (Lowitt, 2013b). Similarly, in Alaska, community food security is heavily dependent on the availability of local seafood and those in the lower income bracket tend to access fish through alternative pathways such as bartering or sharing. The author goes further to suggest that to enhance the community food security, seafood must be marketed and priced with the aim of reaching local consumers (P. Loring, Gerlach, & Harrison, 2013). A community food security lens was used in this research to capture key drivers and aspects of food security outcomes at the community level. This examination of household food security, key cultural aspects of the local food system and exploring food sovereignty will offer insights into how the local food system can be maintained or enhanced.

2.2 Small-scale fisheries and contribution to food security: Globally and in South Africa

SSF can be broadly described as all activities along the value chain from pre-harvest, to post-harvest processing and the distribution of fishery resources. SSF employ both men and women part-time or full-time and supply products to domestic markets as well as export oriented production (Béné, 2006). The subsector employs 90% of the world’s capture fishers, contributes to half of the global catches and constitutes over 80% of the fish caught for direct human consumption (FAO, 2015). When compared to large-scale commercial fishing, SSF does not greatly contribute to the global economy; however, it serves as an invaluable safety-net function, preventing households from falling deeper into poverty and is often part of a multi-approach livelihood strategy (Allison, 2011; Béné, 2006; Béné, Hersoug, & Allison, 2010).

Actors within this sector claim that it is more environmentally sustainable than conventional fishing practices as the gear is less destructive, fishers tend to be unselective in what they catch therefore waste and by catch is almost non-existent and due to limited mobility stewardship is inherent (Kolding, 2011). Conversely, there are many who point to the economic inefficiency of the sector, the use of destructive gear and overcapacity as well as the vulnerability of fisher communities which disincentivises conserve efforts (Pomeroy, 2012; Selgrath, Gergel, & Vincent, 2018). SSF also face challenges in terms of governance and failed management systems which further exacerbates pressure on natural resources and decreases economic gains (Kosamu, 2015). Lastly, neoliberal policies, export focused markets and ocean grabbing may negatively impact the vitality of SSF and the communities in which they exist (James, Govan, & Satter, 2015; Pinkerton, 2017). Nevertheless, participation in SSF can provide critical work opportunities to the most vulnerable, landless and insecure households (Kawarazuka and Béné, 2010).
Fish and aquatic products are an excellent source of protein and micronutrients. Fisheries and aquaculture provides an estimated 3 billion people with 20% of their average per capita intake of animal protein and SSF are estimated to contribute 80% of the total world catch that is used for domestic consumption (High Level Panel of Experts on World Food Security, 2014). SSF, when compared to large commercial fisheries, provides greater contribution towards food security directly and indirectly as fish is more affordable and accessible to local, immediate communities and SSF provides multiple livelihood opportunities (Allison, 2011; Béné, 2006; High Level Panel of Experts on World Food Security, 2014). As Kawarazuka summarized, SSF contributes to food security through three pathways: direct consumption, income and distribution. In the following three sections, these three pathways will be highlighted (Kawarazuka & Béné, 2010a).

The nutritional benefits of fish are widely known and documented in literature. Fish provides a valuable, often inexpensive, source of protein rich in nutrients and micronutrients (Béné et al., 2015; Kawarazuka & Béné, 2010a). In addition, fish is a source of fatty acids which aids in neurological development, it enhances uptake of micronutrients from a plant based diet and is rich in zinc (Bogard et al., 2015; Karapanagiotidis et al., 2010; Kawarazuka & Béné, 2010a; Thilsted et al., 2016). Fish is particularly important for the nutrition of poor populations who largely rely on staple foods such as rice, wheat or maize which lacks significant quantities of nutrients and micronutrients. The consumption of fish can make the difference between poor health, starvation and poor nutrition versus recovered health, a nutritious diet and a food secure household (Béné, 2006).

Unfortunately, availability and access to marine resources does not necessarily translate to increased consumption, more nutritious diets and reduced food insecurity. Fishery dependent communities often face food shortages and food insecurity. In 1974, the FAO acknowledged that people engaged in small-scale fisheries operated at the margins of subsistence and were highly vulnerable to food insecurity (Béné, 2006). Moreover, there are mixed findings within literature comparing fish consumption and food security with fisher households and non-fisher households. In Kenya, there was no apparent difference in consumption of fish and food security between fisher and non-fisher households (Fiorella et al., 2014). Whereas in Nigeria, when coastal and inland community fish consumption was compared, fisher households consumed twice the amount of fish (Kawarazuka & Béné, 2010b). In other countries the household consumption of fish may be determined by market access and prices. In Papua New Guinea, approximately 15% of the catch was kept for household consumption but in Laos over 70% of the fish caught was eaten by the household (Garaway, 2013; Kawarazuka & Béné, 2010a). Availability and access does not directly translate into increased fish
consumption and food security as fisheries systems are complex webs driven by factors such as the market, social economy and cultural preferences (Fabinyi et al., 2017).

Thirty million full time or part time fishers make a living from the SSF sector and an additional 68 million individuals are involved in pre- and post-harvesting livelihood activities (High Level Panel of Experts on World Food Security, 2014). SSF contributes indirectly to food security through income pathways. The sale of fish can help households obtain money to buy key staples such as rice as well as vegetable that they may be unable to produce on their own (Fabinyi et al., 2017). Income generated from SSF can represent a large portion of household revenue. For example, in the Democratic Republic of Congo, fishing revenues made up 61% of household income and for 30% of households, fishing was the sole income source (Béné, Steel, Luadia, & Gordon, 2009). Part-time involvement in fisheries can provide vital income during lean seasons where the main livelihood is not as profitable. Whether or not income from the sale of fish is used to purchase nutritious and high quality food is largely undetermined as the number of nutritional studies examining this remain limited (High Level Panel of Experts on World Food Security, 2014; Kawarazuka & Béné, 2010a).

The contribution of fish to food security depends on the distribution pathway, that is, how fish is shared, received and dispersed throughout a community. The distribution pathway can be heavily influenced by gender roles, the social economy of the community and cultural practices. While women’s role in fisheries goes largely unrecognised, women make up approximately half of the workforce involved in activities along the SSF value chain which can determine the contribution of the sector to household food security. The approximate 45 million women involved in fisheries undertake mainly pre- and post-harvesting activities but this varies by country (High Level Panel of Experts on World Food Security, 2014; Kawarazuka & Béné, 2010a). Women’s participation in processing and selling fish contributes directly to their children’s nutrition and in Papua New Guinea, women fished primarily for household consumption (Friedman, 2009). Furthermore, in South Africa, 32% of those in the fisheries sector are women who mainly work in processing therefore obtaining an income for food expenditures (Harper, Grubb, Stiles, & Sumaila, 2017).

The culture of coastal communities is often strong due to commonalities such as shared challenges, reliance on natural resources and a strong occupational identity. A culture of collective action and common social norms effects food practices and the social economy of the community which in turn impacts the food security of the community. In coastal areas, fish and fishing are woven into the food and cultural traditions. Donating fish to cultural activities or sharing fish with families and elders maintains social cohesion (P. Loring et al., 2019). In Newfoundland, fish consumption across all income brackets was the same due to sharing practices and fish was sold at lower prices based on social networks (Lowitt, 2013b). Local
seafood was commonly obtained by bartering, sharing and trading for lower income residents in Alaska (P. Loring et al., 2013). Socio-economic relationships also determine financial arrangements and income of fishers as they are cautious to reconfigure value chains and social solidarity often determines decision making (Adhuri, et al., 2016). While there is a large amount of literature outlining the contribution of SSF to food security it is important to closely examine the pathways at the community level to arrive at deeper understanding (Harder & Wenzel, 2012).

The South African food system is both complex and conflicting as it is composed of large-scale industrial and export geared enterprises while at the same time smallholders, subsistence producers and small traders operate within informal markets. Food system governance remains splintered and despite attempts to develop and implement a food security strategy, actors within the government often fail to acknowledge the need to enact a transdisciplinary approach in cooperation with non-governmental actors (Pereira & Drimie, 2016). Food security strategies and food policies in South Africa have mainly been framed as an agricultural production issue and fisheries as a contributor to food security has been largely absent from the narrative.

The siloed approach to addressing food security, coupled with the political marginalisation of small-scale fishers in South Africa, has resulted in a limited selection of literature examining the contribution of SSF for food security; however, within the current literature there is a consensus that small-scale fishers are reliant on marine resources for food security. A survey between 1999-2000 in small-scale fisher communities revealed that most marine sources caught were sold, consumed or used for bait and levels of food insecurity ranged from an average of 43.1% on the West Coast to 57% on the East Coast (Raemaekers et al., 2013). Isaacs’s 2011 study on the Snoek value chain in one fisher community, 43% of respondents stated that Snoek was their main protein source and their preferred form, suggesting the significant role of locally caught seafood for food security (Isaacs, 2013). In another study, the impact of interim relief measures, temporary fishing access rights granted during fisheries reform, on household food security indicated that consumption of fish in fisher households increased once the permits were allocated. Moreover, the increase in permits enabled the greater community to purchase fish as the price decreased and fish were readily available from local fishers (Shanyengange, 2009). Similarly, in Lambert’s Bay, 81% of interim relief permit (IRP) holders interviewed stated engagement in fisheries was contributing directly to household consumption as residents were consuming fish at least twice a week (Nthane, 2015). Lastly, in the community of Kalk Bay, the negative effect of fisheries policies on access to fish for food security resulted in decreased household food security (Nkomo, 2015).
The South African fisheries model is geared towards industrial export fisheries as approximately 50% of the total landed catch is exported. Species, such as Snoek and West Coast Rock Lobster (WCRL), once a primary food source in poorer coastal communities, have now been incorporated into international markets, negatively affecting local diets (Isaacs, 2013; Schultz, 2016). Policy reform in the late 1990s excluded many poor and food insecure subsistence fishers who did not qualify for fishing rights, as the marine resources near them were not considered low economic value and deemed inappropriate for subsistence (Merle Sowman et al., 2011). While empirical evidence regarding the contribution of SSF for food security in South Africa is limited, many researchers are calling for its recognition in national food security policies and fundamental changes to legal frameworks such as allocation processes that recognize SSF for local food security contributions and improved local markets (Isaacs, 2013; Merle Sowman & Cardoso, 2010).

2.3 Fisheries value chain and direct marketing

The contribution of fish to the food security of local communities is often compromised by local, regional and global value chains that reduces the direct and indirect benefits received by fishers. Fish is one of the most traded food commodities on the planet and the globalisation of the fisheries value chain has an immense effect on harvesting and consumption patterns (Hamilton-Hart & Stringer, 2016; Thilsted et al., 2016). A value chain can be defined as series of business functions that results in the creation of a product or service from the provision of inputs to the final sale of such a product. It includes all transactions and involves various actors through a series of activities: product development, marketing and distribution (Springer-Heinze, 2017). Value chains represent relationships between buyers and suppliers and the movement of a good to the consumer (Bolwig, et al., 2008). A fisheries value chain can be complex with many actors involved along the global distribution and processing phase or simplified if fish are consumed locally and moves direct from the fisher to the buyer. In the section below, conventional SSF value chains will be described and alternative arrangements that increase and shift the benefits to small-scale fishers will be examined.

Transactions along the global fisheries value chain are shaped by policy makers and industrial players who make decisions along the product path that determines the value extracted along the chain, who is benefitting and the sustainability of the sector. Global food value chains have fuelled demand-driven and import-reliant markets to satisfy the increasing consumption from middle and high income countries placing significant pressure on fish stocks and the environment (Wilkinson, 2006). This in turn impacts domestic consumption of fish in low income countries as they commonly provide high value fish to export markets and rely on lower quality fish for their own diets. While fish exports may increase income, it is unclear the extent of the contribution to the food security of fishers. An FAO study in 2004 suggested that
international trade of fish products had a positive effect on local food security. Conversely, research completed by World Fish indicated that fish exports may decrease the amount of fish available for domestic consumption and much of the profits are captured by large private sector entities (Bjorndal et al., 2014). Power imbalances along the value chain often result in small-scale producers receiving the smallest piece of the pie. Findings across 11 county case studies indicate that small-scale fishers obtain the smallest financial profit out of all other players on the value chain (Béné et al., 2015; Bjorndal et al., 2014).

At the community level, value chain actors, in particular middlemen may inflict both positive and negative outcomes depending on the fishery and relationships. Middlemen play an important role in providing credit, logistic support, access to markets, capacity building and may support community initiatives such as infrastructure development. The extent of the positive impact is often related to whether or not the relationship perpetuates dependency and ignorance (Bailey, Bush, Oosterveer, & Larastiti, 2015). One could say that without middlemen, fishers and their communities would not sufficiently benefit from their resources. Globally and in South Africa SSF value chain transactions are heavily embedded in social networks that determine the rules of engagement between the fisher and buyer (Hamilton-Hart & Stringer, 2016; Wentink, Raemaekers, & Bush, 2017). Fishers operate within complex socio-economic networks with buyers and this often develops into a moral economy with high levels of dependency, patronage relations and a reluctance to defy the status quo (Adhuri et al., 2016; Kusumawati, Bush, & Visser, 2013). SSF value chains in South Africa appear to be relatively informal when compared to large-scale fisheries as there are fewer actors and minimal post-harvesting activities (Schultz, 2016). For example, the Snoek value chain may flow similar to this: the fish is caught by the rights holder, purchased by the local buyer at the landing, the product is then sold to the community from a pickup truck (Isaacs, 2013). As uncomplex as it may seem, the value chain, based upon local socio-economic arrangements, is rife with power imbalances and fishers are often the price takers not price makers. Buyers willingly place themselves within the value chain and assist with provision of supplies as well as credit. This strategic positioning within the value chain and the informal credit systems occasionally results in fisher indebtedness and they are forced to sell their quota at a lower price for the following season (Nthane, 2015; Wentink et al., 2017). In South Africa, SSF value chains as described above, often undermine the contribution of SSF to the food security of fisher communities.

Value chain development or value chain upgrading commonly aims to rebalance power relationships and shared benefits between actors, the quality of the product produced and the efficiency of the movement of materials (Bolwig et al., 2008; Springer-Heinze, 2017). When conventional SSF values chains are examined for value chain development and if the goal is
to evenly redistribute the risks and rewards, the relationships between actors should be reassessed including the participation of the small-scale fishers (Springer-Heinze, 2017). In addition, the integration of social, labour and environmental considerations to mitigate negative impacts such as ecological degradation associated with unsustainable fishing methods can also be considered when seeking to upgrade the fisheries value chain ("2.8.1. Types of Upgrading | Marketlinks," n.d.). Over the last two decades, demand driven, market based social change initiatives that upgrade the value chain have taken the form of certification schemes such as Fair Trade, Marine Stewardship Council (MSC) and Forest Stewardship Council (FSC). Alternative food networks (AFN) such as community support agricultural or community supported fisheries (CSF) also aim to redevelop value chains by providing more benefits to the producer, mitigating social and environmental impacts and shortening value chains. CSF could be a viable option for the restructuring of SSF value chains to mitigate the negative impacts and maintain the contribution of SSF to the food security of fisher communities.

AFNs embody principles and values similar to those found within certification schemes but differ from conventional food value chains as they promote traceability and transparency, aim to shorten the value chain and encourage just prices. These networks are composed of producers, consumers and other actors who embrace food movements that are counteractive to industrialise, super market-led food systems (Desrivières, Chuenpagdee, & Mather, 2017; Forssell & Lankoski, 2015; Rentingô, Marsden, & Banks, 2003). The most commonly used definition is from Feenstra (1997), “rooted in particular places, AFNs aim to be economically viable for farmers and consumers, use ecologically sound production and distribution practices, and enhance social equity and democracy for all members of the community.” (Tregear, 2011). The main objectives of AFNs are to address negative environmental, social and cultural impacts of the mainstream food systems as well as simplifying value chains. Common forms of AFNs include farmers markets, community supported agriculture, food co-ops and restaurant supported fisheries (RSF).

Literature illustrating the positive outcomes of agricultural AFNs state that they provide healthier food for communities, increased income for small producers, reduced carbon footprints related to production and distribution and employ ecologically friendly farming practices (Rentingô et al., 2003; Tregear, 2011; Whatmore et al., 2003). AFNs are also touted to promote reconnection and social cohesion in food systems through the development of relationships between the producer and consumer (Desrivières et al., 2017). Recent evidence sheds light on the negative outcomes of AFNs associated with farmer exploitation due to increased workload from direct market schemes or more time intensive harvesting practices. Products sold through AFNs tend to cater to higher income populations and increased prices.
make products inaccessible for low income populations (Desrivières et al., 2017; Farmers, Galt, & Hall, 2013). Competitive market dynamics can push producers to become exploitative, have less time to dedicate to building relations with consumers, and contribute less to community initiatives undermining the values of AFN. ( Farmers et al., 2013; Galt et al., 2016). There is limited literature on the impact of CSAs on producers’ diets but in one South African study, results indicated that producer household consumption was negatively impacted as they switched they type of crops to satisfy CSA customer needs reducing the amount of vegetables for household consumption (Kirkland, 2008).

CSFs and RSFs are two recent forms of AFNs and therefore literature examining this direct marketing scheme is limited. CSFs promote the viability of coastal communities, fair and simple supply chains, environmental stewardship while at the same time supplying the consumer with a quality product. Evidence does point to many market and non-market benefits of community supported fisheries including fair and higher prices, consistent income, provision of high quality sustainably caught fish, preservation of coastal economies, direct interaction with fishers and consumers (Brinson et al., 2011; Stoll et al., 2015). CSFs can result in reduced environmental impacts by lessening the carbon footprint through decreased distribution distance (65km from 8812km), the promotion of highly abundant stocks increase sustainability and CSF have ability to incentivise lower impact gear and promote local markets (McClenachan et al., 2014). The revival of localized fisheries system through AFNs in Newfoundland are a means to re-engage consumers with their food system, culture and traditions while at the same time improving access for local populations (Desrivières et al., 2017). The emergence of CSFs in response to the globalised commercial fisheries food system is relatively new and novel with much of the literature focused on the positive aspects such as the environmental and economic outcomes predominantly based on case studies in North America. It is argued that an AFN, or some form of a reconfigured market, could provide the grounds for prioritizing the interests of the small holder in terms of food sovereignty and outcomes related to livelihoods and food security (Ros-Tonen et al., 2015).

2.4 Conclusion

SSF contribute to food security directly through consumption and indirectly through the provision of livelihoods, both part-time and full-time. SSF provide an important and affordable source of protein for communities globally. In addition, fish is often considered a key part of the culture of coastal communities rooted in traditional foodways and social networks. Despite the role of SSF for food security, fishers face challenges related to competition with the industrial sector, value chain dynamics, governance issues and a decline in species abundance. Understanding and examining the contribution of SSF to community food security
through a community food security lens, enables a deeper understanding of the role of fish and how institutional, environmental and economic factors influence food security outcomes.
Chapter 3: Methods

This chapter describes the approach and methods employed to conduct the research. The overall aim of the thesis was to investigate the contribution of SSF to the food security of one South African coastal community. The three research objectives were addressed by utilising a mixed methods approach as it enables the investigation of the multiple dimensions of food security (Claasen et al., 2015; Degefa, 2006). There were three main components of data collection: household survey, focus group discussions (FGD) and a scenario planning workshop. These are explained in detail below and supporting information can be found in the annex. In this chapter, ethical considerations, data analysis methods and research limitations are also described.

3.1 Research Approach and Strategy

This study implemented a mixed methods approach through a community food security lens to examine the contribution of SSF to the food security of one South African coastal community. Lambert’s Bay served as the location for the case study which can be broadly defined as “an intensive study of a single unit for the purpose of understanding a larger class of (similar) units.” (Gerring, 2004, pg 342). The unit, in this instance is a spatial bounded location, Lambert’s Bay, which was examined through a variety of methods over a period. Applying a case study approach was appropriate for this research as it promoted the utilisation of a holistic investigation through both qualitative and quantitative methods (Tellis, 1997). The case study approach enabled the researcher to formulate an in-depth picture about the topic of interest (Flyvbjerg, 2006). Furthermore, given the shared values and nature of coastal communities across South Africa, insights drawn from this research will enrich the understanding of food security issues in analogous communities.

Defining and measuring food security is not an easy task as there are many of dimensions and approaches (Cochrane, 2017). Therefore, examining a complex and intricate topic such as food security requires a comprehensive and diverse set of methods. The researcher employed a mixed methods approach to examine the contribution of SSF to food security in Lambert’s Bay. A mixed methods approach employs both qualitative and quantitative procedures to collect and analyse data (Cresswell et al., 2003). Advantages of a mixed methods approach include: reduced limitations of methods as using a variety will help to nullify certain weaknesses of each tool, a variety of methods can strengthen the study as findings can be substantiated by each other and lastly, certain multidimensional topics, such as food security, are best examined with a variety of methods (Cresswell et al., 2003). Applying this approach also has some disadvantages such as increased field work and associated resource allocation, increased possibility of contradictory findings and it requires an understanding of both qualitative and quantitative skills (Degefa, 2006). These shortcomings were mitigated by
selecting effective tools in consultation with a multidisciplinary team and adjusting methods based upon the researcher’s capacity and contextual characteristics. Food system researchers are promoting the application of mixed method approach for food security research as the variety of tools enables the examination of food security across multiple dimensions such as access, preference and culture (Degefa, 2006). In Claasen et al.’s investigation of sustainable diets in South Africa, they endorsed the benefits of mixed methods, “Given the wide spectrum of factors that influence the concept of sustainable diets, transdisciplinary and mixed methods inquiry can support better the investigation of the whole spectrum of factors involved” (Claasen et al., 2015, p. 71).

For this research, the qualitative methods helped to explain quantitative findings. A household survey was utilised to capture basic socioeconomic data, levels of household food security and consumption and access to fish. The researcher captured qualitative data to complement the household survey through FGDs exploring key dimensions of community food security including culture and perceptions. Lastly, the researcher met with key actors and held a participatory scenario development workshop to examine potential reconfigurations of the current SSF value chain to increase access and availability of locally caught fish to the community. In the sections below, each of these methodologies will be explained in detail.

3.2 Case study location: Lambert’s Bay

Lambert’s Bay is located along the west coast of South Africa approximately 250km north of Cape Town in the Cederberg Municipality. Originally the area was referred to as Otterdam but in 1913 it was renamed as Lambert’s Bay after Admiral Lambert of the British Navy who surveyed the area in the mid-1800s. It is a small, rural coastal community with a total population of 6120 individuals and 1710 households. 74.5% of the population define themselves as Coloured, followed by 15.9% White and 9% Black African (Stats SA, 2011). 90% of the population speaks Afrikaans as their mother tongue. It has a Mediterranean climate receiving an annual rainfall of 152mm mainly in the winter months. Average daytime temperatures range from 18 degrees Celsius in July to 28.8 degrees Celsius in February (http://www.saexplorer.co.za/south-africa/climate/lamberts_bay_climate.asp).

The fisheries sector, mainly the small-scale sector, remains a contributor to local livelihoods in Lambert’s Bay. Under this research the small-scale sector will be the main area of interest. There are approximately 150 small-scale fishers who hold a permit. During this research, legally, there were no fishers who held a small-scale permit as the policy was yet to be implemented but for this research, the term is used to refer to a fisher who holds one of the following permits unless otherwise specified: long term near shore commercial permit for WCRL, long term near shore commercial line fish permit, interim relief permit (IRP) for linefish
and IRP for WCRL (Pers comm Raemaekers 2019). The majority of small-scale fishers in Lambert’s Bay hold an IRP permit and in 2019, 122 fishers had an IRP for either WCRL or linefish. There are between 20-30 long term near shore commercial rights holders for WCRL or linefish (Pers comm Raemakers, 2019). The most commonly harvested species include Snoek, WCRL and Cape bream. The community is known as a fishing enclave; however, changes within the sector coupled with stock reductions has left many fishers seeking alternative livelihood opportunities. Employed residents work in sectors such as retail, tourism, agriculture, domestic work and skilled labour. One of the main employers is the potato chip factory which employs approximately 100 individuals and 46.3 % of the population is unemployed (Stats SA, 2011).

Figure 2: Location of Lambert’s Bay, Western Cape (https://www.za-venues.com/maps/western-cape-regional.htm)

Lambert’s Bay is located along the Benguela Current and its waters were abundant with species such as West Coast rock lobster (*Jasus lalandii*) (WCRL), Snoek (*Thyrsites atun*), Jacopever(*Sebastes capensis*), Mullets (*Chelon richardsonii*), Pilchards (*Sardinops ocellatus*), Horse mackerel (*Trachurus capensis*) and Cape Bream (*Pachymetopon blochii*). From the early 1900s the fishing sector was diverse and rich as it employed numerous
individuals, both men and women, and activities ranged from near shore subsistence harvesting to trawling to post harvest work at canning facilities (Lambert’s Bay Museum). Fishermen earned an income and provided for their families by harvesting with row boats and handlines or trek nets. Fishers harvested in boats ranging from 20-28 feet with four to five sets of oars up and down the coast from Elands Bay to Donkins Bay. The opening of the first WCRL canning factory in 1918 was a catalyst that transformed the tiny settlement into a booming fishing town for over half a century. By the 1930s there were two canning factories operating and in 1943 pilchards and mackerel were also canned. The expansion into fish meal as well as fish oil resulted in an increase in employment as men were employed on trawlers. The canning factory ceased operation in the early 1980s and the fish meal plant closed in the early 2000s. As mentioned above, this research will focus on the small-scale fisheries sector; however, the rich history of the community’s fishing sector provides context for their cultural connection to marine resources.

3.3 Data collection

3.3.1 Scoping

Prior to conducting data collection in the community of Lambert’s Bay, a series of three scoping and orientation trips were conducted between June 20, 2018 and September 7, 2018. The purpose of the scoping and orientation trips was threefold. Firstly, the scoping visits enabled the researcher to familiarize herself with the geographic composition of the research site for logistical purposes. Secondly, it enabled the researcher to initiate and develop relationships with key actors. Lastly, visits to the community equipped the researcher with information required to fine tune research methodologies, timeline and general research plans. The initial scoping visit entailed of a meeting with the ABALOBI co-founder and community engagement director. The researcher gained insights into the research topic, the culture of the community, and general characteristics and conditions of the community. The initial visit allowed for a deep reflection regarding the research aim, objectives and methods and the researcher adjusted plans based on these valuable insights. A second scoping trip to Lambert’s Bay was made in mid-July and the researcher met with a woman fisher to gain information about women’s role in fisheries, perspectives about household food management and community food security. The third scoping trip entailed of meetings with the ABALOBI community engagement director to review the household survey, meet with research assistants and finalise logistics. The three scoping visits permitted the researcher to gain a better understanding of the community and establish a joint understanding of the research objectives with her key contact person and research assistants.
**Table 1: Data collection phases**

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<tbody>
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<td>Scoping</td>
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<td>June 20- September 3, 2018</td>
</tr>
<tr>
<td>Household Survey</td>
<td>40</td>
<td>October 3 – October 15, 2018</td>
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<tr>
<td>Focus groups discussions</td>
<td>4</td>
<td>February 13- February 19, 2019</td>
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<td>Scenario planning</td>
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### 3.3.2 Household survey

Quantitative household level socio-economic and food security data was generated by employing a household survey. This research tool enables one to collect and analyse data to understand specific characteristics of a population or subpopulation (Creswell & Creswell, 2018). For the purposes of this research, the household unit was defined as, “a group of two or more persons living together who make common provision of food other essentials for a living” (Department of Economic and Social Affairs, 2017).

The household survey sought to provide descriptive statistics of the profile of the target group and was comprised of three sections. It was the main tool used to address study objective number one: examine levels of household food security. It also captured information to fulfil objective number two: to understand perceptions of food security and food culture. The first section included basic socio-economic questions including a section about marine resource use. The second section was comprised of questions related to household food consumption and purchasing practices with a focus on fresh or dry fish. Thirdly, the survey obtained household food security information by utilising four different measures: the household food insecurity access scale (HFIAS), household food insecurity access prevalence (HFIAP), household dietary diversity score (HDDS) and months of adequate household provisioning (MAHFP).

The HFIAS asked nine questions to assess the occurrence of household food insecurity over the previous four weeks and the HFIAP is derived from these questions to serve as an indicator that can report food insecurity prevalence (Coates, Swindale, & Bilinsky, 2007). HDDS and MAHFP are also indicators of household food access. HDDS gathers information on the number of food groups consumed over a given period of time – most commonly over a 24-hour period. It is a good proxy for measuring household food access as a more diverse diet is often associated with beneficial nutrition and health outcomes (Swindale & Bilinsky, 2006). MAHFP captures changes in a household’s capacity to ensure a sufficient supply of food is available all year by asking what months the household did not have enough food to meet its needs (Swindale & Bilinsky, 2010). The survey was developed through a reiterative process whereby the researcher drafted the questionnaire and it was reviewed and revised in
collaboration with supervisors and local contact persons to ensure it was contextually appropriate. The survey was translated by a Lambert’s Bay community member and then reviewed by the community engagement coordinator. Following the review of the translated survey, the researcher and the main contact person trained and tested out the pilot questionnaire with the two research assistants. Both research assistants had previous experience collecting data but neither had experience with household food security questionnaires. The survey was tested on four individuals. After the questionnaires were piloted the researcher met with the research assistants to evaluate the process and make the necessary revisions. The review of the survey, testing and final revisions took place two weeks before the household survey was conducted (Annex A).

3.3.3 Sampling

When undertaking the household survey, the researcher focused on two population groups: small-scale fisher households and non-fisher households. Small-scale fisher households were defined as those with at least one active fisher who had fished over the last 12 months. Non-fisher households did not have an active fisher but may have had a member who was a fisher in the past, for example a widow whose deceased husband was a fisher. The researcher employed two sampling approaches to select households in each subset. When selecting fisher households, a systematic random sampling approach was used by choosing households from a list of current registered fishers (Alvi, 2016). Households were chosen randomly from DAFF’s list of “Permit to harvest marine resources under interim relief dispensation” (Department of Agriculture Forestry and Fisheries, 2018). Both the IRP list and the near shore commercial permit list were reviewed however; the IRP list was used because the majority of fishers held this type of permit. In addition, past research conducted by Nthane in 2015 suggested that near shore fishers were better off, and the researcher wanted to target fishers from a lower socioeconomic bracket.

Once the researcher established a list of 20 randomly selected fishers, their fishing status was verified with the research assistants to ensure those selected were actively fishing and the location of the house was mapped on a printed map of the town taken from Google Earth. If the preselected fisher household was unwilling to participate, the researcher returned to the fisher list and selected another fisher or the research assistants identified a fisher in the particular neighbourhood. A maximum variation sampling was employed to determine non-fisher households. This method tends to be more representative than a random sample when the sample size is small because it ensures a range of extremes are drawn upon (Elder, 2009; Lowitt, 2013b). The researcher selected a range of characteristics that best represented the community and provided the broadest variety of perspectives. Households were selected based on three main characteristics: socioeconomic status, conjugal status and race.
Research assistants helped the researcher to draw up a list of half of the target sub sample and then relied on snowball sampling to identify the remaining 10 households as the survey was carried out.

At each household, the researcher interviewed the household food manager as the focus was centred on household food access, consumption and food practices. The household food manager can be defined as the individual who is responsible for the provision and preparation of food within the household. Out of the 40 interviews conducted, 37 were female household food managers and three were completed by the male household food managers who were either widowers or living with their elderly parents.

### 3.3.4 Conducting the household survey

The household survey was completed between October 3, 2018 and October 15, 2018. Two research assistants supported the selection, identification and introduction of the researcher to the respective household food manager. All of the interviews were conducted in Afrikaans and because the researcher did not speak Afrikaans the research assistants would ask a series of questions according to the survey and following the response (depending on the length), the dialogue would be translated. After piloting the survey and the first initial surveys, a good flow of translation was established between the researcher and the research assistants. During the first four surveys both assistants conducted the interview and for the remaining 36 interviews, the researcher and one research assistant conducted the survey.

A portion of the interviews were completed upon arrival at the respondent’s house and a number were prescheduled. Each interview would begin by describing the study, the objectives and obtaining oral consent from the participant (Annex A). There was time allocated for further introductions, initial questions and general conversation. The research assistant began the interview and filled in the questionnaire while at the same time translating responses to the researcher who was taking notes. On average, four interviews a day were completed, starting at 9:30AM and finishing around 4:30PM. 33 interviews were conducted in the respondents’ homes, four interviews were conducted at the local school as the respondents were working with the expanded public works program, two interviews were conducted in the researcher’s car and one interview was conducted at the house of a neighbour. All but six interviews were done with only the respondent present. Two interviews were conducted in the presence of the respondent’s husband, one conducted with a teenage child and two interviews conducted in the presence of a close family friend. Interviews lasted approximately one hour. At the end of the day the researcher and the assistants reviewed the completed questionnaires for quality control and to discuss the information. The researcher scanned and saved the questionnaires each evening and transcribed notes into electronic file.
3.3.5 Focus group discussions

The purpose of an FGD is to gather in-depth information on the ideas and perceptions of a group about a chosen topic. A facilitator(s) guides the participants to discuss predetermined topics through the use of specific discussion guide lines. (Krueger et al., 2000; Nagle, B. & Williams, 2011). FGDs have had increased popularity over recent years across several disciplines as it can gather information efficiently. FGDs provide the researcher with deeper insights into the topic being examined and supplies information that can complement quantitative data and other data collection tools. It enables the researcher to gather information about shared experiences and elements that may not be unearthed when utilizing other methods. Another benefit of FGDs is that the group interaction creates an environment that enhances dialogue and participants make connections between concepts that may not occur during one-on-one interviews (Krueger et al., 2000; Nagle, B. & Williams, 2011). Conversely, some research topics may not be conducive to this method as participants may hesitate to take part in the discussion. Group dynamics or the presence of some individuals may have negative effects on the participation of other members of the group such as fostering group conformity, limiting participation or dominating the conversation (Krueger et al., 2000).

FGDs were used to complement data collected through the household questionnaires and to delve deeper into emerging trends. The researcher developed and conducted the FGDs following a preliminary analysis of the household surveys. The FGDs were carried out between February 13, 2019 to February 19, 2019 in Lambert’s Bay. FGDs were disaggregated by sex to understand differences in perception related to gender and livelihood roles as well as ensuring that participants felt comfortable to speak. The two research assistants that conducted the household surveys identified and recruited individuals to participate. The male target group were men that were currently small-scale fishers and older fishers who had approximately over 30 years in the fishing industry in Lambert’s Bay. Similarly, the women that participated were active fisherwomen and older women who had a long-standing history with fisheries through direct participation or family affiliation (husbands, fathers, etc.). The researcher aimed to recruit five to seven individuals for both groups respectively to ensure optimal interaction and engagement. The researcher was able to recruit five women and five men to participate in the FGDs.

The FGDs were held at the ABALOBI office over four mornings as the women participated in two morning sessions and the men participated in two. One of the research assistants served as the co-facilitator with the researcher and acted as a translator. The other research assistant helped with note taking, translation and ensuring the discussions ran smoothly. Both research assistants worked with the researcher for two days prior to the meetings to learn and review
the facilitation guide. The meeting was held around a table, discussion was audio recorded and exercises and notes written on flipchart paper. Discussion was conducted in an informal manner and the guide was loosely followed as the researcher allowed for associated discussion to flow if information was relevant and rich. The FGD guide was based upon key research objectives and emerging trends from the household survey. The guide can be found in the annex and findings will be discussion in subsequent chapters (Annex B).

3.3.6 Scenario Planning

The participatory scenario development (PSD) tool is a method that allows participants to brainstorm and describe possible futures. This process actively engages with community members to think about and discuss future challenges, opportunities and action plans related to the topic at hand. Moreover, it brings together actors who can develop a shared understanding of potential impacts, positive and negative, associated with plausible plans. PSD can be used to develop policies and plans and is a useful tool in complex situations where future situations are uncertain (Roland, Cross, & Hartmann, 2014). PSD was employed to examine potential scenarios that could increase or maintain the consumption of local fish by community members.

The PSD meeting was carried out following the surveys and FGDs. It was held on May 28, 2019 at the ABALOBI office. Eight community members participated in the meeting, two active ABALOBI fishers, three members of the ABALOBI women fishers’ group and three inactive fishermen. Participants were identified and invited by the researcher prior to the meeting. The researcher developed the facilitation guide based on information derived from a World Resources Institute guide and a World Vision UK report (Addison & Ibrahim, 2013; World Resources Institute, 2016). The guide was reviewed by the researcher and co-facilitator and adapted based on the local context and participants. The researcher and co-facilitator, who also works with the community, organized and ran the meeting. The meeting was conducted in Afrikaans and the co-facilitator also acted as the translator. The discussion was recorded, and notes were taken with the consent of the entire group.

The meeting was comprised of three main components to address the objective: to identify scenarios that maintain or enhance community food security by providing access to fresh and affordable fish for local community members. The researcher reviewed main findings from the household survey to frame the discussion, stimulate discussions and obtain feedback from the participants. The second, and main, part of the meeting focused on identifying options that would increase or maintain level of consumption of local fish for community members. The group brainstormed options and ideas on paper. Lastly the group reviewed two of the options
and identified key enabling factors for each of the situations to work. The facilitation guide can be found in the annex (Annex C).

### 3.4 Data analysis

Data analysis was performed with Microsoft Access and Microsoft Excel. Data collected from the household surveys was inputted into a database the researcher created in Microsoft Access. The database was organised and using the pivotable function in Microsoft Excel, the original database was exported into Microsoft Excel. Trends and relationships were explored and further analysed in Microsoft Excel and the researcher developed graphs and tables that depicted key findings. Notes taken during the household surveys were transcribed into Microsoft Word and this information was using to complement quantitative data. Qualitative data from FGDs and the scenario planning meeting were voice recorded, notes were taken during the discussions and where applicable diagrams made and photographed. During the FGDs and the scenario planning meeting, one of the research assistants would translate throughout the discussion and this was captured on the audio recordings. Recordings and notes were translated and transcribed into Microsoft Word.

### 3.5 Ethical considerations

The Faculty of Science Research Ethics committee at the University of Cape Town granted the researcher ethical approval: FSREC 66-2018. Key considerations such as the use of recordings, photographs and confidentiality as well as the development of a consent form. These considerations were adhered to throughout the course of the researcher’s data collection activities and interactions with community members (Annex D).

The researcher strove to do more than just informed consent throughout all stages of research by considering her perceived position of power and privilege, the need to uphold and safeguard needs of subjects and ensuring the consideration of shared community values were maintained. Many of the respondents were lacking sufficient economic resources, experienced years of institutional marginalization and faced other hardships. The researcher, coming for a perceived position of power, coupled with contextual considerations, understood the need to be sensitive to the fact that respondents may see issues through a different lens (Benatar, 2002). While working with a local organization, ABALOBI, and community members, the researcher ensured that common values of respect, trust and communication, were upheld to ensure a rich collaboration and the research would be mutually beneficial. Four key principles shaped the researcher’s engagement with participants and the researcher ensured they: understood the purpose of the research; had the opportunity to pose questions and have them answered; gave informed consent and; were not coerced into participation (Benatar, 2002). During data collection further measures were taken to ensure the welfare of the
research participants was protected and their integrity was respected (Benatar, 2002; George, 2016). Interviews were completed in comfortable settings, each participant treated appropriately, suitable language used, and participants were given the choice when and where to carry out the interview.

The positionality of the researcher in terms of the position they placed themselves utilizing ABALOBI as an entry point and the ABALOBI office for the FGDs was considered by the researcher throughout the process. Working in partnership with a local non-governmental organization (NGO) operating in a historically complex sector may have signalled to community members that the researcher aligned their values to the perceived values of the NGO as well as their social networks and affiliations. The researcher was constantly aware of how the alignment could influence engagement; however, the researcher continually made it clear that it was for research and independent from the focus of ABALOBI. During the household interviews, the researcher’s relation to ABALOBI was not apparent as the interviews were performed in the participants’ homes or neutral location. The FGDs were held at the ABALOBI office and while the participants did not appear to be influenced by the location, they may have subconsciously altered their responses based on their location.

Lastly, gender was considered in terms of how the researcher, a female, was viewed by participants and how the researcher’s gender shaped her engagement. There were no apparent gender biases in terms of how the researcher was perceived during the FGDs but during the household surveys, as most participants were female, they may have felt more comfortable with the researcher. Similarly, the researcher’s engagement in the field may have been influenced by having a higher level of comfort with female participants and thus asking more questions; however, differences were mitigated by using standard questions and FGD guidelines.

3.6 Limitations

Research limitations varied throughout the data collection process depending on the research tool employed. During the household survey one of the main challenges was language as the researcher did not speak Afrikaans. In addition, the researcher was foreign and may have been unaware of some cultural nuances. This was addressed by working with two research assistants from the community who conducted the interviews and translated the responses to the researcher. The researcher worked closely with the assistants before the household survey to ensure they understood the objective of the survey and the quality of information that the researcher was aiming to collect. During the survey, the researcher reviewed the surveys with the assistants at the end of each day to ensure information valid. This also served to overcome any issues related to language barriers. For the most part, the survey questions
were appropriate, and individuals did not have trouble understanding the question or responding; however, when asking about sources of protein, many respondents were unsure about what type of food classified as protein. This was explained by giving the respondent examples of sources of protein. When respondents were asked what their preferred source of protein was many had trouble answering and when the question was reframed as, “if you had the means to buy any type of protein, what would you prefer to eat?”, many respondents could not imagine this situation and stated they would buy food in bulk. While this was a limitation to the household survey information about sources of protein, it also suggested that a segment of the population was in a situation whereby securing basic food stocks was a priority and achieving a balanced diet is secondary.

Four meetings were completed during the FGDs and there were several limitations encountered during this phase of data collection. When meeting with the male participants, it was difficult to get them to focus on the discussion topics because they were very much focused on issues related to permit conditions. They spoke frequently of challenges they faced or other members of the fishing community faced in terms of perceived constraints and the impact on their livelihoods. When speaking to the women, it was easier to hone in on the topics at hand but they was less discussion about general issues such as community food security or household food security issues they may face. This could be attributed to the fact that the women did not feel comfortable speaking in the company of their peers. This limitation was offset because during the household surveys individuals were open and willing to share more information about their personal experiences. The final meeting was held during Snoek season and most of the active fishers were busy therefore there were only two active fishers at the meeting. In addition, the participating women fishers were constrained by time as they worked in the afternoons. Due to the busy nature of the Snoek season and employment obligations the final meeting was condensed into a half day. While it was shortened, the meeting was productive as the co-facilitator and researcher had previous experience engaging with the group and most participants had been involved the previous FGDs or meetings of a similar nature and were familiar with each other, therefore they spoke at liberty and openly.
Chapter 4: Background and context of the study

Small-scale fishers across South Africa have experienced and operated within a dynamic and, at times, unstable political environment in terms of access rights and livelihood opportunities. These conditions, coupled with South Africa’s food environment, has impacted how small-scale fisher communities ensure household and community food security. This chapter will highlight marine resource governance and recount the transformation process designed to grant rights to small-scale fishers. It will then examine food and agricultural policies and describe relevant food security outcomes. Illuminating the food environment and small-scale fisheries governance will provide a backdrop to better comprehend the research.

4.1 Fisheries governance

South Africa possesses rich marine resources and has a long history of fishing. Over time, formal marine governance took shape to safeguard and manage resources for shared benefits. Unfortunately, fisheries management and corresponding policies, has largely favoured an elite minority. The following section outlines marine governance development, focusing on the transformation process following the advent of democracy in South Africa and specifically the development of the small-scale fisheries policy.

4.1.1 Redistribution of fishing rights

During the late 1900s, the South African fisheries sector was dominated by large scale vessels. Commercial fishing rights were held mainly by white owned companies, while black and coloured populations accessed recreational permits or fished illegally (Isaacs, 2006; Isaacs & Hara, 2015; Sowman, 2006a). Systematic discrimination through the use of exclusionary legislation during apartheid left many subsistence and small-scale fishers without legal access to fishing rights resulting in a dire impact on livelihoods and food security (Sowman, 2011). Initial attempts to dispense fishing rights to historically disadvantaged individuals (HDI) occurred in 1992 through the allocation of rights to Fishermen’s Community Trusts (FCTs) by the Quota Board. The allocated catches were insufficient and had a negligible impact on fisher livelihoods. Furthermore, awarded trusts were often organized by those who were not bona fide fishers which caused further dismay within communities. Elite capture of benefits, corruption and limited accountability along with a court ruling stating community trusts were not capable of receiving quotas, led to the termination of FCTs (Isaacs, 2006; Isaacs & Hara, 2015).

In 1994, the ANC’s Reconstruction and Development Programme (RDP) set out to redistribute fishing access rights while maintaining a competitive presence internationally (Isaacs, 2006, 2012; Merle Sowman et al., 2014). The government formalised a new fisheries policy and in 1998 the Marine Living Resources Act No. 12 (MLRA) was promulgated. Under this legislation,
quotas would be allocated to three categories of fishers: commercial, recreational and subsistence. While the MLRA did attempt to redistribute rights to HDIs and marked the first-time subsistence fishers were acknowledged in fisheries legislation, several key issues hindered the realisation of the equitable distribution of rights. It was interpreted that any HDI could apply regardless of their historical dependence on fishing, so the department was inundated with applications from both bona fide fishers and new applicants. This also caused confusion for many who lacked the capacity to navigate the bureaucracy and again, bona fide fishers had limited success obtaining rights (Isaacs, 2006; Isaacs, Hara, & Raakjær, 2007; Sowman, 2006b). Mostly, and relevant for this discussion, was that in the MLRA, small-scale fishers, who engaged in commercial activities were not clearly defined in the MLRA and largely excluded during the initial permit allocation processes (Isaacs & Hara, 2015; Sowman et al., 2014). The Subsistence Fisheries Task Group (SFTP) was created in 1999 to develop a comprehensive definition of small-scale fishers for a revised MLRA. Initially, while the MLRA was being revised, small-scale fishers with subsistence permits, namely the political elite, had their permits converted to “limited commercial” permits (Isaacs, 2006).

Between 2000 to 2007, the government initiated multiple year rights permits for small-scale fishers. Firstly, medium term near shore commercial permits for WCRL and/or linefish were allocated. Fishers who could demonstrate investment ability, capacity and economic spinoffs for the local community were awarded with rights. Many small-scale fishers struggled to fulfil stringent guidelines, entrepreneurial individuals benefitted and animosity concerning the government’s inability to deliver steadily rose (Isaacs & Hara, 2008; Isaacs et al., 2007). Following the allocation of medium term rights, these were transformed into long term near shore permits in 2005 and a similar story played out in terms of a burdensome application process, limited administrative capacity and unfair allocation (Isaacs, 2012; Nthane, 2015).

4.1.2 Small-scale fisheries policy

The marginalisation of small-scale fishers, despite the promises of transformation and rights allocation under MLRA, came to a head in 2004 when a class action law suit was filed by representatives of the small-scale fishing community, mainly the Artisanal Fisher Association and Masifundise, against the Minister of Environmental Affairs and Tourism (DEAT) (Isaacs & Hara, 2015; Merle Sowman et al., 2014). The main argument was that failure to allocate rights to the fishers was a violation of their Constitutional rights, mainly, their right to food and nutrition, right to be recognised and the right to a livelihood. The Equality Court ruling in May 2007 stated that the department must grant interim relief permits (IRP) to fishers (only in Western Cape) and ordered the Minister to develop a SSFP (Isaacs & Hara, 2015; Merle Sowman et al., 2014).
The allocation of IRPs, led by the Marine and Coastal Management (MCM) within DEAT, did provide legal marine access to some fishers; however, the process was criticised for failing to reach poor fishers, favouring elite groups and MCM had limited institutional capacity to allocate rights in an efficient manner. Whilst the policy was being drafted, seven IRP extensions were issued. The SSFP was developed by a task group comprised of fishers, researchers, NGOs and government officials (Isaacs & Hara, 2015; Merle Sowman et al., 2014). In June 2012, following five years of negotiation with the task committee, Department of Agricultural, Forestry and Fisheries (DAFF) (who took over fisheries management in 2010), and the National Economic Development and Labour Council, the policy was gazetted.

The aim of the SSFP is, “to provide redress and recognition to the rights of small-scale fisher communities in South Africa previously marginalised and discriminated against in terms of racially exclusionary laws and policies, individualised permit-based systems of resource allocation and insensitive impositions of conservation-driven regulation” (DAFF, 2012, p. 1). Throughout the policy, contribution of SSF to the food security and livelihoods for coastal communities is acknowledged, “The contribution of small-scale fisheries to food security must, however, not be underestimated as an important source of cheap protein; and the income generated from it can also be used to buy food. This policy seeks to address this issue by ensuring access to the marine living resources and maximizing the benefits for fishers that can be derived from those resources.” (DAFF, 2012, p. 5).

Regulations for the implementation of the policy were developed and in 2016 rights allocation guidelines were released by DAFF. Rights will be allocated to community based legal entities who demonstrate a historical dependence on marine resources. A holistic co-management approach will be implemented in which fishing cooperatives in consultation with DAFF, decide upon “basket of species” whereby a specific variety and quantity of species would be harvested for commercial or personal consumption. While the basket of species approach may have certain ecological benefits as fishers may diversify their harvest, correspondingly terms may undermine the contribution of SSF to the food security of fisher households and communities. When deciding upon what marine resources to harvest, fishers must determine what species are for commercial sale and what species are for their consumption. “In general, species requested by a small-scale fishing community for commercial purposes may not be used for own consumption and vice versa; species used for own consumption shall not be sold, but may be bartered within the local community.” (DAFF, 2016, p. 13). In sum, if a species is on the commercial list, a fisher is prohibited from bringing that species home for household consumption. The regulations do state that the small-scale fishing community does have the power to donate a portion of the commercial catch for personal consumption; however, the amounts are counted for the total allowable catch of the co-operative. Lastly, it states that,
“catching of fish for own consumption shall be limited to shore-based activities” (DAFF, 2016, p. 13). This stipulation further limits the potential contribution of SSF to the food security of fisher households and communities.

Implementation of the SSFP has been slow; however, community entities in Northern Cape, Western Cape, Eastern Cape and KwaZulu-Natal completed verification and registration process between 2016 to 2018. 15-year fishing rights were granted in the Northern Cape to two community co-operatives in 2018 and DAFF plans on completing the allocation of 75 registered co-operatives across the country in 2019.

4.1.3 Conclusion

The rights allocation process over the last three decades has significantly affected the livelihoods and food security status of more than 28,000 small-scale fisher households engaged in marine harvesting (Masifundise Development Trust (MDT), 2010). Many hopes of restoring cultural food practices, legally accessing fish for direct consumption and securing a livelihood through redistribution of rights were dampened because of complicated bureaucracy, continued elite capture and the “thin spreading of rights”. Similar to the agriculture sector, fisheries policy is largely in support of international export and large-scale enterprises, therefore, the resource has been viewed as a commodity rather than as a key element of food security. Fisheries policies, except for the newly implemented SSFP, have generally operated to the detriment of community food security. Despite the challenges, communities continue to rely on fisheries as a source of food and livelihoods. In the context of this research, it is important to understand marine resources governance and how it has and continues to influence the contribution of fisheries to community food security.

4.2 Food security in South Africa: Strategies and food security outcomes

For decades preceding democracy in South Africa and the creation of explicit food security strategies, measures were taken that would shape the nation’s present-day food environment. Most notably, the Natives Land Act of 1913 and the Homelands Act in 1951. Both created designated areas based on ethnicity resulting in increased inequality in the context of natural resource access and increased household food insecurity, contradictory to the Acts’ aim to increase agricultural productivity (Hendriks, 2013; Koch, 2011; van der Merwe, 2011). The focus on promoting large-scale commercial agriculture, mismanagement of food relief programs and legislative acts that resettled a large portion of the population significantly shaped the country’s food system in terms of consumption patterns, access and availability. This section will review the food system following the start of democracy in South Africa through an examination of relevant policies and related results. Food security is an outcome of the food system which is largely driven by food and agricultural policies. Therefore, the
following section will describe food security strategies, argi-food policies and the subsequent outcomes.

### 4.2.1 Food security strategies and policies

South Africa is a signatory to The Universal Declaration of Human Rights (UDHR) and the International Covenant of Economic, Social and Cultural Rights (ICESCR), both of which recognise the right to adequate food. More importantly, the Constitution of the Republic of South Africa recognises that every citizen has the right to basic water and food (RSA, 1996). The government must respect, protect and fulfil the people’s right to food while providing an environment whereby citizens can produce or procure food. Following the advent of democracy, food security was recognized as a national priority and food as a basic human right in the RDP (Hendriks, 2013). Food security objectives concentrated on agricultural development for the provision of affordable food, supporting small-scale farming, increased employment opportunities and monitoring nutrition status (African National Congress, 1994).

Based on the RDP, the government committed public spending to improve food security conditions of HDIs through social programmes such as school feeding, child support grants and community food garden initiatives (Kirsten, 2014). Following the RDP an array of strategies, policies and documented government initiatives, all with the intention of addressing food insecurity, were created. For the purposes of this section two multi-sectoral governance arrangements will be interrogated to explore the food security policy environment: The Integrated Food Security Strategy (IFSS) and the National Policy on Food and Nutrition Security (NPFNS).

In 2000, the government initiated a national food security strategy to integrate and diversify food security programmes. This initiative would eventually lead to the IFSS, the first holistic governance approach to food security. The strategy sought to foster inter-sectoral coordination to conduct food security interventions, streamline existing programmes and diversify interventions from those solely focused on agricultural development (Department of Agriculture, 2002; Hendriks, 2013; Koch, 2011). In 2013, the NPFNS, aimed to formulate a common definition and measurement of food security and to provide a framework for an interdisciplinary approach to food security. The goal of the policy was to, “ensure the availability, accessibility and affordability of safe and nutritious food at national and household levels.” (DAFF, 2013, p. 6).

Both the IFSS and the NPFNS had ambitious objectives but fell short in achieving results because of weak institutional arrangements and siloed implementation that continued to focus on agricultural development (Drimie, Ingram, & Pereira, 2017). It should be noted that the IFSS and the NPFNS made no mention or recognition of fisheries as a contributor to food
security as the issue remained framed as an agricultural production matter. The IFSS was void of high level directives as it lacked political will and similarly, the NPFNS, had unclear lines of coordination and departments continued to underestimate the intense coordination required to implement the strategy (Pereira & Drimie, 2016; Watkinson, 2002). During the development of both strategies, engagement with civil society organisation (CSO) actors was limited resulting in a narrow understanding of the diverse set of solutions required to address the complex food system (Pereira & Drimie, 2016; Ramkissoon, 2017). The IFSS was never funded or implemented expansively and the status of the NPFNS is unknown (Kirsten, 2014; Pereira & Drimie, 2016). On a positive note, the IFSS did signal a paradigm shift as it highlighted the need for a multi-sectoralism approach to combat food insecurity (Koch, 2011). It should also be noted that while the IFSS and NPFNS may have fallen short of their ambitious objectives, several discrete food security interventions have improved individual and household food security.

4.2.2 Policies and food system outcomes

Food and nutrition security strategies are threatened by supply chain and agricultural production policies that are geared towards economic growth (Thow et al., 2018). The food system in South Africa has been called by some scholars as, “dichotomous”. It is composed of an industrialised commercial sector which serves both the domestic and international market. On the other hand, small-scale and subsistence farmers and informal traders operate along the fringes and experience high barriers to enter competitive markets (Drimie et al., 2017; Greenberg, 2010). There is policy incoherence between nutrition and food security policies and economic policies. Policies related to the food supply regard food as a commodity, promote the sale of affordable food regardless of the nutritional value and support trade liberalisation, leaving the country vulnerable to food price shocks (Thow et al., 2018). Following 1994, the South African government abolished tight controls on imports, price controls and licensing related to agricultural and food markets. South Africa entered the liberalised, global agri-food system based upon the belief that imported food was cheaper and aimed to redress years of protection in favour of privileged farmers. This transition left the country vulnerable to food price crises and increased corporate control, both of which significantly impacted the food system (Greenberg, 2017; Kirsten, 2014).

The corporate expansion following deregulation of the agri-food system, has impacted the food system via the consumer food environment. Large corporations influence food consumption patterns in low income and rural areas by increasing the number of supermarkets. The movement of modern markets into rural areas and urban migration reinforces de-agrarianisation and households have a heavier reliance on store bought food as opposed to self-provisioning. Larger retail outfits tend to provide lower prices and a wider
range of foods; however, they displace traditional markets and small-scale suppliers and strengthen consumers preference to buy cheap but nutritionally poor food (Claasen, van der Hoeven, & Covic, 2016; Drimie et al., 2017; L. M. Pereira, 2014). Informal markets continue to serve low income areas as they provide smaller quantities of food and often provide store credit options but tend to stock unhealthy foods when compared to other retailers (Battersby & Peyton, 2014). Often, poor communities, both rural and urban, have “bad access to good food and good access to bad food” (Oxfam, 2014, p. 25).

The consolidation of the food industry in South Africa has impacted food price and affordability of certain foods. Corporations, through competitive economies of scale, increase the availability and affordability of processed foods in supermarkets and through fast food chain expansion. Pricing structures make some foods, often unhealthy foods, more accessible than others (Battersby & Haysom, 2018). 35.9% of the surveyed South African population stated that price was the number one factor influencing food choice (Shisana et al., 2014). South Africans are driven to purchase cheaper foods with lots of energy but lacking micro nutrients (Claasen et al., 2016). Temple and Steyn investigated the cost of a healthy diet and found it to be, on average, 69% more expensive than a typical South African diet (Temple & Steyn, 2011). The cost and availability of high energy food lacking nutrients is driving a nutrition transition in South Africa. The country faces the “double burden of malnutrition” whereby there are growing rates of obesity in children and adults, while at the same time stunting, wasting and undernutrition continues to prevail (McLachlan & Landman, 2013).

4.2.3 Food security outcomes

South Africa is a middle-income country and at the national level, it is food secure as it has the capacity to feed the population through domestic production and imports if shortfalls occur. However, as examined in the above sections, the absence of a coherent food security strategy and the contradictory nature of agri-food policies, may not foster the realisation of food security at the subnational level and household level (Altman et al., 2009; Oxfam, 2014; Tawodzera, 2016). While there are a number of subnational studies, there is a limited number of food consumption studies that provide a comprehensive portrait of the food security status across socio-economic groups (Van Heerden & Schonfeldt, 2011). The South African National Health and Nutrition Examination Survey (SANHANES-1) was administered across the country and provides information on the nutritional status in terms of food security, food consumption and behaviour. The South African General Household Survey (GHS) also provides information on access to food.

The most recent indicator of national food access is from the GHS which asks how often households experienced hunger due to household food shortage as well as questions based
upon the HFIAS. 10.4% of households were vulnerable to hunger and the percentage of households with limited access to foods was 24.7. In the Western Cape, 15.5% of households were food inadequate and 7.3% were severely food inadequate in terms of access to food (Statistics South Africa, 2017). SANHANES-1 provided more detail on rates of hunger and food security across race groups, black Africans have the highest rate of food insecurity (30.3%) followed by the Coloured population (13.1%) (Shisana et al., 2014). In rural localities, individuals face higher rates of food insecurity and 37% of respondents reported experiencing hunger as rural households tend to pay higher costs for purchased food and suffer high rates of vulnerability (Pereira, 2014; Tawodzera, 2016). South African diets are, in general, nutritionally deficient and lack diversity. Cereals make up the bulk of South African diets (Misselhorn & Hendriks, 2017). From the SANHANES-1 study, the mean dietary diversity score (DDS) was 4.2 and 39.7% of respondents had a DDS of less than 4. The DDS is derived from a 24-hour recall that categorises foods into nine food groups thus the higher the score the more diverse the diet. Rates of high food insecurity and low dietary diversity can also result in micronutrient deficiencies which poses major public health concerns. For example, 33% of women are anaemic (Statistics South Africa, 2016). Amongst adult populations, 68% of women are overweight and 31% of men respectively. In terms of child nutritional status, 27% of children under age five were stunted, 10% severely stunted, 3% of kids were wasted and 13% of children were overweight (Statistics South Africa, 2016).

4.3 Conclusion

The misalignment of food security strategies and economic growth objectives reveals a complex food system which drives food security outcomes. A significant portion of the population struggles to achieve household food security and the nation suffers from the “double burden of malnutrition”. Food security strategies often lack political will, coordination and the ability to compete with economic objectives. Strategies that address food security, largely continue to focus on agricultural production, increasing social grants and creating employment opportunities and other sectors such as fisheries remain absent. The siloed nature of addressing food security has overlooked the contribution of fisheries to the food security of coastal communities. The fisheries sector largely frames fish as a commodity to be traded on international markets, rather than a key aspect of community food security. Small-scale fishing communities rely on marine resources for food, livelihoods and culture. While the new SSFP strongly recognises the contribution of fisheries to food security, other food security policies and interventions fail to acknowledge the contribution of fisheries to food security. The state’s failure to acknowledge fisheries as an integral part of coastal food systems through a narrow food security strategy scope, coupled with the realities that South
Africans face achieving household food security, especially marginalised small-scale fisher populations, provides an important backdrop to this research.
Chapter 5: Findings

This chapter presents the findings of the household surveys and the FGDs conducted in Lambert’s Bay. The aim of this research is to understand the contribution of SSF to the community food security of Lambert’s Bay and the findings serve to fulfil this. The three study objectives directed the research and consequently, will guide this chapter. The household surveys were conducted to address the first objective: examine the current level of food security within the community. Information derived from both the household survey and FGDs fulfilled the second objective: understanding of the community’s perceptions of food security and food culture. Lastly, a scenario planning workshop was conducted to examine the potential impacts of a reconfigured market on the local food system. Selected community members explored various scenarios and put forth suggestions that would enable the realisation of potential situations.

The chapter is divided into three sections according to these three research objectives. The first section will present the socioeconomic profile of respondents, marine resource use and food security indicators and the household surveys were the main method of data collection. This will provide key information to examine levels of food security within the community. The second section will describe more subjective and qualitative aspects of food security through the examination of perceptions and food culture. FGDs and components of the household survey provided the evidence. Lastly, the outcomes of the scenario planning workshop will be discussed in the final section.

5.1 Lambert’s Bay: Demographic profile, marine resource use and food security status

5.1.1 Community profile

In total, 20 non-fisher households and 20 fisher households were interviewed during the household survey with a structured questionnaire. The household food manager was selected as the main respondent and in total there were three male and 37 female participants. 38 respondents, identified as “Coloured”, while 2 identified as “Black”. The survey was conducted in the Apartheid area designated for Coloureds resulting in underrepresentation of other racial groups. The choice to survey this area was intentional as it is where many small-scale fishers lived. The average age of the respondents was 49 and 67.5% of respondents were married or in common law marriages. 55% were born in Lambert’s Bay and the remainder of respondents had lived in the community for at least 10 years. The level of education varied across all participants. 40% of respondents had not completed high school, 22.5% completed high school, 17.5% did not complete primary school and 10% finished primary school (Table 2).
Table 2: Profile of survey respondents

<table>
<thead>
<tr>
<th></th>
<th>Both</th>
<th>Fisher Household</th>
<th>Non-Fisher Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent Gender (% Female)</td>
<td>92.5</td>
<td>85</td>
<td>100</td>
</tr>
<tr>
<td>Respondent Age (Average)</td>
<td>49</td>
<td>45</td>
<td>52</td>
</tr>
<tr>
<td>Population Group (% Coloured)</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>Marital Status (% Married or common law)</td>
<td>67.5</td>
<td>85</td>
<td>50</td>
</tr>
<tr>
<td>Respondent place of birth (% born in Lambert's Bay)</td>
<td>55</td>
<td>60</td>
<td>50</td>
</tr>
<tr>
<td>Respondent Level of Education (% completed high school or higher)</td>
<td>30</td>
<td>35</td>
<td>25</td>
</tr>
<tr>
<td>Number of people in household</td>
<td>4.75</td>
<td>4.55</td>
<td>4.95</td>
</tr>
<tr>
<td>Housing structure (% Permanent house)</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
</tbody>
</table>

Most households had multiple sources of income. 40% of households reported an income of 1000-2000ZAR for the previous month and 33% had an income within the range of 2000-4000ZAR (Table 3). Households had an average of three income sources which ranged from harvesting marine resources, government grants, working at the potato factory or participating in the expanded public works program. The main income source reported for the previous month was harvesting marine resources (7) and the second most important source was child support grants (15). Some fisher households did not consider fishing as the main monthly income source as they were reporting based on September 2018, a poor fishing month, which is unusual as the month of September usually provides favourable fishing conditions. The community was largely dependent upon government grants for income which included child support, government old age pension and disability. 34 households were recipients of at least one government grant and 11 households relied on a grant as their main income source for the month of September 2018. For some fisher households, government grants were critical for maintaining household food security when fishing conditions were poor. This was evident during the month of September 2018 as many fisher households stated government grants or community work programmes were their top income source.
5.1.2 Marine resource use

Lambert’s Bay is historically known as a fishing community and while the lobster canning factory and fish meal plant have longed closed and many small-scale fishers are inactive, the community still has a strong association to the sea in terms of livelihoods, culture and food. The majority, 18 out of 20 sampled non-fisher households, had a family member who previously fished or had a family member outside of the household who was an active fisher. Of the 20 fisher households surveyed, 16 were husbands/partners of the respondent, three of the respondents were fishers themselves and one household had both a husband and son who fished. The most common species harvested included: Snoek, West Coast Rock Lobster (WCRL), Cape Bream and Yellowtail. All, except one fisher harvested WCRL. 70% of fishers harvested three species, while 20% fished two species and 10% fished four species (Fig. 3). In general, most fishers focused on harvesting WCRL, Cape Bream and Snoek. During the month of September 2018, fishing conditions were poor and 65% of fishers did not fish during the month, 30% fished 2-3 times and 5% fished once during the month. In the month of September, Cape Bream was the only species harvested. The Snoek run for the 2018 season began in March 2018 and ended mid-June 2018, while the WCRL season did not start until November 15, 2018 (Fig. 4).
While involvement in fisheries was mainly framed and investigated in terms of the SSF sector, households were also asked if they fished recreationally for enjoyment and/or subsistence over the last 12 months. Eight respondents stated that they or someone in their household harvested shellfish. Two women reported harvesting shellfish (limpets) and six individuals stated that their husband or their son harvested shellfish. Four households who harvested shellfish did so for personal consumption and four harvested shellfish to sell for bait. Frequency of this practice varied, 3 individuals reported harvesting shellfish about once a month, 2 people reported practicing 2-3 times per month, one person reported as harvesting once a week and two people harvest about 2 times per week. Harvesting shellfish was not commonly practiced when compared to the past and respondents stated that this was mainly because of the permit restrictions. One woman stated that while she did harvest shellfish, she did so infrequently because she did not have a permit and wanted to avoid a fine. Another respondent stated that it was not worth going to the shore to harvest because the maximum take was 25 shellfish per person, which was not enough to feed a family and justify the time. FGD participants also expressed dissatisfaction with the conditions of the recreational permit for harvesting shellfish as the cost was high, 120ZAR, and harvesting could only occur between 8AM to 4PM. In the following section, this practice with respect to food culture will be further discussed.

Figure 3: Species harvested in Lambert’s Bay reported by 20 interviewed fisher households
5.1.3 Consumption of fresh or dried fish

Respondents were asked how often they consumed fresh or dried fish over the past month. As the survey was completed during the first and second week of October 2018, the respondents were reflecting on the month of September which was a particularly bad month for fishing (Figure 4). Less than half of the households consumed fresh fish and there were no households that consumed dried fish. Ten non-fisher households and eight fisher households consumed fish (Table 4). It should be noted that respondents considered fish they bought fresh and froze themselves as fresh. Often households would buy a bundle, portion out the fish and freeze it to eat throughout the month as a strategy to ensure they had a sufficient supply throughout the month. Respondents did not view fish that they froze themselves as frozen fish but considered store bought frozen fish as frozen.

Table 4: Reported frequency of fresh fish consumed during the month of September 2018

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-4 times (about once a week)</td>
<td>13</td>
</tr>
<tr>
<td>5-8 times (about twice a week)</td>
<td>2</td>
</tr>
<tr>
<td>9-12 times (about three times a week)</td>
<td>1</td>
</tr>
<tr>
<td>More than 12 times (almost every day)</td>
<td>2</td>
</tr>
</tbody>
</table>
The most common fish consumed was Cape Bream and only one household reported eating Snoek which was purchased from the Northern Cape. According to the seasonal calendar completed for 2018, Cape Bream was available all year round; however, during Snoek season, March to June 2018, community members mainly consumed Snoek and occasionally Yellowtail. Other linefish species that is occasionally caught includes Gurnard and Jacopever. Fish sellers from neighbouring communities such as Elands Bay or Dorongbaii sometimes travelled to Lambert’s Bay sell Mullets or Snoek.

Those who ate fish during the month of September 2018 obtained their fish from a variety of sources. The majority of households purchased fish from a local fisher at the harbour or at the fisher’s home and five respondents consumed fish harvested by a household member (Table 5). Four individuals were gifted fish from a neighbour or family member who did not reside in the same house. This is a common practice that will be examined in the following section. One household obtained Snoek from the Northern Cape and the rest consumed Cape Bream landed at the local harbour. At the time of the survey, a bundle of Cape Bream purchased locally was 150ZAR and this included approximately eight fish. Respondents stated that in 2017, a bundle could be purchased for 80ZAR.

Table 5: Source of fish consumed by 18 households who consumed fresh or dried fish at least once during the month of September 2018

<table>
<thead>
<tr>
<th>Source of Fish</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caught by household member</td>
<td>5</td>
</tr>
<tr>
<td>Gifted by family member/friend</td>
<td>3</td>
</tr>
<tr>
<td>Gifted by family/friend (industrial fishing)</td>
<td>1</td>
</tr>
<tr>
<td>Purchased at from local fisher at harbour or home</td>
<td>8</td>
</tr>
<tr>
<td>Purchased at large store</td>
<td>1</td>
</tr>
</tbody>
</table>

There were four common responses provided when households were asked why they did not consume fresh or dried fish (Figure 5). One common explanation was that a member of the household did not go to sea due to a number of reasons such as poor weather conditions, they did not have a place on a boat or their own boat was not operational. One respondent said, “There was no fishing last month so (we) ate no fish, he (my husband) had to service the boat and he struggles to get a site on other boats.” (HH13). Others stated that fish was too expensive, and they could not afford it. “We had nothing last month because we didn’t have the money to buy.” (HH22). Similarly, others must make choices in accordance with their budget. One woman claimed that while she would like to buy fish, when she has to choose
between a bundle of fish for 150ZAR and the same amount of chicken for 80ZAR she picks the chicken because she has funds to buy additional food. Fishing conditions were also a factor for the decreased number of households consuming fish because there was less fish available to buy or receive if a fisher was sharing. While the difference between the number of fisher households eating fish and the number of non-fishers households eating fish was not significant, fewer fisher households ate fish.

![Pie chart showing reasons for not consuming fresh or dried fish from 22 households during September 2018](chart)

*Figure 5: Reported reasons for not consuming fresh or dried fish from 22 households during September 2018*

Household and community consumption of fish was further examined when respondents were asked if they thought that household consumption of fresh fish had decreased or increased compared to 10 years ago. 75% of respondents felt that household consumption of fish had decreased. Several claimed that the reduction was because there was no longer an active fisher in the household. Others stated that the changing weather patterns resulted in fewer sea days and thus less fish available for consumption. The decline in the accessibility and availability of fish was a result of fewer fishers going to sea due to a reduction in fishing permits. Conversely, 23% of individuals claimed their household consumption of fish increased because they now had a household member who had a fishing rights or they themselves were granted with a permit. In terms of community consumption of fresh or dried fish, 83% of respondents felt that community consumption had decreased when compared to ten years ago. The decline was due to permit conditions, affordability, climate change and a decrease in species abundance.

5.1.4 Sources of protein: fish versus chicken

Fish provides an important source of protein for many fisher communities throughout the world. The main source of protein was examined as households were asked to list their three
most common sources of protein. 30 out of 40 respondents stated that their main source of protein was chicken while only four respondents stated that fish was their main source of protein. When asked this question, most respondents signed in exasperation and one respondent exclaimed, “We are tired of chicken, chicken, chicken. Always chicken.” (HH13). Chicken was the most affordable and accessible source of protein for households when compared to meat or fish. A bundle of fish was almost double the price of the same portion of chicken. “Chicken is the cheapest thing to eat now.” (HH18). FGD participants stated that in the past they did not eat food like chicken necks and livers because there was enough fish. Community members did not need to go to the shops to buy cheap sources of protein. As fish has become more expensive and inaccessible, community members have been driven to substitute fish with cheaper sources of protein such as chicken or chicken necks.

Participants were asked to list their household’s three preferred sources of protein. Common responses were mutton and beef, but some individuals were unable to envisage circumstances that would permit them to purchase a protein of their choice. With some additional prompting, a number of respondents did state sheep, fish, or beef; however, seven respondents, when asked their second and third most preferred source of protein explained that if they had extra funds they would buy bulk food or staples such as flour, tea, sugar and other food stocks. Similarly, two other respondents expressed a comparable sentiment when asked their third preferred source of protein. This could be an indication of the quality of diets of a portion of households and the resources they have available to secure an adequate diet.

5.1.5 Household Food Security

Levels of household food security were assessed using four measurement scales which included the household food insecurity access scale (HFIAS), household food insecurity access prevalence (HFIAP), months of adequate household food provisioning (MAHFP) and the household dietary diversity score (HHDDS). In the section below, the findings will be described.

5.1.5.1 Household Food Insecurity Access Scale

HFIAS scores are the sum of the frequency of occurrence for all nine questions that ask the respondent to reflect on household food security over the four previous weeks. The HFIAS score is a continuum and range from 0-27, with the higher score representing a household that is severely food insecure. The range for the respondent group was 1 to 25 and the average score was 9 (Fig. 6).
Figure 6: Respondents’ HFIAS scores

5.1.5.2 Household food insecurity access prevalence

HFIAP uses the HFIAS and a logic tree to categorize households to determine if a household is food secure, mildly food insecure, moderately food insecure or severely food insecure (Figure 7). Households are categorized more severely if they answer affirmatively to more extreme conditions. For example, if a household responded yes to the question, “did you or any other household member go to sleep hungry because there was no food?” they would be categorized as severely food insecure regardless of their other responses. Using this measurement, 83% of households were classified as moderately to severely food insecure.

Figure 7: HFIAP reported by respondents
5.1.5.3 Household Dietary Diversity Scores

HDDS is another proxy that measures household food security in terms of access to food. The proxy measures the number of food groups consumed by all members of a household over a 24-hour recall period. The sum of the food groups eaten represents the score and can range from one to 12, with 12 representing a household that has the most diverse diet.

![Figure 8: Household dietary diversity scores](image)

As shown in Figure 8, the average HHDDS was six with 38% of respondents reporting this score. 28% of respondents had a score of five or lower indicating a diet lacking diversity. There is no ideal or universal target score; however, a high score does indicate a more varied and rich diet. The food groups reported tended to be homogenous. The main food groups eaten were: grains, coffee/tea, sugar, animal protein, oil/fats and tubers. The least common reported food groups included fish, pulses, eggs and fruit (Fig. 9).
Figure 9: Food groups consumed over 24-hour period by 40 households

5.1.5.4 Months of adequate household food provisioning

Months of adequate household provisioning (MAHFP) is a measure of a household’s ability to obtain food over a 12-month period. It depends on the resources available for individuals to procure food from own production, stocks or through purchases. Respondents were asked if there was a month over the past year where they did not have enough food to meet their family’s needs. Households were reporting on the period from October 2017 to September 2018. Referring to figure 10, August was the most difficult month for households to secure food as 23 out of 40 households stated they did not have enough food. In July and June, 13 and 9 households reported not having enough food to meet their needs. Winter months, June to September were the most difficult months as fishing conditions were poor, resulting in reduced income and food for fishers. Non-fishers also reported that seasonal work opportunities reduced during the winter months affecting their ability to secure food. Referring to the seasonal calendar in figure 4, the trends related to fishing, income and food security, convey similar trends to the MAHFP.
5.2 Perceptions of food security and food culture

This study utilised a community food security lens when examining the contribution of SSF to food security. In addition to quantitative measures of food security explored in the previous section, perceptions of food security and food culture are investigated below. A more holistic examination of lived experiences and perceived changes within the context of cultural conditions will result in a better understanding of the contribution of SSF to community food security. The findings in this section are derived from responses to questions and subsequent discussions during the household survey and information gathered during the FGDs.

5.2.1 Perceptions of household and community food security

Subjective measures of food security are interwoven into holistic studies as it is imperative to consider individuals’ perceptions of their situation and responses. Perceptions are formed through a combination of experience, environment and sense making. Examining respondents’ perceptions of food security provided insights into how conditions manifest at the local level and sheds light on the role of SSF for community food security. Perceived drivers of food insecurity, both ecological changes and the permit allocation process, are also examined in the section below.

The HFIAS provided an indicator of respondents’ perceptions of household food security. 34 out of 40 individuals felt that their household was unable to eat their preferred foods because of lack of resources. Correspondingly, 26 respondents reported that over four weeks, they had to eat food that they really did not want to eat due to a lack of resources. One individual expressed, “There were times when we didn’t have what we wanted to eat but spiced it a certain way and it was fine” (HH2). A similar sentiment was expressed by another individual, “Yes, (we) eat what we don’t want because we just need to fill our stomach.” (HH21). 27
households answered affirmatively to the question, “In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?”. Households often had a limited variety of food towards the end of the month because they were only paid once a month. “if no money then (we) must eat what (we) have.” (HH5).

Perceptions related to the quality of household diets were explored as individuals were asked if the quality of their household diet had changed compared to 10 years ago. 78% of respondents felt that the quality of their household diet had decreased, while 12% believed the quality of their household diet had increased. Most respondents stated that the cost of food negatively impacted the quality of their diets. One individual stated, “Quality of the household diet has decreased because everything is getting expensive, and (we) have to buy on credit and by the time we pay credit there isn’t enough to buy other types of food.” (HH23).

Respondents from fisher households expressed concerns related to their diets in terms of fishing permit allocations and changes in weather. These changes negatively impacted their husbands’ livelihoods resulting in an inability to acquire a sufficient supply of food. This will be discussed more below. Household survey respondents also reflected upon the current quality of the general community’s diet compared to 10 years ago. 65% of individuals believed that the quality had decreased, 25% of individuals did not know, 10% thought that the quality of diets had stayed the same and there were no respondents that stated the quality of diets of the general community had improved. The cost of food as well as high unemployment were common reasons for the decline. One respondent explained that the quality of diets was now inferior compared to ten years ago because of changing preferences, “… people are eating more mainstream, and people want to eat food at KFC rather than something maybe cheaper and healthy.” (HH14). Similarly, others commented that in the past, fresh food such as vegetables and fish were more accessible, as most households had home gardens and access to fishing rights was easier.

FGD participants shared similar sentiments regarding the quality of diets and community food security. Both men and women expressed that in the past (30 years ago) it was easier to put food on the table and access to food was better. One participant stated, “we eat (ate) better at that time then now because now you must buy food at the shops to feed yourself. At that time you get what you need. I was eating out of our garden and fishing stocks every day.” (FGDM5). Before 1994, it was reported that almost every second house had a home garden but presently, municipal bylaws prohibit residents from keeping chickens in residential areas and water restrictions make it difficult to maintain home gardens.
5.2.2 Access rights as a driver of food insecurity

As briefly alluded to above, one of the perceived drivers of food insecurity with respect to consumption of fish is access rights. Decreased access to marine resources because of permit allocation processes and conditions were often voiced as a reason for the reduced consumption of fish, reduction of income and consequently, a decline in the quality of diets, both household and community. Prior to redistribution of fishing rights and the MLRA, fishers were less constrained by regulations as they fished informally and required only a safety certificate for their boat. Following the implementation of the permit system, some fishers sit idle because they were not granted fishing rights or others face challenges licensing their boat. One fisher reflected on the impact of the permit system, “it was better for us to fish without permits because we knew how to protect the resources. And since the permits came in, it came with conditions that makes things very difficult... it’s caused a lot of fishers to sit with no job because it’s not every fisher who has a permit...it was better to fish without a permit then to fish with a permit because at the time, every fisher could go to sea, and every fisher could catch whatever there is in the water to catch.” (FGDM1). Household survey respondents and FGDs participants explained that now it is increasingly difficult to purchase fish because of the permit allocation process. Household income has also decreased for some fishers because their permits have not been renewed resulting in difficulty accessing food. One woman stated the quality of her household diet has decreased because, “now my husband doesn’t have his permit and before this was additional income.” (HH27).

5.2.3 Environmental changes as a driver of food insecurity

The decrease in consumption of fish and the decline in the quality of diets was perceived by many respondents to be a result of environmental factors and climate change. Abnormal weather patterns resulting in fewer sea days and fluctuations in water temperatures due to climate change were expressed by community members as reasons for the decline in the consumption of fish. For example, the month of September is typically a good fishing month; however, during September 2018 it was reported that there was at most 10 fishing days because of climate variability.

A reduction in species abundance and a change in the behaviour of fish is believed to be a result of climate change, overfishing by trawlers and environmental changes on land. The migratory patterns of species are changing and in particular Snoek. Fishers stated that Snoek were not coming as close to shore as in the past and the length of the 2018 season was shorter than years past. While there is no concrete evidence, individuals who participated in the FGDs and household surveys, thought that overfishing by trawlers resulted in a reduction
of prey for Snoek and thus a shorter season. Changing weather patterns due to climate change were believed to also influence the behaviour of the Snoek.

Environmental changes on land, specifically the closing of the fish plant and the damming of a local river were suspected to negatively affect the abundance of fish. While in operation, the fish plant pumped effluent into the ocean and attracted fish mainly, Snoek and Cape Bream. When the plant ceased operation, this was thought to have negatively affect the abundance of fish as there was no longer a source of food for large fish. In addition, the damming of a local river, altered the health of the estuary which served as an important habitat for juvenile and smaller fish was reported as another reason for the decline in fish abundance.

5.2.4 Food Culture

One element of food security is ensuring that people have access to culturally appropriate food. Furthermore, community food security considers the social, economic and institutional factors that affect access and availability to resources. Examining key aspects of food culture in Lambert’s Bay through the household survey as well as FGDs unlocked information about food harvesting, preparation and consumption practices. In the section below, cultural food ways, past and present are explored with a focus on the role of SSF for food security.

5.2.4.1 Harvesting

Marine resource harvesting in Lambert’s Bay is mainly centred around small-scale commercial fishing and fishers mainly harvest Snoek, WCRL and Cape Bream. According to information gathered, it was common practice for community members to also harvest marine resources for subsistence and recreational purposes. As stated in section 5.1, only four individuals harvested shellfish for personal consumption, and no one reported recreational fishing. In the past, harvesting marine resources was practiced by all family members. One participant stated that before permits, “if the weather was not good for the men to go to sea, the ladies and kids would go to the rocks and collect shellfish to make a pot of food” (FGDF2). In the past, men, women and children would collect limpets on a regular basis but now community members feel that they have to “steal” the limpets, “they tell you, you are a poacher, you are a poacher. But in those days, it was free to get limpets from the rocks” (FGDM5). Limpets were used to make curries, soup, and pies. One participant referred to a dish prepared with limpets as “king’s food”. At one time, fishing was a form of play for children. Kids would catch mullets in the river’s mouth or at the harbour and take the fish home to their mothers, “From the time I was a kid we walked to that river mouth, we get harders (mullet s). We take a sack… we cut off the fish from the deep side to the low with the sack… pull it up and we got some fish…we take that home and some of the fish we sell. And that was our playground.” (FGDM2).
5.2.4.2 Food preparation

Community members in Lambert’s Bay possess a multitude of methods for preparing fish; however, as the cost of fish increases and the availability of fish decreases, some traditions are practiced less and less. Previously, preserving fish through salting, pickling and smoking were commonly practiced. Mooijkies, a traditional method of preserving fish in jars with salt, was a dietary staple when fishers could not go to sea due to weather or during the winter months. One respondent commented on fishers years ago, “the fishers think ahead, think about the wintertime.” (FGDF1). Another fisher stated that in the past, they may return home with 20 snoek to dry and that would serve as food for the winter. Drying snoek is a practice that unfortunately is decreasing because of the cost and availability fish as well as crime. Community members must take precautions when drying fish outside their homes as it may be stolen explained an FGD participant as he made light of the situation, “you need a security guard to watch your fish.” (FGDM5). Traditional ways of preparing fish utilized every part fish such as the heads and livers. However, this practice is decreasing because of changing preferences, “other ladies don’t do it so much is because some of the kids don’t like it and maybe now housewives are too fancy”. (FGDF1). In the past, community members had access to “free” fish. Men would often take WCRL bodies from the canning factory and women would prepare soup. “When we grow up, you get the half cuts of the lobster. Our mothers make, every day, a pot of crayfish soup. Every day you could make that but now, when they catch you with that you go to jail.” (FGDM5).

5.2.4.3 Consumption

Sharing fish and consumption of fish, especially on holidays, is a key cultural aspect of Lambert’s Bay. All 20 of the interviewed fisher households stated that they shared fish with neighbours. Fishers share with households who do not have a fisher residing in their home or with those who cannot afford to buy fish. Many fisher households claimed that this practice was a strong tradition that had been passed down from previous generations. “If he shares, the blessings will stay with them and maybe tomorrow they will be blessed with more fish.” (HH7), one wife commented about her husband’s gifting of fish. Non-fisher households receive fish from friends and family; however, this is more concentrated during Snoek season as fishers are more likely to share as their catch is more plentiful. Unfortunately, the practice of sharing fish is now compromised due to increased operational costs as well as the decrease in species abundance. One fisher explained, “we must understand the reason why fishers don’t share so much anymore, it is because of the difficulties they face to get to sea, and the expensive tools they must buy to catch fish, and the petrol prices are going up and up and up…You love to share, you would really like to share, but you can’t.” (FGDM5).
One of the most prevalent and discussed food traditions in Lambert’s Bay is eating fish on Mondays. In the past people would often consume a heavier meal of meat on Sundays and prefer to eat a lighter meal of fish on Mondays, the tradition continues today. Throughout the research, “fish on Mondays” was often described by respondents when asked about the culture of eating fish in Lambert’s Bay. Unfortunately, 33 of the 40 household respondents felt that the culture of eating fish was decreasing in Lambert’s Bay. One individual stated, “The culture has decreased but people still have the craving.” (HH40). Another respondent explained that the culture of eating fish is decreasing because of the cost of fish. Conversely, some community members stated that the culture of eating fish has remained the same because people always made a plan to eat fish on Mondays even if it is frozen or canned fish. Older women explained that the tradition was still strong in their household because they were always planning for fish on Monday. For example, they would buy a bundle of fish at the start of every month, portion it out and freeze it so that they could eat fish every Monday of the month.

During holidays, fish is often a central element of the celebrations, but these traditions are changing in Lambert’s Bay. One practice that remains a staple is pickled curry fish at Easter. While fish may be difficult to acquire throughout the year, people find a way to get fish for Easter and if necessary, fishers travel to other towns to harvest fish. Other food traditions are changing as tastes and standards evolve. Christmas celebrations, for many, now involve more expensive foods such as gammon and lamb, rather than simple, traditional foods such as fish or chicken. Holiday expenses in December coupled, with school start-up costs in January results in economic difficulty and household food shortages in January. The impact of “Januworry” was captured in the MAHDP as 18% of household reported not having adequate food during the month of January (Fig.10).

5.3 Exploring the future: Increased access and availability of fish

The final section of this chapter explores scenarios that seek to maintain or increase consumption of fish for the local community. Building upon the previous two chapters which highlighted levels of food security and fish consumption as well as food culture and perceptions of food security, this section will be forward looking. This segment of the chapter will examine situations that seek to increase or maintain community food security through the consistent provision of local fish at an affordable price. The findings in this section are based upon an FGD that utilised a participatory scenario planning tool to develop two plausible scenarios. Complimentary information from previous FGDs and the household interviews will be used to support information derived from the scenario planning meeting.
5.3.1 Lambert’s Bay: Ensuring a consistent and affordable supply

Two challenges related to the consistent consumption of local fish for community members was economic and physical access to fish. To combat these two issues, one scenario developed was based upon the concept stockpiling fish when fishing conditions were favourable to ensure consistent access. Fishers would keep a portion of their catch and freeze the fish to later sell to the community at a reasonable price.

If fresh fish is unavailable, for example during the winter months when there are typically fewer sea days, local community members would still able to purchase fish direct from fishermen and women who had a supply of frozen fish. Based on the household survey, 45% of people consumed local fish during the month of September when there were less than 10 sea days throughout the month. Often those who ate fish consistently reported buying a bundle of fish each month, portioning out the fish for the month and freezing it as part of a strategy to ensure a constant supply of fish. In addition, it was reported that some fishers and fisher women are currently practicing this system of stockpiling fish and they supply fish to community members by selling it from their homes. Building upon both strategies, that of household food managers and fishers stock piling fish, this practice could be replicated, and the network strengthened to increase the availability of fish.

The other challenge that this scenario addressed is the affordability of local fish. Local community members struggle to purchase fish, and this was commonly reported throughout the research. At the time of the survey, September 2018, Cape Bream was sold in a bundle for 150ZAR and Snoek, sold for 50-60 ZAR to Lambert’s Bay residents during May 2019. As part of this scheme, fishers at the scenario meeting stated that fish would be sold at a reasonable price; however, the exact price was not determined. Participants in the meeting stated that operational costs such as petrol, bait, transport, and ice as well as refrigeration costs would have to be calculated before determining a price. However, the fishers and fisherwomen present at the meeting strongly emphasized that they would not be looking to achieve a high profit margin, rather, the main goal would be to provide fish at a fair price to community members. The issue of selling fish, mainly Cape Bream, in smaller portions was not explicitly addressed as part of the proposed scenario because participants focused on Snoek as they were in the midst of the Snoek run. One reason community members could not afford to buy Cape Bream was that it was sold in bundles and respondents suggested that if fish was sold in smaller quantities, it may increase accessibility. Moving forward, the proposed scenario would have to be further expanded and selling smaller quantities of fish, in particular Cape Bream, would have to be addressed.
The key elements needed to make this work were identified as establishing a group of fishers willing to keep a portion of their fish and forego immediate payment. Freezers to store the fish would also be needed. The fishers proposed that they could use their own freezers, group together to use one communal freezer and/or use existing resources such as shared freezer to reduce costs. Lastly, a system to factor in operational costs to ensure that fishers were being fairly compensated for their labours would be required.

It should be noted that the majority of fishers who participated in the scenario planning workshop were active ABALOBI fishers who sold fish on the ABALOBI Marketplace at a premium price to restaurants in the Western Cape. In general, they are in a more stable economic position and have access to more resources, such as infrastructure and capacity building opportunities, compared to other fishers in the community.

Figure 11: Potential scenarios that would make fish more accessible and available for local and neighbouring community members
5.3.2 Sell Snoek to Lambert’s Bay and neighbouring communities

The scenario planning meeting was held during the Snoek season and local fishers were experiencing challenges related to the low market prices. In addition, some residents in neighbouring communities, were having to purchase Snoek at unreasonable prices. The second scenario was developed to address the low price that fishers were receiving from langanas (middlemen) and the high price that individuals were paying for Snoek. Meeting participants proposed selling fresh fish at an affordable price direct to the community, thereby cutting out the middleman to ensure fishers received a fair price and similarly, community members paid a fair price. This scenario resembled a community supported fishery as fisheries would organize themselves and sell direct to the immediate community and to neighbouring communities such as Clan William or Citrusdal.

Fishers are usually “price takers” as they are often forced to take the market price for their catch when they return to the harbour to cover operational costs. During Snoek season, fisher can receive between 20 to 80 ZAR for one fish. A fisher expressed that on days when the price is low, he is unable to cover his costs and pay his crew. He is forced to use his savings to cover his shortfall. The middlemen who purchase the fish, then sell the snoek for 120-150 ZAR depending on the location. One fisher commented, “they (langanas) are exploiting our community…like those who get a government grant. They have to take fish on advance and pay an extra price. Normally they (langanas) sell 120 ZAR, the older person pay 150 ZAR in advance because they have to wait for their money. That’s unacceptable for us…they are making the people poorer.” he continued, “They buy (fish) for 30ZAR and sell for 120ZAR so the profit is 90ZAR which is unacceptable” (SP1). The fishers identified selling Snoek direct to the community as a win-win situation in which community members could purchase affordable fish and fishers would make a small profit.

The fisher men and women in the meeting explained two ways that fish could be collected and sold to the immediate community and neighbouring communities. One scheme would be a “catch of the day” model in which a group of fishers would fish half a day and harvest approximately 200 Snoek. They would return from sea early, clean and pack the fish and then travel to neighbouring communities themselves. The second option would be to stockpile the fish throughout the week by collecting a portion of fish from willing fishers. For example, they could collect approximately 50 fish from 4 boats throughout the week, freeze the fish if necessary and then travel to communities to sell the fish. While this model is geared towards selling fish to neighbouring communities, it was highlighted that this would be easily adapted to sell fish to the local residents in Lambert’s Bay as fishers could sell fresh or frozen Snoek to the immediate community before traveling to neighbouring towns.
The fishers estimated that they could sell the fish for a maximum price of 70ZAR in neighbouring communities and less in Lambert’s Bay as transport costs would be negligible. They could still make a small profit and more than they would if they sold to the langanas for 20-25ZAR per fish. Operational costs, especially petrol for traveling to neighbouring communities, would be factored into the price. Identified challenges would be the additional work for fishers as they would also sell the fish and ensuring that a network of buyers was established. A pre-established network of customers at a predetermined location would be set up to ensure all of the fish would be sold and to ensure efficiency. Lastly, to mitigate the risk of people reselling the fish for a higher price, there would be a limit to the number of fish purchased by an individual.

In general, the two scenarios described above build upon practices that have been or are currently practiced in Lambert’s Bay. For the realisation of one or both of the scenarios above these practices need to be strengthen and expanded. Furthermore, it should be noted that the commitment of fishers to supply fish to the local community is key to the success of the actualisation of the above scenarios. The fishers that participated in the scenario planning workshop regularly share fish with the community, whether it be giving a fish to a neighbour or donating several Snoek to the local church. In addition, the participating fishers, both men and women, have access to diversified markets as they are ABALOBI fishers, therefore their income may be higher or more stable than other fishers as they consistently sell to restaurants at a premium price. These fishers continue to practice the tradition of sharing fish explained in the second section of this chapter and understand the cultural and nutritional value of fish, “we understand that fish is important, especially for our elderly people but they can’t afford it because they get a grant of less than 2000 per month.” (SP1). In order for these initiatives to take shape, fishers will have to be supported and encourage their peers to take part.

5.4 Conclusion

This chapter describes the findings from the three components of data collection: household survey, FGDs and scenario planning workshop. Findings from the household survey indicate low dietary quality and moderate levels of food insecurity throughout the community. There was also seasonal variation in terms of food security and consumption of local fish. In general, respondents felt that the consumption of local fish within the community was decreasing and findings from the household survey indicated that there was relatively low consumption of local fish. A decrease in the consumption of fish is largely due to environmental changes, access rights and increased operational costs.

While the consumption of fish may have decreased, fish continues to play a key role in terms of culture and traditions in Lambert’s Bay as indicated by food procurement, food preparation
and consumption practices. Recognising the critical role that SSF plays for food security in terms of direct consumption, livelihoods and culture, two scenarios were outlined to increase and maintain access to local fish for residents. The scenarios focused on providing a consistent supply of fish to local residents at an affordable price.
Chapter 6: Discussion

As presented in the previous chapter, findings of this research indicate moderate levels of food insecurity across the community and low dietary quality. There was relatively low consumption of fish during the survey period and overall, community members reported that at the household and community level, consumption of local fish had decreased over the last ten years. Historically, fish was a key component to the cultural identity of Lambert’s Bay. While fish remains an aspect of diets and culture in the community, the decline in traditional foodways associated with fish suggests a weakening of its cultural significance. Findings suggest that environmental, economic and institutional factors negatively affect the direct and indirect contribution of SSF to the community food security of Lambert’s Bay. Fisher men and women recommended that in order to increase access to local fish, shortened value chains through alternative marketing arrangements would have to be implemented. In the four sections below, the significance of the findings will be highlighted and examined within the context of current literature. Further areas of research will be suggested and lastly, emerging themes within this body of research will be underlined.

6.1 Role of small-scale fisheries for household and community food security: direct consumption and indirect contributions

6.1.1 Food security and quality of diets

Results from the household survey conducted in Lambert’s Bay suggest moderate levels of food insecurity and low household dietary diversity. Fishing communities throughout South Africa face high levels of food insecurity. A survey across South African fisher communities in 1999-2000 reported high levels of food insecurity on the West Coast, with 43.1% of households being food insecure. A similar study conducted a decade later suggested high levels of poverty and high levels of dependency on marine resources for food in 13 coastal communities (Raemaekers et al., 2013). As most food security studies throughout South Africa utilise different indicators, it is difficult to make cross site comparisons.

Reported HFIAS scores ranged from 1 to 25 and the average score was nine out of 40 households (Fig 6). 31 out of 40 households reported a score of more than 5. HFIAP categorises households with a logic tree to determine the severity of food insecurity based on responses to HFIAS. 83% of households were classified as moderately to severely food insecure (Fig 7). Many of the households, while they may have a lower HFIAS answered affirmatively to some of the more extreme questions such as, “in the past four weeks was there ever no food of any kind to eat in your household” and were placed in a severe HFIAP category. This was similar to urban food security research conducted in Ghana as there was a noticeable rise in variance of HFIAS as HFIAP categories increased in severity. Using the HFIAP can
lead to over categorizing households into the severely food insecure bracket (Tuholske et al., 2018). Interviewed households often received income once a month, therefore by the end of the month they were reducing the number of meals or consuming smaller portions of foods. In addition, many household food managers explained that if they didn’t have something in their house they would go and borrow from a neighbour therefore, having an empty cupboard, while a severe condition was not out of the norm for some households because their social network enabled them to secure a meal at the end of the day. These coping strategies may have placed them at more severe categories.

Households in Lambert’s Bay, had for the most part, poor dietary quality. 38% of respondents had a HHDDS of six and 28% of respondents had a score of five or lower, indicating a diet lacking in diversity. Furthermore, when the type of food groups consumed are examined, it was evident that diets were for the most part homogenous. The main food groups consumed were grains, coffee/tea, sugar, animal protein, oil/fats and tubers. The least common reported food groups included fish, pulses, eggs and fruit (Fig. 9). This also follows dietary trends throughout the country as cereals comprise of most of the diet (Misselhorn & Hendriks, 2017). It is alarming that fish was one of the least common food groups consumed; however, this was during a poor fishing month.

The results suggest that fisher and non-fisher households in Lambert’s Bay are food insecure and consume diets that are generally low in diversity. It is difficult to compare to other studies as different food security indicators were used but this suggests that, due to the vulnerability and marginalisation of fisher communities, more research is needed to better understand how environmental, institutional, economic and social factors influence food security. In addition, coping strategies in fisher communities must be further examined. This research reveals the unique challenges that coastal communities face in regard to food insecurity and dietary diversity.

6.1.2 Consumption of fresh fish

Reported consumption of fish during September 2018 was relatively low in Lambert’s Bay, highlighting the influence of seasonality on fish consumption. Less than half of the interviewed households reported consuming fish during the survey period. 18 out of 40 respondents stated they consumed fish, exclusively Cape Bream, at least once over the course of the month, with the majority, 13 respondents eating fish once a week (Table 4). Nthane’s 2015 study in Lambert’s Bay indicated that 81% of IRP holder households ate fish twice a week (Nthane, 2015). These current findings present a dissimilar image than the 2015 study as Nthane’s results were based upon an annual average and the research was conducted during the
Snoek run which is characterised by higher consumption of fish. This case study calls attention to the seasonality of diets in coastal communities.

Relatively low consumption of fish due to unfavourable weather conditions underscores the vulnerability of coastal communities reliant on marine resources for food and livelihoods. Physical access to fish during September 2018 was compromised because of an unseasonably limited number of sea days. 65% of interviewed fisher households reported not fishing throughout the month and 50% of survey respondents who did not consume fish stated that poor fishing conditions was the main reason for the absence of fish in their diets. These findings build upon Bene’s 2009 research in the Democratic Republic of Congo that suggests specialised fishers in the Congo, while economically stable, remain vulnerable due to the nature of their livelihood. This research in Lambert’s Bay extends the notion of vulnerability beyond the fishers to the greater community. While fishers may experience the immediate impact of environmental shocks as both their source of food as well as income is affected, community members are also negatively impacted as access to fish is interrupted.

Social networks and self-provisioning served as the main source of fish for Lambert’s Bay community members. All but one of the households who reported consuming fish during the month of September 2018 obtained fish from a local source (Table 5). Households obtained fish from a household member or from a local fisher at the harbour or at the fisher’s house. These results support previous research completed by Lowitt that emphasises the importance of access to local fish for food security in coastal communities. Lowitt’s survey of seafood consumption in Newfoundland indicated that residents consume more and prefer local seafood sourced through social networks and local fish plants (Lowitt, 2013b).

Access to fish for non-fisher households was often determined by affordability and the social economy. 32% of surveyed residents who did not consume fish expressed that it was too expensive, and they simply could not afford it. Residents, who were occasionally recipients of gifted fish, suggested that the practice of fishers sharing their catch was in decline. While fishers attempt to uphold this practice as attested to by all of the surveyed fisher households, they face growing operational costs which threatens the social economy. Research surrounding the social economy associated with fish, highlights that the gifting and bartering of fish provides access to a nutritious protein source for residents, especially those in the lower income bracket. Lowitt’s findings in Newfoundland showed that fish consumption across all income brackets was the same as fish was sold at lower prices depending on social networks. Similarly, Loring’s examination of local seafood consumption in Alaska indicated that seafood was often traded, bartered or shared amongst local low income residents (Loring et al., 2013; Lowitt, 2013b).
Findings from this research in Lambert’s Bay do support elements of Lowitt’s and Loring’s respective research; however, this study draws attention to the challenges that fishers encounter while trying to maintain the social economy. Fishers must cope with rising operational costs as well as poor fishing conditions due to environmental changes. These challenges threaten the social economy in Lambert’s Bay and a source of fish for residents, especially those in the lowest income bracket.

6.1.3 Role of small-scale fisheries for food security: direct and indirect

SSF contribute to food security through direct consumption and indirectly through the provision of livelihoods and thus income. Findings during the household survey showed that the direct contribution of SSF to food security was based upon seasonality as there was limited consumption due to poor weather conditions and fish migratory patterns. During other months of the year and in particular, during the Snoek run, it was reported that consumption of fish increases drastically, signifying that SSF plays a significant role as a direct contributor to community food security. In the Western Cape fishing communities, Snoek is the main species for small-scale fishers, accounts for more than 50% of the landed fish and as expressed by Isaacs’s 2013 study it is a key component of the diets for communities living on the margins (Isaacs, 2013). Nthane’s research findings displayed that 96% of IRP fishers from Lambert’s Bay stated that Snoek and Cape Bream was their main food source. Furthermore, WCRL permit holders stated that harvesting Snoek provided critical supplementary income and food source when WCRL was not in season (Nthane, 2015).

During this research period, the Snoek season occurred between April to June 2018 as reported during the household survey and FGDs. The migratory fish greatly contributes to household food security of the community as for three to four months community members are employed in harvesting, post harvesting or spin off activities such as renting a room to visiting fishers and have direct access to Snoek. As reported throughout the FGDs, during Snoek season fisher households and non-fisher households have increased access to fresh fish almost every day. Fishers commonly take home a fish or two to their households or fishers who rent a room from community members share a fish with the proprieters. As noted on the seasonal calendar (Fig 4), during Snoek season, consumption of fish is high as well as income. It was reported that these months were the easiest to acquired food for the household. It is also important to compare the seasonal calendar to the months of adequate dietary provisioning indicator (MADP) (Fig.10 ) based on the household survey results as both show higher levels of food security during Snoek season. The MADP demonstrates that in general, during the Snoek run, April to June 2018, there were fewer households who did not have a sufficient food supply.
SSF play an important role for community food security especially during the Snoek run as it significantly increases direct consumption of fish and provides critical nutrition for this period of time. These findings uphold previous research that states within poor households consumption of fish can provide essential nutrients, making the difference between hunger and poor nutrition versus a nutritious, more diverse and food secure household (Béné, 2006; Thilsted et al., 2016). This research provides a more complete image of the contribution of SSF as it captures periods of decreased access to marine resources as well as times of abundance.

SSF contribute indirectly to the food security of the community of Lambert’s Bay through income pathways as it provides employment opportunities for fishers, post-harvest workers and other individuals through spinoff activities. Increased employment opportunities are particularly prolific during the Snoek season. Selling fish enables households to purchase a variety of foods that may satisfy nutritional and cultural preferences. As demonstrated in the Philippines, the sale of fish enabled fishers to purchase rice, a key dietary staple or nutrient dense foods that they were unable to grow as found by Fabinyi et al. (Fabinyi et al., 2017). Income generated can represent a large portion of household funds or it can be a vital part-time activity that uplifts the household and prevents them from falling deeper into poverty (Béné et al., 2009; Kawarazuka & Béné, 2010b). Results from this research do not dispute these findings. All the fisher households reported selling the majority of their catch. As mentioned above, during Snoek season, direct consumption of fish increases, in addition, income increases for fishers, post-harvest workers and other community members who are engaged in spinoff activities. On the seasonal calendar (Fig. 4) it was reported that income was highest during March to June 2018, which coincides with Snoek season. Increased income also enables households to provide others with a loaf of bread or help with electricity as reported by FGD participants. Income from fishing activities has a trickle-down effect to households that may not be directly involved.

The impact of poor fishing conditions on the contribution of SSF for livelihoods and income was evident during the household survey. Low income derived from marine harvesting activities was apparent during the month of September 2018 as 13 of the 20 fisher households interviewed did not consider harvesting marine resources as their main income. These households, relied on other income sources such as on government grants to cover household needs. Indirect contributions of SSF for food security are heavily reliant on fishing conditions as evident in the two pictures that emerged from this research: significant contributions to food security through increased income during Snoek season and increased food insecurity in September 2018 due to poor fishing conditions and decreased number of sea days. What remains unclear, as stated by the High Level Panel of Experts on World Food Security, is if
income from the sale of fish is used to purchase high quality food (High Level Panel of Experts on World Food Security, 2014). Secondly, how can benefits gained during good fishing months be carried over lean seasons to maintain food security. While the seasonality of small-scale fisheries is a common feature, more investigation has to be made to examine how food security sustained during lean seasons (High Level Panel of Experts on World Food Security, 2014).

6.2 Cultural significance of fish for community food security

Traditional foodways and the social economy surrounding fish indicates its cultural significance in the community of Lambert’s Bay. Through the examination of harvesting, preparation and consumption practices, the historical importance of fish and its centrality to the cultural identity of the community is apparent. The sea provides income, food, a sense of identity at both the individual and community level which shapes the traditions of the community (Loring et al., 2019). Unfortunately, traditional practices are in decline as reported by community members. 83% of household survey respondents stated that the culture of eating fish had decreased when compared to ten years ago. Similarly, FGD participants claimed that certain methods of preparing fish such as drying, picking and salting, were less commonly practiced.

6.2.1 Traditional foodways associated with fish

Historically, marine resource harvesting in Lambert’s Bay was comprised of various activities undertaken by men, women and children, for both commercial and subsistence purposes, all of which contributed to food security. The diversity of procurement strategies enabled households to ensure consistent access to marine resources for food. For example, harvesting shellfish was a key dietary substitute when male fishers could not go to sea. The variety of marine harvesting practices has decreased as indicated by findings from the household survey. Only four individuals reported harvesting shellfish for subsistence or recreational purpose during a 12-month period. FGD participants claimed that permit conditions, time restrictions and daily bag limits, have contributed to the reduction of this practice. This research suggests that the current uniformity of marine harvesting activities, mainly fishing for commercial purposes, is a result of permit restrictions. A reduction in access rights has in turn negatively impacted access to food for community members. The research supports concepts that demonstrate the link between access rights and cultural identity. As Power suggests, the ability to use traditional food systems is directly linked to the cultural identity of the community and the maintenance of culture (E.M. Power, 2008).

The decline in the diversity of food practices is also evident in the reduction of traditional fish preparation techniques in Lambert’s Bay. Traditionally, community members employed a wide
range of fish preservation methods such as the drying, salting, pickling and the smoking of fish to ensure a consistent supply throughout the winter months. These value adding activities enabled households to partake in economic activities with inland communities through the bartering or selling of preserved fish. Results suggest traditional fish preparation methods are in decline due to an increase in the price of fish and a decrease in the availability of fish. People are now more reliant on purchasing fish as self-provisioning has decreased due to access rights and less fish is gifted due to increased operational costs experienced by fishers themselves. There is also a decrease in fish abundance as reported by local fishers. In addition, the closing down of the fish plant where residents would often get fish at a reduced price or for free, has reduced the availability of fish to the local community.

These findings support previous research that explores the value of traditional foodways in coastal communities. As articulated by Loring et al., 2019, traditional methods of food preparation and value adding activities significantly contribute to food security as they often increase access and availability (shelf life) of nutritious sources of affordable food within the community and communities locate inland (Loring et al., 2019). Lowitt found that, regardless of the level of income, households that salted fish were significantly more likely to eat more local seafood throughout the year (Lowitt, 2013b). Results from Lambert’s Bay suggest that in the past, traditional food practices associated with fish ensured a vital supply of food as well as increased economic gains from fishing activities, similar to previous studies. This research also uncovers factors that contribute to a decline in food practices and the impact of their absence for food security and livelihoods.

6.2.2 Fish and the social economy

Local fish and seafood are central to the community food security of Lambert’s Bay as it plays a key role in the social economy. Sharing fish with family members, neighbours and community members is a long-celebrated tradition in Lambert’s Bay that has been passed down from generation to generation. Sharing and exchange, despite a reported decline, remains a key component to the food system. This practice is similar to other coastal regions around the world. For example, in Hawaii, it was reported that 20% of seafood caught by small-scale fishers was donated to social activities to ensure community cohesion (Kittinger et al. 2015). Similarly, in the Pacific Islands sharing fish was a form of contribution or general support to community (Severance et al. 2013).

All 20 of the interviewed fisher households stated that they gifted fish as it was a way to share the wealth that they received and a means to reciprocate good deeds performed by other community members. Gifted fish is an important source of food for many non-fisher households as they cannot afford to purchase it themselves. From the household survey, 5 of
10 non-fisher households who consumed fish received it as a gift. Studies in North America highlight the importance of sharing and social networks for access to fish. The existence of social networks in Newfoundland resulted in uniform fish consumption across all income brackets (Lowitt, 2013) and amongst lower income community members in Alaska, local seafood was commonly obtained by bartering, sharing and trading (Loring et al., 2013). Furthermore, as Harder and Wenzel articulated, food security is dependent on store bought food but also driven by social networks and access to cultural foods (Harder & Wenzel, 2012). Research in Lambert’s Bay highlights the significance of sharing as a food practice and its contribution to the social economy. Access to fish through social networks has been and remains a key component to community food security in Lambert’s Bay as it enables non-fisher and poorer households to access fish. Unfortunately, the practice of sharing fish and exchange is in decline due to increased operational costs and permit restrictions, expressed by both fishers and non-fisher households alike. The complexity of the food system and the interrelatedness of environmental, institutional and economic factors in Lambert’s Bay threatens the strength and existence of the social economy.

Through the examination of traditional foodways it is evident that fish remains a key part of Lambert’s Bay culture, however; traditional methods of procuring, preparing and consuming are in decline due to a reduction in species abundance and access rights as well as economic factors. The broader definition of community food security emphasises access to culturally appropriate food and the importance of traditional food ways. Power suggests in the context of Aboriginal Canadians in Northern Canada, food security also depends on access to cultural food through traditional harvesting methods (Power, 2008). Reduced access to natural resources prevents the achievement of cultural food security and goes against the principles of food sovereignty (Rocha & Liberato, 2013). Further research on traditional foodways within coastal communities will enable a better understanding of how to maintain and/or adapt these traditions within current context to contribute to community food security. This research not only highlights the importance of fish as a part of cultural similar to past studies, but it suggests reasons for the decline.

6.3 Factors influencing community food security

Community food security is affected by the economic, institutional and environmental factors and their relationships, at the community level as they impact the availability and accessibility of food, whether purchased or produced. In Lambert’s Bay factors associated with the above components have shaped the community food system and filtered down to the household level. In the following section each factor will be described as it is a perceived driver of community food security outcomes.
6.3.1 Economic factors

Household food security and the quality of diets in Lambert’s Bay is compromised by the rising cost of food. Residents face challenges due to economic constraints accessing food. During both the household survey and FGDs, participants commonly stated that the cost of food was negatively impacting food security. Furthermore, the accessibility of local fish is in decline as prices rise due to increased operational costs. A recent study conducted by Broll indicated that, when comparing food price increases from 2008 to 2018, the cost has increase 93.4% for the same basket of food. Specifically, key staples such as bread have increased from 5.89 ZAR to 13.49ZAR, much higher than the cost when factored for inflation (Broll, 2018). Most urban and rural South Africans who are heavily reliant on purchased food for household consumption suffer greatly due to rising food costs (Pereira, 2014).

78% of household survey respondents stated that the quality of their household diets had decreased compared to ten years ago and this was mainly due to the rising cost of food. Residents are forced to make dietary choices based on cost and household survey findings indicated low dietary diversity. Mkhawani et al., observed that when food prices rose in Runnymede, South Africa, 57% of participants stopped buying certain foods, bought cheaper brands or compromised taste and safety (Mkhawani, Motadi, Mabapa, Mbhenyane, & Blaauw, 2016). Temple and Steyn investigated the cost of a healthy diet and found it to be, on average, 69% more expensive than a typical South African diet (Temple & Steyn, 2011). The Lambert’s Bay case study suggests that the cost of food is a major factor influencing dietary choices, similar to other studies completed in South Africa. Findings in Lambert’s Bay also suggest that the decline in self-provisioning through home gardens, bartering and fishing results in an increased reliance on purchased foods. This research suggests, in the past, coastal food systems were more resilient, community members could secure a healthier diet and food procurement strategies were diversified.

Community members are unable to access fish, a nutritious protein source, consistently throughout the year due to the increased cost of fish and in particular Cape Bream. Rising operational costs associated with petrol, purchasing of bait and boat licensing fees have driven up the price of fish. Between October 2017 to November 2018, the cost of fuel (95 Octane) per litre increased from 13.52ZAR to 16.49ZAR (http://www.sapia.org.za/Overview/Old-fuel-prices). Community residents were unable to purchase fish and the frequency of fishers gifting fish has decreased as they must recover costs. The ability of a harvester, fishers or hunters, to share, as Harder and Wenzel suggest, is critical for those with non-hunters to access “country food” (Harder & Wenzel, 2012). Almost one third of household respondents who did not consume fish during the month of September 2018 stated that they could not afford to purchase a bundle of fish. The cost of one bundle of Cape Bream increased from 80ZAR to
150ZAR between October 2017 to October 2018. Fishers expressed concern with the pressure they are under to uphold the traditional practice of sharing fish but at the same time need to cover their own costs. On the other side, community members who regularly obtained gifted fish are now receiving it less often or not at all. The increasing operational costs incurred by fishers, as expressed by fishers themselves and community members, is negatively impacting the social economy and thus the community food security of Lambert’s Bay.

6.3.2 Small-scale fisheries governance and food security

The transformation process associated with the allocation of fishing rights proceeding the start of democracy in South Africa impacted the food security of Lambert’s Bay residents by drastically reducing access to marine resources for food and livelihoods. Fishing permit allocations for small scale fishers were viewed by both fishers and non-fishers as a reason for food insecurity and lack of access to fish for food. In the fishing community of Kalk Bay in Cape Town, the withdrawal of access rights and access to resources through fishery reform policies has meant a decrease in livelihood activities and thus food security (Nkomo, 2015). Shanyengange investigated the impact of interim relief measures being granted to fishers in Oceanview, South Africa and consumption of fish, Cape Bream and Snoek, for some households increased by fourfold. Also, the interim relief measures resulted in the cost of fish decreasing (Shanyengange, 2009).

Results from this research echo findings from the above studies. The reduced consumption of fish in Lambert’s Bay was attributed to the reduction in fishing permits as fish was harder to access on the local market. Conversely, 23% of household stated their household consumption of fish increased and this was because they or their partner were granted fishing rights. This indicates the significance of access rights for food security. Non-fisher households expressed that it was harder to obtain fish because of permit conditions as there were less fishers going to sea. Indirect benefits of SSF for food security were stifled by mismanaged permit allocation. It was explained on multiple occasions that fishers who were not granted a permit were struggling as a main household income source was terminated. Results gathered from this research illustrate the impact of access rights on food security, for both fishers and non-fisher households.

The allocation of single species or multiple species permits influenced community food security as fishing activities, driven by permit restrictions, affected the amount of fish available for community consumption. While there was no explicit link, or distinction between West coast rock lobster (WCRL) permit holders and linefish permit holders during the household survey, findings suggest that WCRL fishing activities were disruptive to access to fish for direct consumption. WCRL is primarily exported and not consumed by the local population. When
fish consumption over a 12-month period was examined, participants reported that accessing linefish was difficult during WCRL season because a large portion of fishers were occupied with WCRL activities and did not harvest other types of fish. The impact of the allocation of rights to fish single species was detrimental to the community in terms of livelihoods and food security as demonstrated in Kalk Bay, Cape Town (Nkomo, 2015).

6.3.3 Environmental factors influencing community food security

Access and availability of fish for community food security is negatively influenced by environmental changes due to climate change and human activities. While there is no concrete evidence, observations by fishers and community members, suggest the role of changing environmental conditions as a reason for the decline in local fish. Climate change may result in increased vulnerability related to loss of livelihoods, decreased sea days and changes in geographic distribution of species due to changing ocean temperatures (Allison 2009, IPCC, 2014). Lived experiences of fishers in Lambert’s Bay support this research. Abnormal weather patterns make it difficult for fishers to predict their activities and they have fewer sea days. As shown during the household survey, only 45% of fisher households interviewed went to sea and there was at most 10 sea days during September 2018. This was atypical compared to usual fishing conditions during the month of September. Migratory patterns of fish, such as Snoek, are also changing as reported by fishers. This influences the length of Snoek season and also the distance that fishers have to travel to fish which in turn increases their fuel costs.

Human activity has impacted species abundance due to overfishing and environmental changes on land. Erosion and land use caused by humans negatively impacts the health of coastal ecosystems. More alarming is pressure placed on fish stocks due to overfishing (High Level Panel of Experts on World Food Security, 2014). Fishers expressed concerns that embodied these findings. They voiced fears and frustration related to resource competition and decreasing species abundance. On land, the closing of the fish plant and the damming of a local river as well as water use was also a perceived reason for the decline in the abundance of near shore species.

While more investigation is necessary, evidence suggests environmental changes are negatively impacting the contribution of SSF to the food security of coastal communities. Climate change impacts the availability, stability, access to and utilization of food stocks (IPCC 2014). SSF dependent communities must develop and implement adaptation and mitigation strategies with particular attention at the implications for food security and nutrition (FAO, 2015). This research sheds light on the impact of environmental changes on SSF in South Africa in terms of food security.
6.4 Increasing access and availability of local fish for community food security

Fishers, as custodians of the sea and community members, play a vital link that enables coastal communities to benefit from marine resources. In Lambert’s Bay, fishers view themselves as the stewards of the ocean. Consequently, they facilitate the contribution of SSF to community food security. Unfortunately, fishers face immense challenges, have been largely marginalised and are often undervalued for their contributions at the community level. In order to increase the consumption of fish and the role of SSF for food security, fishers require greater support from community members, government and non-governmental actors.

Key issues to address, as identified by fishers themselves include shorter value chains through direct marketing, access to new markets and cold storage. The other evident issue is improved conditions for access rights. Throughout the course of this research, fishers and community members referred to permit conditions and lack of access rights as a major barrier related to the realisation of livelihoods and food security.

SSF value chains in South Africa are relatively informal, however; the value chain often positions the fisher as the price taker as buyers situated themselves within the value chain by providing advances and supplies. As both Wentink et. al and Nthane both highlight in their respective work, middlemen, “langanas” as they are referred to, create power imbalances, manipulate the system, force lower prices through fisher indebtedness that they create (Nthane, 2015; Wentink et al., 2017). This research did not explicitly examine value chains but, through scenario planning, the issue of fishers being “price takers” and the impact on food security emerged, especially during Snoek season. At times during the Snoek season, fishers received low prices for the catch and langanas then sold the fish to nearby community members for an unreasonable price. Fishers recognised the unfair situation and suggested that shortening the value chain and pursuing direct marketing would enable them to get a fair price and community members would be able to purchase fish at an affordable rate. Initially, fishers may require support from non-governmental actors to develop and explore new markets, especially in neighbouring communities.

Community members were largely dependent on the local, informal market to access fish however; these markets were vulnerable to weather conditions and price shocks. To provide more consistent access to fish and improve and maintain consumption of fish throughout the community it was proposed that fishers stockpile and freeze a portion of their catch, mainly Cape Bream and Snoek, to sell to Lambert’s Bay households. This practice would build upon current practices as some fishers currently save a portion of the catch to sell from their houses. Fishers could also sell fish in smaller portions to enable increased affordability. Building upon current practices, will enable fishers to provide improved access to fish to households in Lambert’s Bay. These themes surrounding the maintenance of informal economies and social
networks echoes sentiments and topics from food systems studies in North America that highlight the critical role that the provision of “traditional” food at affordable prices through social networks has on community food security (Harder & Wenzel, 2012; Loring & Gerlach, 2009; Lowitt, 2013a).

Lastly, the realisation of improved access to fish for community food security is largely dependent on access rights. Fortunately, as of 2018 the Small-scale fisheries policy (SSFP) is being implemented in South Africa which promises improved access to fishers and in turn, supports the contribution of SSF for food security. However; the SSFP must truly support and consider the role of fish for food and not compromise this with economic objectives. The policy states that each cooperative will decide upon a “basket of species” and each species must be defined for commercial or personal consumption. Species that are deemed for commercial purposes cannot be consumed and species considered for personal consumption cannot be sold (DAFF, 2012). How this condition plays out must be closely observed and its impact on the direct and indirect benefits of food security for coastal communities must be assessed. This research highlights the role that fishers play in providing an affordable source of protein and it emphasises that fishers requires support from community members, government and other actors to truly realise their contribution to local food systems.

6.5 Conclusion

This research demonstrates that SSF does contribute to community food security directly and indirectly; however, seasonality affects the role of SSF for food security. Unfavourable fishing conditions was marked by low consumption of fish within the community and decreased income for fishers. On the other hand, during the Snoek run, direct and indirect benefits of SSF to food security were prevalent. Results suggest that consumption of fish and livelihood opportunities increased during this period. This case study highlights the vulnerability of coastal communities due to their dependence on marine resources. This vulnerability is further compounded by economic, environmental and institutional factors that threaten access to and availability of fish for food and livelihoods. Traditional food practices associated with fish were a key component to culture in Lambert’s Bay but the prevalence of practices is also negatively impacted by marine resource governance and environmental changes. Using a community food security lens, this research was able to identify key factors and their interconnectedness, that affects community food security within the context of a South African coastal community.
Chapter 7: Conclusion

Across the globe there are approximately 50 million individuals participating in small-scale fishing activities and SSF contributes to 90% of fish that is consumed. SSF contribute to global food security as well as the food security at both the regional and local levels fishers (Food and Agriculture Organization of the United Nations, 2016). In South Africa, there are approximately 28,000 small-scale fishers and coastal communities are reliant on marine resources for food security. However; there is little known about the extent of the contribution of SSF to food security, globally and in South Africa. Moreover, how SSF contributes to community food security is largely unknown and the factors that influence the role of SSF for food security has not been examined extensively.

The overall aim of this research was to understand how SSF contribute to the community food security of one South African coastal community. By utilising a community food security lens, a broader concept building upon food security, the researcher was better equipped to examine the role of fisheries at both the household level and community level as well as the factors that influence access and availability of food, in particular fish.

The study adopted a mixed methods approach to address the three research objectives. The first research objective, examining the food security at the household level, was achieved by conducting 40 household surveys. A series of FGDs and observations made during the household survey addressed the second research objective: examine perceptions of food security and food culture. Lastly, a scenario planning workshop with community members, mainly fishers, was conducted to assess potential scenarios that would maintain or improve access to local fish for increased consumption.

Overall, households in Lambert’s Bay experience levels of moderate food insecurity. Household and community diets, in general, were characterised by lower dietary diversity and quality. In recent years dietary quality has decreased due to increased cost of food, decline of self-provisioning and increased reliance on purchased foods as well as decreased access to marine resources.

Two key findings emerged from the research that highlighted the contribution of SSF to food security in Lambert’s Bay and the drivers that influence food security outcomes. Firstly, the research highlighted the role of SSF for food security both through direct and indirect contributions as well as its social importance. Historically and to some extent at the present, fish, in the community of Lambert’s Bay, represents multiple significances. It is a source of food, a source of livelihoods and a symbol of community and social cohesion. Secondly, access rights, the permit allocation process and permit conditions has had a significant impact on the contribution of SSF to community food security.
Historically, fish was a key component of diets throughout the community of Lambert’s Bay. Traditional food practices such as preserving fish ensured a sustained supply of fish throughout the year. Alternative methods of harvesting marine resources, enabled community members to obtain food from the shoreline when fishing conditions were poor. Fish was a key part of diets in the past. Today, it remains an aspect of residents’ diets, however; it is in decline. Community members reported that overall consumption of fish had decreased throughout Lambert’s Bay. Factors such as access rights, increased costs, the reduction in species abundance, environmental changes and a reduction in traditional preserving practices have resulted in a decline in the consumption of fish. While the Snoek season does directly contribute to food security as fish are abundant and accessible to the community, in general, throughout the rest of the year, there is an absence of fish in household diets. The role of fish as food for the community of Lambert’s Bay is in jeopardy.

SSF indirectly contributes to food security through the provision of employment. In Lambert’s Bay, fish is a source of livelihoods. While the number of active fishers may be in decline due to permit restrictions, the indirect benefits of SSF to food security was particularly evident during the Snoek run. Findings indicated that during the Snoek season household income increased and food security increased because of seasonal employment opportunities. The presence of the Snoek enabled fishers, post-harvest workers and other service providers an income that contributed indirectly to food security. Fish remains a source of income however; the benefits are in decline due to access rights, environmental changes and increased operational costs.

Lastly, research findings highlight the role of fish for social cohesion and culture. While this was more predominate in the past, the social economy plays a role in the procurement of fish and the tradition of sharing fish remains part of the culture of Lambert’s Bay. Unfortunately, institutional, environmental and economic factors have negatively impacted the role that fish plays as part of the social economy and a unifying commodity throughout the community. Fish historically, and to an extent today, is a symbol of culture. It was a key contributor to the community food security of Lambert’s Bay and does, remain, a vital part of this.

Drivers of food insecurity included economic and environmental factors, however; findings indicated that institutional factors had the most significant impact on the contribution of SSF to community food security. Prior to the fisheries transformation and redistribution process, fishers in Lambert’s Bay harvested marine resources informally and/or fished for elite individuals who held permits. While they did not have formal rights, they had consistent access to fish for food and an income. Following the transformation process many fishers were not granted permits or they had to wait long periods of time to obtain rights while the allocation
process was occurring. In addition, the conditions by which the rights were granted were not conducive to their livelihood and food needs. Other marine harvesting activities such as harvesting shellfish was impacted by permits as residents stated the cost of the permit and the conditions were disincentives to harvesting for household consumption. The permit allocation process also had an impact on the community as a whole. The allocation of permits to some fishers and not to others created tensions within the community which weakened social cohesion. In addition, there was a decrease in the availability of fish to procure as there were fewer number of fishers. The permit allocation process and conditions undermined and compromised the role of fish for community food security as it reduced access to fish for food and livelihoods. The reduction of access rights also negatively impacted the cultural role of fish and its role within the social economy.

This research highlights that fishers and non-fishers residing in coastal communities are impacted by factors that affect access to fish and in turn food security. By taking a broad inventory of the contribution of SSF to community food security, this research highlights the interrelationships which influence the role of marine resources for food security. Through the use of the community food security lens, the contribution of this research, areas of future research and policy recommendations emerged.

Globally, it is widely accepted that SSF contribute to food security however; through this research, with the use of a broad lens, how and what influences the contribution of SSF to food security emerges. The interconnectedness of coastal food systems shapes how the contribution of marine resources for food manifests at the community level. This research highlights the importance of SSF for food security at the household and community level as well as the role that fish plays in terms of culture. As fishers and coastal communities face a myriad of challenges, it is particularly important that interdisciplinary research considers the drivers of food security outcomes in these incredibly vulnerable food systems. If small-scale fishing communities are to maintain or increase the contribution of fish for food security a variety of factors must be considered and addressed.

In South Africa, this study illuminates the need to do more research within the context of SSF and food security. Furthermore, one issue that is particularly relevant and requires further examination is the impact of access rights to marine resources on the community food security of coastal communities not just in terms of livelihoods and food but also implications for food culture. Secondly, a deeper examination of the impact of SSF value chain on the food security fisher communities is needed as value chains often undermine the role of small-scale fisheries on the food security of the producer community. Lastly, more general research on the role of SSF for food security and livelihoods in South Africa must be conducted to better understand
the realities these communities face in terms of food security as they face vastly different challenges compared to inland agricultural communities or urban dwellers.

Through this research and in particular the scenario planning workshop, several recommendations emerged related to promoting the contribution of SSF for the food security of the local community. Fishers are often price takers and placed in a position of disadvantage along the fisheries value chain, therefore receiving suboptimal livelihood benefits. In order for fishers to receive improved prices and livelihood benefits they require support to access diversified markets and support shortening value chains. ABALOBI is supporting small-scale fishers to shorten value chains by assessing restaurants in Cape Town through direct marketing. However; it is recommended that fishers explore directing marketing to the local community or neighbouring communities. This will serve two purposes – fishers will be able to access other markets thereby increasing their income and local communities will be able to access fish. It is also recommended that fish to local communities is sold at an affordable price. Actors such as ABALOBI or government agencies must support initiatives that increase the contribution of SSF to food security through direct consumption and indirectly through increased income.

The small-scale fisheries policy began implementation in late 2018 with explicit objectives and conditions to ensure that the sector contributed to the food security of fishers and their communities. The impact of the policy and the recognition of small-scale fisheries as a sector and its impact on community food security must be closely monitored and examined. In particular, it is recommended that the “basket of species” approach and its implementation is closely assessed as it has the potential to undermine the direct contribution of marine resources for food security if some species are not available for community consumption and deemed for commercial purposes.

Utilising a community food security lens to examine the contribution of SSF to food security provided a broad scope to assess its role for direct consumption, for livelihoods and for culture. The degradation of coastal communities through the misallocation of access rights to marine resources resulted in the erosion of a dynamic coastal food system whereby community members, fisher and non-fishers alike, had access to food through self-provisioning and through formal and informal networks. After years of dysfunction permit allocation systems, unemployment coupled with increased living costs, and subsequent threats to informal economies, the role of SSF for community food security has been weakened. In order to increase and maintain access to local fish for improved community food security not just one, but several key drivers of the food system mainly institutional, environmental and economic, must be addressed.
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Annex A- Household survey

HUISHOUDING KOS SEKURITEIT OPNAME (Household Food Security Survey)

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**Projek Beskrywing en toestemming**

My naam is Margaret en my navorsingsassistent is ............... .. Ek is 'n Meestersgraadstudent aan die Universiteit van Kaapstad en ek doen navorsing in Lambertsbaai. Die doel van my navorsing is om ondersoek in te stel oor water bydrae die kleinskaalse visserye tot die gemeenskapsvoedselsekuriteit in Lambertsbaai bied. Ongeveer 45 huishoudings sal ek onderhoude mee voer om deel uit te maak van my navorsing.

U huishouding is geselekteer en wil ons graag met u praat oor onderwerpe wat verband hou met voedselsekuriteit en verbruik van vis. As die huishoudelijke voedselbestuurder glo ek dat u kennis en menings ons sal help om 'n beter begrip te kry van hoe vis bydra tot die dieetgewoontes binne die gemeenskap en voedselsekuriteit in die algemeen. Daar is geen regte of verkeerde antwoorde nie. U antwoorde sal vertroulik wees, en sal u naam nie bekend gemaak word nie. Die onderhoud sal ongeveer een uur duur.

**Is jy bereid om deel te neem? (Omsirkel antwoord)**

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**Volgens NEE: Dankie vir u tyd.**

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<td><strong>Indien JA:</strong></td>
<td><strong>Ons dank u dat u deelgeneem het aan hierdie studie. Weereens, u antwoorde sal vertroulik wees en u volle naam sal nie aangeteken word nie om sodoende u en u huishouding anoniem te hou. U het die reg om te weier om enige van die vrae te beantwoord. Indien u op enige tydstip van die onderhoud ongemaklik voel kan u die bespreking beëindig. Voordat ons voortgaan, het u nog vrae? (Skryf vrae hieronder neer)</strong></td>
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Project Description and consent

My name is Margaret and my research assistant is................ I am a Masters student at the University of Cape Town and I am conducting research in Lambert’s Bay. The purpose of my research is to examine the contribution of small scale fisheries to community food security in Lambert’s Bay. I am interviewing approximately 45 households as part of my research.

Your household has been selected and we would like to talk to you about topics related to food security and consumption of fish. As the household food manager, I believe that your knowledge and opinions will help us gain a better understanding of how fish contributes to diets within the community and food security in general. There are no right or wrong answers. Your responses will be confidential, and I will not record your name. The interview will take about one hour.

Are you willing to participate? (Circle answer)

YES

NO

If NO: Thank you for your time.

If YES: We thank you for agreeing to be part of this study. Again, your answers will be confidential and your full name will not be recorded so you and your household will remain anonymous. You have the right to refuse to answer any of the questions. If at any time you do not feel comfortable to continue the interview you can end our discussion.

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<td>5. Hoe lank is u woonagtig in Lambertsbai?</td>
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<tr>
<td>Ander/ Other</td>
</tr>
<tr>
<td>8. Wat is u huwelik status? What is your marital status?</td>
</tr>
<tr>
<td>Getrouid/ Married</td>
</tr>
<tr>
<td>Gemeenskaplike Reg/ Common Law</td>
</tr>
<tr>
<td>Ongetrouid/ Single</td>
</tr>
<tr>
<td>Geskei/ Divorced</td>
</tr>
<tr>
<td>Weduwee/ Widow</td>
</tr>
<tr>
<td>9. Watter vlak van skool het jy voltooí? What level of school have you completed?</td>
</tr>
<tr>
<td>Geen/ None</td>
</tr>
<tr>
<td>Onvoltooid Primêr (Gr.1 – 6 or Sub A to Std 4)/ Incomplete primary</td>
</tr>
<tr>
<td>Voltooid Primêr/ Complete primary</td>
</tr>
<tr>
<td>Onvoltooid Hoërskool ( Gr. 8- Gr 11 or Std 6 and 9)/Incomplete High school</td>
</tr>
<tr>
<td>Voltooi Hoërskool ( gr 12 of Std 10)/ Complete high school</td>
</tr>
<tr>
<td>Tegniese opleiding/ Technical Education</td>
</tr>
</tbody>
</table>
### Teriëre opleiding / university education

Ander/ other:

<table>
<thead>
<tr>
<th>10. Wat is jou beroep of mees algemene daaglikse aktiwiteit? (Sien die mees algemene in die eerste kolom)? What is your occupation or most common daily activity? (Check most common in first column)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mees algemeen / Most common</strong></td>
</tr>
<tr>
<td>Bestuur huishouding (onbetaald)</td>
</tr>
<tr>
<td>Manage household (unpaid)</td>
</tr>
<tr>
<td>Oes Marine Hulpbronne /Harvest marine resources</td>
</tr>
<tr>
<td>Huishoudelike werk (betaald)</td>
</tr>
<tr>
<td>Domestic work (paid)</td>
</tr>
<tr>
<td>Pre voor-oes marine werker/ Pre harvest marine worker</td>
</tr>
<tr>
<td>Na-oes werker / Post harvest worker</td>
</tr>
<tr>
<td>Pensioenaris/ Pensioner</td>
</tr>
<tr>
<td>Kleinhandel werk (formeel)/ Retail work (formal)</td>
</tr>
<tr>
<td>Verkoper/handelaar (informeel) /Vendor/trader (informal)</td>
</tr>
<tr>
<td>Staatsamptenaar/ Civil servant</td>
</tr>
<tr>
<td>Geskoolde handwerk/ Skilled manual work</td>
</tr>
<tr>
<td>Ongeskoolde handwerk/ Unskilled manual labour</td>
</tr>
<tr>
<td>Besigheidseienaar (selfstandig/ Business owner (self employed)</td>
</tr>
<tr>
<td>Werkloos/ Unemployed</td>
</tr>
<tr>
<td>Ander/ Other:</td>
</tr>
</tbody>
</table>

### Huishoudelike Informatie / Household information

11. Beskou jy jouself as die hoof van die huishouding? (indien ja, slaan oor tot 14)? Do you consider yourself the head of the household? (if yes skip to 14)

<table>
<thead>
<tr>
<th>JAA/ Yes</th>
<th>NEE/No</th>
<th>Beide/Both</th>
<th>Ander/ Other</th>
</tr>
</thead>
</table>

12. As jy (die informant) nie die huishoudelike hoof is nie, wie beskou jy die hoof van die huishouding? (merk een)/If you (the informant) is not the household head, who do you consider the head of the household? (check one)

<table>
<thead>
<tr>
<th>Man/Lewensmaat Husband/Partner</th>
<th>Broer/ Brother</th>
<th>Sister/Sister</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vader/ Father</td>
<td>Antie/ Aunt</td>
<td>Skoonpa (Vader in wetlike aspek /Father-in-law</td>
</tr>
<tr>
<td>Moeder/ Mother</td>
<td>Oom/ Uncle</td>
<td>Skoonma (Moeder in wetlike aspek)/Mother-in-law</td>
</tr>
<tr>
<td>Dogter/ Daughter</td>
<td>Vriende/ Friend</td>
<td>Seun/ Son</td>
</tr>
<tr>
<td>Ander familie lid / Other relative</td>
<td>Nie-familie lid/ Non-relative</td>
<td>Ander (spesifiseer)/ Other (Specify):</td>
</tr>
</tbody>
</table>

13. Wat is die ouderdom van hulle? Age? 14. Waar is hulle gebore? Where were they born?

15. Hoeveel mense woon permanent in u huishouding? How many people live permanently in your household?

16. Hoeveel tussen die eue van…..? How many between the ages of ……?

| 0-4 | 4-18 | 18-60 | 60+ |
17. Hoeveel mense in u huishouding verdien ’n inkomste? How many people in your household earn an income?

18. Wat is die hoofaktiwiteite wat lede van die huishouding onderneem om ’n inkomste te verkry? (kyk alles wat van toepassing is en ondersoek) What are the main activities undertaken by members of the household to obtain an income? (check all that apply and probe)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oes van marine hulpbronne (visvang)</td>
<td>Harvesting marine resources (fishing)</td>
</tr>
<tr>
<td>Plaaswerker/ Farm worker</td>
<td></td>
</tr>
<tr>
<td>Kleinskaal boer /Small scale farmer</td>
<td></td>
</tr>
<tr>
<td>Voor-oes marine werker /Pre-harvest marine worker</td>
<td></td>
</tr>
<tr>
<td>Na-oes marine werker /Post- harvest marine worker</td>
<td></td>
</tr>
<tr>
<td>Huishoudelike werker /Domestic worker</td>
<td></td>
</tr>
<tr>
<td>Fabriekwerker /Work in factory</td>
<td></td>
</tr>
<tr>
<td>Ouderdomspension/ Old age govt pension</td>
<td></td>
</tr>
<tr>
<td>Kindertoelae / Child support</td>
<td></td>
</tr>
<tr>
<td>Ongeskikheidstoelaag / disability grant</td>
<td></td>
</tr>
<tr>
<td>Pleegsorg / Foster care grant</td>
<td></td>
</tr>
<tr>
<td>Pivvaat Pensioen / Private Pension</td>
<td></td>
</tr>
<tr>
<td>Staatsamptenaar / Civil servant</td>
<td></td>
</tr>
<tr>
<td>Uitgebreide Publieke Werke Program / Expanded public works program</td>
<td></td>
</tr>
<tr>
<td>Oes hout /Harvesting wood</td>
<td></td>
</tr>
<tr>
<td>Toerisme /Tourism</td>
<td></td>
</tr>
<tr>
<td>Kleinhandel (formeel, bv. Spar ) /Retail (formal, ex Spar)</td>
<td></td>
</tr>
<tr>
<td>Verkoper / kleinhandel informeel (bv. padstalletjie teen pad van huiswinkel) / Vendor/retail informal (ex stall on road side or spazza)</td>
<td></td>
</tr>
<tr>
<td>Geskoolde hande-arbeider /Skilled manual labour</td>
<td></td>
</tr>
<tr>
<td>Ongeskoolde hande-arbeider /Unskilled manual labour</td>
<td></td>
</tr>
<tr>
<td>Indiensneming in nywerheidsvissery / Employment in industrial fishing industry</td>
<td></td>
</tr>
<tr>
<td>Selfstandige werker /Self employed:</td>
<td></td>
</tr>
<tr>
<td>Staatsubsidie (spesifiseer) / Government grant (specify):</td>
<td></td>
</tr>
<tr>
<td>Ander / Other:</td>
<td></td>
</tr>
</tbody>
</table>

19. Wat is die top drie huishoudelike aktiwiteite wat bydra tot maandelikse inkomste? (Lys die belangrikste eerste) What are the top three household activities that contribute to monthly income? (list the most important first)

1)  
2)  
3)  

20. Behalwe inkomste, is daar enige aktiwiteite wat bydra tot die verkryging van kos? (Lys die top drie indien van toepassing) Besides income, are there any activities that contribute to obtaining food? List the top three if applicable

1)  
2)  
3)  

21. Wat is die drie top huishoudelike uitgawes (lys die grootste eerste)? What are the three top household expenses (list the largest first)?

1)
22. Vir die *vorige maand*, ongeveer wat was die totale huishoudelike inkomste? (ZAR)
   For the previous month, approximately what was the total household income? (ZAR)

<table>
<thead>
<tr>
<th>Inkomste (ZAR)</th>
<th>Antwoord</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1000</td>
<td></td>
</tr>
<tr>
<td>1000-2000</td>
<td></td>
</tr>
<tr>
<td>2000-4000</td>
<td></td>
</tr>
<tr>
<td>4000-7000</td>
<td></td>
</tr>
<tr>
<td>7000-13000</td>
<td></td>
</tr>
<tr>
<td>Above 13000</td>
<td></td>
</tr>
<tr>
<td>Geen antwoord / No response</td>
<td></td>
</tr>
</tbody>
</table>

23. Wie bestuur die huishoudelike inkomste?
   Who manages the household income?

- Vroulike Hoof (informant) / Female head (informant)
- Manlike Hoof / Male head
- Albei / Both
- Ander / Other:

24. As u huishouding iets duur moet koop wat hierdie besluit maak?
   If your household needs to buy something expensive who makes this decision?

- Vroulike Hoof (informant) / Female head (informant)
- Manlike Hoof / Male head
- Albei / Both
- Ander / Other:

25. Soort/Tipe woning (waarneem)
   Type of dwelling (observe)

- Permanente Huis (Baksteen, blok) / Permanent House (Brick, block)
- Permanente Sink hok (sink, gemengde baksteen)
- Permanent Shack (corrugated iron, mixed brick)
- Tydelike hok/hut (plastiek, karton doos) / Temporary shack (plastic, cardboards)
- Kamer in huis / Room in a house
- Ander / Other:

### Gebruik van mariene hulpbronne / Use of marine resources

26. Was jou familie betrokke by visvang in die verlede? In the past was your family involved in fishing?

<table>
<thead>
<tr>
<th>Ja/ Yes</th>
<th>Nee/ No</th>
<th>Ouders/ Parents</th>
<th>Skoonouers in regsaaspek / Parents in law</th>
<th>Familié/siblings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

27. Indien JA, wie? (kie ar almal van toepassing)? If YES, who? (check all that apply)

- Ouers/ Parents
- Ingetrode groot ouers/ Ingetrode Ouma en Oupa (grandparents in law)
- Familie/ Siblings
- Ander / Other

### Is iemand in jou huishouding tans 'n visser?
Is anyone in your household currently a fisher?

<table>
<thead>
<tr>
<th>Relatie tot informant</th>
<th>Posisie/ Position</th>
<th>Hou of verkop die vis/harvest for own consumption?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Wie? Skryf relatie tot informant neer?</td>
<td>b. Wat is die mees algemene spesies wat gevang? (lys tot drie)?</td>
<td>c. In die <em>afgelope maand</em>, hoe dikwels het hulle gaan visvang? (1x per maand) (2-3x per maand) (Een keer 'n week) (Twee of meer keer per week)</td>
</tr>
<tr>
<td>Who? Write down relation to informant</td>
<td>What are the most common species caught? (list up to three)</td>
<td>In the last month, how often did they fish? (1x per month) (2-3x per month) (Once a week) (Two or more times a week)</td>
</tr>
<tr>
<td>d. Wat is hul posisie? wat doen hulle? What is their position? What do they do?</td>
<td>e. Het hulle 'n permit? (Skryf J / N en tipe permit) Do they have a permit? Type?</td>
<td></td>
</tr>
<tr>
<td>b. Wat is hul posisie? wat doen hulle? What is their position? What do they do?</td>
<td>e. Het hulle 'n permit? (Skryf J / N en tipe permit) Do they have a permit? Type?</td>
<td></td>
</tr>
<tr>
<td>c. In die <em>afgelope maand</em>, hoe dikwels het hulle gaan visvang? (1x per maand) (2-3x per maand) (Een keer 'n week) (Twee of meer keer per week)</td>
<td>d. Verkoop of houd die vis/oes vir eie verbruik? (Verkoop alles Verkoop die meeste, hou 'n paar Verkoop sommige, hou 'n paar Hou alles) Do you sell or keep the fish/harvest for own consumption? (Sell all Sell most, keep a few Sell some, keep some Keep all)</td>
<td></td>
</tr>
</tbody>
</table>

| b. Wat is hul posisie? wat doen hulle? What is their position? What do they do? | e. Het hulle 'n permit? (Skryf J / N en tipe permit) Do they have a permit? Type? |
|-------------------|-----------------|-----------------------------------------------|
|                   |                 |                                              |

28. Is iemand in jou huishouding tans 'n visser?
   Is anyone in your household currently a fisher?

<table>
<thead>
<tr>
<th>Relatie tot informant</th>
<th>Posisie/ Position</th>
<th>Hou of verkop die vis/harvest for own consumption?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Wie? Skryf relatie tot informant neer?</td>
<td>b. Wat is die mees algemene spesies wat gevang? (lys tot drie)?</td>
<td>c. In die <em>afgelope maand</em>, hoe dikwels het hulle gaan visvang? (1x per maand) (2-3x per maand) (Een keer 'n week) (Twee of meer keer per week)</td>
</tr>
<tr>
<td>Who? Write down relation to informant</td>
<td>What are the most common species caught? (list up to three)</td>
<td>In the last month, how often did they fish? (1x per month) (2-3x per month) (Once a week) (Two or more times a week)</td>
</tr>
<tr>
<td>d. Wat is hul posisie? wat doen hulle? What is their position? What do they do?</td>
<td>e. Het hulle 'n permit? (Skryf J / N en tipe permit) Do they have a permit? Type?</td>
<td></td>
</tr>
<tr>
<td>b. Wat is hul posisie? wat doen hulle? What is their position? What do they do?</td>
<td>e. Het hulle 'n permit? (Skryf J / N en tipe permit) Do they have a permit? Type?</td>
<td></td>
</tr>
<tr>
<td>c. In die <em>afgelope maand</em>, hoe dikwels het hulle gaan visvang? (1x per maand) (2-3x per maand) (Een keer 'n week) (Twee of meer keer per week)</td>
<td>d. Verkoop of houd die vis/oes vir eie verbruik? (Verkoop alles Verkoop die meeste, hou 'n paar Verkoop sommige, hou 'n paar Hou alles) Do you sell or keep the fish/harvest for own consumption? (Sell all Sell most, keep a few Sell some, keep some Keep all)</td>
<td></td>
</tr>
</tbody>
</table>
29. In the past year, has anyone in the household fished recreationally or harvested marine resources? If yes fill out the table below.

<table>
<thead>
<tr>
<th>JA</th>
<th>NEE</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>a. Wie? Skryf relasie tot informant neer?</th>
<th>b. Wat is die meest algemene spesies wat gevang / geoes word? (lys tot drie)?</th>
<th>c. In die afgelope maand, hoe dikwels het hulle mariene hulpbronne of vis geoes? (1x per maand) (2-3x per maand) (Een keer ’n week) (Twee of meer keer per week)</th>
<th>d. Verkoop of hou die vis / oes vir eie verbruik? (Verkoop alles Verkoop die meeste, hou ’n paar Verkoop sommige, hou ’n paar Hou alles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who? Write down relation to informant</td>
<td>What are the most common species caught/harvested? (list up to three)</td>
<td>In the last month, on average, how often did you/ they fish or harvest marine resources? (1x per month) (2-3x per month) (Once a week) (Two or more times a week)</td>
<td>Do you sell or keep the fish/harvest for own consumption? (Sell all Sell most, keep a few Sell some, keep some Keep all)</td>
</tr>
</tbody>
</table>
## Vroulike betrokkenheid by visvang aktiwiteite / Female involvement with fishing activities

30. Het u die afgelope jaar gehelp met enige werk of aktiwiteite wat verband hou met visvang? Over the past year, did you help with any work or activities linked to fishing?

<table>
<thead>
<tr>
<th>Ja/YES</th>
<th>NEE/NO</th>
</tr>
</thead>
</table>

Indien ja vul asb. onderstaande table in / If yes please fill out the table below

<table>
<thead>
<tr>
<th>a. Aktiwiteit (kyk asseblief alles wat van toepassing is)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity (please check all that apply)</td>
</tr>
<tr>
<td><strong>Voor-oes (voorbereiding van nette, toegang tot lokaas)</strong> Pre-harvest (prepare nets, access bait)</td>
</tr>
<tr>
<td><strong>Voor-oes (voorbereiding voordat visser see toe gaan)</strong> Pre-harvest (preparing before fisher goes to sea)</td>
</tr>
<tr>
<td><strong>Papierwerk (lisensiëring) en boekhouding</strong></td>
</tr>
<tr>
<td>Paper work (licensing) and book keeping</td>
</tr>
<tr>
<td><strong>Na-oes bemarking</strong> Post harvest marketing</td>
</tr>
<tr>
<td><strong>Na-oes (skoonmaak, vlek)</strong></td>
</tr>
<tr>
<td>Post harvest (cleaning, flecking)</td>
</tr>
<tr>
<td><strong>Oes van kusbronne</strong> Harvesting inshore resources</td>
</tr>
<tr>
<td><strong>Visvang vanuit ’n boot</strong> Fishing on a boat</td>
</tr>
<tr>
<td><strong>Ander/Other:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b. Word u vergoed vir hierdie werk? Are you compensated for this work?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Skryf: Ja of Nee)</td>
</tr>
<tr>
<td><strong>Ja/YES</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c. Hoe word u vergoed vir hierdie werk? How are you compensated for this work?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geld die hele tyd</td>
</tr>
<tr>
<td>Money all the time</td>
</tr>
<tr>
<td>Meestal geld, ’n bietjie vis</td>
</tr>
<tr>
<td>Mostly money, some fish</td>
</tr>
<tr>
<td>Sommige geld, ’n bietjie vis</td>
</tr>
<tr>
<td>Some money, some fish</td>
</tr>
<tr>
<td>Net vis</td>
</tr>
<tr>
<td>Just fish</td>
</tr>
<tr>
<td>ander</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

## Besluitneming met betrekking tot mariene hulpbronne / Decision making related to marine resources

31. As daar vissers in jou huishouding is, deel jy vis saam met familie en ander lede in die gemeenskap? If there is fisher in your household, do you share fish with family and others in the community?

<table>
<thead>
<tr>
<th>JA/YES</th>
<th>NEE/NO</th>
</tr>
</thead>
</table>

32. Waarom deel jy vis saam met familie en ander in die gemeenskap? Why do you share fish with family and others in the community? Hoekom deel jy nie? Why do you not share?

## Consumption of fish

33. In die laaste maand hoeveel keer het jy of iemand in die huishouing (Vars of gedroogde?) vis / seekos in hierdie huishouding geëet? In that last month, how many times did you or anyone in the household eat (Fresh or dried?) fish/seafood in this household?

<table>
<thead>
<tr>
<th>&gt; / meer as 17 keer (byna elke dag)/ &gt;17 times (almost everyday)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-16 keer (byna elke tweede dag) /13-16 times (about every second day)</td>
</tr>
<tr>
<td>9-12 (byna drie keer per week) / 9-12 (about three times a week)</td>
</tr>
<tr>
<td>5- 8 keer (byna twee keer per week) / 5- 8 times (about twice a week)</td>
</tr>
<tr>
<td>1-4 keer (een maal per week) / 1-4 times (once a week)</td>
</tr>
<tr>
<td><strong>Geen/ None</strong></td>
</tr>
</tbody>
</table>

33.b. As jy nie vis geëet het nie, hoekom? If you have not eaten any fish, why?
34. Oor die afgelope maand, waar het jy jou vis gekry? Lys al die bronne van waar jy die afgelope maand vis / seekos gekry het. Over the past month, where did you get your fish? List all sources of where you got fresh fish/seafood in the past month.

<table>
<thead>
<tr>
<th>Bron</th>
<th>Afgekyk door lid van huishouding</th>
<th>Gekoop by groot winkel (USave, Spar, Checkers, ens.)</th>
<th>Geskenk deur familielid / vriend wat ‘n visser is/ Gifted by family member/friend who is a fisher</th>
<th>Gekoop by hawe van kleinskaalse visser of bemarker / Purchased at harbour from small scale fisher or marketer</th>
<th>Aangekoop op straat / Purchased on the side of the road</th>
<th>Geruil / Bartered</th>
<th>Geskenk deur familielid / buurman wat betrokke is by die industriële visserybedryf / Gifted by family member/neighbour involved in industrial fishing industry</th>
<th>Gekoop by klein winkel / Purchased at small shop</th>
<th>Vergoeding vir werk deur huishoudingslid wat betrokke is by die industriële visserybedryf / Compensation for work by household member involved in industrial fishing industry</th>
<th>Ander / Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gevang / ge-oes deur lid van huishouding / Caught/ harvested by household member</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gekoop by groot winkel (USave, Spar, Checkers, ens.) / Purchased at large store (Spar, Checkers, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geskenk deur familielid / vriend wat ‘n visser is/ Gifted by family member/friend who is a fisher</td>
<td></td>
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<td>Gekoop by hawe van kleinskaalse visser of bemarker / Purchased at harbour from small scale fisher or marketer</td>
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<td>Aangekoop op straat / Purchased on the side of the road</td>
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<td>Geskenk deur familielid / buurman wat betrokke is by die industriële visserybedryf / Gifted by family member/neighbour involved in industrial fishing industry</td>
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<td>Gekoop by klein winkel / Purchased at small shop</td>
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<td>Vergoeding vir werk deur huishoudingslid wat betrokke is by die industriële visserybedryf / Compensation for work by household member involved in industrial fishing industry</td>
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35. Van die bogenoemde plekke, skryf asseblief waar jy die afgelope maand die meeste vars / droë vis gehad het? (mees algemene bo) Out of the places listed above, please write where you most often got fresh/dry fish in the last month? (most frequent at top)

1. 
2. 
3. 

36. Oor die afgelope maand, wat was die top drie vars of gedroogde vis wat in die huishouding geëet was? Over the last month, what were the top three commonly eaten fresh or dried fish in the household?

1. 
2. 
3. 

37. Wat is die top drie vis / seekos soorte in die huishouding wat voorkeur kry? What are the top three preferred fish/seafood in the household?

1. 
2. 
3. 

38. Watter tipe proteïen word die meeste gebruik in die huishouding? (lys drie) Gee voorbeeld van proteïenbronne: beesvleis, vis, hoender, ingemaakte beesvleis, eiers, lenses / bone, melkprodukte, vark Give examples of sources of protein: beef, fish, chicken, canned beef, eggs, lentils/beans, milk products, pork What type of protein is most consumed within the household? (list top three)

1. 
2. 
3. 

39. Wat is die huishoudings drie voorkeur tipe proteïen? (Lys mees voorkeur bo) What are the households three preferred sources of protein? List most preferred at top

1. 
2. 
3. 

Persepsie van verandering / Perceptions of change

40. Hoe het die huishoudelike visverbruik van in die afgelope 10 jaar verander in vergelyking met nou? Compared to now, how has the household consumption of fish changed over the past 10 years?

☐ Afgeneem (decreased) ☐ Verhoog (increased) ☐ Dieselfde gebly (Stayed the same) ☐ NVT of weet nie (N/A or do not know)

41. Hoe het die beskikbaarheid van vars vis verander oor die afgelope 10 jaar? (hoe maklik is dit om vis vir huishoudelike verbruik te verkry) Over the last 10 years, how easy is it to obtain fresh fish how easy is it to obtain fish for household consumption)

☐ Afgeneem (decreased) ☐ Verhoog (increased) ☐ Dieselfde gebly (Stayed the same) ☐ NVT of weet nie (N/A or do not know)
42. Die afgelope 10 jaar, dink jy die kleinskaalse vissers in die gemeenskap se vangs het toegeneem of verminder?
Over the last 10 years, do you think the small scale fishers in the community have increased or decreased their catch?
☐ Afgeneem (decreased)
☐ Verhoog (Increased)
☐ Dieselfde geleë (Stayed the same)
☐ NVT of weet nie (N/A or do not know)

43. Die afgelope 10 jaar, dink jy die gemeenskapsverbruik van vis het toegeneem, afgeneem of dieselfde gebly?
Over the last 10 years, do you think the community consumption of fish has increased, decreased or stayed the same?
☐ Afgeneem (decreased)
☐ Verhoog (Increased)
☐ Dieselfde geleë (Stayed the same)
☐ NVT of weet nie (N/A or do not know)

44. Oor die afgelope 10 jaar het die kwaliteit van u huishoudelike dieet verbeter, dieselfde geleë of slegter geword?
Over the last 10 years has the quality of your household diet improved, stayed the same or gotten worse?
☐ Afgeneem (decreased)
☐ Verhoog (Increased)
☐ Dieselfde geleë (Stayed the same)
☐ NVT of weet nie (N/A or do not know)

45. Oor die afgelope 10 jaar het die kwaliteit van jou gemeenskaps se dieet verbeter, dieselfde geleë of vererger?
Over the last 10 years has the quality of you community’s diet improved, stayed the same or gotten worse?
☐ Afgeneem (decreased)
☐ Verhoog (Increased)
☐ Dieselfde geleë (Stayed the same)
☐ NVT of weet nie (N/A or do not know)

46. Oor die afgelope 10 jaar het die kultuur / tradisies van die eet van vis afgeneem, toegeneem of dieselfde geleë?
Over the last 10 years, has the culture/traditions of associated with eating fish decreased, increased or stayed the same?
☐ Afgeneem (decreased)
☐ Verhoog (Increased)
☐ Dieselfde geleë (Stayed the same)
☐ NVT of weet nie (N/A or do not know)

Verbruik en aankoop van kos /Consumption and purchasing food

47. In die laaste maand, vir al die voedsel tipes, waar het die huishouding sy kos gekry? Gaan asseblief al die bronne na?
In the last month, for all food types, where did the household obtain its’ food? Please check list all sources

- Kleinskaal winkel /Small shop
- Groot kruidenierswinkel
  (Usave,Spar)/Large grocery store
- Informele mark/ Mobile /Informal market
- Plant en laat groei dit / oes dit/ Grow it
- Ruil/ Barter
- Restaurant/Wegneem etes
  Restaurant/take away
- Deel maaltye met bure /Share meals with neighbours
- Kos verskaf deur bure / Food provided by neighbours
- Leen kos by ander/ Borrow food from others
- Voedselhulp of regeringsprogram/ Food aid or government program
- Ander/Other (specify):

48. Lys asseblief die top drie mees gereelde plekke wat u die afgelope maand kos gekry het?
Please list the most top three most frequented places you got food for the past month
1
2.
3.

Food Security

49. Vra vraag en indien antwoord ja is vra hoe gereeld binne die laaste vier weke
Ask question and if response is yes, ask how often within the last four weeks

- a. Was u die afgelope vier weke bekommerd dat u huishouding nie genoeg kos sou hê nie?
In the past four weeks, did you worry that your household would not have enough food?
- b. In die afgelope vier weke was jy of enige lid van die huishouding nie in staat om die soorte kosse wat jy verkies het, te eet nie weens ‘n gebrek aan hulpbronne?
In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?

c. Het u of enige lid van die huishouding in die afgelope vier weke 'n beperkte verskeidenheid kosse gehad as gevolg van 'n gebrek aan hulpbronne?
In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?

d. Het u of enige lid van die huishouding afgelope vier weke kos geëet wat u regtig nie wil eet nie weens 'n gebrek aan hulpbronne om ander soorte kos te verkry?
In the past four weeks, did you or any household member have to eat some food that you really did not want to eat because of a lack of resources to obtain other types of food?

e. Het u of enige lid van die huishouding afgelope vier weke 'n kleiner maaltyd geëet as wat u nodig gehad het omdat daar nie genoeg kos was nie?
In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?

f. In die afgelope vier weke, moes u en enige lid van die huishouding, minder maaltye in 'n dag eet omdat daar nie genoeg kos was nie?
In the past four weeks, did you any household member have to eat fewer meals in a day because there was not enough food?

g. In die afgelope vier weke was daar ooit geen kos van enige soort op u huishouding nie?
In the past four weeks, was there ever no food to eat of any kind on your household?

h. Het u of enige ander lid van die huishouding afgelope vier weke honger gaan slaap in die nag omdat daar nie genoeg kos was nie?
In the past four weeks, did you or any other household member go to sleep at night hungry because there was not enough food?

i. In die afgelope vier weke het jy of enige lid van die huishouding 'n hele dag gegaan sonder om iets te eet omdat daar nie genoeg kos was nie?
In the past four weeks, did you or any household member go a whole day without eating anything because there was not enough food?

j. Het u of enige lid van die huishouding afgelope week 'n gekookte maaltyd minder as een keer per dag geëet?
In the past week, did you or any household member eat a cooked meal less that once a day
**Huishoudelike dieet diversiteit telling / Household dietary diversity score**

50. Vra die respondent om, alle soorte kos wat die respondent of iemand in die huishouding gister (gedurende die oggend tot die nag) geëet het, te beskryf en te lys. Respondent om te beskryf en dan moet die onderhoudvoerder dit in kategorieë plaas. Maak seker dat jy ondersoek - vra byvoorbeeld of iemand buite die huis geëet het, wat hy vir ’n peselhappie gehad, ens.

Ask the respondent to describe and list all types of food that the respondent or anyone in the household ate yesterday (during the morning to the night). Respondent to describe and then interviewer put in categories. Make sure to probe – for example ask if anyone ate outside of the house, what they had for a snack, etc.

<table>
<thead>
<tr>
<th>Kosse gelys/ Foods listed</th>
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<tbody>
<tr>
<td>Types of food</td>
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<tr>
<td>Graan: brood, rys, noedels, pap, of ander kosse gemaak van koring, sorghum, mielies, rys</td>
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<tr>
<td>Knolle: Aartappels, Yams, Cassava, of ander</td>
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<td>Groente / Vegetables</td>
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<td>Vrugte / Fruits</td>
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<tr>
<td>Diereproteïene: beesvleis, vark, hoender, wild, eend-, lewer-, nier- of ander orgaanvleis</td>
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<td>Eiers</td>
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<tr>
<td>Vis ( vars of gedroog)/ Fish ( fresh or dried)</td>
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<tr>
<td>Pulses: bone, lensies, neute/ Pulses: beans, lentils, nuts</td>
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<tr>
<td>Suiwel: melk, kaas, jogurt, ens/ Dairy: milk, cheese, yogurt, etc</td>
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<tr>
<td>Enige voedsel gemaak met vette: olie, vet, botter? Any foods made with fats: oil, fat, butter?</td>
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<tr>
<td>Enige suiker of heuning?/ Any sugar or honey?</td>
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<tr>
<td>Ander kos: koffie, tee, ens / Other foods: coffee, tea, etc</td>
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<tr>
<td>51. In die afgelope 12 maande was daar maande waarin u nie genoeg kos gehad het om aan u gesin se behoeftes te voldoen nie</td>
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<tr>
<td>52. Indien JA, wat was die maande (in die laaste 12) waarin jy nie genoeg kos gehad het om aan jou gesin se behoeftes te voldoen nie.</td>
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<td>Indien nee gaan na volgende afdeling</td>
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| 53. Het u toegang tot spaargeld? Do you have access to savings? | JA/YES |  |
| 54. Indien JA, wat is u bronne van spaar? If YES, what are your sources of savings | Bank rekening /Bank account |  |
|  | Groepsbesparingskema /Group saving scheme (gooi goo) |  |
|  | Ander/Other: |  |
| 55. As u ’n tekort aan geld het, het u toegang tot krediet? If you have a shortage of money, do you have access to credit? | JA/YES |  |
| 56. Indien JA Lys asb. die bron If YES please list the source | Familie /Family |  |
|  | Booteiernaar /Boat owner |  |
|  | Bemarker /Marketer |  |
|  | Bank |  |
|  | Geld lener /Money lender |  |
|  | Buurman /Neighbour |  |

**Comments:**

**Tyd eindig /Time end**
Annex B- Focus group discussion methods and guide

General instructions:

Number of people: Five to seven people

Materials: Large sheets of paper, coloured markers, post it notes, voice recorder

Consent: Always explain the research aims, purpose of the meeting and obtain consent from each participant

Time frame: 2.5 hours per session

Session 1: Seasonal food calendar

Objective: Identify changes in livelihoods and food supply (in particular fish) over a year and examine seasonality of food availability as well as direct and indirect contribution of fish to food security

Guidelines

1) Explain to the group that during the session you will be discussing changes in weather, fishing and consumption of food and fish over the past 12 months. The purpose is to see seasonality effects how much and what fish and food households eat. For example, what months of the year was the snoek run in Lambert’s Bay? During those months how plentiful were the snoek? The facilitator(s) will ask questions and another person will fill in the chart according to the groups’ answers.

2) Post a large piece of paper on the wall, draw a table with 13 columns, one for all of the topics and then one for each month of the year. Each row will represent a topic (ex a fish species).

3) Begin by mapping in the most dominant weather patterns for each month. Ask participants what the weather was like in each month and fill in with the appropriate symbol
   a. Large sun = hot
   b. Wind sign= windy
   c. Rain cloud= rainy
   d. Cloud = over cast
   e. *if mix of weather put in several symbols but the most predominant should be the largest
   f. *if they have additional terms then include these
4) List all of the main species of fish down the far left column and for each month determine the abundance by drawing a fish and colouring in the fish. For example if there were lots of snoek in May colour one fish in completely, while if in May there were a limited number of snoek only colour in the tail of the fish. Continue with each species that is listed down the left column.

5) Begin another row entitled, “community consumption of fish”. Ask the respondents what month the community ate most amount of fish. If they ate the most in April colour in the whole block. Conversely, if they ate the least amount in September, colour in a small segment of the block. Continue to fill in each block according to the amount of fish consumed.

6) Below, the amount of fish consumed, repeat the same process but colour in the block according to overall food security (food availability).

7) Lastly, repeat the same process and illustrate the amount of household income over the 12 months and expenditures.

8) Give time throughout exercise for comments from participants and at the end for overall reflection.

9) Potential probing questions
   a. At what time of the year was it harder to feed the household?
   b. At what time of year did you have the most expenses? Why?
   c. What time of the year did you eat the most fish?
   d. What time of year was there an abundance of fish available to local community?
   e. When are the major holidays throughout the year?
Session 2: Historical trends and timelines

Objective: Look at the community’s history and examine key events that may have caused changes related to fishing activities, fishing access, consumption of fish and overall food security.

Guidelines:

1) Explain to the group that you will be talking about the past events and history of Lambert’s Bay, in general, and related to fishing activities. Explain that you will be looking at the past 20 years and focus on a couple of topics like fishing rights and employment.

2) On a large piece of paper, begin writing the earliest date that you will start with - 2000. At the other end of the paper (axis) place the current year. Ask the community members to think of key events and place these on fill the x axis. (** get some key dates from Nico to probe***, ex when did the fish plant close)

3) When the timeline is complete, tell the group that you will discuss fishing rights and how this has changed over the years. On another piece of paper make a table with three columns: Event (ex long term rights allocated)/ Description (what happened)/ Impact (how did this impact the community, how did impact the fish available for people, the consumption of fish, impact the number of fishers)
   a. How have fishing rights changed over the years? List key events related to fishing rights in the community

4) Once you have explored how fishing rights allocation has changed over the years with key dates, plot these on the timeline. Ask if this looks okay and then plot consumption of fish according to impact, fisheries employment over time and then overall food security (if appropriate).

5) Some potential probing questions
   a. Has there been a decrease in fish stocks? When? What types of fish? Has there been an increase?
   b. Has the consumption of fish decreased? Why has this occurred? Have any species disappeared from local plates?
   c. How has access to marine resources changed? Has there been an increase or decrease in the number of people involved in fishing?
   d. Is there an increase in food availability? Why? Has there been an increase in hunger/food insecurity? Is it harder to feed your families now compared to before? What could be the reason for this?
e. How fishing livelihoods changed over the years? List key changes in livelihoods under events, describe what happened and the impact on LIV and FS.
Session 3: Food Culture and Traditions

Objective: The purpose of this discussion is to talk about food culture, practices and traditions in the community. This could include food harvesting, preparation and consumption practices. The group will brainstorm and list cultural food practices (in particular those associated with fish) and then discuss the prevalence of them today (are they still common practice, if the practice has decreased and why). Use a large sheet of paper and draw a table with three columns: Practice, Still practice now?, Why still practice or why not?

1) Begin by asking the group to brainstorm different food practices/traditions in the community. List the traditions on the far left column of the table.

2) Some questions to probe the group include:
   a. What special foods do you eat on holidays?
   b. What foods did your grandparents commonly eat? Do you still eat these?
   c. What are (were) common ways of preparing fish? What were common ways that your grandparents prepared fish?
   d. Are there any traditions around sharing food (fish) and bartering? Ensure these topics comes up – do people share fish? How did this happen? How does it happen now?

3) Once the list is exhausted (or during developing the list), ask if the tradition is still practiced. This can be rated by a scale (1=No, 2= Rarely, 3= Sometimes, 4= often, 5= Always, still common)

4) In the final column, ask why or why not they still practice the tradition. Write the reasons down and probe if they would like to do this practice or not.

5) When the table is complete ask how they feel about the changes. Further explore by asking questions about how they view the change in diets (what they are eating) and quality of diets.
   a. Do you think in the past what they ate was better?
   b. Do you think the quality of their diet was better?
   c. Do you think it was easier to get food (ex vegetables, fish, meat) back then?
   d. Do you think it was easier to feed a family back then?

6) Food Preferences (ensure this is discussed): The purpose of this is to reflect on what they did eat, and what they eat now and discuss what their preferences are and why or why not they eat the foods they do.
   a. Can they think of common foods they ate back then? (List on piece of paper)
   b. What are common foods they eat now? (List)
c. What types of food do they prefer? In the past or now?

d. Why do they choose the foods they do now? (Can use DD to prompt – state that for the most people they ate 6 different food each day – breads/potatoes/coffee/sugar/oil/protein)
Session 4: Challenges to food security

The purpose of this discussion is to examine some of the challenges related to accessing food and achieving a good diet. Use the preliminary findings (MADP, dietary diversity, fish consumption to prompt conversation).

1) Food shortage and coping: Referring back to MADP, state that in the survey a lot of people said that they did not have enough food in August and September.
   - Why was this a difficult month?
   - What do people do if they have a difficult month, how do they try and feed their families?
   - What other challenges do people face when feeding their families?

2) Dietary diversity – if doesn’t come up above
   - State that most people eat from 6 groups (grain/ potato/oil/sugar/coffee)
   - Why low number of fruits?
   - Why low number of vegetables?

3) Types of protein
   - What is a common type or protein (meat, chicken, fish, eggs) that people in the community eat?
   - What do most people prefer to eat?
   - Most common type was chicken, follow by eggs and dairy
   - Most preferred was mutton and chicken

4) Consumption of fish
   - Low in September, is this common? Why do they think?
   - Also a lot of people state they think the community eats less fish now than compared to before, do you agree? why do you think this is?

5) Other questions to ask
   - Access to food – where do they buy? Do they feel the selection is good? And prices are reasonable?
   - Cost of food
   - Electricity
Annex C - Scenario planning workshop

Purpose:

- Margaret interviewed 40 people to talk about what households were eating, consumption of fresh fish and levels of food security as well as discussion sessions with community members about history of Lambert’s Bay and food culture related to fisheries
- To identify scenarios (options) that maintain or enhance community food security by providing access to fresh and affordable fish for local community members
- Main questions to address
  - How can local community members access local fish given identified barriers/ issues they face?
  - What factors can increase or maintain consumption of fish for community members?
  - What scenarios or situations will help people access fresh local fish?

Participants: Fisher women and fisher men

Length: 2-3 hours (8:30-11:00)

Outline:

Introduction (5 minutes):

- Introduce the aim of the meeting
  - To discuss OPTIONS scenarios/situations that will help improve and/or maintain consumption of fish amongst community members (to make sure there is fish for people)
  - To discuss with participants how local community members can access more fish
  - This is a component of Margaret’s research and will be used for her thesis that looks at community food security in Lambert’s Bay and the contribution of fish to community food security (how fish contributes to diets of people in Lambert’s Bay, the quality of people’s diets, and the food culture of Lambert’s Bay)
- Obtain consent
  - State again that this will be use for research and the discussion will be recorded and notes will be taken. No names will be recorded. Are you willing to participate?
  - The session is discussion, a chance to hear your insights and knowledge. There are no wrong answers.
  - Are there any questions before we begin?

Review of key points from past research (20 min)

- Margaret interviewed 40 people to talk about what households were eating, consumption of fresh fish and levels of food security as well as discussion sessions with community members about history of Lambert’s Bay and food culture
- For this session I will share a couple of key points from household survey to start the discussion and if there is any feedback or thoughts from you
  - Consumption of fish during September 2018
  - Sources of fish
  - Reasons for why people don’t eat fish (cost, availability, weather)
• Perceptions of change (decrease in HH consumption of fish, decrease if community consumption and food culture with respect to fish)
  o Food security
    ▪ % hh struggled to meet hh food needs because of cost of food, end of the month money ran out, fishers less time at sea

• Show each point (drawn on large paper), brief explanation and allow time for feedback or thoughts

Identify factors/ situations that can increase or maintain consumption of local fish for community members (factors or situation)

• (20 min) Explain that given that fish is a good source of protein, an important part of Lambert’s Bay culture but it’s difficult for local community members to access it, what can be done to improve this? What factors can help people access fish?
  o Write these ideas (factors or situations) on paper
  o Group ideas if there is some overlap
  o Reflect on research if need prompt when brain storming
  o If there are more that 2-3, group ideas and then prioritise 2-3 solutions, and create one large sheet for each solution

Break

• Back casting (40-60 min)
  o Starting with one scenario, ask – if in 3 years what would be the ideal situation (ex every Monday community members could purchase fish at points in the community). In three years, what would the ideal scenario be?
  o On a large sheet of paper, draw table with last date at far right with a column for each preceding year (2020, 2021)
  o Under each column brainstorm and write the key steps that need to be taken in order to reach ideal scenario in 2022
  o Allow time for discussion
  o Write down as more detail as possible and probe if steps and/or goals are too broad

• Identify enabling factors and barriers (20)
  o Select one scenario to identify factors that will help achieve goal (ex selling fish by kg, having a place to store fish, community members receive notification, customers pre order, etc)
    ▪ What things will help achieve the goal/milestones
  o Write these factor down on a sheet of paper
  o Repeat the same exercise for barrier (ex need to have selling permit, not enough fish to sell or irregular schedule, fish still too expensive, too many logistics)
    ▪ What will be an obstacle to achieve the goal
  o Allow time for reflection and comment
4 September 2018

Ms Margaret MacDonald
Department of Environmental & Geographical Sciences

RE: The role of small-scale fisheries to the food security of one South African coastal community

Dear Ms Margaret MacDonald

I am pleased to inform you that the Faculty of Science Research Ethics Committee has approved the above-named application for research ethics clearance, subject to the conditions listed below.

• The application does not refer to the use of video whereas the consent form does. Please could you remove the reference to video in the consent form or, alternatively, include the use of video in the application and explain its use and necessity. Please could you submit the revised documents to us for our records.
• Implement the measures described in your application to ensure that the process of your research is ethically sound; and
• Uphold ethical principles throughout all stages of the research, responding appropriately to unanticipated issues: please contact me if you need advice on ethical issues that arise.

Your approval code is: FSREC 66 - 2018

I wish you success in your research.

Yours sincerely

A/Prof Rachel Wynberg
Chair: Faculty of Science Research Ethics Committee

Cc: Dr. Serge Raemaekers, Dr. Jane Battersby (Supervisors)