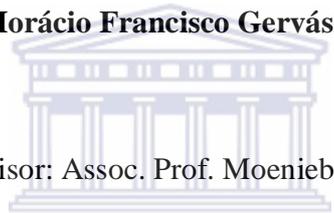


**Governing the intertidal subsistence fisheries in Mozambique: Vulnerability,
marginalization and policy mismatches
Case study of the district of Palma (The Province of Cabo Delgado)**

by

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Submitted in fulfillment of the requirements for the degree of Doctor of Philosophy
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Cape Town, November 2014

Declaration

I declare that the “Governing the intertidal subsistence fisheries in Mozambique: Vulnerability, marginalization and policy mismatches, Case study of the district of Palma (The Province of Cabo Delgado)”, is my own work, that all other sources used or quoted have been indicated and acknowledged by means of complete reference and that this thesis has not been submitted for a degree at another university.

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November 2014

Signature :

Supervisor: Assoc. Professor Moenieba Isaacs



Acknowledgements

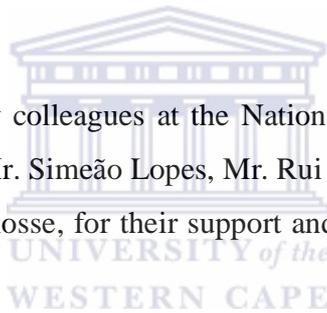
First of all I thank God for giving me such long life. Second, I wish to express my sincere gratitude to my supervisor, Assoc. Prof. Moenieba Isaacs for your patience, encouragement, constructive comments and very useful suggestions during this work. Thank you very much for everything and I hope you will be able to help many other Africans who might need support!

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I then wish to convey my final sincere thanks to the PLAAS family at the University of the Western Cape for creating such an efficient education system which is also accessible to poor people.



Dedication

This study is dedicated to the loving memories of my parents, Gervásio N'solo and Margarida Alexandre Majawa. Thank you for everything!



Abstract

Since the earlier 1970s the government of Mozambique has been carrying out legal, political, economic and institutional reforms which are culminating in the establishment of the current fisheries governance systems. An important achievement of these reforms is the political recognition the government has given to the importance of subsistence fishing and its incorporation into policy instruments such as the Fisheries Master Plan II (2014-2019) and the Artisanal Fisheries Development Strategy (2009-2015). In these policy documents, fisheries authorities put subsistence fisheries on top of priorities. However, the practice in Mozambique's fisheries is indicating that, despite this recognition, subsistence fishers remain amongst the most vulnerable groups, particularly at district and village levels. The objective of this study is to understand the patterns of inclusion and exclusion of subsistence fishers from the fisheries governance spaces in Mozambique with particular emphasis on Palma district (Cabo Delgado province). The study uses the concept of Action Spaces to situate the nature of opportunities that are being created under these reforms. A critical finding of this study is that, the institutions for fisheries governance being created by the government at district and community levels are not creating a functional mechanism for subsistence fishers to participate, access opportunities, and bring their voices into decision-making systems. As a result, subsistence fishers are creating their own spaces which are based on informal structures and relations to sustain their livelihoods. The study resorts to the institutional governance insights to understand the factors that may determine the interactions between the formal and informal action spaces while improving the contribution of subsistence fisheries to the livelihoods and food security of the vulnerable groups.

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Abbreviations

ADNAP	National Administration of Fisheries
AFDS	Artisanal Fisheries Development Strategy
CAP	Fisheries Administration Commission
CCGD	District Co-management Committee
CCGP	Provincial Co-management Committee
CCP	Community Fishing Council
CPPE	<i>Combinado Pesqueiro da Pesca de Pequena Escala</i> ¹
CPUE	Catch per unit effort
DDSP	District Development Strategic Plan
DNP	Fishery National Directorate
DPP	Provincial Directorate of Fisheries
EP	Fisheries School
FAO	Food and Agriculture Organization (United Nations)
FMP	Fisheries Master Plan
FFP	Fisheries Development Fund
GDP	Gross Domestic Product
GNP	Gross National Product
HCI	Household Commercialization Indexes
GD	<i>Grupos Dinamizadores</i> ²
GZV	Cabinet of Green Zones
IDPPE	National Institute for the Development of Small-scale Fisheries
IIP	National Institute for Fisheries Research
IMF	International Monetary Fund
INIP	National Institute for Fisheries Inspection
MICOA	Ministry for Coordination of Environmental Action
MITUR	Ministry of Tourism
MP	Ministry of Fisheries
MTC	Ministry of Transport and Communications
NGO	Non-governmental Organization
NIE	New Institutional Economics
OCB	Community-based Organization
OJM	Mozambique's Organization of Youth
OMM	Mozambican Organization of Women
PARPA I	1 st Action Plan for the Reduction of Absolute Poverty
PARPA II	2 nd Action Plan for the Alleviation and Reduction of Absolute Poverty (2006-09)
PARP III	3 rd Poverty Reduction Action Plan (2011-2014)
PCR	Savings and Rotating Credit
REPMAR	Maritime Fishing General Regulations
SADC	Southern African Development Community
SAP	Structural Adjustment Programme
SDAE	District Services of Economic Activities

¹ Small-scale Fisheries Combine

² Community (Political) Organization

CHAPTER ONE: INTRODUCTION

1.1. Introduction

Mozambique has a long coastline (2,500 km) which attracts different interests, namely: fisheries, oil and gas production and other economic activities. It has a 6,400 km² share of Lake Malawi (though little is known of catch magnitudes or potential), and 2,700 km² of a man-made freshwater lake above the Cahora Bassa Dam (*Ministério das Pescas*³, 2006). The fisheries sector plays an important role in the economy, contributing to about 4 per cent of the Gross Domestic Product (GDP) and approximately 30 per cent of foreign exchange earnings (Namalue, 2014). The role of artisanal fisheries on national food security and nutrition as well as on the livelihoods is also critically important. The artisanal fisheries census done by the National Institute for the Development of Small-scale Fisheries (IDPPE) in 2012, has estimated that at least 400,000 people were directly involved in artisanal fishing activities and among them, approximately 130,000 were involved in subsistence fisheries (IDPPE, 2012). Almost 90% of the fish consumed in Mozambique is supplied by the artisanal and subsistence fisheries (*Ministério das Pescas*, 2006).

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At an international level, the contribution of artisanal and subsistence fisheries in food security and livelihoods is also well recognized. It has been estimated that “between 660 and 820 million people in the world depend totally or partially on fisheries, aquaculture and related industries as sources of income and support” (HLPE, 2014:24). In developing countries, small-scale fisheries “generally make a broader direct and indirect contribution to food security” and to the livelihoods of the most vulnerable populations (HLPE, 2014:16). The contribution of fish in a population’s intake is also high (17% of the global population’s intake of animal protein and 6.5 per cent of all protein consumed) (HLPE, 2014:23). Fish is also a source of full-time and part-time employment and according to the most updated data from the United Nations Food and Agriculture Organisation (FAO), in 2010 “58.3 million people were engaged in the primary sector of capture fisheries and aquaculture” (HLPE, 2014:24). Fishing is an important source of food, income and employment even for the households “whose main activity is farming but who

³ The Ministry of Fisheries, Mozambique.

live in the proximity of water bodies” (HLPE, 2014:37). Fish provided by subsistence and artisanal fisheries is nutritionally important because it provides nutrient content such as iodine, vitamins B12 and D, “long-chain fatty acids (LC-PUFA), *eisapentaenoic* and *docosahexaenoic* (DHA) omega-3 chain fatty acids, protein of high quality and fish’s very rich content in calcium, iron, zinc and vitamin A” (HLPE, 2014:23). Aquaculture and livestock promotion projects have also deviated considerable quantities of fish such as anchovy, herring, mackerel and sardine (HLPE, 2014) to animals’ consumption while sacrificing the human demand on food. It is estimated that “in 2012 for instance, about 21.7 million of small pelagics were destined to feed use, of which 75 per cent (16.3 million Tonnes), was reduced to fishmeal and fish oil to feed carnivores and omnivores, farmed fish and livestock” (HLPE, 2014:29).

The current debate on small-scale fisheries has centered on three important points: the first is around the need to place subsistence fisheries on top of the priorities of the development agenda. The second focuses on the impacts of the losses or waste caused, such as the by-catch discharges⁴ (done by the semi-industrial and large scale fishing industries) and post-harvest damages (caused by inadequate handling and processing methods and facilities) impacting on the domestic supply of fish. The third point is about the impacts of policies that encourage the trade of fish commodities from the small-scale fisheries⁵. In all these debates an open discussion on subsistence fisheries and the role it plays in food and livelihood securities within the small-scale fisheries is missing. There is very little information on subsistence fishing and its contribution to food security and livelihoods around the world. “Too often, subsistence fishing is ignored outright or blithely acknowledged only to be forgotten in the glare cast by management attention to commercial and recreational fishing” (Schumann et al. 2007:706). This is because subsistence fishing, compared with other types of fishing, “is diffuse, sporadic, less dependent on established infrastructures” (Schumann et al. 2007:706) and involves the most vulnerable and marginalized

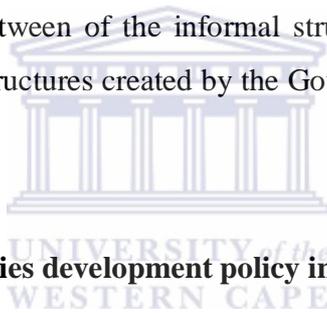
⁴ In Mozambique, by-catch of the shrimp fleet reached 13,600 tons in 2012 (*Administração Nacional das Pescas*, 2013) (National Fisheries Administration, Mozambique).

⁵ According to the literature, (Kurien, 2003; Béné, 2008; Béné et al 2010c; HLPE, 2014) the commercialization of fish can have mixed impacts on food security and nutrition. On the one hand, export revenues from fisheries can have positive impacts on food security and nutrition through the growth and employment effects (HLPE, 2014). On the other hand, the commercialization and monetization of subsistence economies imply that they are linked to “external markets leading to the breakdown of traditional management systems through the weakening or total collapse of traditional moral authority” (Ruddle, 1991:3 cited by McCay and Jentoft, 1998:26).

groups such as women and children, elders, youth and others. There is, however, sufficient evidence that subsistence fishers remain amongst the vulnerable and marginalized groups particularly in developing countries. The factors influencing these trends are diverse. However, it is the lack of capacity of fisheries governance institutions in dealing with diversities, dynamics and complexities associated with the small-scale fisheries which plays a major role. The decentralized systems of fisheries governance like Co-management, Community-based Management, Marine Protected Areas, have failed to improve governance relations, mainly in the cases where the distribution of power and other resources is influenced by the presence of the 'elite capturing' problem (Njaya et al. 2011; HLPE, 2014). The frequent violation of the rights of marginalized groups, the lack of their participation and representation in the policy-making and fisheries governance processes (Sharma, 2011; HLPE, 2014) and the difficulties the modern formal systems fisheries governance have faced in allocating opportunities on an equal basis, have motivated the marginalized fishers to build informal action spaces to cope with their conditions of marginalization.

The objective of this study is to understand the context of subsistence fisheries development in Mozambique and particularly in Palma district (Cabo Delgado province). The study uses the concept of 'action space', to understand the nature of policy reforms being performed by Mozambique's government, the opportunities being created under these reforms and the patterns of access to these opportunities by subsistence fishers. The study argues that most of the problems that the Mozambican government faces in managing and governing subsistence fisheries derive from three important factors, namely: a) inconsistencies in the conceptualization of subsistence fishing and its determinants, b) difficulties in creating institutional spaces that mediate participation of subsistence fishers in fisheries governance processes and c) problems in creating opportunities that are accessible to the subsistence fishers. The study also observes that the current concept of subsistence fisheries and its determinants as supported in the Artisanal Fisheries Development Strategy, places an excessive focus on market factors to explain the exclusion and marginalization of subsistence fishing (*Ministério das Pescas*, 2006). This policy instrument argues that the determinant factors explaining the exclusion of subsistence fishing lays on market failures. While acknowledging the vital role markets play in fisheries development, the study claims that reducing subsistence fishing problems to the market factors

loses a considerable amount of other factors that explain the vulnerability of subsistence fishers. The study also argues that, adopting strategies that leave subsistence fishers at “the mercy of market opportunities” (Isaacs, 2011:363 citing Hogan and Marandola, 2005:458) particularly in situations where the lack of access to basic rights or entitlements is clearly evident, could cause subsistence fishers to be more marginalised⁶. Resorting to the concepts of social vulnerability, marginalization and social exclusion, the study provides very interesting findings on the multiple factors that cause the insecurity of this sector within the Mozambique’s fisheries development framework. It concludes that it is the inability of the fisheries institutions to mediate the access of opportunities being created by the ongoing reforms that explains the current status of vulnerability of subsistence fishers. The study applies the concept of Action Spaces to understand how the fisheries governance framework in Mozambique create conditions for the exclusion of vulnerable groups and resorts to the institutional governance framework to discuss the possibilities of interactions between of the informal structures associated with subsistence fisheries and formal governance structures created by the Government of Mozambique under the ongoing policy reforms.



1.2. A background on the fisheries development policy in Mozambique

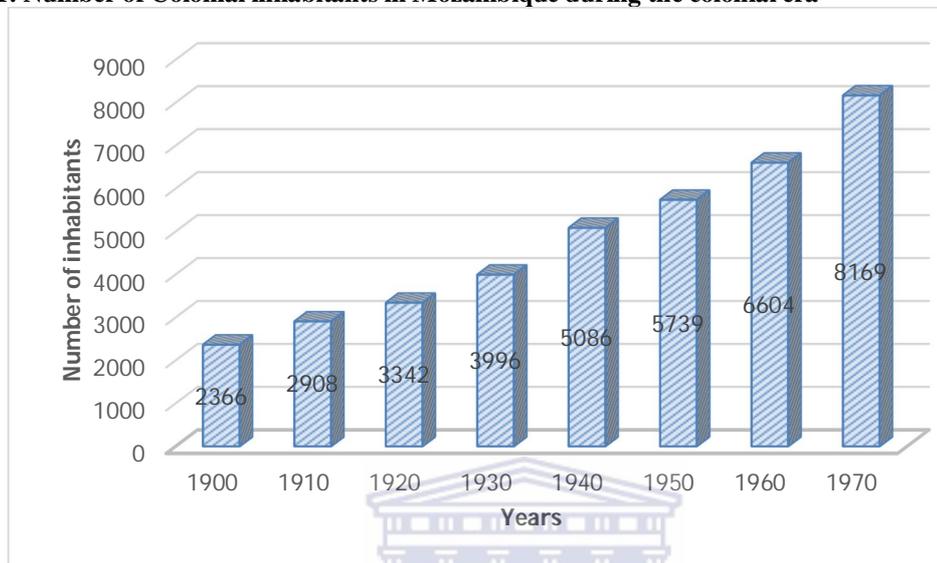
1.2.1. The colonial era (the 1960s)

Mozambique was a Portuguese colony for more than 450 years. Vasco de Gama was the first European to set foot in Mozambique in 1498 in his pursuit of establishing a trade route to the Far East. By that time Arab and Indian traders were already present along that coast and involved in trade (Carlson, 2006:24). In 1885, the number of Portuguese immigrants was sufficient to transform the territory into a formal colony named Portuguese East Africa (Henriksen, 1978). However, the “Portuguese colonialists achieved total control of Mozambique only in the 1920s (Hermele, 1988: 250). During the 1950s, over half a million indigenous families in Mozambique

⁶ This is because markets are likely to: (a) “create different incentives about the product to be harvested, technologies of harvest and rates of harvest” (Agrawal, 2001:1656), or (b) penetrate and change social and power relations (McCay and Jentoft, 1998). Thus, it may be expected that as the market expands, there are groups who may be marginalized, unless there are institutions that may secure the fair participation of those who are deprived of appropriate skills and basic entitlements to cope with changes in market outlets.

were producing cotton (Pitcher, 1996, 2002). By 1960, approximately 250,000 Portuguese settlers and their descendants were living in Mozambique (Newitt, 1996).

Graph 1: Number of Colonial inhabitants in Mozambique during the colonial era



Source: *Associação industrial de Moçambique*, 1974:143 (Industrial Association of Mozambique)

According to Momade (2006), during the end of the 19th century and the beginning of the 20th century, the Portuguese colonial administration was already in control of the artisanal fisheries in Mozambique, through the concession of very limited number of fishing licenses for boats and gear (e.g. traps⁷). The mass migrant labor system in the South African mines, transport linkages between landlocked states in southern Africa and Mozambique's ports and commercial agriculture were the main sources of revenue of Mozambique's economy (Abrahamsson and Nilsson, 1994). The intention of the Portuguese colonial administration was to use Mozambique as a "consumption market" where the fish consumption needs would be met through importing fresh and processed fish from Portugal and Angola (Hermele, 1988, 1990). The imports of fresh fish increased between 100% and 300% of domestic fish production during the early 1950s (Hermele, 1988). Consequently, artisanal fishing remained at subsistence levels, producing very little surplus (*Secretaria de Estado das Pescas*⁸ 1980, Momade, 2006).

⁷ A barrier with catching chambers made of fences.

⁸ State Secretary of Fisheries

Due to the population increase in the urban areas of Mozambique, artisanal fishing began to gain some importance, fishing production increased and the networks of rural canteens buying fish began to expand (IDPPE 1999). In the early 1960s it was noticed that Mozambique had a large shrimp and fish fishery. This discovery raised an increased local resistance against the prohibition of trawling in Mozambique. In 1965, colonial authorities issued the first trawling licenses and from that epoch onwards, the fishing industry began to expand gradually. The aim of colonial authorities, with the authorization of motorized fishing, was to promote the export of crustaceans and molluscs to Portugal.

All important activities within the motorized fishing units were operated and managed by Portuguese or other foreign interests (Aubray, 1976; Debeauvais, 1990). No Mozambican citizens were involved in the expansion of commercial fishing. During the early 1970s it was estimated that more than 100 motorized boats owned by Portuguese and South Africans were operating in Mozambique, with catch estimates around 6000 Tonnes of shrimp per year (Anon, 1976). Despite the increasing number of fishing operators in Mozambique's waters, Mozambique imported large quantities of fish to supply to the domestic market. On average, it is estimated that over 60% of the fish consumed in urban areas during the colonial era, was imported from Angola and Portugal (Table 1). The Portuguese authorities were not interested in promoting a local equitable fishing industry of notable size in Mozambique. For that reason, they never created a policy space for the small-scale fisheries (Debeauvais, 1990). In the late sixties, they developed a socialization process called "Works of Social Cooperation," (Amador, 1963:9) which encouraged the formation of civil society groups or associations, comprised of the natives of the then province of Mozambique.

Table 1: Fishing boats and production between 1965 and 1971

Year	Motorized Boats (owned by Portuguese fishers)	Non-motorized Boats (owned by Mozambicans)	Artisanal fishers (mainly Mozambicans)	Importation (aquatic resources)	Exportation (aquatic resources)
1965	80	5,064	18,752	3,185	100
1966	87	5,419	18,997	3,687	151
1967	110	6,380	21,854	3,666	261
1968	141	7,225	22,454	4,312	370
1969	141	7,519	23,292	5,509	430
1970	177	10,658	24,101	6,570	393
1971	250	7,596	22,778	7,584	1,093

Source: *Plano de Fomento, Pescas*⁹ (IV). Vol 2.1973:5

According to Legislative Decree Number 132 published in 1960 (Monteiro, 1995), the associations were concentrating mainly on the agro-industrial and livestock areas, which at the time needed more targeted assistance for socio-economic development. Fishing was not included in the list of priorities. Throughout the colonial period there was only one association, namely the association of fishermen *Govuro* in the (current) Inhambane province¹⁰ (Amador, 1963). This association never benefited from accessing credits or other opportunities from the colonial authorities, as was the case with other associations, for instance, those associations formed by Chinese fishermen (Monteiro, 1995). Despite having authorized its formation, the colonial administration was not favorable to such initiatives but was more interested in the labor of the fishermen for agricultural plantations. All these findings are consistent with the fact that, despite their efforts in promoting industrial fisheries, the colonial authorities had no interest in promoting artisanal fishing.

1.2.2. The socialist experimental era (1975-1986)

Mozambique became independent in June 1975 after waging a liberation war for more than ten years, against its colonisers. At that stage, the Mozambique Liberation Front (FRELIMO), the party that fought for the national independence, inherited an unstable country. Much of the

⁹ Promotion Plan, Fisheries

¹⁰ *Govuro* association was formed by local fishers in the early 1960s and the main objectives were aimed at finding alternatives to address the marginalization that was prevalent under the colonial regime.

infrastructures of the country were destroyed, and the majority of the people were illiterate. That situation created a collapse of the entire structure of economic development, including the fishing sector. There were many challenges facing the government, but the most urgent need was to build the economic sectors, using the structures left by the Portuguese. FRELIMO decided that Marxism would be the best development philosophy. Under the socialist experiment the state controlled the economy directly through production and investment plans and indirectly through fiscal and macro-economic measures, such as control over prices, wages and transactions in foreign currency (Mosca, 2005).

The overall development policy was oriented to the promotion of the large and medium scale projects based on imported technology and personnel. Very few investments from the state were driven directly to the subsistence sector (Roesch, 1984). The state “monopolized internal and external trade, took control over all abandoned enterprises” (Torp, 1989: 36) and through centralised planning, exercised a powerful control over the overall economy. Access to education, health and housing was subsidized by the state (Torp, 1989). Community institutions previously promoted by colonial authorities such as the traditional chiefs were replaced by new structures, most of which conformed to FRELIMO¹¹'s ideology. For instance, the population in rural areas were encouraged to settle in new (artificial) villages, known as the communal villages. It was based on communal villages that the state allocated social and economic services (education, health, markets) and other facilities in rural areas (Brito, 1995). In each village, production councils and popular assemblies were promoted. Traditional leaders previously appointed by the colonial government, were replaced by the *Grupos Dinamizadores*¹² (GD), generally staffed by FRELIMO's militants. The *Grupos Dinamizadores* became the most influential political institutions in the history of Mozambique. Their initial mission was to spread the influence of the FRELIMO party; however, they did more. As Hanlon (1982: 203) remarks:

(The *Grupos Dinamizadores*) “took over more and more official functions from the steadily collapsing colonial apparatus. In a form of workers’ control, they ran abandoned factories. In villages and neighbourhoods, they served as councils, courts, police and social workers. In rural areas, they replaced the Portuguese-appointed local leaders... More than anything else, it was the *Grupo Dinamizadores* that introduced Mozambique

¹¹ FRELIMO, the political party which is in charge in Mozambique, means Frente de Libertação de Moçambique (Mozambique Liberty Front).

¹² Community (political) Organization

to FRELIMO and to peoples' democracy, and it was the GDs that kept the country running".

How helpful these structures were for the fisheries development, is still a question for debate. Some findings (Fabri, 1981; Hanlon, 1982; Krantz, 1986; Debeauvais, 1990) suggest that despite their strong political work, these structures did not create spaces for public choices and participation. They worked under a centralized management and their main focus was strictly limited to the implementation of directives of the FRELIMO party (Hanlon, 1982).

In 1976, a 12-mile nautical zone for Mozambique, the first Fishery National Directorate (DNP) and a national system on artisanal fisheries, was established. From that period onwards, the fisheries sector became strategically grouped into 'large-scale' and 'small-scale'. The large-scale sector was constituted by the industrial fishing operations using boats with a length of between 20 and 100 meters, a gross tonnage between 101 and 3,000 Tonnes and engines between 350 and 3,000 HP (Krantz, 1986). They were licensed to fish shallow and deep-water shrimps, and lobsters. The industrial fisheries were organized into state-owned companies, joint ventures between the state and private foreign companies, private Mozambican companies and private licensing companies. In 1985 the industrial fishing sector employed more than 2,000 people, of whom 80% were Mozambican (Krantz, 1986).

The concept of small-scale fisheries emerged as a way of combining in a single strategy, the wide range of fisheries sub-sectors from artisanal and semi-industrial fishing. Small-scale fisheries referred to fisheries employing boats smaller than 20 meters (Krantz, 1986). Internally it was formally subdivided into two factions: the semi-industrial and artisanal fisheries. The semi-industrial faction had been developed during the last decade of the colonial era by small ship-owners, operating close to urban areas. They used boats between 10 and 20 meters long, using ice to maintain the quality of the fish on board. Most of them were equipped for trawling or gill-netting and operated from protected harbours. After independence, about 100 of these boats were abandoned by their former owners (*Secretaria de Estado das Pescas*, 1980). Artisanal fishing, which was more associated with the traditional fishing systems became formally defined as that carried out by oar-powered canoes, non-motorized sailing boats less than 10 meters

long¹³. But this definition excludes all fishers collecting intertidal resources, which include the people fishing without boats, actually known as subsistence fishers.

After this conceptualization, the government decided that small-scale fisheries would focus on two major development goals:

- Increase the supply of fish for consumption among the population within the country; and
- Improve the economic situation and standards of living among the fisher-folk of the country (*Secretaria de Estado das Pescas*, 1980:4).

These goals would be attained by means of two interventions. The first was the establishment of fixed prices for all sorts of fish-related commodities. The second and most important for this study was the creation of a network of state enterprises called the *Combinados Pesqueiros da Pesca de Pequena Escala*¹⁴ (CPPE) and cooperatives of artisanal fishers. The CPPEs, through the artisanal fisheries cooperatives, supplied improved fishing gear to the fishers and fishing accessories and consumer goods (clothing, cooking oil, soap, salt, etc.) to the artisanal fishers and in exchange received fish products from fishers, in the form of dried or fresh fish (Krantz, 1986; IDPPE, 1995).

Table 2: The area of coverage of *Combinados Pesqueiros da Pesca de Pequena Escala* (1982 to 1988)

	1982	1983	1984	1985	1986	1987	1988
Number of CPPEs in the country	6	9	10	10	10	11	11
Number of people directly employed by CPPEs	1319	1205	1057	1019	900	1037	701
Artisanal fishers directly assisted by the CPPEs' services	1000	1500	3500	5500	7000	17500	17600
Estimated number of artisanal fishers in the country	42,300	-	-	-	-	-	43,876
Total fish commercialized by CPPEs (Tonnes)	1,951	3,118	6,053	4,376	15,352	9,368	3,257

Source: Namalue, 2000.

¹³In 1979 there were about 45,000 fishers, 14,000 dugout canoes, 3,300 planked rowing and sailing boats (Krantz, 1986). Hand line, traps and gil-nets were the main fishing gear used by artisanal fishers. In the same year, it was estimated that artisanal fishing covered nearly 95% of total small-scale fisheries landings (*Secretaria de Estado das Pescas*, 1980).

¹⁴Small-scale Fisheries Combine

Each CPPE was equipped with a small system of cold storage and ice-plant, a system of fish processing, a workshop for the maintenance of fishing gear and boat engines, fishing inputs and boats, generators for electricity, a store for consumer goods, vehicles and transport boats, fuel tanks, and a building for administrative services (Krantz, 1986; Donato, 1991). Cooperatives of artisanal fishers were promoted to facilitate access to CPPEs. The original idea was that through the cooperatives, the linkages between fishers and the CPPEs could be better and fishers and their families would participate better in several social development activities if they were organized in cooperatives. In 1977 there were approximately 78 cooperatives of artisanal fishers. This number increased to more than 800 cooperatives ten years later (Gervásio, 1997).

However, the role and performance of cooperatives were very limited due to the lack of technical expertise in production management and accounting, institutional support from the state and due to the authoritarian approach to their internal affairs. Targets and goals for the cooperatives were all formulated at national and provincial levels without the proper involvement of the cooperative members who had little or no influence on the decisions affecting their daily lives and productive activities (Tarp, 1984). Also, the cooperative promotion strategy completely ignored the social and cultural differentiation among artisanal fishers: fishers were just grouped in cooperatives without observing their socio-economic backgrounds and heterogeneities, or without pre-consultations about their willingness to participate (Fabri, 1981; Monteiro, 1991). There are no indications of participation of subsistence fishers such as collectors or harpoon operators in cooperatives. The majority of the members of cooperatives, according to Monteiro (1991) were fishers owning fishing gear such as beach seines, gillnets, and pursing nets. The CPPEs had no mandate to support social development initiatives within the artisanal fishing realm. The dominant structure of their interventions was focused on production and commercial operations but not necessarily on the social promotion of marginal groups.

Additionally, the human dimensions of the artisanal fishers were absent in the entire strategy of artisanal fisheries development of that era. The dominant political system in Mozambique during that period had abolished many forms of traditional institutions¹⁵ or replaced them with others

¹⁵ For instance, traditional leadership was abolished; bride wealth was outlawed; ceremonies were banned; religious organisations and institutions were viewed with suspicion...and efforts were made to move the peasantry from their

judged as appropriate to support the implementation of the overall fisheries development policy and strategy at community level (Sumich and Honwana, 2007:11). The CPPEs supplied boats and engines, fishing gear and other equipment to artisanal fishers, but did not teach them how to use and maintain them (Gervásio, 1997). As a result, the CPPEs only helped at solving immediate problems, but did not create a social space for the majority of fishers to build their capacity to sustain changes in their livelihoods.

In the mid-1980s, both CPPEs and cooperatives were critically hampered by the civil war¹⁶, which destroyed their infrastructure and created a general environment of political and social insecurity and instability. Infrastructure such as grocery stores, schools, hospitals and others inherited from the colonial era, were destroyed. From 1981 to 1983, almost 200 hospitals and clinics and 900 small grocery stores were destroyed and one million people died during this war (Mosca, 2005). The war also caused the massive migration of populations from rural to urban areas, as well as from inland to the coastal areas. The role of the fishing sector went beyond job and income generation, assuming a prominent function of food provision to the local and immigrant populations in the coastal areas. The demand for fish resources and the number of fishers increased. The number of fishers increased from 45,000 in 1979 to approximately 50,000 during the mid-1980s (Krantz, 1986). These processes led to the emergence of a strong informal fishing sector which became the supplier of more than 60% of the fish transacted in the country (IDPPE, 1992).

In 1983, during the fourth congress of FRELIMO, the government noticed committed itself to perform a number of fisheries reforms which included the decentralization of political and economic systems and the reliance on market forces. Private initiatives would be encouraged in every sector of the economy and reforms would be instituted in labor legislation and in the regulation of foreign investments. The FRELIMO's fourth Congress created conditions for the transition of the Mozambique's political economy from the socialist experiment to the free market system, which is discussed below.

former scattered hamlets to centralised communal villages, which would become 'cities in the bush' (Sumich and Honwana, 2007:11).

¹⁶As soon as independence was proclaimed, a civil war, led by the opposition Mozambican National Resistance (RENAMO), against FRELIMO's government, erupted. In the mid-1980s there were more than three million refugees, three hundred thousand orphans and one million people died (Debeauvais, 1990).

1.2.3. The free market era (1987-1994)

Mozambique launched the Structural Adjustment Programmes (SAPs) in 1987. The intention was to liberalize the market. The programme took three years and was supported by the International Monetary Fund (IMF) and the World Bank. After three years, the SAPs became extended to a Social and Economic Rehabilitation Program (PRES). The Social and Economic Rehabilitation Program, which was both market and private enterprise oriented, was essentially, concerned with restoring macroeconomic stability in a time of a general crisis caused by the failures of the Socialist/Marxist experiments.

Although described as a socio-economic programme, the Social and Economic Rehabilitation Program, was in large extent, purely "economic-based" in its philosophy as it paid very little attention to the social and human dimensions of the Structural Adjustment Programmes. It was expected that economic growth would benefit the entire sectors of the economy at different levels, through the trickle-down effect. Furthermore, the Structural Adjustment Programmes implemented under the Social and Economic Rehabilitation Program, did not imply a deep structural transformation of the social or institutional platforms, as would be expected. They aimed essentially to create a new space of action within the existing structure, physically inherited from the colonial era and institutionally formed during the socialist experiment. The Social and Economic Rehabilitation Program then represented a move away from the centrally planned, socialist, capital intensive and import dependent development projects, towards a market based system (Abrahamsson and Nilsson, 1994).

The Social and Economic Rehabilitation Program intended to "halt the decline in production, re-establish a macro-economic balance through a reduced budget deficit, to strengthen the current account and the balance of payments" and alleviate poverty in order to ensure the rural population of a minimum income and consumption (Abrahamsson et al., 1994: 113). These objectives would be implemented through a series of financial, fiscal and trade adjustment measures. For instance, markets and prices would be liberalized; state enterprises would be restructured to reduce interferences of the state in private market-based initiatives (Abrahamson et al., 1994). State revenues would increase through a series of fiscal and monetary reforms as

well as international aid to the public budget, subsidies to unprofitable production as well as to consumption would be cut to reduce the public budget expenditures. In the banking system, credit would be reduced, interest rates raised and national currency devaluated to stimulate exports (Abrahamson et al., 1994). In relation to rural areas, the goal of the PRES was to transfer “resources from the city to the countryside and stimulate rural agricultural production” (Hanlon, 1991: 129). It was assumed that peasants involved in different sectors of development in the rural areas, would produce more if they were given higher real prices and consumer goods and if markets worked well (Hanlon, 1991, 1996).

In 1987, statistics from the government pointed at different successes the country experienced as a consequence of the Social and Economic Rehabilitation Program, (Hanlon, 1996). Growth was estimated at 4% for the GNP, 27% for agricultural production, 18% for industrial production, 9% for the value of aggregate exportations (Roesch, 1992) and a general increase of consumption goods in the domestic urban markets. During the first five years of the Structural Adjustment Programmes, the socio-economic situation in both rural and urban areas deteriorated. The efforts of the government to expand social infrastructures were limited by the progressive expansion of the war in rural areas. In rural areas, almost 2,600 primary schools, 800 health centres, and 900 stores were destroyed (Hermele, 1988). Also, during the adjustments, access to social services became difficult because the state stopped subsidizing those services. People were then required to pay for access to health and education. The public expenditures on health and education services were reduced between 1987 and 1988, from 7% and 17% to 4% and 10% in 1987 and 1988, respectively (Roesch, 1992). Because of these budget allocations in health and education, access to these services was conditioned to prices that the majority of the poor population were not able to pay for. Torp (1989:58) summarizes the social impacts of the Social and Economic Rehabilitation Program in the following way:

“More generally, some consequences of the Economic Rehabilitation Program for social life can be noticed: (i) the food basket is no longer taken advantage of in full by poorer segments of the urban population simply because they can no longer afford it; (ii) enrolment rates for primary education are decreasing further from the already frighteningly low level of 47 % in 1986-7, as parents keep their children out of school because they lack the money to pay for school books; and (iii) people in both rural and urban areas stay away from clinics and hospitals, where reductions on previous attendance of 50-80%% are reported...”

In 1987 an average increase of 52% on the minimum wage was not enough to overcome the accumulated inflation of 188% from 1986 to 1987 (Mosca, 2005). In late 1988 in rural areas, close to 24 district towns each person was earning an average monthly income of 7,100 Mt (or USD 244.8) (Bowen, 1992). The equivalent of 8,000 Mt (USD 275.8) was required to satisfy minimum nutritional needs. Thus, “70% of the population was already living under conditions of absolute poverty” (Bowen, 1992:265). In 1989 the government stated that two-thirds of the population, (approximately 10 million people) were living in conditions of absolute poverty (Bowen, 1992).

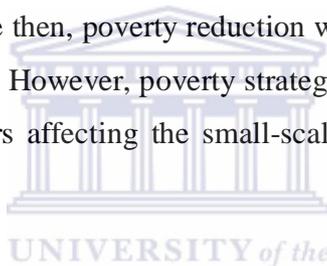
Due to the market liberalization and the elimination of the state’s direct interventions in markets, the CPPEs and cooperatives in the fisheries sector became unable to support artisanal fisheries with even the very basic services. The increased complexity of the CPPE operations, the new dynamics in the economy and the need for quick and efficient adaptation together with the scarcity of funds from the central level aggravated the problems of the CPPEs and created a need to redefine the activities which they were responsible for (Debeauvais, 1990). These trends increased doubts on whether the fisheries policy and institutions created under the socialist experiment would support the small-scale fisheries within a free market system. The government also noticed that the small-scale fisheries development policy required a new conceptualization which would address not only the production and distribution of fish, but also to include the social and governance aspects. The new conceptualization of the fisheries policy marked the beginning of a new era for the small-scale fisheries development.

1.2.4. Fisheries policy framework in the present decades

After several years of central planning, the ideas supporting decentralization, democracy and community participation became dominant. From the early 1990s, important transformations were carried out. The first and most important was the revision of the Constitution of Mozambique in 1990 which saw the abolition of Marxism-Leninism as the political ideology of the state. The Constitution opened a political space for important civil, political, economic, social and cultural rights and the country adopted the International Covenant on Civil and Political Rights (*Ministério das Pescas*, 2006; Bowen, 1992). Freedom of expression and association

became the most important of civil rights and bases for good governance (Bowen, 1992). It was under those principles that the concept of "local governance and local development" was implemented. The country held its first democratic elections in 1994, whereby a President was elected and a 250-member National Assembly was voted into existence (*Ministério das Pescas*, 2006).

The realization of the elections in 1994 and the recognition of poverty alleviation as the main development goal for the country, as well as the decentralization programs initiated in 1998 (with elections in 33 municipalities) were among the most important achievements towards a more democratic and participative governance system in the history of Mozambique. In 1995, the Government stated that the National Poverty Assessment Survey indicated that almost 70% of the Mozambican population, including fishers were living below the poverty line (National Institute of Statistics, 1998). Since then, poverty reduction was established as the top priority of Mozambique's development goals. However, poverty strategies developed under that stage were much generalized, thus key factors affecting the small-scale fisheries were not understood or addressed.



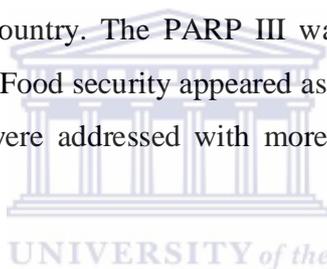
A second poverty assessment survey was carried out in 2000 and it concluded that conceptually, poverty could be viewed as multi-dimensional rather than just being a problem of the lack of material resources (*Instituto Nacional de Estatísticas*¹⁷, 2001). Concepts such as vulnerability, social, human and cultural development, inclusive governance and justice, absolute and relative poverty, community development and food security became popularly integrated into the national vision of development. In 2001, the government approved the first government Programme for Absolute Poverty Alleviation (PARPA). Human capital development through education and health, good governance, infrastructure and agriculture, rural development and better macro-economic and financial management, were among others, the most important pillars of PARPA (*República de Moçambique*¹⁸, 2005). The strategy of development in those areas was to be centred on the promotion of an improved infrastructural environment in order to reduce the marginality of disadvantaged groups (Government of Mozambique, 2005). PARPA has been

¹⁷ Institute of National Statistics

¹⁸ The Republic of Mozambique

updated three times to align it with the current needs of the poor and vulnerable groups. The third edition changed its designation from the Plan for Alleviation and Reduction of Absolute Poverty (PARPA I and II), to the Plan for Alleviation and Reduction of Poverty (PARP III- 2011-14). The PARP (2011-2014) “has as its primary goal to reduce the incidence of poverty from 54,7 per cent in 2009 to 42 per cent in 2014, with a deliberate decision that government action must first of all promote ‘pro-poor’ growth” (*República de Moçambique*, 2011:7).

To achieve this goal PARP has defined five immediate objectives: (i) to increase output and productivity in the agriculture and fisheries sectors; (ii) to promote employment; (iii) to foster human and social development; (iv) to maintain a focus on governance; and (v) to ensure a firm grasp on macro-economic affairs and fiscal management (Republic of Mozambique, 2011:7). The PARP III recognizes the importance of artisanal fisheries in providing employment, food security and livelihoods for the country. The PARP III was more aligned to the interests of small-scale fisheries development. Food security appeared as one of the development focus areas for the rural poor and fisheries were addressed with more details, compared to the previous poverty alleviation plan.



Essential aspects of the PARP III included increasing production and agricultural and fisheries productivity, impacting the food supply and livelihoods, promoting decent employment with a focus on micro, small and medium enterprises as well as expanding education, health and social security mechanisms that protect the most vulnerable groups PARP III (*Governo de Moçambique*¹⁹, 2011). PARP III is aligned with several sector policy tools, including the the Rural Development Strategic Plan, the Strategy and Plan of the Action for Food Security and Nutrition (2008-2015), the Fisheries Master Plan II (2010-2019), the Fisheries Research Development Strategy (2008-2012), the Strategy for Aquaculture Development and the Artisanal Fisheries Development Strategy (2009-19). In fisheries, the FMP II (2010-2019) as well as the sector development vision are now more focussed on small-scale fisheries (*Ministério das Pescas*, 2010). The broad vision and objectives of the fisheries sector as enshrined in the Mozambique Fisheries Master Plan (2012-2019), including socio-economic and development objectives, are summarized as follows (*Ministério das Pescas*, 2013):

¹⁹ The Government of Mozambique

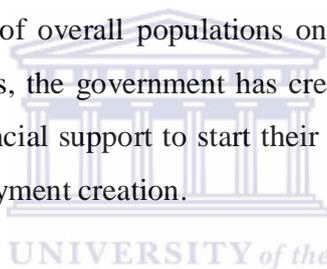
- Ensuring the improvement of food security and nutrition derived from fish for the population;
- Improvement of the living conditions of artisanal fishing communities;
- Increased production of fisheries to assist the achievement of national economic and social development;
- Increasing the net contribution of the fisheries sector to the balance of payments of the country;
- Ensuring the sustainability of exploitation of resources and the preservation of the biodiversity of aquatic ecosystems.

A very important aspect is that, the FMP II recognizes that both poverty and food insecurity in fishing communities are linked to factors that are endogenous and exogenous to the fisheries sector. The endogenous constraints include among others, the inadequate facilities for fisheries development; inappropriate boats and gear for deep water fishing; over-fishing in some areas and post-harvest losses and lack of access to markets. The exogenous factors include the poor physical infrastructure; limited access to credit finance; low levels of education and scarce social amenities such as schools, hospitals and electricity (*Ministério das Pescas, 2010*). The recognition of the existence of external factors affecting artisanal fisheries leads to the need to link artisanal fisheries development strategies with factors and means which are not necessarily fisheries related, but hence, exert some influences. The policy focuses specifically on artisanal fisheries development that was created through the Artisanal Fisheries Development Strategy (2009-2015) and gives more emphasis to the subsistence fishing, which is taken as the most vulnerable segment of the fishery sector. The vision of the government is that, development priorities for subsistence fisheries, should not be the introduction of new fishing technologies, but centred on setting up an infrastructure that will eliminate market failures and revitalize its role in the development of artisanal fishing.

1.3. The research problem

Since attaining national independence in 1975, the Mozambican government has demonstrated a political will to increase the contribution of subsistence fisheries in food security and livelihoods. The government has promoted several institutional, legal and social reforms to secure the participation of all stakeholders in fisheries management and governance processes. Legal and policy instruments such as the Fisheries Act of 1990 (Law 3 / 90), the Maritime Fisheries

Regulation (Decree N° 43 / 2003), the Law of the Local State Organs (Law 8/2003), the Inland Fisheries Regulation of 2008 (Decree N° 57/2008), the Fisheries Master Plan II of 2014 and the Artisanal Fisheries Development Strategy of 2009, are amongst the most important policy tools set by the government to help the participation of artisanal and subsistence fishers in fisheries governance and development processes. The Fisheries Master Plan II (2014) and the Artisanal Fisheries Development Strategic Plan (2006), in particular, have clearly emphasized the role subsistence and artisanal fisheries play in food security and livelihoods and elevated particularly subsistence fishing on top of development priorities within the fisheries development scope. At community level, the government has encouraged the promotion of community-based organizations such as, the fishers associations, credit and saving groups, local forum and fisheries community councils to facilitate the participation of all fishers in the process of fisheries development and co-management. District and local councils were also created in all districts to facilitate participation of overall populations on district development planning and governance. Linked to this process, the government has created a district development fund to provide the poor people with financial support to start their businesses on fisheries, agriculture, commerce, food supply and employment creation.



All these policy tools were expected to create an action space, where all people including subsistence groups could find the desired means to increase their contribution to food security and livelihoods. However, the practice of the fisheries development trend still indicates that despite some success stories on the inclusion of small-scale fishers in fisheries development and governance processes, very few subsistence fishers have been benefiting from these opportunities. Consequently, subsistence fishing appears to be the most excluded and poor sub-sector (*Ministério das Pescas*, 2006) with very elementary fishing capital and very low capacity to participate in formal venues of fisheries governance. Attempts to mobilize the participation of subsistence fishers in formal venues of fisheries governance have failed; as a consequence subsistence fishers have resorted to informal action spaces to sustain their livelihoods.

This study investigates the factors leading to the marginalization of subsistence fishers from the opportunities that are created under the ongoing fisheries governance reforms. The study argues that despite the efforts undertaken by the government of Mozambique in creating a pro-poor

development policy for the small-scale fisheries, the institutions created to govern the process of fishers' inclusion are not playing their expected roles in mediating access to, or participation in the formal action spaces of fisheries governance created under these reforms. There are still critical barriers that inhibit vulnerable people such as subsistence fishers, to access opportunities, or to participate in decision-making networks. This study aims at gaining an in-depth understanding of the factors determining subsistence fisheries' participation in the fisheries governance networks in Mozambique and particularly in the Palma district. The study uses the concept of Action Space to capture the overall scope of the opportunities being created for subsistence fisheries development and resorts to the institutional governance framework to understand the processes leading to the exclusion and marginalization of subsistence fishers.

1.4. Research Questions

This research uses the concept of Action Space to explain subsistence fishers' participation in fisheries governance in Mozambique. This concept has been significantly used in fisheries research addressing marginalization, vulnerability and social exclusion and helps in understanding the mechanisms the actors participating in formal venues of governance use to access opportunities. To guide this discussion, the following questions are asked:

- a) To what extent is subsistence fishing recognized within Mozambique's fisheries development and policy context?
- b) How can formal and informal Action Spaces be understood in the context of subsistence fisheries governance?
- c) Are the formal institutions promoted under the fisheries governance reforms mediating access for subsistence fishers to the formal policy space?
- d) To what extent can the marginalization and vulnerability of subsistence fishers result in their exclusion from the formal action spaces?
- e) What are the mismatches between the fisheries policy on subsistence fisheries and the actual implementation strategies?

1.5. Justification and significance of the study

In Mozambique, there is strong recognition that subsistence fishing plays a very important role in food provision and livelihood provision to the marginal and poor fishers, their families and the wider community. Subsistence fishing is also associated with informal structures and social values which play a very important role in protecting marginal and vulnerable families from adverse factors and risks.

Despite these interests, no in-depth social research has been dedicated to this sector. Most of the studies (Krantz, 1986; Debeauvais, 1990; Monteiro, 1991; Donato, 1991; Donato, 1992; IDPPE, 1995) done in small-scale fisheries (especially during the period between the 1980s and earlier 2000s) have all focussed on semi-commercial artisanal fisheries which do not necessarily include the fishers using harpoons, hands, spear guns and all other groups who do not systematically use boats for fishing operations. As a result, most of the conclusions regarding subsistence fishing in Mozambique are extrapolated from the semi-commercial artisanal fisheries. One of the most critical conclusions that the fisheries sector has been based on is the approach which supports the idea that the determinant aspect to develop subsistence fisheries lays in the elimination of the market failures and transactional costs. Based on this, policy makers have centred their attention on setting-up the necessary infrastructure to address market failures (Ministry of Fisheries, 2007:21), assuming that once the infrastructure is in place, the market will automatically improve the integration of subsistence fishers into the market.

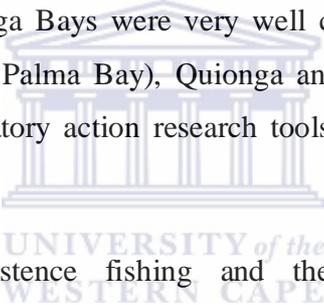
Direct observations in Mozambique have evidenced that although there are many subsistence fishers fishing for nutritional consumption, most of them participate in markets, even though not as fully market-oriented producers. Also, subsistence fishing is not just a rural practise. There are many subsistence fishers in urban areas where markets and a supporting infrastructure are relatively well established. This means that, although market based approaches as applied in the artisanal fisheries development strategy, for instance, provide a diagnosis of the problem of subsistence fishing, they cannot provide a full explanation on the reasons why subsistence fishing exists in Mozambique. This study argues that although market orientation is an important goal, a more fundamental and urgent research and policy concern is the fact that subsistence fishing is very vulnerable and a socially marginalized sector, and the reasons behind this situation are more related to the ways fisheries institutions and governance systems deal with subsistence fishing. The study resorts to the institutional governance framework to understand the participation of subsistence fishers in formal venues of fisheries governance being created by the government of Mozambique under the on-going institutional reforms.

1.6. Methodology and data collection

The core methodological approach of this study is the Participatory Research Approach. “The origin of participatory research methods goes back to the 1970s, when a research methodology that combines theory, action and participation committed to further the interests of exploited groups and classes was developed and used in many Latin American and other countries” (Trimble et al., 2013:769). Participatory research methods are based on the premise of the “individuals who in other traditions might be viewed as subjects, a population, or a sample, are taken as ‘active, engaged, and equal participants’ in the research processes” (Dover and Lawrence, 2010:307). Participatory research methods seek to “get up close and personal” with participants and focus on valuing and understanding their insider knowledge (Dover and Lawrence, 2010), perception and everyday life. Participatory research methods enable local people to share, enhance and analyse their knowledge of life and conditions as well as to plan and to act (Chambers and Conway, 1992). Participatory research methods are based on the assumption that the more people are affected by a decision, policy or governance system, the more they need to be given space to communicate about their expectations. These methods reflect people’s values and knowledge and allow intensive interaction between the investigator and the system being investigated.

Participatory research methods have become “increasingly common in the context of natural resource management” (Trimble and Berkes, 2013:769), but their application to the fisheries sector has only started receiving more attention during the last two decades, with the implementation of decentralized government systems of fisheries management. Focus groups, rapid appraisals individual in-depth interviews and participant observations are some of the most important tools of information gathering used in this participatory research. To allow a better understanding of some aspects of subsistence fishing, Informal and Formal Action Spaces, the standard participatory tools (Focus groups, rapid appraisals individual in-depth interviews and participant observations) were combined with practical actions of participation in key events of community life, such as fishing journeys, informal meetings as well as training sessions of Fisheries Community Councils.

Before any decision was taken on which villages to focus on, significant time was spent carrying out exploratory interviews with key informants at district and provincial levels. Separate interviews were conducted with the fisheries extension staff from the district Administrator, the district Permanent Secretary, the district Director of Economic Activities (which include fisheries and agriculture), and the Chief of Culture at the District Services of Education, Youth and Technology. These interviews provided an overview of the district in terms of its history, structures of leadership, the institutions at district level and patterns of interactions between the village structures and the district authorities. The fieldwork started with visits to all villages recommended by the local authorities, as potential areas for the sample (Quionga, Quirinde, Quiwia, Farol, Mbwize, Palma-sede, Maganja, Milamba, Nsemo, and Olumbi). The initial fieldwork involved exploratory interviews with key people of interest in the villages. Almost 80% of the villages visited were suitable for the topic of this research, however only four fishing communities in Palma and Quionga Bays were very well connected to the regional transport network namely: Palma-sede (in Palma Bay), Quionga and Quirunde (in Quionga Bay) and Olumbi (Olumbi Bay). Participatory action research tools in this study was guided by five important steps, namely:

- 
- a. Characterization of subsistence fishing and the nature of subsistence fishing communities.
 - b. The study of the Formal Action Spaces created by the government to secure the participation of subsistence fishers in fisheries development and governance.
 - c. Identification of the context of inclusion, exclusion and marginalization of subsistence fishers in formal action spaces.
 - d. The study of the existing informal action spaces (structures, social networks, organizations and social values) associated with the subsistence fishing systems.
 - e. The study of the factors leading to the interactions between the Formal and Informal Action Spaces.

1.7. Limitations of the study

1.7.1. Lack of information

The first and biggest limitation of this study was the lack of data on subsistence fishing. Although interest in subsistence fishing has increased significantly in the last 10 years, there was no information related to this industry. The national sampling system conducted by the Institute

of Fisheries Research (IIP) does not include intertidal subsistence collectors. There are no case studies focusing on subsistence fisheries in Mozambique. Most of the conclusions regarding this sub-sector are based on evidence extrapolated from the overall artisanal fisheries and in most cases these conclusions are often outside the range of the real dynamics of the subsistence fishing sector. The lack of information was clearly visible during the investigation of community historical records. Most of the people involved in focus groups and individual interviews were not able to provide all the required details (e.g. specific days, years or months of the occurrences), because most of those details had been forgotten. For that reason, participants agreed to discuss the history of each village according to the following time frame: Period before national independence (1960 until 1975), after national independence (before the civil war and after the civil war ceased in 1992), ten years ago, five years ago and the previous year.

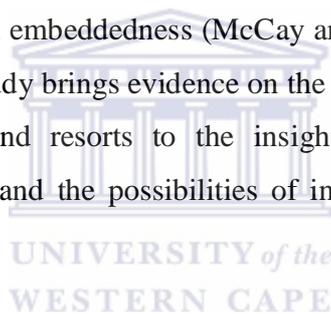
1.7.2. Difficulties in discussing sensitive topics

This research relied on the use of a combination of research and interview techniques in order to establish the reality of people on the ground. The villagers' use of informal networks and their adherence to certain social values were often difficult to identify. Research on informal structures and social values is time consuming and sometimes requires that researchers spend considerable time in the field in order to become familiar with the subjective actions of the community. That was not done in all villages visited during the fieldwork (in 2010, 2012 and 2013) due to time and financial limitations. Focus group discussions and individual interviews on informal structures were also very complex and sometimes took very long. Participants spent long periods unpacking the meaning of the informal Action Spaces. In villages like Olumbi and Quirinde where informal structures were notably stronger, discussion on informal structures and values were repeated several times to confirm the veracity of the information provided by the informants.

1.8. Outline of the chapters of the study

This thesis is divided into Eight Chapters. Chapter One, gives the introduction of this thesis. Special emphasis is given to the background of the fisheries sector, which includes a summary of important reforms carried out by the fisheries authorities since 1975 up to date. The statement of the research problem and the relevance of this topic are all addressed in this chapter. Chapter

Two, is strictly focused on the analysis of the current structure of the fishing industry in Mozambique and policies adopted by Mozambique's government to improve the contribution of subsistence fisheries to food security and livelihoods. Chapter Three is about the theoretical framework of this thesis. The study uses the concept of Action Spaces to situate the nature of opportunities created under the ongoing fisheries governance reforms and resorts to the fisheries institutional governance framework to understand the factors that determine the access to these opportunities by subsistence fishers. The concept of Action Space is borrowed from Isaacs (2003, 2011) and Njaya et al. (2011). Formal Action Spaces as per Isaacs (2003, 2011) and Ostrom (2011) refer to policy and governance processes which have permitted individuals to interact, access opportunities, participate in decision-making or dominate one another. Informal Action Spaces encompass a wide range of socially shared norms and activities that are created, communicated and enforced outside of formal action spaces as a reaction to an exclusion. Resorting to the concepts of social embeddedness (McCay and Jentoft, 1998; Granovetter 1985; Onyango and Jentoft, 2007) the study brings evidence on the influences that informal actions can make on fisheries governance and resorts to the insights from the institutional fisheries governance framework to understand the possibilities of interactions between the formal and informal spaces.



Chapter Four is about the methodology of this study. The study applies the methods that are based on participatory approaches. The reasons for choosing this tool are many, but the most important, lays on the fact that subsistence fishing is a very complex sector, which relies on informal and less visible interactions to survive. Understanding those interactions, requires intensive debate and time with those people who are directly involved in it.

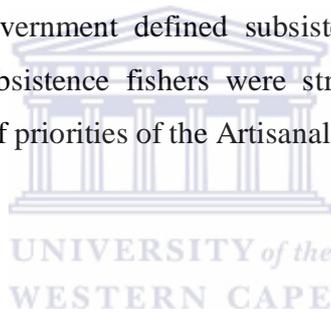
Chapter Five brings the contemporary debate on the concept of subsistence fishing. This chapter is based on the literature review and seeks to question whether the definitions currently adopted by the fisheries authorities are in line with the real dynamics of this sector. Important issues related to the feasibility of the parameters and variables being used in the contemporary conceptualization are brought into the discussion. Chapter Six is about the results of the fieldwork in Palma district. Special focus in this chapter, is given to the vulnerability context of subsistence fisheries and the strategies subsistence fishers adopt to guarantee their minimal levels

of surviving. It will be evident that subsistence fishing in Palma, is a very complex sector which is associated with multiple values and functions which are not properly captured in the contemporary policies. These functions and values could make a difference if they were taken seriously. Chapter Seven is dedicated to the analysis of the Formal Action Spaces created by the government under the ongoing policy and institutional reforms in Palma district and the patterns of exclusion and marginalization of subsistence fisheries. Chapter Eight brings the discussion of the key findings and Chapter Nine, the conclusions of this study.

1.9. Summary of the chapter

Chapter One of this study is the introduction to the topic of this research. It provides a summary of the research project with emphasis on the research problem statement and questions, justification and the background of the subsistence fishing policy in Mozambique, with particular emphasis on policies and institutions adopted from the colonial era up to date and their effectiveness in relation to subsistence fisheries development. It was clear that during the colonial era, colonial authorities had no interest in promoting artisanal or subsistence fisheries. Clear signs of interventions on artisanal and subsistence fisheries appeared since the independence in 1975 through the promotion of *Combinados Pesqueiros*. These state enterprises played a very important role in fisheries production and commercialization. However, the *Combinados Pesqueiros* also had some weaknesses. One of the major weaknesses was the fact that these enterprises were not conceptualized to deal with people who needed additional social support in order to engage the market. The majority of subsistence fishers or collectors did not know how to take advantage of the opportunities made available by the *Combinados Pesqueiros*. They did not have skills to operate and manage motorized boats, did not have technical expertise to maintain their equipment and to sustain their fishing businesses in a sustainable way. This is the reason why with the advent of the free market economies in the late 1980s, the grand mass of fishers who were dependent on the government in every single step they took, got lost. The structure of opportunities that were opened up through the *Combinados Pesqueiros* did not match with the structure of the endowments of subsistence fishers.

In 1987 the government adopted the Structural Adjustment Programme. This marked a critical change in development policies and artisanal fishers' lives. The *Combinados Pesqueiros* (Ministério das Pescas, 2006), the only entities which provided the small-scale fishers with basic conditions for fisheries production and commercialization, collapsed and most fishers became marginalized. At this stage the Small-Scale Fisheries Development Policy required a new conceptualization which would address the social aspects of fisheries. From the earlier 1990s up to date, fisheries development was critically marked by several political and institutional reforms which culminated with the creation of the Artisanal Fisheries Development Strategy (AFDS) in 2009. Poverty and vulnerability became central concepts in policy making and poverty reduction strategies were put in place. It is the AFDS along with other associated fisheries regulations and policies that brought a pro-poor vision to the fisheries development strategy. A particular aspect of the AFDS is its emphasis on the subsistence fisheries. For the first time in the history of the fisheries in Mozambique, the government defined subsistence fishing as a priority for the fisheries development policy. Subsistence fishers were strategically recognized as the most vulnerable groups and put on top of priorities of the Artisanal Fisheries Development Strategy.



CHAPTER TWO: SUBSISTENCE FISHERIES IN MOZAMBIQUE: POLICIES, OPPORTUNITIES AND MEDIATING INSTITUTIONS

2.1. Introduction

Mozambique's fishing industry is structurally dominated by three important segments of fishing: the industrial, semi-industrial and artisanal fisheries. In 2012 there were about 464 fishing vessels, among which, 143 were licensed for industrial fishing and 321 for semi-industrial fishing of shallow and deep water shrimp, fish, tuna and deep water lobster (*Ministério das Pescas*, 2012). Artisanal fishing provides the rural and urban population with labor, food and income. According to the Institute of Small-scale Fisheries Development (IDPPE), in 2012, there were approximately 400,000 people involved in artisanal fishing (IDPPE, 2014), of whom 43% were known as subsistence fishers. Both artisanal and subsistence fisheries represent about 87% to the total catches of marine products (actually estimated at 160 000 tons) (IDPPE, 2014). Artisanal fisheries have been also contributing more than 70% to the fish consumed in domestic markets. Women are mostly involved in post-harvest activities or in subsistence fishing.

Since its independence in 1975, Mozambique has been demonstrating a political will to secure the inclusion and participation of subsistence fishers in policy and fisheries governance. This intention has been witnessed by the ongoing fisheries policy, legal and institutional reforms which are creating new opportunities for those who were historically marginalized, including the subsistence fisheries. Particular importance on these reforms is given to:

- Law N° 8/2003, which gives the district government the authority to issue artisanal fishing licenses and to establish governance structures that are suitable to their particular contexts.
- Marine and Inland Fisheries Regulations, and the Fisheries Act of November 2013 (Law 22/2013) which together enforce the need for the decentralization of fisheries administration structures through fisheries co-management frameworks.
- Fisheries Master Plan II (2010-2019) and the Artisanal Fisheries Development Strategy (2009-2014), which, together put subsistence fisheries and food security on top of fisheries development priorities. Women and men, heads and/or members of households involved in subsistence fishing, groups of women involved in solidarity networks promoting small-scale credit and literacy, and collectors in the intertidal areas (*Ministério das Pescas*, 2006) are among the social groups selected as the target priorities for these policy tools.

The main objective of this chapter is to provide an overview of the ongoing fisheries governance and policy reforms in Mozambique. The chapter starts with a description of the fishing industry

and ends with an analysis of the dominant policy for subsistence fisheries. Emphasis is given to the Artisanal Fisheries Development Strategy, which is the most important policy for subsistence fisheries in Mozambique.

2.2. Description of Mozambique’s fishing industry

2.2.1. Overview of the fishing industry

Mozambique’s fishing industry is dominated by a dualistic structure composed of commercial fishing and artisanal fishing (*Ministério das Pescas*, 2003). The commercial fishing is dominated by industrial and semi-industrial fishing fleet and also in the catching and exporting of high-value resources. The subsistence fishing is situated within the artisanal fisheries. Industrial fisheries use vessels, usually larger than 20 metres in length, equipped with modern technologies and targeting shallow water shrimps, tuna, deep-water prawns and some molluscs. Most industrial vessels belong to vertically integrated companies that control all their business chains, from harvesting and processing, through to marketing. These are mostly foreign and joint ventures with European, South African, Japanese and Zimbabwean partners. Semi-industrial fishers use vessels, between 9.9 and 19.9 m long, to capture shrimp and fish. About 325 semi-industrial fishing boats are licensed to fish in Mozambique’s Exclusive Economic Zone (EEZ), and the majority among them belong to Mozambican owners.

Table 3: Number of industrial and semi-industrial fishing boats (2009-2012)

	2009	2010	2011	2012
Industrial	183	143	147	143
Semi-industrial	271	309	310	321
Total	454	452	457	464

Source: IDPPE, 2014.

The fishing products from semi-industrial fisheries are mainly exported after being processed and packaged in-land. Industrial fishers use larger vessels, which are equipped with freezers and cold storage facilities, which enable them to stay at sea for 20 to 30 days, depending on the daily average catch. No products originating from industrial vessels are processed at in-land facilities (*Ministério das Pescas*, 2010). Semi-industrial and industrial fishers are the sectors officially making a high contribution to the national economy (*Ministério das Pescas*, 2007; Almeida,

2007). These industries help the national economy by improving government revenues (from taxes and licenses collection) and foreign exchange earnings. Financial resources used in the fisheries public sector are derived exclusively from semi-industrial and industrial fishing license fees (Almeida, 2007). However, industrial fishers have strong limitations in providing value - adding activities, which in turn, would generate more value to the national economy. They do not provide fish for domestic consumption. Large parts of the fish captured as shrimp by-catch by these vessels are thrown out at sea. These companies also employ a very small part of the national labor force and most of their workers are foreign labor directly contracted abroad.

Mozambique has adopted the concept of small-scale fishing which included subsistence, artisanal and semi-industrial fishing. In the Fisheries Act (Law 3/90) subsistence is distinguished from pure artisanal fishing based on fishing technology and level of commercialization. Subsistence fishing were defined in the Law 3/90 as those activities involving the collection of fish and other resources for immediate consumption using or not a boat or fishing gear. Later, in 2006 the Government of Mozambique through the Artesanal Fisheries Development Strategy has proposed to extend this definition by including some fishers using boats. Currently, subsistence fishers, use no boats or very rudimentary boats such as canoes, dugouts and skiffs equipped by sails or oars to fish. They use the traditional beach seines, weirs, traps, harpoons, hand lines and other gear for fishing. They fish in areas near to the shore line, estuaries or bays. Molluscs, small pelagic and demersal fish, small shrimps, rocky bottom demersal fish and shrimp by-catch (Ministério das Pescas, 2006) are the main resources captured by these fishers. Their catch can be sold although it is considerably used for family consumption.

Artisanal fishing is mainly performed in coastal communities and if they use boats, the length is less than 10 m. It can be considered as a low-income activity, carried out in restricted fishing grounds and can be an unsustainable practice in the long run, putting at risk the community livelihoods and the marine ecological equilibrium. According to the fisheries authorities, artisanal fishers are distinguished into two segments: artisanal-commercial fishers and subsistence fishers. In the Decree nº 43/2003 (General Maritime Fisheries Regulation) subsistence fishing is defined as fishers collecting a variety of fisheries resources for immediate consumption (*Boletim da República*, 2003) such as lobster, squid, sea cucumber, crabs and fish

in areas fairly close to their homesteads or islands. The artisanal fisheries census conducted by the IDPPE in 2012, indicated that the number of fishers had increased from 300,000 (in 2007) to approximately 400,000 (in 2012) (IDPPE, 2013). About 45% of the 400,000 people are involved in the artisanal-commercial fishing, 32% are subsistence fishing and the remaining 27% fall under the supporting services category (boat builders, fish trading and processing) (IDPPE, 2013).

Table 4: The number of fishing centres, boats, gear and fishers involved in artisanal-commercial fishing in Mozambique

Province	Fishing centers		Fishing boats		Fishing gear		Fishers using fishing gear and boats	
	2007	2012	2007	2012	2007	2012	2007	2012
Maputo	65	90	1,782	2,283	2,238	2,964	6,629	6,276
Gaza	53	95	1,325	1,041	1,666	4,268	3,559	6,447
Inhambane	138	169	2,474	2,836	2,163	3,011	9,914	7,047
Sofala	178	187	7,111	6,510	7,280	8,545	18,546	19,028
Manica	32	55	700	871	794	1,795	1,932	2,338
Zambézia	142	201	5,627	9,074	5,880	15,338	21,611	33,243
Tete	176	213	5,520	5,380	5,568	36,347	9,911	11,412
Nampula	103	196	7,591	9,058	8,648	9,353	37,185	43,431
Cabo Delgado	194	233	3,934	5,119	4,764	1,173	14,261	38,398
Niassa	146	262	3,334	2,907	3,408	10,758	11,981	12,453
Total	1,227	1,701	39,398	45,079	42,409	93,552	135,529	180,073

Source: IDPPE, 2009 and IDPPE, 2013.

According to the fisheries legislation, artisanal fishers must pay an annual license fee to gain access to fishery. A license for artisanal fishing is available to anyone but not for the foreigners. Boat and fishing gear are licensed on a separate basis. Boats are licensed and assessed by the maritime administration and the fishing gear by the fisheries administration. To gain the right of being licensed, the artisanal fisher must have a well-constructed boat, fishing gear and a proof of citizenship. Subsistence fishers must fish within a one mile area (from the shore line), while the artisanal commercial fishers are allowed to fish up to 12 miles according to specific requirements. Some of the conditions are as follows:

- To operate up to 3 miles, the artisanal fishing boat may not exceed 10 m in length and must use an engine of no more than 100 hp or 74 kW.

- To fish within 6 miles, the artisanal fishing boat may have an open deck and possess mechanical means of propulsion.
- To fish within 12 miles, the artisanal fishing boat may have a covered deck and possess mechanical means of propulsion.

2.2.2. The subsistence fishing sector

In Mozambique subsistence fishing is mostly composed of fishers who do not use (or rarely use) boats for fishing. The number of fishers who do not use boats for fishing is about 128,044 (IDPPE, 2013) which represents approximately 42% of all the artisanal fisheries sector (Table 5). This includes poor women, children and older people targeting lobster, squid, sea cucumber, fish and crabs.

Table 5: Number of subsistence fishers according to the type of fishing (2012)

	Collectors	Divers	Hand line	Traps	Harpoon	Others	Total
Niassa	14	40	1,042	111	5	13	1,225
Cabo Delgado	11,604	2,439	3,713	261	2,791	889	21,697
Nampula	17,184	3,346	5,510	363	1,837	3,340	31,580
Zambezia	13,052	640	8,296	3,730	332	6,369	32,419
Tete	43	26	746	75	1	391	1,282
Manica	0	14	1,824	425	141	521	2,925
Sofala	359	50	1,670	251	184	6,803	9,317
Inhambane	7,339	1,299	3,343	747	846	4,066	17,640
Gaza	78	74	2,248	349	937	1,235	4,921
Maputo província	1,122	55	660	122	57	235	2,251
Maputo Cidade	1,982	33	657	21	69	25	2,787
Total	52,777	8,016	29,709	6,455	7,200	23,887	128,044

Source: IDPPE, 2013

Subsistence fishing is linked to the fishing chain which links “pre-harvest,” “harvest,” and “post-harvest” processes. Subsistence fishers in Mozambique share the same fishing areas and fishing chains with the commercial-artisanal fishers. They fish the same resources with artisanal fishers and supply fish to the same traders although in different magnitude and scale. The differences between the commercial-artisanal and subsistence fishers come from the way they are organized and the institutional structures embedding them. Normally, artisanal/commercial fisheries rely on

formal institutions and organizations while subsistence fishers rely on informal institutions and social relations and structures.

Subsistence fishing involves extended social structures and labor relations that are constructed through a process of cooperation in production and sharing. These relations can be grouped into three dimensions: the structural dimension (social networks), relational dimension (trust and trustworthiness) and cognitive dimension (shared paradigm that facilitates a common understanding of collectivity). These social features are called upon for various self-help activities and sometimes act as foundations for financial insurers' networks, though largely in a less formal manner (*Ministério das Pescas*, 2006). Trust and cooperation among members constitute the major factors that determine successes in these social frames. It is based on trust and implicit mutual agreement or obligation to share resources and claim resources that the informal financial groups have emerged in most of the coastal rural areas of Sofala, Nampula and Inhambane provinces (IDPPE, 2006). The most popular social network developed by subsistence fishers is the so called rotating credit and saving. It is an informal credit system involving two or more people. The government is expanding the rotating credit and saving framework to a more formal system (IDPPE, 2009). Subsistence fishers diversify their sources of incomes by exploring diverse opportunities offered by the fishing, agriculture, trade, small businesses, waged employment, livestock and other activities. This may pose some confusion on the definition of what is primary and secondary activity in a given diversification scheme. One may ask whether households with more than one activity outside the fisheries sector could be considered as fishers or whether it is the fact that households are able to continuously change and adapt their portfolio of activities (See also Ellis, 2000).

2.3. Production trends

Around 1 500 species of fish are present in the Mozambican seas, of which 400 are of direct commercial importance. It is estimated that the fisheries sector currently contributes 2% to the GDP. Altogether, the fisheries sector (large and small-scale, marine and inland waters, fishing and aquaculture) produced approximately 213,436 Tonnes/year and this represented an economic contribution of approximately USD 526,639 million. About 87% of the fisheries production

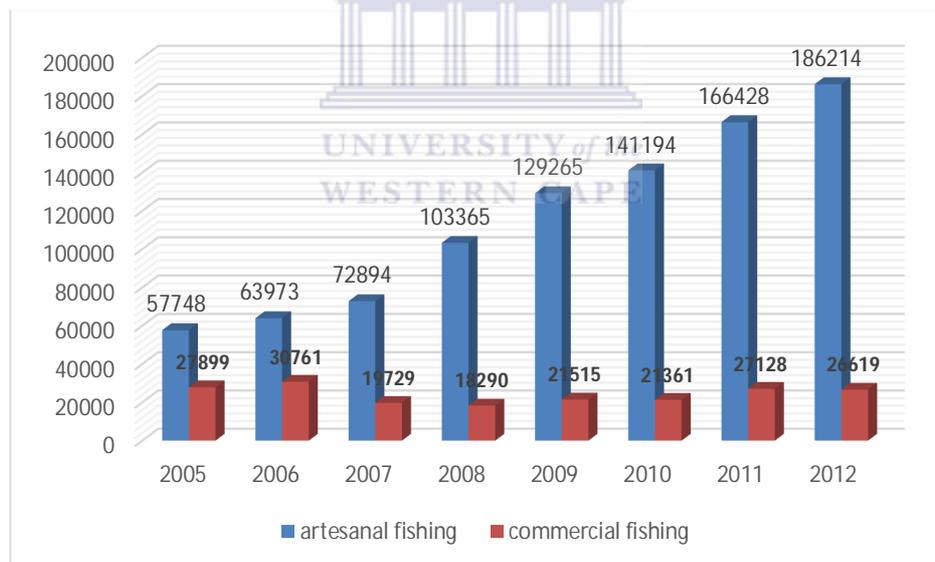
comes from artisanal fisheries. The commercial sector (industrial and semi-industrial) contributes 12.5% while aquaculture only contributes 0.3% to fisheries production (*Ministério das Pescas, 2006*).

Table 6: Production and value share in fisheries industry

	Production		Value (Million USD)	
Commercial	26,619	12.5%	66,093	12.5%
Artisanal	186,214	87.2%	458,903	87.1%
Aquaculture	603	0.3%	1,643	0.3%
Total	213,436	100%	526,639	100%

Source: *Ministério das Pescas, 2013.*

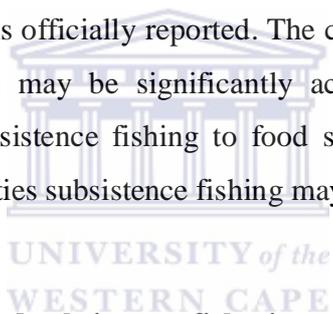
Graph 2: Production trends in fisheries



Source: *Ministério das Pescas, 2013.*

Decreasing trends in production of the commercial fisheries can be explained by the fact that, the most valuable stocks of prawn, demersal fish, line fish and deep water lobster are extremely exploited (*Ministério das Pescas, 2010*). Low exploitation levels are attributed to resources such

as crayfish, large and small pelagic, bivalves, deep water fish, algae and cephalopods (See Appendix 1). The main marine resources comprise the crustacean (prawns, deep-water shrimp, crayfish, lobsters and crabs), marine finfish (demersal and pelagic species, mainly grouper, snapper, emperor and sea bream, also high migratory tuna species of yellow fin, big eye and albacore, swordfish and shark), and cephalopods and molluscs (squid, octopus, sea cucumbers, bivalves) (Ministry of Fisheries, 2012). Annual catches show some slight decreases in the commercial fishing and progressive increases in artisanal fisheries (See Graph 2). However, it is not clear whether production from the subsistence fishing is included in these statistics. It is perhaps that the ongoing sampling system on fisheries production run by the Institute of Fisheries Research in Mozambique, is not collecting information from fishers such as collectors for instance. Taking this gap into consideration, it may be fair to consider that possibly figures on production and value of the fisheries resources being explored by the entire fishing industry in Mozambique, is higher than what is officially reported. The contribution of subsistence fisheries in fishing production and values may be significantly acknowledgeable. The next section highlights the contribution of subsistence fishing to food security, which is one of the most important dimensions of opportunities subsistence fishing may be offering to this country.



2.4. Contribution of artisanal and subsistence fisheries to food security

According to the HLPE (2014:13) the total contribution by fisheries to food consumption has grown substantially “to more than triple at world level since 1950” (from 6kg/cap/yr in 1950 to 19.2 kg/cap/yr in 2012). Global per capita fish consumption has increased from 9kg in 1960, to 16 kg in 1997 and 18.4 kg in 2011 (IDPPE, 2014). However, Africa continues to share the lowest average per-capita consumption, which is around 9.1 kg/annum (IDPPE, 2014). Fish, at the global level “represents 15% of all animal protein consumed by people, whereas in low-income food-deficit countries the proportion is higher, at about 20 %, and in Asia it is higher still, at about 23%.” (HLPE, 2014).

In Mozambique artisanal fishing is also of great relevance in providing food, not only in the coastal districts, which contain two-thirds of the Mozambican population, but also in the interior regions, which, in addition to fresh water fish, receive fish caught at sea, usually in dried (with or

without salt) or smoked forms (*Ministério das Pescas, 2006*). Fish per capita consumption in Mozambique has been increasing between the years 2006 and 2012 (See Table 7). Most of the fish consumed in this country comes from in-country production. However, imported fish consumed in the country has been increasing vis-a-vis the in-country production supply (See Table 7).

Table 7: Food availability and per-capita consumption

	2006	2007	2008	2009	2010	2011	2012
In-country production (ton)	95,782	93,461	122,226	151,341	163,399	194,352	213,436
Importation (ton)	7,070	9,357	16,553	26,687	37,268	43,595	44,493
Exportation (ton)	18,254	13,249	11,031	11,220	12,058	13,124	12,359
Food Availability (ton)	84,598	89,569	127,748	166,808	188,609	224,823	245,570
Population thousands (inhabitants)	19,913,777	20,632,434	21,207,929	21,802,866	22,416,881	23,049,612	23,700,715
Per-capita consumption	4.2	4.3	6.0	7.7	8.4	9.8	10.4

Source: IDPPE, 2014.

The contribution of the subsistence fishing to food security is by far, higher than commercial fisheries (industrial and semi-industrial), by-catch collection and aquaculture (See Table 8). The statistics on subsistence fisheries are based on projections. It has been recognized that it is possible that subsistence fishing is contributing much more than it has been estimated (*Ministério das Pescas, 2006*). However, the role the imported fish is playing on domestic consumption is still critically important (13.5% according to the Table 8).

Table 8: Contribution of subsistence fishing to food security

	2009	2014	2019
Industrial fishing	3.7%	5.9%	4.7%
Semi-industrial fishing	8.2%	7.6%	5.6%
Artisanal			
Commercial	49.8%	49.1%	42.2%
Subsistence	18.1%	13.6%	9.2%
Collection of by-catch	3.3%	4.5%	4.6%
Aquaculture			
Industrial	0.3%	5.2%	23.8%
Small-scale	0.1%	0.6%	0.6%
Imported fish	16.5%	13.5%	9.2%
Total	100.0%	100.0%	100.0%

Source: *Ministério das Pescas*, 2012.

The reasons for the decreasing trends on the contribution of subsistence fisheries to food security as indicated in the Table 8 are not well known. The government expects that with time, subsistence fishing will be gradually substituted by activities such as aquaculture, artisanal commercial fishing (open sea), by-catch collection and post harvesting operations associated with the fishing and aquaculture industry. Increases on by-catch collection have been mentioned by the fisheries Master Plan as an important goal to achieve in the next 5 years.

2.5. Policy for subsistence fisheries

2.5.1. The artisanal fisheries development strategy

The Artisanal Fisheries Development Strategy (AFDS) is a policy implementation strategy for artisanal fisheries, with a 10-year vision. The government believes that subsistence fishing will evolve to commercial fishing, but this evolution, according to this policy tool, will not happen in the short and mid-terms. Accordingly:

In 2015, artisanal fishing in Mozambique will still be undertaken on a subsistence basis, though increasingly linked to the country's market, and integrated into communities where social services have made considerable progress. At the same time, a relative development will occur in the forms of commercial artisanal fishing in particular fishing centers, strongly linked to domestic, and increasingly to regional, markets (*Ministério das Pescas*, 2006:17).

To facilitate the conceptualization of subsistence fishing, the AFDS divides artisanal fisheries into four important phases of development (See Table 9). Phases I and II are what is commonly known as subsistence fishing. In the old definition of subsistence fishing (Fisheries Act 3/90) these phases correspond to collectors, or fishers who harvest intertidal aquatic resources using no fishing gear. The definition of subsistence fisheries currently advocated by the AFDS (2009) includes “not only the forms of collecting and fishing envisaged in the current legislation, but also, all forms combining traditional equipment and boats, from dugout canoes to boats powered by oars or sails” (*Ministério das Pescas*, 2006: 30). Phase IV is where the artisanal-commercial fishing is located. Phase III is the transition from subsistence to pure artisanal-commercial fishing. In Phase IV, fishing is assumed to be more profitable because its interaction with markets is assumed to be more realistic and rentable.

Table 9: Phasing of the development of artisanal fisheries according to the Artisanal Fisheries Development Strategy (AFDS)

Fishery phase	Technology	Infrastructure	Market linkages	Unit cost of catch	Unit price of catch	Financial services
I	Feeble	Poor, very difficult access	Weak	Low	Poor	Not available
II	Basic	Irregular access	Restricted	Increasing	Low	Available with difficulty, high interest rates, PCR
III	Basic	Regular access, ice irregular	Under developed	Increasing	Increasing	Available, high interest rates
IV	Under developed	Available, roads, water and electricity, ice	Developed	Falling	Increasing	Available, normal interest rates

Source: *Ministério das Pescas*, 2006.

This study raises two important points for discussion. The first is related to the conceptual view of the Artisanal Fisheries Development Strategy on subsistence fisheries. The study argues that theoretically, the typology of Artisanal Fisheries as suggested by the AFDS (See Table 9) is in line with the structure of the artisanal fishing sector in Mozambique. However, the ways the AFDS conceptualizes subsistence fishing in this framework conveys the idea that subsistence

fishing is just a phase of the fisheries development path that may disappear with the expansion of infrastructure and markets. This is not necessarily the reality. If one examines carefully the structure of artisanal fisheries in the whole country (marine coastal areas), one will notice that the structure of this sector is similar in both urban and rural areas with some differences in terms of scale of each category of fishing. All four categories still exist in both urban and rural areas. This means that the structure suggested by the AFDS does not necessarily disappear with the presence of infrastructure or markets, since the availability of these assets alone, cannot secure effective and equal access and utilization by all fishers.

Also, motivations to subsistence fishing need to be properly addressed in policy documents. The study brings some evidence informing that in certain conditions, subsistence fishers use their own judgment to choose between subsistence fishing and other alternatives. It comes as no surprise that the paradigm that informs subsistence fishing is based on “a buffer from social pressure in periods when the normal basis of subsistence is at risk” (*Ministério das Pescas, 2006*) cannot be generalized to all subsistence fishers. Not all subsistence fishing should be considered as an “alternative to which the poorest people resort in their struggle for survival” (*Ministério das Pescas, 2006:21*). The collection of molluscs and oysters, for instance exists even in urban fishing areas where markets are quite well developed. Although producing fewer quantities than the artisanal-commercial fishers, intertidal collectors are the most important suppliers of specific products such as oysters, to the local markets.

The second point of discussion is related to the ways AFDS sees the determinants of subsistence fishing. According to this policy document, market failures are the main factors that keep subsistence fishing at levels I and II. According to the AFDS, subsistence fishing (levels I and II) exists due to the problem of access to markets. Thus, development priorities for subsistence fisheries, according to the government vision, need to be concentrated on actions that will eliminate the market failures (infrastructural development, for example) before specific actions which may improve production and productivity within subsistence fisheries (*Ministério das Pescas, 2006*):

In the presence of market failures “priorities should not be given to introducing new technologies in subsistence fishing, but to: (i) increasing the results provided from fishing as traditionally known and practiced, so that it may lead to immediate increases in the incomes of the artisanal fishermen; and (ii) improving the already known conservation, handling and processing technics” (*Ministério das Pescas*, 2006:5).

This vision is based on the assumption that the market in which subsistence fishers operate is small in size, with plenty of failures. “Any attempt to earn higher income by expanding the scale of operations may be subject to rapidly diminishing returns, because in small markets, more can be sold by only lowering the price” (Osmani, 2007: 256). The limitations of market size work as an “envelope which sets a limit to how far individuals can go in their effort to improve their lot even if they have the means to advance farther...as market size becomes bigger, the envelope is pushed forward, thereby expanding the opportunity set of the envelope” (Osmani, 2007:258). The government expects that once infrastructure is created, “the market will gradually start to play a dynamic role in the development of the artisanal fishing communities” (*Ministério das Pescas*, 2006: 5). The government also believes that as local economies become better connected to “larger markets and common property systems confront cash exchanges.... subsistence users are likely to exploit resources for cash incomes as well” (Agrawal, 2001:1656). This vision is shared by several authors (Coase, 1960; North, 2000; Makhura, 2001; Kuperan et al. 2008) who confirm that market failures and transaction costs have negative effects on market participation and that infrastructures can reduce the impacts of the failures. The shortcomings of this approach (which is here considered as market based approach) will be highlighted in the following chapter when discussing the subsistence fisheries concept. It will be addressed that despite the negative roles market failures and transaction costs play in market participation, there are other factors that explain better the vulnerability of subsistence fishers and their persistent exclusion from development initiatives. Most of those factors are related to the inability of the fisheries governance structures in creating spaces for the action of the weak groups. Another aspect that deserves a comment lays to the ways fisheries policy sees the sustainability of subsistence fisheries. According to this policy, monitoring biological trends of artisanal fisheries should be taken as a priority:

“Understanding not only the biological characteristics of the resources and consequently the degree of risk implicit in the fishery, but also the social motivation towards exploitation of resources are important aspects that cannot be dismissed when deciding on the management measures to take. The monitoring of all the artisanal fisheries is thus

a priority activity ... regardless of the phase of development reached by an artisanal fishery...In phases I and II of the evolution of artisanal fisheries (and often also in phase III) management interventions are not, as a rule, necessary. At the extreme levels of the struggle for survival, any management intervention has uncertain results and most often is ineffective – it is not possible to restrict the action of those who are on the margins of survival” (*Ministério das Pescas*, 2006: 24).

This study argues that the position taken by the Artisanal Fisheries Development Strategy in relation to the intertidal subsistence fishing management strategy as explained above, reveals another dimension of exclusion of this sub-sector. Fisheries resource management cannot be reduced to actions that will restrict access to the fishery. Management also means the promotion of fishing practices that can reduce the risks for depletion of the species in question. It is the understanding of this study that intertidal subsistence fisheries deserve equal attention as other fisheries.

2.5.2. Fisheries policy approach to food security and livelihoods for subsistence fishers

According to the Fisheries Master Plan (II) the responsibility to increase the supply of fish to the domestic markets should be directed to the small-scale and semi-industrial fisheries (*Ministério das Pescas*, 2010). According to the AFDS, subsistence fishing as it is in the current conditions should be focused on providing “foodstuffs (small fish, molluscs, bivalves) directly to the household, while artisanal–commercial fishing should be directed to the promotion of incomes and employment which improve people’s ability to buy food” (*Ministério das Pescas*, 2009:46). In other words, the AFDS supports the idea that fishing at phases I and II should be directed to the direct provision of food to the households, while artisanal-commercial fisheries could be responsible for the creation of employment and income to equip people with the ability to buy food.

Table 10: Role of artisanal and subsistence fisheries in food security

Objective	Type of fishing
Generate employment, raise income in order to equip people with capacity to buy food.	Artisanal commercial (Phases III and IV)
Direct provision of food to the households	Subsistence fishing (Phases I and II)

These visions are all very simplistic for two reasons: the first reason is that conceptually, food security “exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (UN Food and Agricultural Organization, 2005). This definition points to four important dimensions that ensure access to food is ensured, namely: food availability, access, utilization and stability. The availability of sufficient quantities of food of appropriate quality, needs to be supplied through domestic production or imports (including food aid). Access means the level of access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet (Food and Agricultural Organization, 2005). The utilization of food means the existence of an adequate diet, clean water, sanitation and health-care to reach a state of nutritional well-being where all physiological needs are met. This brings out the importance of non-food inputs in food security. Stability deals with the access to adequate food at all times (Food and Agricultural Organization, 2005).

If subsistence fishing has to be connected to food security, more actions are needed to ensure that the four dimensions mentioned above are safeguarded. The market based vision of subsistence fisheries as stressed in the AFDS cannot help subsistence fishing play an active role in food security in all its four stages. The AFDS vision on subsistence fishing is limited to its harvesting side. Resources such as molluscs and bivalves are mainly caught by subsistence fishers but are not demonstrated as management priorities in fisheries policy and legal frameworks. This puts very big restrictions on the potential role subsistence fisheries should play in providing food security. Because the AFDS sees subsistence fishing as a temporary activity which may disappear or be substituted by a more commercial sector, fishing gear like harpoons and traps that are used by the subsistence collectors are not even mentioned in the fisheries management plans. Their feasibilities to produce food and income under certain market and resources' conditions, are also not assessed in the fisheries policy tools. This ambiguity in relation to subsistence fishing is also evident in the fisheries legal frameworks (such as the Fisheries Regulations for Maritime Waters as well as the Fisheries Act 3/90) which are not clear on the future of subsistence fisheries. The General Regulation of Marine Fisheries (2004) for instance, recognizes the existence of subsistence fishing and authorizes it to be performed in protected

areas, but this regulation does not create the necessary legal basis to confirm its right. This is a clear recognition that although politically recognized, subsistence fishing and mainly fishers who do not use boats and fishing gear to fish, have no right to fish.

The AFDS recognizes that in subsistence fisheries women have limited access to education and training, limited participation in fisheries management processes and have poor working conditions and low wages (*Ministério das Pescas*, 2006). In addition, the AFDS understands that freeing women from productive tasks which take their time (through water supply, schools and health units closer to the fishing community), can lead to “increases in the time they spend on productive activities (cultivating the fields, fishing, petty trade) which help increase the production of food for the households” (*Ministério das Pescas*, 2006: 12).

2.6 Institutions for fisheries

2.6.1 The institutions for fisheries administration and development

The Fisheries administration of Mozambique consists of the Ministry of Fisheries and its respective national, provincial and district bodies. The Ministry of Fisheries is the political body that coordinates the system of fisheries administration and establishes the conception and implementation of the fishing development policies (*Ministério das Pescas*, 2006). The Ministry of Fisheries works with the support of four sub-subsystems, namely: the fisheries management, development promotion, policy making (which is the combination of all sectors) and production / service sub-systems (which is the fishing industry).

The fisheries management sub-system consists of the following institutions: the National Administration of Fisheries (ADNAP), National Institute of Fisheries Research (IIP), and the National Institute for Fisheries Inspection (INIP). The National Fisheries Administration (ADNAP) is responsible for actions seeking to extend/ strengthen aspects linked to the monitoring, control, and surveillance of the artisanal fisheries, as well as technical support in terms of fishing infrastructures. The revised statute of ADNAP coordinates all activities related to the management of fishery resources and its management is fully committed to ensure that the institution takes a leadership role in this respect (*Ministério das Pescas*, 2006). Amongst its

responsibilities are the registration of fishermen and gear, fighting against illegal fishing practices and helping in solving local conflicts among fishermen (a role that ADNAP has only partially been fulfilling since the IDPPE has been taking the lead in supporting the Fisheries Community Councils within the context of the development projects) (*Ministério das Pescas, 2006*).

The Institute for Fisheries Research (IIP) is in general responsible for extending the statistical component of fishing, processing, improvement and analysis of the results (in coordination with the Institute of Small-scale Fisheries Development (IDPPE), as well as for all activities seeking to improve knowledge of the fishery resources accessible to the fishing industry. It has a motivated staff and close working relations with IDPPE, but insufficient scientific/technical capacity at central and provincial levels (*Ministério das Pescas, 2007*). The mandate of the National Institute for Fisheries Inspection (INIP) is to oversee quality, sanitary and traceability aspects; it is responsible for certifying fish quality and the sanitary conditions of fishing facilities and vessels. There is an opportunity for it to provide technical support to project initiatives involving the improvement of the quality of fisheries produced for the national and export markets (*Ministério das Pescas, 2006*).

The fisheries development sub-system consists of the following institutions: the Institute of Small-Scale Fisheries Development (IDPPE), National Institute for the Development of Aquaculture (INAQUA) and the Fisheries Development Fund (FFP). The Institute of Small-scale Fisheries Development (IDPPE) is the key institution for the development of artisanal fisheries and has a mandate that combines support for fishing communities with technological, social and economic development. It is a lightly staffed institution both at headquarters and in the field level. IDPPE contains a network of (110) extension officers working along the coast, through its provincial delegations (*Ministério das Pescas, 2012*).

The Fisheries Development Fund (FFP) is responsible for activities that seek to define policies, strategies, norms of conduct, and raising and making available funds for credit to bodies that undertake financial services for fishing (Ministry of Fisheries: 2007). The FFP is also the manager of most revenues collected by the government from the fisheries industry that include

fish license fees, fish inspection fees and the aquaculture license fees fines. The mandate of the National Institute for the Development of Aquaculture (INAQUA) is to promote aquaculture development.

At provincial level, the fisheries sector is made operational by the Provincial Directorate of Fisheries (PDF) and supported by the provincial authorities of IDPPE, IIP, FFP, INAQUA and INIP. In addition to these institutions, there is the Maritime Administration, an entity from the Ministry of Transport and Communications that is responsible for supporting the fisheries administration at community level. At provincial level, the Ministry of Fisheries is represented by the Provincial Directorate of Fisheries (PDF) which works on support of the provincial delegations of the Institute for Small-scale Fisheries Development (IDPPE), Institute of Fisheries Research (IIP), Fisheries Promotion Fund (FFP), Institute for Aquaculture Development (INAQUA) and Institute for Fisheries Inspection (INIP). There is also a Fisheries School (EP), which provides training at basic and medium level, required for the development of the sector (*Ministério das Pescas*, 2006).

Decisions on the fisheries administration at district level, fall under the responsibilities of the district administrator - with the direct support of the District Services of Economic Activities (SDAEs). The SDAE has been recently established under the Law 8/2003 of May 19th (the law of the Local Organs of the State) and its regulation (the Decree N° 11/2005 of June 10th). The SDAE is the platform from which the representatives from the fisheries administration, development and research at district level operate. Thus, the director of SDAE is the head of fisheries, agriculture, forests, wild life, livestock, tourism, mineral resources, trade and transport (ADNAP, 2012). In some urban areas (e.g. Inhambane province), the *Gabinete das Zonas Verdes*²⁰ are the institutions which play the SDAE's role.

According to the fisheries authorities the action of SDAEs and GZVs on fisheries, include the observation of the fisheries legislation in force (namely the Fisheries Law, regulations, ministerial diplomas and dispatches from the Ministry of Fisheries, as well as the legislation and regulations on the maritime administration which concern the security of fishing activities),

²⁰ Cabinet of Green Zones

promotion of fisheries development activities and coordination of all actions tending to improve the fisher's wellbeing (*Ministério das Pescas*, 2006). At lower levels of district administration (administrative post and locality levels) fisheries administration is represented by extensionists or state agents appointed by the district administrator.

One of the most important challenges the institutions of fisheries administration and development face, is their weak representation at district, local and village levels. Fisheries departments at district level lack human, material and financial resources to work on fisheries administration, management and development. Furthermore, the creation of the District Services of Economic Activities in SDAEs at district level was not complemented with specific actions tending to build their institutional, financial and material capacity. Most of the district directors of SDAEs were inherited from the former district directorates of Agriculture and share very little knowledge on fisheries development and management.

2.6.2 The institutions for fisheries governance

The Law 8/2003 and its regulation (the Decree No 11/2005) reiterate the idea of decentralization and community participation in planning and implementation of development projects at district level (*Boletim da República*, 2003a; 2005). This law also creates the broad district governance institutional framework which comprises of the district and local consultative councils which are the institutional bodies that secure participation of the citizens on district development planning actions. Representatives of all citizens living in a district space and their organizations are supposed to be invited to participate in important events of district development planning and governance activities. The law 8/2003 also creates a District Development Fund which is intended to assist communities at district level with credits on projects intending to improve livelihoods, food production and employment (*República de Moçambique*, 2005).

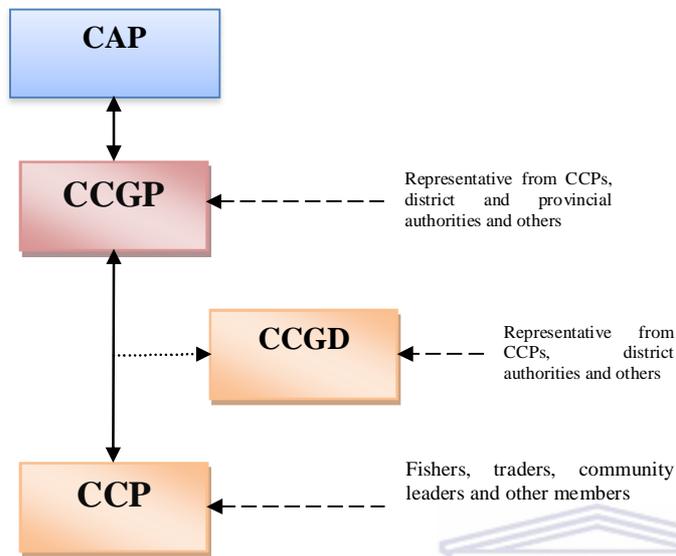
In the fisheries sector, the Decree 11/2005 has also consolidated the role of the district authorities by giving to the district administrators, the power and rights to issue fishing licenses, collect license fees, inspect and issue fines to infractors, as well as to coordinate all actions leading to the sustainable fisheries development (*Ministério das Pescas*, 2006). The Decree 11/2005,

specifies that it is the responsibility of the District Administrator to promote the participation of communities and authorities in activities that promote district development (*Boletim da República*²¹, 2005). This Law defines community as “the set of population and legal entities included in a particular unit, territorial organization, including provincial, district, administrative post, locality and village, including families, aiming to safeguard common interests, such as protection of residential areas, agricultural areas, whether cultivated or fallow, forests, places of cultural importance, pastures, water sources, hunting areas and expansion” (*Boletim da República*, 2005:3). Community participation, according to this Decree, is secured through formal processes which are represented by the Institutions for Community Participation and Consultation at district, administrative post and local levels.



²¹ Official Gazette

Figure 1: The structure of the Fisheries Co-management Programme in Mozambique



Source: Author.

In the alignment of this legislation, the government of Mozambique approved the General Maritime Regulation in 2004 (Decree 43/2003). This regulation introduced the bottom-up system on fisheries management and created conditions for participation of fishing groups in formal venues of fisheries management and governance. The fisheries co-management programme currently being implemented in Mozambique is one of the most important examples that reflect the space created by this

branch of legislation which denotes a clear demonstration of the willingness of the government of Mozambique to decentralize the fisheries administration structures. According to the Decree 43/2003, fisheries co-management arrangements intended to strengthen coordination between the formal and informal institutions by encouraging participation of all stakeholder groups (government, private sector, fishers, community and traditional leaders, traders) in decision-making processes and to share benefits from coastal resources. The fisheries co-management programme is expected to promote spaces that encourage the interactions between the artisanal fishers, institutions of fisheries administration, research and development institutions and the private sector. The National Fisheries Administration Commission (CAP) and the fisheries co-management committees are the only fora where all stakeholders are presented and invited to participate, and bring suggestions on matters related to the fisheries resources and management. The CAP is chaired by the General Director of the National Fisheries Administration (ADNAP) and advises the Ministry of Fisheries on matters pertaining to the conservation of fisheries' resources and fisheries management including: fishing quotas, maximum number of vessels to be licensed in a fishery, areas with restrictions on fishing activity, procedures for preparing and reviewing fisheries development plans, and other measures of fisheries management or

conservation of the aquatic environment. There is also a “Fisheries Management Council (CGP) which facilitates the coordination between the various entities of the subsystem components of fisheries management. The Fisheries Management Council is also chaired by ADNAP and integrates representatives of some institutions of the sector particularly IIP, INIP, IDPPE and Fishing Ports (*Ministério das Pescas*, 2013). In order to make the fisheries management process more inclusive and participatory, the fisheries management system at local level (district and villages) supports the establishment of Fisheries District Committees and Fisheries Community Councils that operate at district and community level, respectively.

The Fisheries Community Councils (CCPs) are community-based organizations whose function is to secure participation of community members and artisanal fishers in fisheries management at local level. Created under the General Maritime Fisheries Regulation (2004), the CCPs are expected to play an important role in several aspects of fisheries management including: the licensing of fishing, community sensitization for good fishing practises, resolution of conflict among fishers and submission of suggestions on fisheries management to the district government. The CCPs are supposed to work in collaboration with the whole community and in particular with community leaders, private entities working in their villages and all community-based organizations with interests on fisheries (e.g. Fisheries’ Associations, Rotating and Saving Groups, etc.). According to IDPPE (2013), there are approximately 2,333 community-based organizations in the country, amongst which 441 are CCPs, 488 are fisheries associations, 1104 are Rotating and Saving Groups and 300 are diverse or not specified organizations (Table 11). The main differences between these community-based organizations lay in their functions. The CCPs are more focussed on fisheries co-management, while the Fas and RSGs are more related to the income generation activities. The formation of CCPs is requested by the community members (mainly fishers) or by the government while the FAs and RSGs result from the private decision of the group.

The CCPs and fisheries associations can be considered formal organizations, as they are formally established within the fisheries legal framework. To operate, both CCPs and FAs must be authorized by the government through appropriate regulations. In the case of CCPs, requests for formalization must be submitted to the Minister of Fishers through the district government.

However, the Law 8/2008 gives the district administrator the competencies and rights to recognize and authorize the formation and interventions of the CCPs.

Table 11: Number of Fisheries Community Councils in Mozambique (2012)

	Number of Fishers Community Councils (CCPs)	Number of fishers' Associations (FA)	Number of Rotating Credit and Saving Groups (RSG)	Number of other types of groups related to fisheries
Niassa	24	19	12	50
Cabo delgado	65	94	166	46
Nampula	65	132	547	49
Zambezia	39	66	91	71
Tete	52	63	76	34
Manica	8	11	5	8
Sofala	22	27	80	20
Inhambane	93	27	43	11
Gaza	33	33	73	10
Maputo province	33	9	5	1
Maputo City	7	7	6	0
Total	441	488	1104	300

Source: IDPPE, 2013.

The rotating groups are not formal organizations, but are promoted or encouraged by the fisheries authorities. When the performance of the group is outstanding, fisheries authorities do encourage the group to apply for formalization. In that case, the group will change its designation from saving groups to fishers associations and will have to be legalized according to the association's rules. The number of associations that were formalized is not known. However, there are indications that many groups have returned to the informal structure of organization after they tested the implications of being legal. Perhaps that, the problem is not the legalization *per se*, but the fact that a group which started its formation based on informal relations faces many challenges in changing these relations into a more legal or formal format.

There are many challenges which are associated with the whole fisheries governance framework. One of the biggest challenge is the lack of functional articulation and connection between the institutional bodies created by the fisheries authorities for fisheries co-management and

development and the highest institutional governance bodies (such as local councils) promoted by the government to secure participation of all in the district development planning processes. There are very few examples in the country where the CCPs were consistently involved in the local council's decision-making events. Another challenge lays in making the institutions and organizations created by the fisheries authorities more connected to the social contexts they operate in. The fisheries Community Councils rarely address issues that are priorities for particular contexts and their organizational structures are constructed in a manner that favors the elites of fisheries such as the owners of fishing gear, politicians and others. The informal structures such as the saving groups have very little expression in these spaces. Fishing workers and women are also excluded from the CCPs (Table 12).

Table 12: Composition of community-based organizations and participation of women

	Total CBOS	Male members	Female members
Fisheries Community Councils (fisheries co-management)	441	87%	13%
Fishing producer and traders' associations (income generation)	488	73%	27%
Savings groups (income generation)	1,104	63%	37%
Total	2.333	68%	32%

Source: IDPPE, 2013.

Attempts to mobilize semi-industrial and industrial fishers negotiating access rights with artisanal / subsistence fishers through co-management arrangements are not resulting in the expected outcomes. Industrial/semi-industrial fishers do not systematically participate in the provincial and district co-management forum, for several reasons. First, the government does not have financial resources to support these forums on a systematic basis. Second, semi-industrial and industrial fishers still take many advantages on decision-making due to their political and economic influences. This may be confirmed by the lack of participation of these stakeholders in most provincial and district co-management fora. Thus, although the government is formally recognising the priority of artisanal fisheries in its national development agenda, empirical evidence has indicated that artisanal and subsistence fishers are often “marginalized” from the fundamental decisions regarding fisheries management and development.

2.7. Summary of the chapter

This chapter provides very useful information on the fishing industry in Mozambique, the policy framework for subsistence fisheries and the institutions being formed by the government to support fisheries development in the country. It is clear in this chapter that in Mozambique fishing is very diverse and complex sector. Artisanal fishing in particular involves many actors using diverse fishing gear and targeting different resources. Mozambique's fisheries policy has made a clear distinction between artisanal-commercial and artisanal subsistence fisheries to allow more clarity on its actions for the subsistence fisheries development. The government has made a comprehensive assessment of the problems affecting subsistence fishing and came to the conclusion that market failures are the most important factors hindering development of this sector. The development strategy for subsistence fisheries according to the fisheries policy needs to prioritize actions that will eliminate the market failures and improve the social and economic environment of the fisheries sector before specific actions which may improve production and productivity within which subsistence fisheries take place (*Ministério das Pescas, 2006*). Parallel to these policy positions, the government has also embarked on important institutional reforms that culminated with the creation of fisheries governance institutions (fisheries co-management councils and committees, District and Local Consultative Councils) and community-based organizations that may secure the participation of marginal groups in decision-making and opportunity sharing mechanisms.

The study in this chapter highlights that both fisheries policy and institutional governance reforms address very useful issues of fisheries development and represent an important step towards a sustainable fisheries development framework. The Artisanal Fisheries Development Strategy in particular, represents the first more consistent policy instrument the government has produced to show its will to support subsistence fishing. However, despite these advances, the chapter identifies several shortcomings that are associated with the fisheries policy instruments and institutions that need to be addressed in a more structured way. One of these shortcomings is the way fisheries policy addresses the determinants of subsistence fishing. The study has stated that limiting subsistence fisheries development constraints to the market failures problems

undermines many other factors that explain the current situation of vulnerability and marginalization of subsistence fishers. Apart from market failures subsistence fishers have been critically affected by the problem of elite capturing which inhibit them to access and take advantage of the institutional spaces being created under the ongoing reforms. It is the exclusion of the fishers from these spaces, explains the marginalization of subsistence fishers from the development actions. The policy intended to address subsistence fishing, needs to bring a serious reflection on these issues, even before market failures problems are put in consideration. The second shortcoming points to the lack of alignment between the institutional platforms that are created by the fisheries authorities to assist the fishers, and the overall institutions that are expected to aggregate participation of all citizens at district level. Failures on these linkages explain the limited access that fishers have to opportunities or decisions that are made at district governance level.



CHAPTER THREE: UNDERSTANDING FORMAL AND INFORMAL ACTION SPACES FOR SUBSISTENCE FISHERIES: A THEORETICAL FRAMEWORK

3.1. Introduction

In Mozambique, despite the contribution of subsistence fisheries in food security, income generation, self-employment and poverty alleviation (*Ministério das Pescas*, 2006; 2014), the fact that subsistence fishers remain substantially excluded from the existing formal venues of fisheries governance and development, continues to be a matter of much concern. The previous chapters have demonstrated that historically Mozambique's government has been demonstrating a political will to provide a situation arena where all fishers are able to attain better opportunities. The creation of the Law 8/2003, Law 22/2013, the Maritime and Inland Fisheries Regulations as well as the recognition of the importance of subsistence fisheries through the Fisheries Master Plan II (2010-2019) and the Artisanal Fisheries Development Strategy (2009-2014), have marked important moments towards the recognition of the importance of subsistence fisheries and the need for fisheries management regimes which were more adequate to the current situation of fisheries in Mozambique. The key idea of these reforms is decentralization, a process that was expected to bring the government, institutions, rights and opportunities closer to people, and policies closer to real contexts. Decentralized systems were also expected to influence that power and responsibility in fisheries management and governance were transferred from central to provincial, from provincial to district and from district to the village levels. To ensure that policy visions and laws were implemented, the government encouraged the creation of new institutions at district and community levels which included the district consultative councils, fisheries co-management committees, fisheries associations, district development funds and diverse community forums and councils. Through these institutions, power, decisions and opportunities in their different dimensions would be shared and subsistence fishers, according to the Artisanal Fisheries Development Strategy, would be a priority group.

However, despite these efforts, subsistence fishing remained marginal to these development spaces and the artisanal fishing sector became more fragmented into two separated sub-sectors: the subsistence sector, which remains on a system based on informal practises and structures, and artisanal-commercial fishing, which is based on commercial relations/transactions. Research in

Mozambique's fisheries sector has invested very little effort in understanding the informal subsistence fisheries as an integral sector. Most of the conclusions on subsistence fisheries have been extrapolated from the artisanal–commercial component of fisheries. The Artisanal Fisheries Development Strategy (AFDS) is the first policy document which recognizes the need to distinguish subsistence from other types of fisheries within the artisanal fisheries sector and advocates for policies which are particularly addressed to subsistence fisheries. This document marked a new era in fisheries development policy in Mozambique, as it the first policy tool clearly declaring subsistence fishing a priority. However, despite these advances, subsistence fishing remains a marginal sector with very little access to the opportunities for poverty alleviation being created by the fisheries authorities.

This study is an attempt to understand subsistence fishing systems as formulated in the fisheries policy and aims at determining the factors leading to its marginalization from the formal venues of fisheries governance in Mozambique. The study recognizes that finding an accurate theoretical framework to understand this social system is a very complex task, as subsistence fishing is itself very difficult to determine. However, since this topic is more centered on the issues of fisheries governance, the study takes the concept of 'action space' as a departure point to determine its conceptual road map.

3.2. Understanding Social Vulnerability and Marginalization in the context of subsistence fisheries

3.2.1. Social vulnerability

This section discusses the reasons why the concept of vulnerability is useful to understand subsistence fisheries and the ways it is applied in the context of subsistence fisheries policy governance. This study uses vulnerability as a central concept to characterize the *status quo* of subsistence fishers in Mozambique. The reasons for choosing this concept are threefold: firstly, vulnerability denotes a sense of exposure and fragility. Secondly, vulnerability reveals a state of insecurity in relation to the future events, decisions or policy options. Thirdly, the concept of vulnerability deals with the incapacity of actors or systems to cope with changes or to recover from a hazard.

Table 13 provides different definitions of vulnerability, mostly applied in social sciences. Vulnerability as a concept used to be distinguished into *physical* and *social* vulnerabilities (Adger 1999). Physical vulnerability refers to exposure to stress and crises resulting from physical hazards and is formally defined as an “amount of several damages caused to a system by particular climate related hazards or events as well as a state that exists within a system before it encounters a hazard” (Brooks, 2003:3). The literature on vulnerability to climate change (Cannon, 1996; Adger, 1999; Brooks, 2003), normally uses resilience and sensitivity as indicators to measure physical vulnerability. Resilience is the ability of a system to bounce back from stress or shock, and sensitivity is the magnitude of response to an external event (Ellis, 2000; Ellis and Freeman. 2004; Hulme et al, 2003). Resilience measures the efficiency and effects of the coping strategies, while sensitivity is related to the risk management magnitudes. Resilience leads to the ownership of assets as well as peoples’ capability to mobilize these assets in the face of difficulties. Robust systems are those displaying high resilience and low sensitivity (Ellis, 2000).

Table 13: Definitions of vulnerability

AUTHOR (A)	DEFINITION (B)	KEY WORDS (C)
Chambers, 1989	Vulnerability is ‘exposure to contingencies and stress, and difficulty in coping with them’.	Exposure, stress
Alwang, J. et al. 2001	The “probability of experiencing a loss in the future relative to some benchmark of welfare” caused by uncertain events.	Welfare, uncertain events
Hogan, D.J et al., 2005	The characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard.	Person, incapacity to anticipate, cope with, resist, recover, natural hazard
Hulme et al, 2003	“The situation with a substantial downturn in the wellbeing of people or substantial threatening of their daily lives because of their inability to deal with risks when they face threats”.	Downturn, wellbeing, people, inability, risks, threats
Béné and Friend, 2011:130	Vulnerability is a function of the risks to which people may be exposed (exposure to risks); the sensitivity of their particular livelihoods to those risks (sensitivity); and their ability (or lack of) to adapt to, cope with change or recover from the impacts of external shocks (adaptive capacity).	Risks, exposure, sensitivity and adaptive capacity

Source: Compilation from the authors indicated in the column A.

One of the several advantages of using the concept of social vulnerability to contextualize subsistence fishing is that, this concept deals not only with the problems that make people to be vulnerable, but also with the incapacity people have in coping with, responding to or recovering from a stress without damaging losses²² (Dilley and Boudreau, 2001; Adger, 2003; Kelly and Adger, 2003; Smith and Wandel, 2006; Vincent, 2006; Béné and Friend, 2011).

Another advantage is well pointed out by Ribot (2010), who divides vulnerability analysis into two components: the risk-hazard and social dimensions. The difference between these two components, according to Ribot (2010:51) is that the former (risk-hazard) “tends to evaluate the multiple outcomes of a single ... event whereas the social constructivist characterizes the multiple causes of single outcomes”. It is on this differentiation where the application of the concept of social vulnerability became much more useful to the subsistence fishing in contrast to the market based approaches, as applied in Mozambique’s fisheries policy. Differently from the market based approaches that tend to see subsistence fisheries as a result of a single market failure problem, social vulnerability takes subsistence fishing as a product of multiple factors. The Artisanal Fisheries Development Strategy is based on the market failures paradigm which regards subsistence fishing as a product of single market failure problems. This paradigm alone, cannot guarantee an effective integration of subsistence fisheries into Mozambique’s fisheries development processes. Subsistence fishers in Mozambique’s context lack many a thing at the same time. They lack: (a) clear rights of access to the fisheries resources, (b) decent working conditions, (c) a secure livelihood, (d) a legal and institutional support to access better markets, (e) infrastructural support for their operations, (f) credit and other financial opportunities, (g) abilities to transform their assets into entitlements (Sen, 2000) and face many restrictions in accessing the existing economic, political and social rights. Although market failures are important factors in characterizing subsistence fishing (*Ministério das Pescas*, 2006), it is the overall context of poverty, inequalities, marginalization and discrimination that makes them powerless and unable to access opportunities that are provided by the formal mechanisms of fisheries development. Thus, the discussion around the problems of access to the fisheries governance spaces is strictly linked to the concept of social vulnerability. Other concepts that are

²² The degree of vulnerability of a social system depends on the nature and magnitude of the risks, and the ability of the social system to respond to, cope with or to adapt to the risks (Kelly and Adger, 2000; Allison and Ellis, 2001; Adger et. al, 2005; Béné and Friend, 2011).

related to the notion of social vulnerability are social exclusion and marginalization. These concepts help in understanding social vulnerability by looking at processes that drive people to a multidimensional exclusion.

3.2.2. Marginalization and social exclusion

The concepts of social exclusion and marginalization are used in this study, to give more clarity on the nature of exclusion of subsistence fishers from the formal action spaces. These concepts are useful because they give emphasis on the institutional and social relation processes that create conditions for exclusion of some groups of people while favouring others (Nevile, 2007). Social exclusion, according to Narayan (1999:5), refers to institutional processes that exclude certain groups from full participation in the social, economic, cultural and political life of societies”. A person is then referred to as socially-excluded, if he/she does not participate in activities, decisions and other conditional assets which provide them with valuable opportunities and capabilities (de Haan, 1999). Both, social exclusion and marginalization encompass the idea that some groups of people are included but in disadvantageous and discriminatory ways. Marginalization as a concept is also useful because it deals with the social and institutional processes that keep some groups at the margin of formal action spaces due to their characteristics or factors such as ethnicity, race, religion, gender, (Béné and Friend, 2011:131), social position or fishing practices, etc. The study uses the concept of vulnerability to situate subsistence fishing as a social system. Examples of this type of exclusion can be found in the existing disconnection between fisheries policy (which puts subsistence fisheries on top of the priorities) and the district and local governance practises which completely exclude subsistence fishing from the ongoing participatory processes.

This study identifies three important dimensions of exclusion that may be contributing to the social vulnerability of subsistence fishers in Palma district namely: lack of entitlements and livelihoods²³, elite capturing and unclear (or non-existence of) rights of access to fishing. It is argued in this study that in the case of Palma district, lack of entitlement for subsistence fishing

²³ Entitlement, according to Ribot (2010: 55), refers to the “total set of rights and opportunities with which a household can command—or through which it is “entitled” to obtain—different bundles of commodities. Examples of a few of the things subsistence fishers are excluded from that falls into the entitlement concept include: a decent work, a livelihood; secure and permanent employment, credit; land; education, skills and cultural capital.

is better explained through arguments which are based on the concepts of social exclusion and marginalization. In most cases it is not the lack or unavailability of opportunities or rights at all, but the fact that there is a mismatch between the structure of these opportunities and the households' endowments to access and use them (Osmani, 2007). The mismatches between endowments and opportunities have been described by Osmani (2007) as the 'integrability' problem. The idea of structural mismatches is that, as the overall opportunities expand, new challenges may arise and some groups (like subsistence fishers) may be required to improve their abilities and skills to get access and make appropriate use of those opportunities. Some of the major factors that influence the patterns of access to opportunities include: lack of correct information and knowledge, lack of appropriate technologies or skills to make use of the available opportunities, or limited access to the institutional mechanisms of access to the available opportunities (Putnam, 1993). A critical example of structural mismatches in fisheries can be captured from the problem of the rural credit markets. Generally, subsistence fishers do not have access to credits, even in urban areas due to several factors. On the one hand, most of the microfinance institutions that have been involved in credit promotion for fisheries rarely have acceptable knowledge about fisheries' behaviour. On the other hand, small-scale fishers rarely have valuable assets that can be seized to the service of a debt. They also fail to correctly interpret the terms of contracts when credit opportunities are opened up. According to Osmani (2007:9) "many of the disadvantages suffered by women in the economic sphere can also be seen as a mismatch between endowments and opportunities when gender is seen as an invariant endowment of a person.

However, solving the problem of structural mismatches requires detailed knowledge of the nature of endowments possessed by the households, the structure of existing opportunities and the nature of institutions mediating development processes. Institutions (formal and informal) are expected to reduce the structural mismatches while creating the necessary incentives to reduce risks and uncertainties of resource allocation in the overall fisheries development system. Where formal institutions fail, social capital networks and other mechanisms of self-insurance may play an important role in transmitting development processes. Social capital can help in accessing credit, technologies, infrastructure and other opportunities by lowering transaction

costs, improving diffusion of information and strengthening informal insurance mechanisms (North, 1990).

Another way of looking at the concepts of social exclusion and marginalization is provided by Sen (2000). According to Sen (2000:13), it is important to “distinguish between exclusion which is a deprivation and exclusion which is not in itself negative, but can lead to other deprivations which do have constitutive relevance”. Social exclusion as formulated by Sen (2000) and cited in Nevile (2007) can be distinguished into active and passive exclusion. Active exclusion results from a policy deliberation to exclude certain people from particular opportunities. Passive exclusion is not necessarily deliberated, but can intentionally be organized by certain groups to fulfil their interests. Implicit to both exclusions and marginalization is the problem of power relations. Actors use the privilege they have in accessing certain sets of capitals to dominate one another, capture opportunities, even if indirectly. For instance, landlords exclude people from access to land or housing because they are economically well positioned and strategically linked to the systems of political power. The elite political groups exclude others from legal rights because they use political power to determine their positions in the spaces of actions. The owners of fishing gear in Mozambique use their economic privileges to hijack all the decisions and opportunities that are made available by the fisheries community councils.

Elite capturing has been expressed in terms of power manipulation, opportunity deviation to specific groups, and limitation of the spaces for participation of those groups that are already marginalized by the overall system of community governance. Thus, power and elite capturing are linked and very important requisites in understanding marginalization and exclusion particularly in the fisheries sector. Power as a multi-dimensional concept denotes the ability of the powerful actors to affect the weaker actors through actions that are not consensual. The ways fisheries co-management institutions work in the Palma district for instance, denotes processes of symbolic imposition, where owners of the fishing gear and other richer people determine the discourse about fisheries management and use their powers to decide who will participate and how. Participation will not be effective if power creates conditions for dominated-dominant relations among the interacting groups (Béné and Neiland, 2006; Gaventa, 2006). Thus, without an understanding of the powers of the various stakeholders involved in the governance schemes,

“the domains in which they exercise their powers and to whom and how they are accountable” (Njaya et al., 2011:4), it is impossible to learn the extent to which fisheries governance arrangements have taken place.

When power is shared actors in action can exert influence on each other and inter-dependence between them can be achieved. Power sharing can also confer to the actors in action, a certain degree of autonomy, which is a central condition for the fair participation to occur. When actors are inter-dependent, their relations are more than just exchange or input-output: they involve reciprocal accountability in the sense that each partner is accountable to the others for its actions and impacts on the collaboration (Ylitalo et al, 2004). Reciprocal accountability may be achieved through transparency and participation in every action influencing the course of the interaction. The consequences of social exclusion can be multidimensional, as people who are socially excluded can be deprived of several things at the same time.

3.3. Understanding the Action Spaces created by the fisheries policy for subsistence fisheries

3.3.1. The concept of Action Space

The notion of space has been used across the literature on power, political sciences, policy analysis, democracy and citizen action (Gaventa, 2006); but it has not been rigorously theorized yet. Gaventa (2006) uses it to mean political or institutional discourses, arrangements and practices through which poor people can pursue poverty and vulnerability reduction. In fisheries research the concept of action space is objectively applied by Isaacs (2003, 2007, and 2011) and Onyango, (2011) and subjectively used by Béné and Neiland (2006), Njaya et al (2011) among others. Building on the experiences from South Africa, Isaacs (2003), explains the action space in the context of a broader governance perspective, which dictates the formulation of a new policy implementation arena (Isaacs, 2003:360). Isaacs (2003) situates the concepts of hidden transcripts as the onstage and offstage performances of actors by using the works of Scott (1985, 1990) to understand how particular social groups of fishers reacted to a situation of marginality and to what extent they are able to develop their own action space (the informal action spaces). Informal action space conceptualized in this way is a claimed space – that is - space that emerges

as a reaction to certain conditions of exclusion. Njaya et al (2011) apply the notion of action space (although indirectly) in their analysis of power in the context of fisheries co-management in Malawi. Using the decentralization and the cube power frameworks, Njaya et al (2011) build their concept of action space by exploring the several dimensions of power, knowledge and discourses embedding them. Accordingly, fisheries co-management spaces are filled with specific dimensions of power (be it visible and invisible), knowledge (be it traditional or scientific), ideology and opportunities. This observation was also previously submitted by Cornwall and Coelho (2004), to whom action spaces are not neutral but are filled with power and human relations which surround and enter them. Njaya et al (2011) situate informal action spaces in the context of power analysis. They found several dimensions of power which are inherent to both formal and informal spaces and play decisive roles in fisheries co-management frameworks. This observation was also previously submitted by Cornwall (2004), to whom action spaces are not neutral but are shaped with power and human relations which surround and enter them. According to Clegg et al (2006:376) the central question in understanding these powers is not who has the power but how power is exercised in each dimension. Agrawal and Ribot, (1999) (and later Njaya et al. 2011) suggest a process of power analysis which consists of: (a) identifying the key stakeholders in the local arena who exercise power over resources, (b) positioning the stakeholders in relation to types of power, (c) categorizing power into: power to create rules or modify old ones, power to make decisions about how a particular resource or opportunity is to be used, power to implement and ensure compliance with new or altered rules and power to adjudicate disputes that arise in the effort to create rules and ensure compliance (Njaya et al, 2011:4).

Onyango and Jentoft (2011) then use the concept action space resorting to a framework based on women's entrepreneurship. They found that women in communities they studied in Lake Tanzania, "have taken steps to tackle the problems of poverty and underdevelopment and, at the same time, have also changed their subordinate status relative to that of men within their community" (Onyango and Jentoft, 2011:118). These findings are consistent with the idea that participation in policy spaces is also a matter of human agency. The agency aspect, as submitted by Alkire (2005:219), "is important in assessing what a person can do in line with his or her conception of the good" and choices. Agency is the ability of people to act on behalf of goals

that matter to them and may be exercised individually or in groups (Alkire, 2005). The capacity of the agents to transform or to open alternative “spaces for their engagement with structures which affect their lives” depends on the level of power, freedom, autonomy and independence held by those making the choices. Sewell (1992) argues that all people in the society are agents and do exercise their agency in their daily lives, by employing complex repertoires of their skills to control and sustain ongoing social relations. But, agency is not simply the realm of massive social relations: it is the capability of actors to intervene in key events so as to determine their course of life (Sewell, 1992; Hays, 1994). Transformative agency entails the “capacity to transpose and extend schemas to new contexts²⁴”. Agency arises from the actor's control of resources, which means the capacity to mobilize resources, coordinate actions “with others and against others, to form collective projects, to persuade, to coerce and to monitor the simultaneous effects of one's own and others' activities” (Hays, 1994:21).

The difficulties in self-building capacity for transformative agency within subsistence fisheries come from two reasons: first is the lack of spaces where they can freely participate, think, make their choices, act, “pursue a better life built on secure entitlements, proficient capabilities, and social justice” (Jentoft et al. 2011:453). These spaces are designated in some studies (Gaventa. 2006) as the opportunities for participation which can mean societal mechanisms, institutional arrangements, or any structural adjustments that minimize marginalization of social entities. The second derives from the fact that subsistence communities are often very much disintegrated sectors, composed of different types of micro-structures which exist at different levels, operate in different modalities, and are themselves based on widely varying types and quantities of resources (Sewell, 1992). Subsistence fishers in Mozambique do not have a particular kind of social representative that should act on behalf of or in place of the rest of actors. All these features serve powerfully, to disperse their interests and social focus as a unique group.

²⁴ The *hidden transcript* and *offstage performance* paradigms as applied by Isaacs (2003, 2011), fit well into the concept of *structurally transformative agency* and may be applied in situations where both, the struggling actors (dominant and subordinates) understand well their potential rights. Here the marginalized, poor and vulnerable fishers organized themselves to complain about their rights for fishing. They found what Isaacs (2003), call *hidden transcripts* to fight against their poor conditions.

3.3.2. Theorizing the Formal Action Spaces created by the fisheries policy to subsistence fisheries

During the last two decades, Mozambique has experienced much progress towards a creation of spaces and opportunities for poverty alleviation and reduction in fishing communities. The Poverty Alleviation Reduction Plan III (2011-2014) became the most important instrument stressing the need to set poverty alleviation and reduction on top of all priorities of the national development framework. Inspired by this vision, Mozambique's fisheries authorities approved the first Artisanal Fisheries Development Strategy (2009-2015), in 2009, and the second Fisheries Master Plan (2010-2019), in 2010. One important particularity of these instruments, is that both recognize the importance of subsistence fishing to food security and livelihoods and define subsistence fishing as the priority of priorities in fisheries development policy (*Ministério das Pescas*, 2006; *Ministério das Pescas*, 2010).

This study attempts to understand the reasons why subsistence fishers have been marginalized from the formal action spaces of fisheries governance created by the government of Mozambique under the ongoing institutional and policy reforms. Action Space has been found to be an appropriate concept to aggregate and situate the institutional, policy and governance context. The concept of symbolic capital developed by Bourdieu (1977, 1985, 1991, 1998) and Bourdieu and Wacquant (1992) in Isaacs (2003) is used in this study to understand the ways actors in action, structure their position and use certain capitals (social, economic, cultural) to influence and manipulate the opportunities which is created by the formal action spaces for their own benefit. Symbolic capital, denotes a "situation in which powerful actors continue to enjoy unchallenged privileges in accessing resources and power, through which they dominate social interactions" and difficult deliberative practices (Ojha et al. 2009:367). In Bourdieu's perspective, what this research defines as Formal Action Space could be considered as a Social Field within which actors "engage in diverse forms of interaction" including exchange of capitals, cooperation, competition and conflict (Ojha et al, 2009:368). Thus action spaces as formulated in this study, denote a field which is summarized by Hurtado (2010:54-55) in the following ways:

A "field" is structured in terms of social positions and power relationships. Their "habitus" confers the players in the field a practical "sense of the game....Within a field,

players engage in “social practices” which Bourdieu also calls “strategies” or “coping strategies.” For a given group of players (in the same class or position) within a “field,” these practices or strategies are generated by the class’ habitus...

To understand how symbolic capital is linked to our concept of Formal Action Spaces, it is important that we recall “Bourdieu's theory of practice, (Bourdieu, 1977) which draws on five key concepts: the field, the doxa, the capitals, the habitus and the practice (Ojha et al, 2009). These interactions among actors are guided by a system of doxas or values and principles embedded in a social field which limit the “space of inquiry to a manageable level”(Ojha et al, 2009:368). Capitals can include physical/economic, social, cultural, ideological, and political. Habitus in Bourdieu’s perspective represents an agent in action in a social field (Ojha et al, 2009). When an actor's habitus mismatches with the principles and values embedded in a social field, a crisis occurs and deliberation or consensus cannot occur. Dominant actors use these systems as the means to sustain the dominant position. Positions are defined in “relation to one’s access to the relevant form of capital” and networks as defined in a particular context and circumstance (Cushion and Jones, 2006:144). By making itself recognized as most important, the dominant system legitimates the interests of the dominant group and forces the dominated systems to describe themselves negatively in relation to the dominant systems (Poupeau, 2000:72).

As an example where symbolic capital can be useful: institutions for community participation and consultation, such as the Fisheries Community councils, District and Local Councils, which adopt organizational structures in which informal habits, structures and social values associated with subsistence fishers have very little space of influence. Actors are chosen or selected according to preconceived logics of rationality and requirements²⁵ which satisfy the interests of the elites (e.g. having the ability to speak the official language, owning specific fishing gear, having political influence, having specific life experience, etc.) On the other hand, opportunities eventually created by policy makers do not reflect the real needs and capabilities of some groups in a given context of systematic exclusion. Social values held by communities and associated cultures, knowledge systems and beliefs are often left out (Sharma, 2011) of the formal mechanisms of participation or weakened through the process of their formalization. Credit

²⁵For instance, having ability to speak the official language, being voluntary, owning specific assets, having political influence, having specific life experience, being older, being traditional leader, etc.

systems use systems of language and practises which are not familiar to rural poor and illiterate people (Ellis, 2000; Ellis and Freeman, 2004). The requirements for access to credit systems do not match with the structure of endowments of subsistence fishers. In this study, some of these aspects will be taken in consideration when assessing participation of subsistence fishers in formal action spaces. However, conceptually these aspects can be better understood if incorporated into the concept of social exclusion or marginalization. The concepts of social exclusion and marginalization are used to give more clarity on the nature of exclusion of subsistence fishers from the formal action spaces. These concepts are useful because they give emphasis on the institutional and social relation processes that create conditions for exclusion of some groups of people while favouring others (Nevile, 2007).

3.3.3. The Informal Action Spaces

When actors feel marginalized or excluded, they resort to alternative spaces that allow them to pursue their goals outside the formal venues of participation. In such cases, informal spaces are regarded as a direct response to a condition of exclusion, or to a situation where certain actors perceive the actual outcomes of their participation in specific action as less valued than outcomes that might be obtained otherwise (Ostrom, 1990). Informal spaces are used by marginalized groups to advocate for structural changes, or to conspire against their condition of exclusion. Isaacs (2003; 2011) for instance, brings an excellent example of informal spaces that are created as a direct reaction to a condition of marginalization. In her case study of South African fisheries, (Isaacs, 2003; 2011) marginalized fishers resorted to offstage performances (boycotts, quiet strikes, theft, poaching, squatting, evasion and malicious gossip, etc.) to protest against their condition of marginalization (Isaacs, 2003). Isaacs (2003; 2011) applies the hidden transcript and offstage performances as formulated by Scott (1985) to contextualize the informal action spaces created by artisanal fishers in two villages from South Africa.

In Mozambique, the onstage / offstage paradigm as formulated in Scott (1985) and Isaacs (2003, 2007, 2011), could be applied to the well-known conflicting relations between the industrial and semi-industrial areas over access to fishing rights (Gervasio, 1997; Lopes et al.1999), but not to subsistence fishing realities. To develop agency based on boycotts, quiet strikes and other

offstage performances of this type, a community or group must live under the same authority, run the same risks, mix nearly exclusively with one another, and rely on a high degree of mutuality or share a higher propensity to build hidden transcripts (Scott, 1990:134). These characteristics cannot be found in Mozambique's subsistence fisheries, because subsistence fishing groups are organized in diverse ways, living in mixed contexts, performing different types of activities including agriculture. These features serve powerfully to disperse their interests as a unique group and hence their social focus as fishers.

Contextualizing the action spaces created under the ongoing fisheries governance reforms in Mozambique's subsistence fishing requires the application of the institutional embeddedness approach. This perspective stresses the fact that subsistence fishers are constrained or enabled in their actions by structures. Structure refers to "the frameworks within which these actors operate, these limit or widen their action potentials and which they therefore must take into account" (Kooiman et al, 2008:3). These frameworks include the patterns of social life that are not reducible to individuals and are durable enough to withstand the whims of individuals who would change them, patterns that have dynamics and an underlying logic of their own that contribute to their reproduction over time (Hays, 1998). Informal action structures take with them an underlying cultural layer that provides a collection of cognitive models from which real people assemble their social identities and create and recreate their perceptions about what is possible, normal and valuable in their life (Bastiaensen et al. 2005). Very important aspects are that, structures are the basis of human powers and self-understanding (Hays, 1994) and as such, they should be taken as the foundations where formal structures can be drawn. According to Scott (2008:429):

...In formulating the classificatory systems, assumptions and premises that underlie institutional logics, the cultural cognitive frameworks provide the infrastructure on which not only beliefs, but norms and rules rest.

Informal action spaces are powerful. Their power encompasses the rules of behavior connected with their everyday activities and "shape people's belief by giving them the sense of self-understanding and acceptance of the status quo" (Gaventa, 2006:15). Thus, the choices that agents make between formal and informal systems are always within the realm of structurally provided possibilities (Hays, 1994) which are expressed in both, constraining or enabling ways.

They can either constrain human actions when the underlying cognitive frames through which actors view and interpret the world are limited with the possibilities for actions. They can enable and empower actors to generate solutions to their problems by providing scripts that constitute legitimate forms of action (Hays, 1994).

Despite the structural barriers imposed on them, intertidal subsistence fishers perform informal agency which is based on extended relations among people or groups of people and use kinship, trust or networking systems as the enforcement tools. These systems of relations and activities, which are enforced outside the formal venues of fisheries governance is called the Informal Action Spaces in this study. They include not only groups but also social networks, extended family networks, informal micro-organizations and other personalized relationships normally used by subsistence fishers as mediators to access markets, informal credit, food, or to pursue goals that matter to them. Micro-organizations such as the informal savings groups in Mozambique have been reported to be important sources of finance to subsistence fishers, farmers and informal traders (IDPPE, 2009) and in some cases, these micro-organizations are linked to the local cultural systems. Women are the most important mobilizers of informal groups, although men, in some cases play a dominant role. Membership of these networks involved an implicit moral obligation and it was based on this that members shared resources and claimed rights. A report from IDPPE (2011) found that producer associations which evolved from these informal spaces, were more resilient and institutionally consistent than those founded strictly based on formal structures. In 2010, there were about 700 informal savings groups in coastal areas (IDPPE, 2011). These systems are diverse in their composition, complex in their interactions and are based on traditional knowledge, social values and principles which are learned and passed from one generation to the next. All the relevant aspects of self-enforced interactions fall under the concept of social capital, which includes social relations embedded in the social structures of society that enable people to coordinate actions and to achieve the desired goals. Trust and solidarity are amongst the most important components of social capital.

These relations are relatively autonomous and carry with them certain values and beliefs which justify the existence of norms, codes of conduct and informal powers within the subsistence

fishing realm. These types of powers can be equated to what Njaya et al (2011)²⁶ call invisible power which is centered on culturally embedded norms and values resulting from cumulative knowledge, ideology and global views. Invisible power emerges from socially shared rules that are created, communicated and transmitted by generations and naturally enforced outside of officially created spaces. It shapes people's belief, sense of self and acceptance of the status quo (Gaventa, 2006:15) and encompasses the rules of behavior connected with the everyday life of the actors. Invisible power is concerned with values and principles, and determines the ways people choose their spaces.

Social networks can be viewed as (i) the pattern of relationships among individuals, groups and organizations (Dubin and Aldrich, 1991), (ii) informal inter-organizational organization (Kreiner and Schultz: 1993), or (iii) a collective of individuals among whom exchange takes place that are supported only by shared norms of trustworthy behaviour. Social networking is synonymous with social relations, mostly manifested in terms of a group of individuals or a group of organizations with a specific purpose. Barr (2000) has indicated that social networks are functionally diverse because they can be used to access information about technologies, markets, policies and other aspects, reducing social and economic uncertainties. In his analysis of the dilemma of collective action, Putnam (1993) concludes that because of social trust and norms of reciprocity, some communities successfully carry out collective actions. Their power centers on culturally embedded values which result from cumulative knowledge, ideology and global views (Njaya et al. 2011).

3.4. The institutional governance approach to formal and informal spaces

3.4.1. Dealing with the informal spaces

The previous sections have demonstrated that, although created for all, the institutions for fisheries governance are not easy to access. There are barriers that inhibit some actors to exert

²⁶ Njaya et al (2011) apply the notion of Action Space in the context of power relations in fisheries co-management of Malawi. They combine the decentralization and power cube frameworks, to explore the concept of power within the co-management arrangements by looking at its several dimensions of relations, knowledge and discourses embedding them. Their key findings were that spaces (formal or informal) are filled by specific dimensions of power.

their rights or to access opportunities that are created by these spaces. Some of the barriers are internal to the action space, but others are exogenous to the action spaces, denoting the problem of institutional embeddedness.

The fisheries governance theory (Jentoft, 2005; Kooiman and Bavinck, 2005; Chuenpagdee et al. 2008, Jentoft et al. 2009) states that governing systems need to support the pre-existing structures instead of imposing new ones or changing them completely. Structures need to be recognized as powerful, durable and fragile as they are embedded in norms which result from cumulative knowledge, ideology and global views (Njaya et al. 2011). Separating people from their structures (e.g. organizations and values) creates conditions for the separation between governing actions and “the wider context of the society of which individuals are a part”, undermines the “influence of wider structures on people’s roles and identities” and perpetuates “divisions between the public sphere of the organization and the private sphere of an individual’s personal life” (Porter, 2012:303).

Interactions are some of the solutions to secure the integration of structures and values in the governance systems. Interactions as defined in this framework refer to actions that may be undertaken to remove constraints, create opportunities for the constituent parties and “tread new pathways” (Kooiman and Bavinck, 2005). Interactions are supposed to reduce the likelihood that “those on the periphery of decision-making are marginalized” (Red, 2008:2420) and build trust, values and legitimacy to the fisheries governance systems. Literature on fisheries governance (Kooiman, 2005; Bavinck et al. 2005; Jentoft, 2006) informs that formal and informal entities as well as actors sharing different cultural, social and economic backgrounds and interests can interact and their structures can interpenetrate each other. Structural interpenetration is the term given to the process where the boundaries between entities or structures of different nature (formal and informal), overlap and their values are shared. These relations are recursive and conceptualized in Pascual-Fernández et.al. (2005) in terms of reciprocal accountability and mutuality. When structures or entities are mutually interpenetrated each partner is accountable to the others for its actions and impacts on the collaboration (Ylitalo et al, 2004). Thus, “reciprocal accountability is central in understanding structural

interpenetration between formal and informal actions and may be achieved when actors or structures are mutually compliant” (Pascual-Fernández et al. 2005:220)

3.4.2. The role of institutions in mediating interactions between formal and informal Actions

Within the fisheries governance framework, institutions appear as the most important engine of the governing system. “Institutions are the instrument through which the formation and execution of fisheries governance occurs” (Jentoft, 2005:147). They are the framework within which policies and social, political or economic processes take place. Without institutions policies cannot be effective. According to Ostrom (2005:2) “the opportunities and constraints individuals face in any particular situation, (...) are all affected by the rules or absence of rules that structure the situation”. To understand how the institutional governance approach is framed in this study, it is important that a review on the concepts of institutions and governance is briefly presented. The literature consulted under this study offers a variety of definitions of institutions (North, 1990; Ostrom, 2005; Scott, 2005; Jentoft, 2005; Sindzingre, 2010). Defined by Ostrom (2009:3) as “the prescriptions that humans use to organize all forms of repetitive and structured interactions”, institutions deal with the regulative, normative and cultural-cognitive aspects (Scott, 2005). Institutions take the form of regulations as well as ethical and behavioural norms and their major role is to reduce uncertainty by establishing stable structures to human interactions (Sindzingre, 2010).

Jentoft (2005:147-148) argues that the emphasis on each of these dimensions produces correspondent consequences to the concept of institutions. He notes that,

“If institutions are defined as ‘rules’ of conduct governors emphasize the legal aspects of institutions. Institutional design then only means rules. If institutions are perceived to be more generally about norms, their design includes whatever mechanisms, such as moral standards and upbringing that make people obey rules. If the definition of institutions is even broader so that it includes the action frame of institution-building is further expanded (...) to cover all the information, knowledge, learning, and validation processes that determine which perceptions of reality are taken for granted and which are not, what or whose knowledge is reliable and relevant and what or whose is not”.

The institutions of fisheries governance being investigated in this study include the ones the institutional bodies created under the the Decree N° 8/2003 and Decree n° 11/2005 (which approves the District and Local Consultative Councils) and the Law (3/90), General Regulation of Marine Fisheries (Decree n°. 43 / 2003) and the Regulation of the Inland Fisheries (Decree No 57/2008), which together formalize the implementation of the fisheries co-management arrangements within the fisheries sector. All these institutions aim at bringing the government closer to the citizens, by sharing responsibilities, securing rights and mediating access to fishing rights and opportunities that are created by the current fisheries policy. Because they are supposed to be based on participatory principles, these institutions are expected to represent the interest of the majority and to align the policy visions of fisheries development with the societal realities. The experience in Mozambique is informing that, although theoretically called democratic and community-based, these institutions are not serving the interests of subsistence fishers, for several reasons. On the one hand, the working rules of these institutions are not known to the majority of fishers. Actors and stakeholders having access to these bodies (councils) and participating in decision-making networks, are chosen according to criteria that are friendly to the elite's rather than to societal expectations. On the other hand, these institutions rarely address problems that are viewed as priorities for the most disadvantaged groups. In addition, their promotion is not necessarily negotiated with the majority of fishers (Gervásio 1999). They are just copied and reproduced from one reality to another with no serious considerations to the particularities of each context.

The concept of institutional crafting as applied by Ostrom (2009, 2011) is used as a metaphor to illustrate the processes that these institutions may be a way of finding a pathway of coexistence between the informal and formal actions. Ideally, formal action spaces could be taken as granted, as they are instituted by the institutions which are taken as legitimate. Institutional crafting in Ostrom's (2011) view, means a continuous process of developing institutions that are appropriately embedded in structures from "which the norms to support purposive decision-making can be drawn" (Cleaver, 2000: 365). Ostrom (2009; 2011) argues that institutions need to adopt an evolutionist approach (Cleaver, 2001) which allows that in particular contexts the structures which are marginal to the formal mechanisms of making rules are proactively taken as an integral part of the governance actions. To achieve this goal, institutions must be crafted by

resource users and policy makers together (Cleaver, 2000; Ostrom, 2011). According to Ostrom (2011:18) “individuals should be allowed to organize themselves and craft their own rules, if the activities they engage in are legal”. The rules and norms that individuals use in making decisions should be derived from a process of genuine participation where “individuals do consciously decide to adopt a different rule and change their behavior” and where conformance with a new rule becomes habitual (Ostrom, 2011:18).

Because the institutional crafting creates “winners and losers” (Adger et al. 2006:4) it is important that the process is complemented by actions that remove the obstacles that reduce the capacity of the losers to act on behalf of goals that matter to them. Those obstacles could for example mean, the elevated levels of “illiteracy, ill health, inequitable access to resources or lack of civil and political freedom” (Sharma, 2011:44). In other circumstances, the obstacles could mean inappropriate rules of public participation in decision-making processes, or unfair mechanisms of access to opportunities and power (Adger et al. 2006). An enabling environment is, then, achieved when the interests of the winners and losers are carefully negotiated and contextualized into the larger context of which they are members (Sharma, 2011). Another way of reducing the tensions between the winners and the loser actors while creating more synergies between them is by recognizing their autonomies. Autonomy, according to the institutional governance concept means that the boundaries of one interacting entity are accepted and respected “in the other’s area or sphere of activity” (Pascual-Fernández et al. 2005:220). Respect for individual autonomy, according to Kooiman et al. (2005:273) “does not differ essentially from respect for the autonomy of collections of individuals and their structures or organizations. When actors or entities are mutually autonomous their relations with others are of interdependence and more than just exchange or input - output relations: they involve reciprocal accountability in the sense that each partner is accountable to the others for its actions and impacts on the collaboration (Ylitalo et al, 2004). Interdependency may occur at both actor and structural levels.

Structural interpenetration, as described by Pascual-Fernández et al. (2005), is the status where the boundaries between structures or entities integrating specific spaces of governance, overlap or even disappear. It is the highest status of the interactions and it occurs when interests of the actors and subsystems participating in the governance, are observed, secured and incorporated

into governing exercise and thought. Structural interpenetration is taken in this study as the highest level of interaction that may lead to the desired stage of participation of subsistence fishers in district and local structures of fisheries governance local level. The author of this study is also aware that both the actor and structural level interactions are not easy to achieve due to the difficulties in bringing diverse, complex and dynamic systems together.

Pascual-Fernández et al. (2005) mentions as an example, the case of Kayar (Senegal) where economic growth of traditional fishing was possible thanks to the former approach of institutional crafting. They argue that in Kayar (Senegal) prosperities (in fisheries development) were linked to the fact that the economic and social organizations remained traditional. In their perspective, pre-existing structures should be recognized and accounted for as part of the governance exercise instead of imposing new ones or changing them completely. Pascual-Fernández et al. (2005) see traditional structures as efficient due to the fact that they remain integrated into a traditional institutional environment and are rooted in the local identity. They then conclude that governance systems in small-scale fisheries would be much more successful if they opted for strategies which emphasize interactions with the original informal structures, than forcing their transformation into formal structures. The good news is that structural relations (social relations, perceptions, values, habits, etc.) are not static, and can be extended to a variety of different contexts of interactional contexts. The sociological reasoning of social structuration, for instance, sustains the idea that structural relations (social relations, perceptions, values, habits, etc.) can be extended to a variety of different contexts of interactional contexts. Actors embedded in different forms of structural complexes can claim for resources or borrow appropriate values from one structural complex and apply them to another (Sewell, 1992). The Pascual-Fernández et al (2005) and Sewells' (1992) argument of traditional institutions' tolerance could be very well applied to the context of subsistence fisheries in Mozambique as informal structures are the main means through which subsistence fishers sustain their livelihoods particularly in remote areas.

3.4.3. Considering social values

Many authors (Carrow et al. 1998, Kooiman et al. 2005, Bavinck et al. 2005, Pascual-Fernández et al. 2005; Kooiman and Jentoft, 2009) support the idea that fisheries governance practises

should support interactions with the pre-existing structures instead of imposing new ones or changing them completely. This implies that informal structures are recognized as useful and powerful as they are embedded in norms which result from cumulative knowledge, ideology and global views (Njaya et al., 2011). Social values appear as a very useful concept in the discussion of formal and informal spaces' connectivity. Values, according to a standard definition reflect the image actors have of themselves and their ability of self-direction for the goals and activities they see as relevant (Hitlin and Piliavin, 2004). In fisheries research, Onyango (2011) places values into the broader picture of people's ways of life and remarks that, fisheries management and poverty alleviation should be structured within a broader framework where social values assume a paramount function. Once values are observed, informal structures can coexist with the formal structures through an inter-penetration mechanism supported in Pascual-Fernández et al. (2005).

From the subsistence fisheries point of view, value recognition is a very important aspect as subsistence fishing is related to multiple functions which are not fully captured by the technocratic mechanisms of governance. Kooiman et al. (2005) and Kooiman and Jentoft (2009), submit that, governors and governed altogether should be able to identify what the values underlying the systems are, bring them into the discourse on governance and decide how in practical terms they should help the governance systems. Incorporating the values that fishers are associated with is also a matter of human rights. Sharma (2011:45) for instance, argues that everyone, including the marginalized groups, "has legally mandated and recognized right and a basis to claim their values, not as charity, but as a right²⁷". The emphasis is on the rights for equitable participation of poor people in fisheries governance is addressed by the United Nations Voluntary Guideline on the Responsible Governance of Tenure, in the following ways:

(The) "effective participation of all members, men, women and youth in decisions regarding their tenure systems should be promoted through their local or traditional institutions, including in the case of collective tenure systems". In addition, "where informal tenure to land, fisheries and forests exists, states should acknowledge it in a manner that respects existing formal rights under national law and in ways that recognize

²⁷ Sharma (2011:50), also argues that Article 8 (j) of the 1991 Convention on Biological Diversity places emphasis on the need to respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities". Sharma (2011:50) still recalls the "United Nations Declaration on the Rights of Indigenous People (2007)" which "sets out the individual collective rights of indigenous people as well as their rights to culture, identity, language, employment, health, education..."

the reality of the situation and promote social, economic and environmental well-being (Food and Agriculture Organization of the United Nations, 2012:14-15).

If values assigned to subsistence fisheries were for instance, compatible with the values held by those practising this activity, policy and community choices would be easy and compatible. Choices would be hard for both community and policy makers if the policy goals of development were incompatible with the vision and needs of the fishers (Kooiman and Jentoft, 2009). One important category of values which deserves attention in subsistence fisheries, is the wisdom based on practical life. Aristotle classifies *phronesis* as one of several intellectual virtues which implies ethics and involves deliberation that is based on values, concerned with practical judgments and informed by reflection (Kinsella and Pitman, 2012). *Phronesis* is important in this study because it calls attention to the need to consider the experience and values of subsistence fishers in the analysis of the problematic relations between the formal and informal actions.



3.5. Summary of the chapter

This chapter provides the theoretical framework being used in this study to understand the processes leading to the exclusion and marginalization of subsistence fishers from the opportunities that are created by the fisheries policy in Mozambique. One important concept being consistently used in this study is social vulnerability. The study argues that to capture the majority of the relevant factors affecting subsistence fishers one needs to use the concept of vulnerability. Accordingly, vulnerability is a very useful concept because it denotes a sense of exposure and insecurity that is derived from the incapacity of actors to cope with a policy or societal changes or the inability of the institutions and policies to rescue the actor's expectations and values. To specify the vulnerability context prevailing in the subsistence sector in Mozambique, the study resorts to the notions of marginalization and social exclusion. It argues that it is the condition of marginalization and exclusion that limits the access to the spheres of fisheries governance and development that explains the vulnerability context of subsistence fisheries in this country. Marginalization and exclusion as per Sen's (2000) categorization can be active or passive. This study has demonstrated that both forms of marginalization can be very well applied to Mozambique's fisheries context. Active marginalization is closely associated

with the disputes between the artisanal-commercial elites and the poor and vulnerable subsistence fishers over the resources, opportunities and power. The exclusion of the subsistence women, youth and other groups from the fisheries governance institutions as highlighted in the previous chapters fits very well into this concept of marginalization. Passive marginalization is more related to the exclusion that derives from the inability of actors, policies and institutions for fisheries governance to meet their mutual interests. The work from Osmani (2007) on the structural mismatches in the context of chronic poverty, explains very well how actors live at the margin because the structure of their endowments does not match with the structure of opportunities being created by the policy, as well because the policy is unable to rescue the actors' expectations and values.

To understand how marginalization, exclusion and social vulnerability happen within the fisheries governance schemes the study resorts to the notion of Action Space. Isaacs (2003, 2011) conceptualized and applied the notion Action Space and subsequently applied by many authors, such as Onyango et al (2011), Jentoft (2011) and Njaya et al (2011). The notion of Action Space as applied in this study denotes the situation where the existing fisheries policies and governance spaces are not benefiting the actors that have to be put on top of priorities due to their condition of vulnerability. Resorting to the notions of symbolic capital and power, the chapter provides a conceptual overview that helps the understanding of the processes leading to the formation of (small) elites in fisheries development and the mechanisms these elites use in capturing opportunities, decisions and benefits that are created under the ongoing fisheries governance reforms in Mozambique.

To capture the response of the subsistence fishers to their situation of exclusion and marginalization, the study aims to expand the concept of action space by splitting it into two dimensions: formal and informal. Informal action space applies to the alternative mechanisms subsistence fishers are creating to cope with their exclusion. Late in this study it will be clear that the mechanisms that subsistence fishers use to build their informal spaces are rescued from the system of resources, structures and values embedding them as community members. This is probably the reason why the informal action spaces need to be taken as an opportunity for policy development and governance improvement.

The role of the informal and the alternative mechanisms for the interaction with the formal spaces is explained in this chapter through the application of the insights from the interactive governance framework. The works of Pascual-Fernandéz (2005); Kooiman et al (2005); Ostrom (2011); Onyango (2011), Isaacs (2011) and Sharma (2011) have provided useful guidelines on the critical aspects of the interactions between formal and informal action spaces. All these studies place on the institutions, the responsibilities of creating the desired synergies between the formal and informal and Ostrom (2011) for example, uses the notion of institutional crafting to denote the structural work that needs to be done on institutions to allow the interactions between the formal and informal. The experience of this chapter is indicating that the arguments presented by the institutional fisheries governance in explaining the formal and informal as well as the possibility of their interactions are consistent with what international organizations on human rights have been advocating in relation to the fisheries governance and are very useful to the study of subsistence fisheries in Mozambique.



CHAPTER FOUR: METHODOLOGY

4.1. Introduction

This study uses Participatory Research Approach as the core methodology. Participatory methods seek to “get up close and personal” with participants and focus on valuing and understanding their insider knowledge, perception and everyday life (Dover and Lawrence, 2010:307). They became increasingly recognized in the overall context of natural resource management (Trimble and Berkes, 2013) but their application to the fisheries sector has received very little attention. In their literature review, Trimble et al. (2013) found numerous positive impacts of the implementation of participatory methods in fisheries co-management and decentralization, namely: increased trust in the research process, two-way knowledge flow, mutual learning and understanding among participants, trust/confidence building, improved interactions among participants, capacity building and the inclusion of the voice of marginal people.

In Mozambique’s fisheries research and development, the participatory methods have been implemented in association with specific projects of fisheries development including the reviews of policy frameworks, constitution of fisheries governance structures, fisheries co-management systems, rural finance projects, etc. In these works, participatory research methods have been seen as consistent with the need to create space for marginal groups to participate in the research and development processes, to elucidate values associated with these groups, to capture community perceptions about fisheries governance and to assess the dynamics of formal and informal institutions. In these works it has been evidenced that tools for participatory research such as Rapid Appraisals, Focus Groups, Participant Observation and individual in-depth interviews, are especially useful with illiterate respondents, because they permit respondents who are not trained in quantitative reasoning, or who have little formal education, to provide meaningful representations of their lives in a manner that gives outside researchers a quick understanding of certain aspects of their living conditions. The rural appraisals can generate information in the form of wealth rankings, village social and economic profiles, production seasonal calendars for agriculture, fisheries and other activities, diversification rankings on incomes and activities, institutional relationships and other relevant information.

A particular challenge of this study is that subsistence fishing is very complex social system which is linked to illiterate people, informal structures and cultural systems that are not always easy to penetrate. To facilitate the interaction with these systems the standard participatory tools such as the focus groups, participant observations and rapid appraisals had to be combined with actions that allowed more prolonged interactions with the subsistence fishers. These actions included participation in several traditional ceremonies and other entertainment events such as soccer games, community festivals, fishing journeys and informal meetings in villages as an invited guest. I was also invited to two Community Fisheries Councils and one Rotating Credit and Saving Group in Palma for a training session on fisheries management, leadership and planning as a voluntary worker. In those training sessions, key concepts on subsistence fisheries, food security, nutrition and fisheries co-management were also discussed and traditional knowledge of the participants played very important role. The training sessions and participation on community key events social processes, provided more information on aspects of people's behavior that were not captured during the application of the standard participatory research methods (focus groups, participant observation and rapid appraisals). With those combinations the standard participatory research initially applied to this study evolved to participatory action research, as the process of investigation involved active participation of the stakeholders whose lives are critically connected to subsistence fisheries. CAPE

The advantages of Participation Action Research tools are many. According to Westhues et al. (2008:702), Participatory Action Research (PAR) takes places in a real world and “involves active participation of ... those whose lives are affected by the issue being studied”. The PAR also enables local people to share, enhance and analyse their knowledge of life and conditions as well as to plan and to act (Chambers and Conway, 1992). Participatory Action Research Methods as emphasized by Armitage et al. (2011:996) involve,

“...the collaborative process of bringing a plurality of knowledge sources and types together to address a defined problem and build an integrated or systems-understanding of that problem”.

The application of the participatory (action) research methods in this study adhered to four important steps of data collection: Step 1 is dedicated to the characterization of the subsistence fisheries and factors influencing its vulnerability. Tools such as focus groups, participant

observations and in-depth interviews with key informants were used to obtain a reasonable understanding of subsistence fishing as an economic activity and processes determining its vulnerability or insecurity. Participant observation, group discussions and ethnographic exploration tools are used in this phase to discover the *world* of subsistence fisheries. Step 2 is focused on the description of the Formal Action Spaces at district level. In this phase literature review on policy documents, interviews with the key representatives of the District Government and departments and focus group discussions with members of the District Consultative Committees were used as the core tools to understand the nature of fisheries and district governance structures being created under the ongoing policy reports. Step 3 is focused on the investigation of the context of inclusion, exclusion or marginalization of subsistence fishers in formal action spaces. This included participation in meetings of the fisheries councils, district consultative committees and other formal venues of fisheries governance. It was in this phase where aspects of social exclusion and marginalization Participant observation and participation in training sessions were critically important in this phase of investigation. Step 4 is dedicated to the study of informal action spaces being created by subsistence fishers and community members to cope with their exclusion and marginalization. Focus groups, in-depth individual interviews and participation in key community activities as an invited guest were in understanding community structures and values which are associated with the subsistence fisheries. Step 5 was dedicated to the participatory analysis of the factors leading to the interactions between the Formal and Informal Action Spaces. Interactions with both formal and informal structures were critically important in understanding the factors hindering or facilitating the interactions between the informal and formal.

4.2. The process of data gathering

4.2.1. Getting familiar with the subject

...Discovering what you don't know – and don't know you don't know – is an important aspect of the process” (DeVault et al. 2006:24).

Subsistence systems often operate in circumstances where social relations, norms and networking based on kin and religion, play a very important role. These relations “encompass the

agencies that inhibit or facilitate the exercise of capabilities and choices by individuals or households” (Ellis, 2000:28-40) and can be expressed in forms of actions and structures or interactions among people of the same or different groups. Research interests on these performances and structuring practises have been increasing; however, uncertainties also persist on how they can be objectively investigated and measured. This is because these structures are much related to intangible elements which are difficult to visualize and measure. To find out people’s values, or what they feel, “what their attitudes and beliefs are, what relationships are significant to them and what their hopes and fears are, it is necessary to spend time with them building up rapport and trust” (Hubert et al. 2007:123).

Thus, it is a consensus among social researchers that the informal structures, actions and practises can be much better captured by using research methods which are able to explore social phenomena from inside of the community. This study started the fieldwork with subsistence fishers by implementing ethnographic explorations (Sharpe, 2004; Smith et al. 2006; De Vault et al. 2006; Angrosino, 2007; Kindon et al. 2007; Trimble and Berkes, 2013) in fishing communities. The ethnographic explorations as described by Sharpe (2004:307) encompasses “research methods that are often associated with participant observation, but can also draw on other research approaches such as contextual and historic analysis of secondary data published by or on the group being studied”.

There are many ways of doing ethnographic explorations. Sharpe (2004) for instance, distinguishes two forms of ethnographic research: the hermeneutic and the critical realist ethnographies. The former are drawn from the presumptions that “a set of behaviour can be termed an action if they are given or could be given a meaning by those carrying out the action”. Hermeneutic ethnography centres its attention on agent conceptualization and assumes that “meaningful behaviour is explicated as governed by rules” (Sharpe, 2004:308). The critical realist ethnography goes “beyond agents’ conceptualization of events and seeks to look at social structures and their relations with the agents” (Sharpe, 2004:309). The dualistic nature of the critical realist ethnography makes it a very useful tool to this research because it accounts with the “connections between micro-practises and macro-structures and between changes in micro-practises and changes in macro-institutional structures” (Sharpe, 2004:309). Critical realist

ethnography has also proved to be a suitable tool in understanding informal structures and values embedding the subsistence fishing such as the customary marine tenure systems and traditional knowledge. For more clarity, the fieldwork with fishers was divided into two steps: step one, which was dedicated to mapping the structure of the fisheries sector in each community, and step two, which was dedicated to in-depth understanding of values associated with subsistence fishing operations.

In this study the process of the ethnographic explorations obeyed the following steps, which are suggested by DeVault et al (2006: 20 - 21):

- Identification of an area of everyday practices that are taken as experiences whose determinants were to be explored,
- Identification of the institutional processes that are shaping that experience,
- Investigation of those processes in a more formal way in order to describe analytically how they operate as the grounds of experience.

Participant observations, focus groups and individual interviews with key or specialized informants were the main research techniques used in this study. Observations were made in the fisheries sites by participating in fishing campaigns and or in the communities, by observing experiences and asking questions about those experiences. At that exploratory stage, informants were chosen as the research progressed and I learned more about the nature of existing relations associated with the group under the study. According to DeVault et al (2006:23) at the exploratory stage of the investigation,

“...interviews need not to be standardized and each interview serves as an opportunity for the researcher to learn more about particular aspects of his subject. Researchers can use informants to build step by step an extended chain of organizational process”.

At the exploratory phase, interviews were carried out with key informants (people who knew very well their communities and contexts) and specialised informants (people with particular competencies in subsistence fishing). Interviews were informal and unstructured, mainly consisting of minimum control over the people’s responses. That allowed the participants to express themselves in their own dominions. At that stage, the author did not think of informants as samples but wanted to discover people and sources that were able to provide him with relevant

experiences, facts and situations that could help on the constitution of the baseline understanding of the context. Information collected through that stage includes the following aspects:

- Types and categories of subsistence fishing: fishing gear, areas, and species.
- The subsistence fishing as a chain: the art of fishing, processing, selling and consuming resources supplied by the subsistence fishing,
- Groups involved in a specific type of activity,
- Forms of social organization of those involved in fishing,
- Other fishing activities and their operational relations with fishers,
- The stakeholders associated with the subsistence fishing and the arenas of interactions with other agents.

That information was later, taken as the entry point in the selection of the critical aspects of subsistence fisheries that needed additional discussion in focus groups. The sections below describe the methods and procedures taken for the focus groups discussions.

4.2.2. Mapping community social profiles

Village mapping was the first field exercise of this research. The main objective was to understand the historical background of the villages, the institutional frames guiding the village residents, the actors dominating the spheres of decision-making of the village, the opportunities for development and the scale of subsistence fishing in each village. The result of the village mapping is a generic description of the social profiles of the villages, with the focus on their socio-political and economic diversities and complexities. In each community, focus groups with the community leaders (the leader of the village and his deputy, the chiefs of the women's organization, the chiefs of youth, voluntary workers of health, the chief of economic activities, community police, the traditional leaders and other influential people) were intentionally included in the first exercise of village profiling. Participants of the focus groups were asked generic questions related to the community life with the focus on its history, the dominant livelihood system, the structures of governance and key issues, the spaces for community participation and key players, and opportunities to develop subsistence fisheries and constraints. The discussion with the various leaders opened the researcher's mind in terms of other questions that should be asked to specific individuals. The leaders were also asked to provide a list of other people or entities they thought had experience and influence enough to participate and talk about the community during the following in-depth interviews and group discussions. The list provided

by the leaders included the elder people who founded the village, the religious leaders who normally care about informal institutions, fishers with some experience in fishing and youth or women representing the informal groups. It was based on the interests of each of these groups that the in-depth interviews were planned and structured (See Table 14).

The village profiles offer an in-depth understanding of the community in terms of its history, the structure of the village livelihood system, community institutions, social networks and perceptions of opportunities to increase the participation of subsistence fisheries in decision-making and the community development constraints.

Table 14: The topics discussed per groups of interest

Focus groups	Topics
Community leaders	<ul style="list-style-type: none"> • The history of the village, • The existing (formal and informal) institutions and structures, community-based organizations, • Livelihood activities: role of subsistence fisheries • The village governance structure: participation of subsistence fishers in village governance spaces • The plans of the community for the subsistence fisheries development • The constraints affecting the community
Experienced fishers	<ul style="list-style-type: none"> • Types of fishing in the area, • The art of fishing • Description of the fishing technologies • Groups involved in each type of fishing • Marketing chains and prices • Informal institutions related to the fisheries.
Representatives of informal groups	<ul style="list-style-type: none"> • Social informal networks, their spheres of activities, members and the way they function. • Informal institutions, the spaces of their actions and their co-existence with formal institutions. • Perceptions on the opportunities and priorities for development of the village.



Photo 1: Community leaders of Quirinde after focus group discussion
Source: Horácio Gervásio



Photo 2: Focus Groups discussion with influential members (Maganja village)
Source: Horácio Gervásio

4.2.3. Mapping informal structures and values associated with subsistence fishing

After the village profiling the focus shifted to the subsistence fisheries, for more detailed work. The intention was to explore in-depth the subsistence fishers' views on what constituted their values and structures. Gathering information on intangible and abstract factors like structures and values was a very complex task and required some theoretical guidance.

4.2.3.1. Step-by-step in mapping informal structures

STEP ONE in mapping the informal structures consisted of participant observation of fishers, their activities and actions at the fishing areas and fishing landing sites. The objective at that stage was to start getting familiar with the fishing sites, the actors involved in fishing activities and their actions. Participant observation and interviews with key informants constituted the most important techniques of investigation used at that stage. Participant observation is defined by Bless et al (1995:105) as an observation in which, “the observers hide the real purpose of their presence by themselves becoming participants. They join the community or group under investigation as one of its members, sharing in all activities”.

During the participant observation, the researcher did not necessarily need to hide his real intention, because the topic was very attractive and very welcome to the vulnerable and poor fishers. That sentiment facilitated the researcher's entry into certain fishing groups and created conditions for his integration and participation in several spheres of community life. Unstructured focus groups were carried out several times with several groups of fishers to understand the practices and actions observed in the fishing sites. In most cases, people were asked questions related to the fishing sites they explored, fishing technologies they used, the ways they organized their crews, but all in an unstructured way. After repeated visits to the fishing sites and several group discussions, a progressively better relationship with locals was developed and the researcher's view of the local context improved. Social networking was the key methodological guide used to capture the connections between the elements associated with subsistence fishing.

STEP TWO consisted of the application of the findings in the group discussions, to map out the fishing activities by locating and visualizing the fishing areas for different groups, fishing centers associated with the community being studied and the groups involved in fishing operations. The maps helped the researcher to figure out the relative importance of features such as mangroves, reefs, fishing banks, estuaries, and associated ecological environments. The maps were firstly prepared on the ground using whatever materials were available (fish, stones, seeds, etc.) and later transposed onto paper. The following questions were used as the guide for the mapping exercise:

- Who does the fishing?
- Who constitutes the crew?
- How do they fish?
- Which sailing vessels are used?
- Which fishing gear is used?
- Which social organization prevails?
- Where do they fish and who else uses the same space?



Photo 3: The researcher facilitating the mapping exercise: Quionga area
Source: Anonymous.

The most important outputs of each interview at that phase were the matrixes on the fishing profile for each community, which were drawn together with the subsistence fishers. Informants were asked to visualize certain fishing locations or routes and to elaborate on a matrix with the key information on fisheries in each fishing community. The maps were firstly prepared on the ground using whatever materials were available (fish, stones,

seeds, etc.) and later transposed onto paper. The fish chain approach was the key methodological guide used to capture the connections between values associated with fishing with those associated with fish processing, selling and consuming. Fish chains are defined in fisheries literature as a way of following a fishing “resource from the marine ecosystem, through capturing, processing and marketing phases, to the consumer” (Bavinck et al, 2005).

Table 14 provides the matrix of fisheries characterization resulted from the interviews carried out in that phase. The results indicate that there are diverse actors that are related to subsistence fisheries in the community. These actors include individuals doing fishing, people buying and those selling or consuming fish resources. In each sampled village, fishing was performed by three groups, namely: categories I, II, and III. Categories I and II are known as subsistence fishers and category III is known as artisanal-commercial fishers. Most of the fishers from category I did not use boats for fishing. They fished during the low tides collecting by hand or using rudimentary fishing gear such as mosquito nets and harpoons. They often operated in areas fairly close to their homesteads - in the estuaries, over coral reefs or sand banks. Category II of fishing is composed of subsistence fishers who used boats for fishing. The women were the ones dedicated to the collection of diverse clams and fished using mosquito nets, and the youth knew all the fishing areas offshore very well.

Table 15: Overview of the fisheries sector in Quirinde, Palma-sede, Maganja and Quiwia

Parameters observed	The categories of fishing activities			
	Category I	Category II	Category III	Category IV
Who does the fishing?	Fisherwomen	Collectors	Divers	Artisanal fishers
Who constitutes the crew?	Groups of 2 to 10 women	Individuals. Many people using the same space	Individuals, or a maximum of two people	Workers paid a wage or a percentage of the catch
How do they fish?	Use mosquito net	Use hand, harpoons	Use spear gun, harpoons	Beach seine, purse nets, gillnets,
Which sailing vessels are used?	They use no boats for fishing, but sometimes use boats as a mode of transport to the fishing site.	They use no boats for fishing, but sometimes use boats as a mode of transport to the fishing site.	They use canoes with oars	They use longboats up to 10-14m (indicative). Sail, outboard motor, internal motor
Which fishing gear is used?	Traps, and manual collection	Manual collection and use of rudimentary harpoons	Rudimentary fishing guns (their fishing practises involve diving)	Hand lines, beach seine nets, gill nets, encircling net used, with a boat, and also long line, trammel net, encircling, net with closed loops
Which social organization prevails?	Informal groups , social networks	Individuals, social networks, associations between two or more people	Individuals, and informal networks or groups	Formal Fisheries Associations
Where do they fish and who else uses the same space?	Estuaries and close to their homesteads	At the beach during the low tide	Close to the islands, and sand banks	Open sea, close to the islands and offshore sand banks

Based on these matrixes, the research questions and methods were refined, and the first semi-structured interviews with key fishers were planned and the questionnaires corrected according to the reality. Key informants were divided into three sets of actors: the women, the older people and the youth (collectors) who had all been identified during the observations. The older people knew about the history of the fishing in their areas. The women were the ones dedicated to the collection of diverse molluscs and fishing with mosquito nets, and the youth knew all the fishing techniques very well.

4.3.2.2. Step-by-step in gathering information on social values with fishers

The institutional governance theory supports the idea that social values are important in understanding or promoting inclusive governance of fisheries. Values according to Schwartz (1994:21) represent “conscious goals corresponding to three universal requirements with which all individuals and societies must cope: needs of individuals as biological organisms, requisites of coordinated social interaction and requirements for the smooth functioning and survival of groups”. In his perspective, values are equivalent to goals and can serve the interests of some social entity, motivate action and functions as standards for judging and justifying action (Schwartz, 1994). One of the “most widely used instruments for measuring social values has been the Rokeach Value Survey” (Braithwaite and Law, 1985:250). Rokeach (1973:48) distinguishes between terminal and instrumental values. Terminal “or ends-values are beliefs or conceptions about ultimate goals or desirable end-states of existence that are worth striving for”. Instrumental values refer to the means of achieving the terminal values. Terminal values are inherent to an object while the instrumental values are possessed by a person²⁸ (Rokeach, 1973) and much more related to people’s behaviour standards than to resources or objects. Sherrouse et al. (2011) and Brown (2013), use participatory mapping techniques to identify social values associated with forest ecosystem services. They found a total of 13 social values which include: the aesthetic, biodiversity, economic, historic and other values. Most of these values were identified through surveys and participatory social mappings.

Research on values in fisheries is also extensive. The most recent insights are particularly provided by the interactive governance framework which regards values as fundamental elements of fisheries governance (Onyango and Jentoft, 2007) and encourages the governments to align their development strategies with people’s values. Song and Chuenpagdee (2014:4-5) use a sorting technique where values are presented in a “deck of cards and through manual sorting, they are evaluated according to their importance and placed into different piles”.

²⁸ This perspective stresses that “values objects or outcomes do not possess innate value apart from the value attached to them by persons” (Meglino et al. 1998:353). Thus terminal values are basically the subject of the social construction of the people using them.

During the fieldwork of this study, social values were discussed at length in the different groups. The notions of Rokeach (1973) on terminal and instrumental values, were used to allow better understanding of the nature of values and structures the study was looking for. Four focus groups²⁹ were established in each village to discuss this topic. People in groups were asked to come up with statements about all kinds of terminal and instrumental values they actually associated with subsistence fishing and to choose a maximum of the 10 most important statements (See Table 16).

For a better understanding of their perceptions on each statement and its relation to the notions of terminal and instrumental values, in-depth group discussions and interviews with key informants were carried out in each community. Although related each other, each statement represented one value and was transformed into a topic for deeper discussion. Information on instrumental values was collected from the informants who belonged to some form of organized network, group or organization. Before engaging each organization, the district database was scrutinized to confirm whether all the organizations listed by the community members were known to the district authorities, and to ensure that no organizations were left out during the tracking. A total of 7 informal networks³⁰ were studied. Members of informal groups were asked to provide a comprehensive description of the rules of access, decision-making mechanisms, roles and functions inside their organizations, power relations, and the backgrounds of those people making decisions. They were also asked to explain if they participated in any decision-making since they became members, if they felt that they influenced decisions in their organizations and if they had in mind the benefits of being a member of the organization they belonged to. The report on instrumental values is a description of the key organizational features of subsistence fishing of each community.

²⁹Among the four, two groups were composed of women and the other two were a mix of people using different fishing gear.

³⁰The majority of the groups were concerned with savings and credit, fishing and other fish processing activities.

Table 16: Value related statements and the key questions on the in-depth investigation

value categories	Key Statements
Self-identity	Intertidal subsistence fishing is more than an income: it is also a culture, habit and business
Food	Intertidal subsistence fishing provides food and nutritional intake to the households especially when the other fishing activities cannot supply enough food.
Wealth	Intertidal subsistence fishing can make someone's life prosper.

4.3. Understanding Formal Action Spaces and their interactions with the informal structures

The theoretical framework concedes that informal action spaces being promoted by the subsistence fishers to cope with a situation of exclusion should be taken as an opportunity to improve the capacity of the formal spaces. Theory also states that interactions between formal and informal structures are possible. All depends on how the institutions leading or regulating the interactions are crafted (Pascual-Fernández, 2005; Ostrom, 2011).

This section is dedicated to explain the method adopted to understand the interactions of the formal and informal structures that are involved in fisheries development in the study area. The first step in this direction was collecting very basic information on the existing institutions dealing with fisheries administration and management, their backgrounds and their system of interactions with the communities in the study area. The second was the participation on specific events promoted by the fisheries governance institutions.

4.3.1. Understanding Formal Action Spaces

Understanding the Formal Action Spaces in the district development context is very complex work. The process applied to this study involved very extensive office work at the district government departments combined with unstructured in-depth interviews with key people dealing with fisheries governance, namely: the District Administrator, the District Director of

Economic Activities, and the District Officers working on fisheries extension, aquaculture development, fisheries sampling systems and the district development fund.

Interviews with the fisheries administration representatives/officers were all carried out individually and most of the questions directed to them were related to the fisheries governance structures and systems (in particular focusing on the aspects related to the institutions of fisheries governance, their roles in fisheries development and their agenda in relation to subsistence fisheries). The activities carried out by specific structures such as the district consultative committees and other formal structures related to fisheries governance the mechanisms of access to these structures and the patterns of participation of subsistence fishers were also discussed at district level. , The interviews with the fisheries government managers brought an overview of the existing conditions in which the institutions and structures for fisheries governance operate and the patterns of access of vulnerable and marginal groups to these spaces.

4.3.2. Understanding interactions between the formal and informal spaces

The revision of the documentation in the district government office (reports, minutes of meetings, legal prescriptions, organizational scripts and publications) and interviews with key entities at government level provided useful information of the existing Formal Action Space for fisheries governance at district level and their backgrounds. This information was critically important in the identification of the institutions and their leaders. To understand the nature of the institutions of fisheries governance in terms of how they operate, how they motivate the participation of the citizens in their processes and how the structures driving these institutions are established, I participated in several meetings as an observer and conducted in-depth discussions with experienced members of the institutions of fisheries governance. However, compared to the interviews, participant observation was more efficient in terms of findings. Using that technique it was possible to observe elementary issues of organizational management that may enable or constrain interactions. Such issues are for instance the ways meetings with fishers were organized, the language used in the meeting, the process of meeting facilitation, and the level of complexity of the rules that regulate the access to the institutions of fisheries governance.

The same methodological exercise, was also done on the informal structures. The topics discussed during the interviews with the key members of both formal and informal institutions were based on the following questions:

- Who are the actors involved in the entities for fisheries governance and what fisheries systems do they represent?
- Who determines the selection of those actors and what roles are allocated to each?
- What problems are intended to be resolved by the entities?
- How important are these problems to the subsistence fishing?
- How are meetings or collective events structured in these entities? Who are the actors that seem to participate more?
- What opportunities have been created by these entities and who determines the allocation of those opportunities?
- What factors inhibit the participation of the fishers?

For each entity it was important to know how each of the above processes worked. The principle behind this analysis is that difficulties in participation of subsistence fishers in formal action spaces are critically influenced by the ways the formal entities motivate the participation. Motivation can be achieved through the simplification of the rules of access to opportunities, decision and networks or through mutual respect of the values of each participant. These factors, including social values can make collective choices hard or easy. For instance, fishers can easily choose between participating in formal or informal spaces if formal and informal spaces are comparable and compatible. Choices may be difficult if the values promoted in one or other entity are incomparable, incommensurable and incompatible (Kooiman and Chuenpagdee, 2005).

One of the biggest challenges in determining people's perceptions was the limitation of some people in discussing some sensitive topics. For instance, the majority of the leaders of each organization or institutions did not like to discuss the questions related to the opportunity allocation system within their organization. That was because in most cases they were aware that some of the key failures associated with their system of opportunity allocations had originated by their misbehavior (negligence or lack of transparency, or corruption).

4.4. Methodological aspects

4.4.1. Self-reflexivity

Self-reflexivity is the way past experience, points of view, and employment or life stories of the researcher impact on the current interaction with the informants. The biggest challenge of this topic was finding a method that could easily help the researcher's integration in the district Consultative Councils, district committee of fisheries co-management and the community fisheries councils, as an independent researcher. That was a challenge because the researcher had been working with most of those organizations as a social practitioner and assistant researcher for the small-scale fisheries. Separating his role as an academic researcher from the image people had about him as social helper was a big challenge in the first meetings with the members of the community fisheries councils (CCP). However, although people were already familiar with him as a social professional, separating his role as an academic researcher from the image people had in the near past about the researcher as a social practitioner, was a big challenge. In the first meetings with the members of the community fisheries councils (CCP) discussion on subsistence fishing was not made. "You have been working with us for many years. We don't believe that you still don't know what is going on with the subsistence fishing here in Palma" (Interviewees, 2010). That sentiment was quite common during the first year of this research but began to reduce a year later.

4.4.2. The rapport

Establishing rapport is an essential element of participatory research. Rapport may exist in situations "when both investigator and informants come to share common goals or move to develop joint goals for the research" (DeWalt et al. 2011:522), or when the investigator accepts the goals of the community. This can mean discussing the goals with the community and finding ways in which the results of the research can be useful to the community (DeWalt et al. 2011). When local people are engaged to participate in formulating questions or collecting information, it is the responsibility of the investigator to describe what the research project is and what he hopes the product will be. Near the end of the fieldwork the researcher shared the findings with people who participated, including the district administrator, village leaders and others.

Participants were asked to add or correct any mistakes in those findings. The researcher participated in the important ceremonies or events of the villages and district.



Photo 4: The researcher participating in the commemoration of Palma district anniversary (2011)

Source: Abdul Razaque



Photo 5: Palma residents during the ceremony

Source: Vali Momade

4.4.3. Behaving appropriately

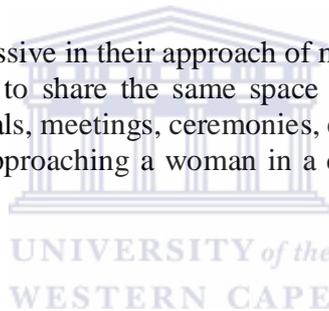
The heart of social research is to behave appropriately “enough to be accepted as a participant at some level and to participate in the daily activities of people with whom the researcher is working.” By behaving appropriately, DeWalt et al (2011:59) meant: learning what constitutes good manners and practicing them to the best of one’s ability. This can include proper, polite speech, appropriate reciprocity, respect for local cultural values, etc. The items indicated below were considered:

- Eating local food, especially when served, unless in cases that the researcher felt any threat to health or personal values (cultural).
- Avoid having meals or drinking water/cold drinks in the presence of community members who cannot afford to have the same things.
- Avoid making offers in communities (such as offering money) without obeying the proper procedures or authorization.
- Avoid making promises or making speeches in communities that can be interpreted as promises/create expectations.
- Avoid making comments or engaging in political discussions in communities.
- Avoid filming or taking pictures in communities without prior consent and clarification of its end use.

- Avoid answering or giving suggestions in matters where the researcher has no mandate or authorization.
- Avoid showing superiority (intellectual, racial, ethnic, economic, etc.) in communities.
- Avoid damaging community assets (such as crops, livestock, fruit trees) and using assets (plot of land, fruits) without the owner's consent, including fishing, harvesting and/or hunting wildlife.

The researcher also learned some local values and principles, for instance:

- The Islamic communities have two main celebrations over the year. *Eid al Adha* and *Eid al Fitr* (marks the end of Ramadan). Interviews or fieldwork were not carried out during those dates. The researcher participated in some of *Eid al Adha* celebrations.
- Communities, especially Islamic communities, consider Friday an important religious day and on that day the majority in the community stay at home. Most of the respondents preferred to attend the interviews, meetings or focus groups on Fridays.
- When a man enters a strange house, he should speak directly to the men of the house. The same rule applies to women.
- It is not culturally appropriate for a man to talk about his initiation rites with a woman and the inverse situation applies.
- Women tend to be more submissive in their approach of men.
- It is not common for women to share the same space with men, especially during social situations such as enjoying meals, meetings, ceremonies, etc.
- Always take care and avoid approaching a woman in a community without the presence of another person.

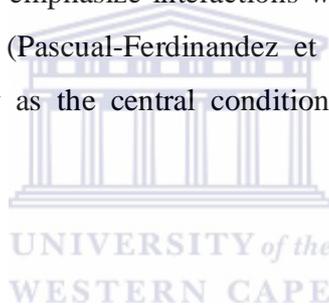


4.4.4. Managing sensitive topics

Although a review of the key documentation of the fisheries councils and district committees helped in understanding of the goals and opportunities created under their auspices, it was the analysis of member's perceptions that gave a much more realistic indication of the kind of alignment between the vision of the committees/fisheries councils and people's expectations. The biggest challenge in inquiring about people's perceptions was, however, the limitations some of them had in discussing some sensitive topics due to circumstantial reasons. For instance, most of the decision makers of those organizations were aware that some of the key failures associated with their organizations had been originated by problems that were critically related to their negligence or lack of transparency, corruption or elite capturing. To minimize the impact of that particular factor to the quality of the data, the following decisions and actions were taken:

- Before any contact with the committees, the researcher spent some time searching for the information about the individual members of each committee, the positions they occupied within the organization and their background in the villages they lived.
- Permission was requested from the district authorities to allow the researcher to participate in most important meetings of the district councils and community fisheries councils, as well as receive his suggestions to submit some topics of his research into the agenda of the official meetings carried out during his fieldwork visits.
- The researcher preferred participatory observation to interviews.

The second challenge was asking people to expose their perceptions about some topics which were very abstract and difficult to interpret in practise. For instance, the interactive governance theory states that governance systems in small-scale fisheries, would be much more successful if they opted for strategies which emphasize interactions with the informal, than those forcing their transformation into formal (Pascual-Ferdinandez et al. 2005). This framework further regards autonomy and mutuality as the central conditions for the interactions between the formal and informal to occur.



4.5. The study area

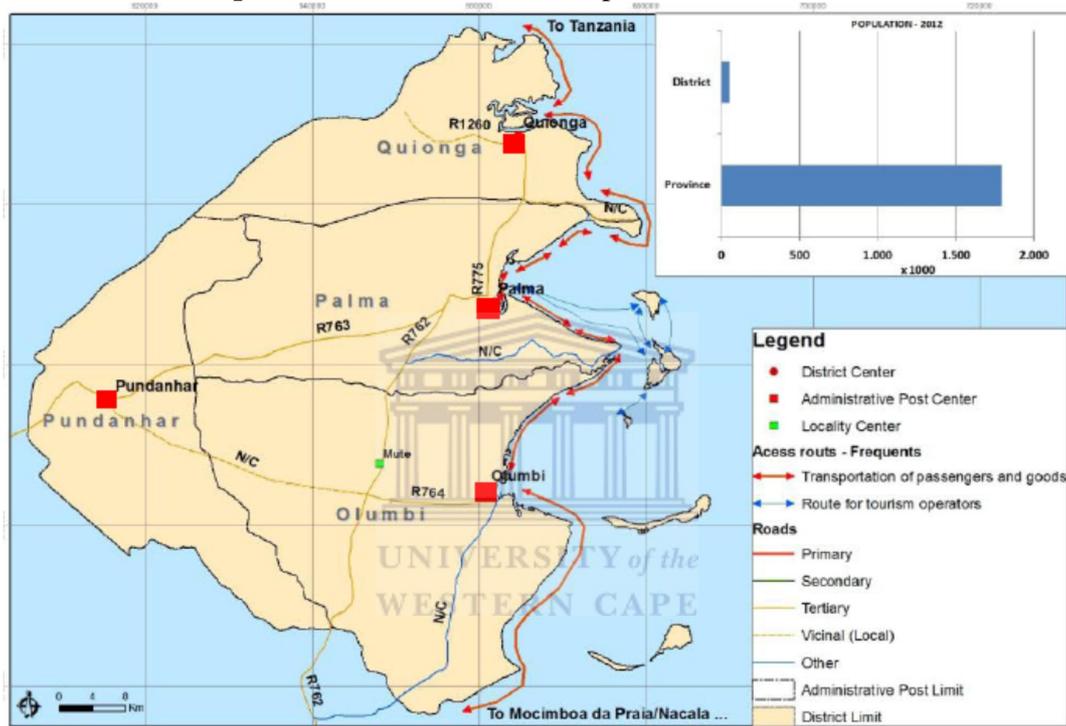
4.5.1. Location and population

Palma is a district in the northern province of Cabo Delgado in northern Mozambique. It covers 3,493 km². Its principal town is Palma-sede. It shares a border with Tanzania in its northern part, with the Indian Ocean in the east, the district of Mocimboa da Praia in the south and Nangade district in the west. The district of Palma comprises four levels of administration, namely: the central level, administrative post level, locality and the villages. Palma district contains 4 administrative posts, 8 localities, 63 villages and 9 islands, namely: Vamize, Quiriamimbe, Quifuque, Tecomaji, Ronque, Metunde, Vumba, Quissungura, Quimesse and Suavo.

Table 17: Administrative posts and Localities of Palma

Administrative	Localities	Coastal localities
Palma-sede	Palma-sede, Mute	Yes
Quionga	Quionga, Quirinde	Yes
Olumbe	Olumbe, Quissengue	Yes
Pundanhar	Pundanhar, Nhica do Rovuma	No

Map 1: The four Administrative posts of Palma District



Source: *ELim Serviços*, 2012.

Palma also has several coastal fishing communities. The most well-known coastal villages are, Quionga, Quiwia, Mbwize, Farol, Palma-sede, Maganja, Olumbi, Ponta Nsangué, Quitupo and Quirinde (*Governo do Distrito de Palma*, 2010). Palma is the 4th least populated district within the province of Cabo Delgado³¹. It accounts for about 48,443 inhabitants and this represents almost 3% of the whole province. The highest concentration of people are in the main town seats (Palma and Olumbi) and in most cases the distribution of the human population is determined by the distribution of the infrastructure, job opportunities and relative advantage in

³¹In 2007 the population of the Cabo Delgado Province was estimated at 1.63 million (of which 52% are women). This represented a growth rate of approximately 21% compared to 1997 figures.

terms of access to the neighbouring countries, natural resources and social services. In 2007, women represented 50.1% of the population of the District of Palma. The average number of persons per household amounted to 3.71 in 2007, which is below the average size of households across the province. Most of the people tend to live in coastal areas. Official data on the distribution of the population among the coastal and inland villages is not available.

Table 18: Population of Palma district (1997-2012)

Posto Administrativo	Localidade	Census 1997			Census de 2007			Projection for 2012 **		
		Total	Men	Women	Total	Men	Women	Total	Men	Women
Palma –sede	Palma-sede	13.131	6.635	6.496	15.673	7.664	8.009	16.685	8.308	8.377
	Mute	7.395	3.651	3.744	10.400	5.133	5.267	11.072	5.513	5.558
	Total PA	20.526	10.286	10.240	26.073	12.797	13.276	27.757	13.822	13.935
Olumbe	Olumbe-sede	7.315	3.543	3.772	7.598	3.691	3.907	8.089	4.028	4.061
	Quissengue	6.140	3.259	2.881	4.951	2.784	2.167	5.271	2.625	2.646
	Total PA	13.455	6.802	6.653	12.549	6.475	6.074	13.359	6.652	6.707
Pundanhar	Nhica do Rovuma	2.489	1.277	1.212	3.349	1.631	1.718	3.565	1.775	1.790
	Total PA	2.489	1.277	1.212	3.349	1.631	1.718	3.565	1.775	1.790
Quionga	Quirinde	5.712	2.860	2.852	6.347	3.192	3.155	6.757	3.365	3.392
	Total PA	5.712	2.860	2.852	6.347	3.192	3.155	6.757	3.365	3.392
TOTAL DO DISTRITO		42.182	21.225	20.957	48.318	24.095	24.223	51.438	25.614	25.824

Source: Instituto Nacional de Estatística, 2009; 2010.

Illegal immigration has been one of the main causes of population growth in Palma. There is no reliable data on the migration patterns of the population in the district, with regard to internal migration and borders. However, recent findings suggest that the Palma district is significantly affected by the violation of the national border with Tanzania. The majority of illegal immigrants detected in 2010 and 2011, for instance were Somalis and Ethiopians, but it also involved citizens of Pakistan, Bangladesh, Congo, India, Tanzania and Burundi. About 8,592 and 13,517 immigrants were registered and returned to their countries during the years of 2010 and 2011 (1st semester), respectively (*Governo do distrito de Palma, 2011*). Although some of them remained living in Palma for a while, it was suspected that the most important destination was South Africa. In response to the migration crises, the government of Mozambique established an office in the District of Palma to assist and handle those cases and referred them to the Center for Refugee Marretane, in Nampula Province (*Impacto, 2012*).

4.5.2. The structure of the livelihoods

The structure of the economy of the three bays is composed of three important sectors, namely: agriculture, fisheries and trade. Formal employment in all Palma districts is still uncommon. The private sector contribution to employment is almost non-existent and opportunities are limited to small private operators working in commerce and fisheries, agriculture, and road construction. New opportunities are being opened up with the establishment of the large-scale companies of gas development, but this is still an incipient door. Limited investment, inadequate human resource development, under-developed service delivery systems, and limited community infrastructure in the district force communities' reliance on subsistence livelihoods for survival (*Impacto, Lda, 2012*). The road network and associated infrastructures are still poor, and people still walk long distances to access markets, healthcare services, education services, government offices, and other basic services.

Agriculture is the most important activity in the district and is practised by more than 70% of local populations. Crops are normally grown near villages, rivers, swamps, lagoons and wetlands. Agriculture in Palma district is still operating at subsistence levels. Crops such as rice, cassava, maize, sweet potatoes and beans are still produced for immediate consumption. Crop commercialization is critically affected by the poor linkages with markets which are determined by the transport networks and investments in capital. Farmers are still using very rudimentary means of production such as hoes, machetes and axes. The land is cultivated under rain fed conditions: the first season begins in October and November, when people start preparing land for the crops such as maize, rice and beans. The second season begins between March and April, with the preparation of land for growing sweet potatoes and vegetables. Agricultural productivity is still very low. Farmers are facing many problems with animals such as elephants, antelopes, and baboons raiding and destroying their crops (*Impacto Lda, 2012*). According to recent data, an average of 60 cultivated hectares (20% of the overall) are destroyed by elephants annually. An average of two people are killed by elephants annually. In 2010 a total of 4 houses were destroyed by wild life in Palma district.

Fishing can be divided into artisanal-commercial and subsistence fishing. The former type of fishing mostly uses fishing gear such as purse nets, hand lines, beach seines and gillnets. Subsistence fishing uses gear such as harpoons, mosquito dragnets, collection by hand, hand lines and traps.

Industry and trade are growing sectors. The industrial sector is dominated by small-scale units processing crops, timber, salt pans and furniture manufacture (*Elim Serviços*, 2012). Some of the mills have been financed by the government funds and can employ on average 10 people.

Table 19: Number of industrial units in Palma district

	Micro	Small	Medium	Large	Other	Total
Palma	13	4				17
Cabo Delgado province	379	58	3	0	0	440
National	7,861	580	59	10	218	8,723

Source: *Governo do Distrito de Palma*, 2010.

Until the 1st quarter of 2012, there were approximately 6,125 trading units in Cabo Delgado, among 2,237 formal units and 3,888 informal units. Table 20 shows the number of trading units in the study area.

Table 20: Trading units in Palma district

	2010	2011	2012
Milling	18	20	23
Bakery	12	20	20
Carpentry	3	5	10
Block making	8	10	10
Tin making	4	4	9
Production of lime	4	5	6
Production of salt	3	5	6

Source: *Governo do Distrito de Palma*, 2013.

District differences are clearly substantial with regard to the number of both formal and informal units in the study area. The poor road conditions are the most important reasons for this situation.

4.5.3. The history of Palma

'Tungi' is the ancient name derived from Swahili societies which ruled on the Palma Peninsula until 1877 (*Impacto, Lda*, 2012). The political capital of Tungi was located at the west side of Palma peninsula, in the village called Kiwia. There are very few sources of information reporting on life in Tungi at that time. Rzewuski (1991) is the only author who tried to bring this information in a more structured manner. According to this author, the geographical extent of the political territory of Tungi is not known; however, there are indications that Tungi included the entire area from the north (Quionga) to the island of Vamizi. Signs of this sultanate (the ruins of the large palace of Tungi) can actually be observed in Kiwia. Recently, an environmental consulting company (Impacto Lda) presented a comprehensive literature review on the Tungi Sultanate. One of their findings is that, Tungi became known to historians in the context of the last episode of the Arab-Portuguese quarrel in the waters of the Western Indian Ocean', the border dispute between Portugal and Zanzibar in the 19th century. Accordingly, both parties in the conflict claimed their sovereignty rights over Tungi. In 1778, an armed Portuguese expedition was sent to the Sultanate of Tungi and since then, Tungi sultans applied a policy of a balanced double loyalty (Rzewuski, 1991). At least one of them, Hassani (Assani) used to receive regular payments from the Portuguese authorities in the 1820s to the 1830s. The Portuguese-Zanzibari dispute involved Great Britain and Germany, as 'intermediaries' who had their own interests in the area. It was ended by the Portuguese military annexation of the disputed land in 1877. A few years later, the colonial border between the *Deutsche Ostafrika* (German East Africa) and *Africa Oriental Portuguesa* (Portuguese East Africa) was mapped along the Rovuma River, some 40km north of Tungi, which was then incorporated into the Portuguese colony (*Impacto, Lda*, 2012).

Vestiges of the Tungi Sultanate are observed almost everywhere in Palma including the predominant names and surnames, religion (Islam) and ruins of ancient forts. In most villages, Islamic leaders continue to exert powerful influence in decision-making and governance. Their power transcends the formal administrative boundaries of fishing communities and in some cases one religious leader leads more than three communities. A religious leader (Sheik) has his own board of authority which includes the deputies, the madrassa instructors and a board of advisors .

In some cases, a sheik will be succeeded by his most preferable nephew after his death. In other cases, the new sheik will be elected after the actual sheik dies. The religious leaders are responsible for the maintenance of all spiritual beliefs and some cultural practices including the rites of initiation. Fishers resort to the religious leaders when their productivity is in decrease by unexplained reasons. Community members use sacred sites, most of which are promoted by the religious structures to ask for blessings in their lives. In summary, the religious leaders are responsible for managing community issues which cannot be solved by the politicians and in villages like Maganja, Quirinde and Olumbi, Islam is the most important spiritual space where people resort to solve their problems.

4.5.4. The institutions of district governance

The Palma District is governed by a government-appointed District Administrator (DA), and supported by a District Government (Board). The district government is composed of the following administrative services: economic activities (Agriculture, Fisheries, Forests, Commerce and Industry), women, social action and health, education, youth, sport, culture and technology, planning and infrastructure, fiscal directorate, social security and labor, civil registration, small-scale fisheries development extension station, customs and immigration services and police and public prosecutor³². This structure has been recently established under the new state law (Law of the Local State Structures), which places emphasis on the role of the districts in development strategies and implementation of plans.

The district contains three levels of administration: the central district, Administrative posts, localities and the villages. Until the publication of the Law No 8/2003, formal state authority at district level ended at the locality and villages were governed by purely informal authorities. With this law administrative authority has been extended down to village level through the appointment of the Village Chief by the District Administrator. The villages are headed by community leaders appointed by the government or elected by the population of the respective village and backed by an Assistant and a Notary (registrar). All village leaders are third-level community leaders elected by the population who have their origin in the relatively recent

³² However the above agencies are generally poorly represented or weak outside the district capital and thus the incidences of non-compliance of local rules (e.g. fishing, forestry, tourism and other economic regulations) are common especially on the islands.

history of the District of Palma and are generally recognized and legitimized by the State bodies at local level. There is a strong presence of traditional authorities in villages.

The Law 8/2003 establishes that each of the administrative levels in the district (central, administrative post and locality) must work with the support of a consultative forum, which integrates actors from formal and informal sectors. The main objective of the District and Local Consultative Councils is to support district government and its citizens in terms of planning and implementation of priority projects at the local level. Local consultation fora can suggest and recommend to the government the priorities for local development (Forquilha, 2010). There is one district Consultative Council, four administrative post consultative forums, eight local fora and more than ten village councils in the district of Palma. The District Consultative Committee of Palma was established in 2005, as a governance body where citizens, government and other stakeholders meet and discuss all matters of local interest, with emphasis on development and governance priorities.

4.6. Summary of the chapter

This chapter presented the methodological process of this study and described the different steps this research followed to conduct fieldwork, gather information and engage with the different levels of the fisheries governance structures. Participatory methods have proved to offer space for the interactions between the researcher and the studied groups. Using research techniques such as focus groups, rapid appraisals and in-depth individual interviews it was possible to get relevant information in an acceptable level of details. Where necessary groups were organized according to gender, type of fishing gear used by the interviewees and type of organization or structure they belonged to. Participatory methods were applied to both fisheries governance institutions and fisheries administration officers. The literature review undertaken prior to the contacts with the groups provided the basis for the formulation of the initial research questions as well as in making important decisions on sampling strategy.

However, the standard participatory research methods such as focus groups, rapid appraisals and in depth interviews alone did not provide enough space to understand the dynamics of the informal institutions and structures. Understanding social networks and groups such as those

involving informal agreements between fish traders and fishers requires methods that required the researcher to live with the people, eat what they eat and in some extent do what they did. Participation in traditional ceremonies, soccer games, informal meetings involving youth and elder people added value to the quality of information required in this type of research. Ethnographic research practises had to be added to these methods proved to be very valuable approach in addressing the informal structures, social values, and other aspects that are very difficult to understand. Subsistence fisheries revealed to be very complex social systems particularly in terms of institutions embedding them. Penetrating informal networks was very difficult especially in areas where the number of illegal fishers was significant. Any stranger in those villages is seen as a government officer.

Another critical part of this research is the process of self-reflexivity where the researcher used his past experience, points of view and employment to capture relevant life stories on the interaction with the informants. As a male researcher stepping into an Islamic society care had to be taken to behave appropriately and how to interview the women subsistence fishers. To allow appropriate interaction with women, female interviewers had to be hired from each village. Community profiles, livelihood structures, history of the area, governance structures and social values associated with subsistence fishing formed a key part of the interview schedules of this research. Due to all these improvements to the standard participatory research methods, the approach being applied to this research can be taken as Participatory Action Research. However, the methods still share some limitations particularly on its ability to capture quantitative information. Despite the exercise done in bringing approximate figures particularly when collecting information related to prices and incomes, it was clear that a considerable part of people tended to omit some relevant data. As the intention of this research was to get an understanding of the processes, these omissions did not influence the quality and the outcomes of the research.

CHAPTER FIVE: FRAMING THE CONCEPT OF SUBSISTENCE FISHING AND DETERMINANT FACTORS

5.1. Introduction

Most of the work on fishing, agriculture and development, comes across with the term “subsistence” which has been applied in different fields resulting in wordings such as subsistence production, subsistence levels of living, subsistence agriculture, subsistence economy, subsistence farmer or subsistence fishing (Mathijs et al, 2002). One of the major challenges in dealing with the subsistence systems is defining the term.

The word subsistence is not derived from dictionary definitions “but from the very large international body of research and knowledge of subsistence found in economic anthropology and human ecology” (Lonner, 1980:2). Economists were generally concerned with subsistence in terms of standards of living. They understood subsistence as a material consumption basket that is necessary for (working) people to make a living for themselves (Brüntrup and Heidhues, 2002; Abele and Frohberg, 2003). Subsistence defined in these terms became an equivocal term that often conjured images of bare existence or a livelihood that only provides in minimal degree life’s necessities (Brown and Toth Jr, 2001). This approach has been strongly criticised due to the fact that it was solely built in terms of the “basic needs” of consumption of material goods, ignoring the social processes in which the production, exchange and consumption are embedded (Brüntrup and Heidhues, 2002). Another definition for subsistence production is based on a systems sharing mechanisms where the household neither sells nor buys, but consumes everything it produces (Sahlins, 1972). According to this vision, subsistence is an economic system which sustains a basic level of livelihood which never produces a profit. Cadot et al (2009) compared this concept of subsistence to an “autarky”, that is, a system where the household neither sells nor buys, but consumes everything it produces.

The main objective of this chapter is to discuss the conceptual challenges involving the subsistence fishing debate. It will be noted that despite the efforts by the government of Mozambique in bringing subsistence fisheries into the policy debate, less work has been done at conceptual level. The definitions adopted by the Mozambican fisheries authorities through the

Artisanal Fisheries Development Strategy are useful, however, they lack important aspects that may establish better the differences between subsistence fishing and other type of fisheries.

5.2. The concept of subsistence fishing

Subsistence fishing falls under what has been called Small-scale Fisheries. The term Small-scale Fisheries has been widely used in the international literature, however it is rarely explicitly defined (Food and Agriculture Organization of the United Nations and World Fish Center, 2008). In most cases countries use the term small-scale or large-scale just to distinguish between the industrial capital intensive and the labor intensive activities. One fundamental problem with this concept lays on the utilization of the term 'scale' which varies according to specific context: "a fishing boat that would be considered small-scale in one place could be considered large-scale in another" (Food and Agriculture Organization of the United Nations and World Fish Center, 2008:5). The solution found by the Food and Agriculture Organization of the United Nations working group in 2003 was to provide a generic description of small-scale fisheries which covers most of the elements of diversification and complexity of this sector. According to this definition:

Small-scale fisheries can be broadly characterized as a dynamic and evolving sector employing labor intensive harvesting, processing and distribution technologies to exploit marine and inland water fishery resources. The activities of this sub-sector, conducted full-time or part-time, or just seasonally, are often targeted on supplying fish and fishery products to local and domestic markets, and for subsistence consumption. Export-oriented production, however, has increased in many small-scale fisheries during the last one to two decades because of greater market integration and globalization. While typically men are engaged in fishing and women in fish processing and marketing, women are also known to engage in near shore harvesting activities and men are known to engage in fish marketing and distribution. Other ancillary activities such as net-making, boatbuilding, engine repair and maintenance, etc. can provide additional fishery-related employment and income opportunities in marine and inland fishing communities. Small-scale fisheries operate at widely differing organizational levels ranging from self-employed single operators through informal micro-enterprises to formal sector businesses. This subsector therefore, is not homogenous within and across countries and regions and attention to this fact is warranted when formulating strategies and policies for enhancing its contribution to food security and poverty alleviation (FAO, 2005, quoted in Béné, Macfadyen and Allison, 2007:7)

The definition above covers the most important characteristics of artisanal fisheries, however, it does not mention if subsistence fishing is included in it or not. However, “many countries divide their fisheries into several categories and small-scale fisheries are generally one” (Food and Agriculture Organization of the United Nations and World Fish Center, 2008:6). Other contexts avoid using the terms small-scale fisheries and prefer to split the fishery into different categories by using terminologies such as artisanal, traditional, recreational or subsistence fisheries “depending on how the categories have been defined” (Food and Agriculture Organization of the United Nations and World Fish Center, 2008:6). In those contexts subsistence fishing has been interpreted as the type of fishing for livelihood rather than profit, fishing where catch is distributed through non-market mechanisms, fishing undertaken to support traditional exchange structures, or fishing characterized by its cultural significance (Schumann et al. 2007). However, because very few countries in the world have formulated particular policies to the subsistence fishing, a very limited body of literature (*Ministério das Pescas*, 2006; Sunde et al. 2007; Sowman, 2006; Schumann et al. 2007) offering a concise definition of subsistence fishing was found.

The initial definition of subsistence fishery supported by FAO (no date) considered subsistence fishery as “a fishery where the fish caught are shared and consumed directly by the families and kins of the fishers rather than being bought by middle (wo)men and sold at the next larger market” (FAO, no date). The SADC Protocol of Fisheries for instance, defines subsistence fisheries as activities “whose fishers regularly catch fish for personal and household consumption and engage from time to time in the local sale or barter of excess catch” (*Ministério das Pescas*, 2006). In this definition it is recognized that “pure subsistence fisheries are rare since excess production would be sold or exchanged for other products or services even in the smallest fishery” (Food and Agriculture Organization of the United Nations and the World Fish Center, 2008:6). This definition is similar to that adopted by the South Africa’s Marine Living Resource Act, according to which a subsistence fisher “means a natural person who regularly catches fish for personal consumption or for the consumption of his or her dependants, including one who engages from time to time in the local sale or barter of excess catch, but does not include a person who engages on a substantial scale in the sale of fish on a commercial basis” (Republic of South Africa, 1998:13). Subsistence fishers in South Africa usually work on or near to the shore

or in estuaries, live in close proximity to the resource, consume or sell the resources locally, use low-technology gear, and the kinds of resources they harvest generate only sufficient returns to meet the basic needs of food security). Since then there has been further developments in the definition of subsistence fishing in South Africa as it is situated in the notion of small-scale fishing, small-scale community, etc.

In Madagascar, to the fisheries authorities subsistence fishing means fishing with non-motorized boats and undertaken by fishers who adhere to local taboos and customs (Mathew, 2003). In India, only the term traditional is legally recognized to a fishing craft of a type already in use before the arrival of mechanized fishing vessels (Mathew, 2003). In Indonesia and Malaysia, (Mathew, 2003) all fishing units other than trawling are defined as traditional fishing units. All these findings lead to the observation that, subsistence fishing is critically associated with culture, social values, informal networks and other aspects that need to be accounted in its definition.

In 1990 Mozambique's government approved the Fisheries Act (Law 3/90) under revision now. In this legal instrument fisheries were divided into 6 groups, namely: subsistence, artisanal, semi-industrial, industrial, scientific research and experimental and sporting fisheries (Law 3/90: 249). Subsistence fishing was defined as a secondary activity for those practising it, normally using no fishing boat and producing no surplus for selling (Law 3/90). The Marine Fisheries Regulation (Decree nr. 43/2033) approved in 2003, has mentioned the occurrence of subsistence fishing in the country and allowed subsistence fishing inside reserves of Marine protected areas, and indirectly to include some subsistence fishing groups within the artisanal fisheries. According to this degree artisanal fishing could include activities which are performed by coastal communities, with or without the use of boats (which the length is less than 10 meters)³³. The appearance of the word subsistence fisheries is encountered again in the Artisanal Fisheries Development Strategy approved in 2006. In this document (*Ministério das Pescas* 2006) it is proposed that the government adopt the definition officially adopted by the SADC Protocol of

³³Semi-industrial fishers use motorized vessels with intermediate size between 9.9 and 19.9 meters, using fishing lines, gillnet or trawl, to capture shrimp or fish which for domestic and international markets. There are two types of semi-industrial vessels: those with freezing facilities on board, and those which carry ice on board for shrimp and fish conservation.

Fisheries (mentioned above) and that expands the subsistence fishing group by including fishers who use boats and fishing gear such as gill nets, beach seine, hand line and pursing nets (*Ministério das Pescas*, 2006). Accordingly, subsistence fishing in Mozambique would include all forms of fishing that use combine traditional fishing gear and boats (dugout canoes, boats powered by oars or sails, etc) (Ministry of Fisheries, 2006: 30). Viewed in this way one may realize that more than 90% of artisanal fishers are subsistence fishers as per the artisanal fisheries census of 2007 (IDPPE, 2007).

Table 21 summarizes the criteria adopted by the Government of Mozambique to define and distinguish subsistence and artisanal fisheries. It can be seen that based on the new proposal, subsistence fishing includes fishing methods such as Beach seine (collectors), weirs, traps, harpoons, hand lines, beach seine nets, gill nets and encircling net. This categorization suggests that fishers using this gear (beach seine nets, gill nets and encircling nets) do not create jobs and that their catches are mostly consumed by their families, which is not necessarily the truth. This study, argues that applying the current definition of subsistence fisheries to the fishing gear such as gill nets, beach seines and pursing nets can be a dangerous policy option. In Mozambique's context, it has been clear that at any level of market development, fishing gear such as beach seine, gill nets and pursing nets are structurally commercially oriented.

Table 21: General classification of types of fishing as proposed by the Artisanal Fisheries Development Strategy

PARAMETERS	ARTISANAL FISHING	
	Subsistence (A)	Commercial (B)
Appearance	Traditional, gradually including industrial material and equipment	Associated with commercial middlemen or promoted by them
Work force involved	Family, or involving fishermen from the community	Job creation: paid a wage or a percentage of the catch
Vessels	No vessel, canoes, dugouts, skiffs, longboats	Longboats, boats with or without decks, up to 10-14m (indicative)
Propulsion equipment	Oars and sails	Sail, outboard motor, internal motor up to 100 HP (indicative)
Auxiliary equipment	None	Radio, line hauler, GPS
Fishing Gear	Beach seine (collectors), weirs, traps, harpoons, hand lines, beach seine nets, gill nets, encircling net	The same as subsistence, used, with a boat, and also long line, trammel net, encircling, net with closed loops
Form of social organization	Individual, familiar	Individual, family, neighbours
Duration of fishing campaigns	Daily	Daily, or up to 3-5 days, based in a camp
Fishing zone	Local, in estuaries, bays, and up to 3 nautical miles from the coast	Up to 12 miles
Seasonality	Influenced by the season of winds and rains and by the agricultural season	Influenced by the season of wind and rains, and by processing/conservation techniques
Target resources	Molluscs, small pelagic and demersal fish, small shrimps, rocky bottom demersal fish, collecting the shrimp by-catch	Small pelagic and demersal fish, rocky bottom demersal fish, shrimps, sharks and other large pelagic fish
Destination of the catch	Family consumption	Local market, processed by drying/salting, internal market, international regional market
Origin of investment	Dependent on savings or individual work, informal saving groups	Dependent on medium scale credit

Source: *Ministério das Pescas*, 2006.

Strictly speaking, in Mozambique the well-known intertidal subsistence collectors, “are commercial” (Food and Agriculture Organization of the United Nations and the World Fish Center, 2008:6). An important aspect of the classification provided in the Artisanal Fisheries Development Strategy is the recognition that despite their interactions, subsistence and other fisheries are mutually autonomous. They can catch the same resources but the ways they organize their operations differ. The distinction the artisanal fisheries development strategy makes between the formal and informal forms organizations is a clear indication of this recognition.

Because subsistence fishing involves aspects that are critically linked to human needs and relations, concepts and definitions for this sub-sector needs to include parameters that are centred on people as well. An example of the parameters which are poorly captured include, gender, age, work conditions, patterns of access to formal networks of social protection and decision-making, knowledge base, ownership structure, patterns of self-food provision, patterns of access to food and nutritional intake as well as motivations driving these groups into fishing. Gender is an important indicator because “many of the disadvantages suffered by women in the economic sphere can also be seen as a mismatch between endowments and opportunities when gender is seen as an invariant endowment of a person. This study and others on gender in Mozambique (IDPPE, 2010) have indicated that, despite their participation in fisheries, gender is an important dimension of exclusion as women tend to be less educated than men. In most cases, it is the man who dominates the decision networks within the fishing community. For example, in the year of 2009, women constituted only 8.83% of the members of the fisheries community councils (CCPs) across the country (IDPPE 2009). During the year of 2010 a total of 5 CCPs were promoted in the provinces of Manica and Zambezia. The total number of members of these CCPs was 76, but only 2 were women (IDPPE, 2011). The weak presence of women in the CCP implies that the presence of subsistence fishers in these organizations is also weak. This is because women are the majority of subsistence fishers (IDPPE, 2007). The exclusion of women and subsistence fishers from the CCPs also implies that women are not included in certain decisions and opportunities such as credits, information, training, and other benefits. Similar statistics are also found in producer associations.

Age is another important indicator that could be used in the conceptualization of subsistence fishing. This is because subsistence fishing is the only fishing sector where the affluence of children and elders is clearly high. Although the incentive to increase the level of technology and to produce a surplus for commercialization is low among elders and children, bringing age on the concepts, may force fisheries policy makers to link fisheries policy with human rights. Skills and knowledge base are also important aspects to be taken into consideration in the conceptualization of subsistence fishing, because they refer to the capacity people have to take advantage of the societal opportunities. Often, as the economy grows, new challenges may rise and individuals or families will be required to improve their abilities in order to get access to the opportunities resulting from the economic growth. Individuals or families, who are unable to shift the structure of their endowments, may find it very difficult to access the stocks of opportunities being created by the economy (Osmani, 2007). The Table 22 provides a summary of some of people centred parameters that may be useful in characterizing subsistence fisheries in Palma district.

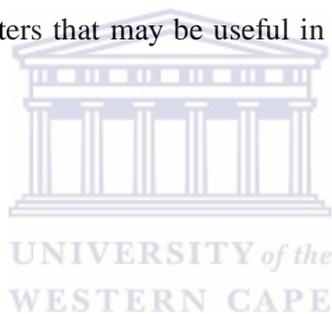


Table 22: Characterization of subsistence fisheries using people centred parameters

	Subsistence (A)	Commercial (B)
Age structure of people involved	Predominantly youth, children and elderly.	Predominantly youth (workers) and adult (owners)
Gender structure of people involved	Predominantly Female	Predominantly male
Forms of contribution on food security and livelihoods	More direct food and employment contribution Profits generated at very low scale	More indirect food contribution Profit generation Direct and indirect employment
Skills and knowledge basis of people involved	Traditional knowledge	Traditional combined with the knowledge provided by the extension work from government
Access to formal networks of decision-making	Null for all	Moderate for the owners of boats Null for the workers
Access to formal networks of social protection	Null for all	Significant access to formal credits
Forms of organization	Informal groups, family extended networks and individual	Individual and formal aggrupation
Motivation for fishing	Selling is the first option Teach children to get familiar with sea Learn how to fish or how to pilot boat	Selling is first option

Source: Based on the field findings (Palma district)

Table 22 highlights not only the social profile of the subsistence fishing, but also the factors that make this group more vulnerable and marginalized than others. Mapping these factors helps in understanding better the interventions that may be required to this sector. It can be seen, that despite the global exclusion of artesanal fisheries at national level, subsistence fishing appears as the most excluded. Factors that determine the exclusion of this group go beyond market failures with a clear expression on difficulties of access in the existing institutions and opportunities. The last row of the Table 22 describes the motivations taking people into fishing. An interesting aspect here is the discrepancy between what policy makers think and what people themselves

feel are their goals when fishing. Policy makers think that the main motivation of subsistence fishers lays to the self-provision of food. But fishers see subsistence fishing as something that may provide them with incomes, self-employment, food and a means to teach their children in dealing with the marine/aquatic environment. These multiple values associated with subsistence fishing are not well captured by the fisheries policy development in Mozambique. Understanding people's motivations would also be conceptually important as motivation is normally linked to values and values are normally an expression of what is desirable to the people.

5.3. Measuring the differences between subsistence and commercial fishing

The general perception of subsistence production is that, the lower the share of marketed produce is, the higher the degree of subsistence orientation (Abele and Frohberg, 2003) and the lower is commercialization. Haddad and Bouis (1990: 12) define commercialization as “the percentage value of marketed output to the total farm production and involves a transition from subsistence to increasingly market-oriented patterns of production and input use”. According to Randela (2005), commercialization “leads to greater market orientation of farm production; progressive substitution out of non-traded inputs in favor of purchased inputs and the gradual decline of integrated farming systems and their replacement by specialized enterprises for crops products” (Randela, 2005:13). Pangali (1997:7) has considered that the concept of agricultural commercialization needs to account with “both the input and output sides of production, and the decision-making behavior of households in production and marketing simultaneously”. This implies that commercialized households may be targeting markets in their production decisions, rather than being related simply to the amount of products they would likely sell due to surplus production (Jaleta et al 2009). However, most of the literature in agricultural science, considers market orientation and market participation as synonymous (von Braun and Lohlein, 2003; Jaleta, et al., 2009). It is nevertheless important to distinguish between the two concepts. Market orientation, according to Kosov and Lingard (2005) refers to the *ex-ante* response of subsistence farmers to change, and it implies that production decisions and mechanisms are organized in such a way that if an opportunity arises, they are prepared to sell (Kosov and Lingard, 2005). Output market participants are those who can occasionally sell their residual outputs, but they are not market oriented. The main objective of market-oriented actors is to produce for selling while

the paramount objective for the output market participants is food provision although commercializing some surplus from their output. Market orientation or pure commercialization leads to progressive substitution out of non-traded inputs (example labor) in favor of purchased inputs.

The share between the output consumed and the output sold and the size of the production units are the main criteria used to distinguish subsistence from commercial producers. The bigger is the part of own-consumption, the higher is the degree of subsistence. The percentage of the production that can be considered as sign of subsistence when used for self-consumption is arbitrary. For example, it is frequently considered that farmers producing at least 90% for their own consumption can be considered as subsistence-oriented while farmers consuming less than 10% of their total output can be defined as market-oriented (Abele, 2003). By contrary, a farmer consuming less than 10% of its total agricultural production may be regarded as market-oriented (Doppler, 1991; Abele, 2003). Cadot et al (2010:89-90) commented on this aspect by arguing that:

“First, the share of output sold on the market and the share of consumption bought from it are both continuous variables on $[0, 1]$. Just along that dimension, where to draw the line between a “subsistence farm and a market farm is a matter of judgment. Second, when there is a functioning labor market, farm households may supply labor for off-farm employment (on other farms or in nearby towns), generating cash income. When that income is used to buy agricultural inputs, even though none of the farm’s agricultural output is sold, a key analogy with autarky (not being able to buy inputs because no output is sold) is broken”.

Leavy et al. (2007) for instance, uses the Household Commercialization Indexes (HCI) to measure the degree of commercialization or subsistence orientation. The HCI is a ratio of the gross value of all crop sales per household per year to the gross of all crop production. A value of HCI equal to zero means total subsistence, while a HCI equal to 100 indicates higher degree of commercialization. Thus, HCI will falls below 100% whenever the household devotes their assets to the production of food for own consumption rather that for sale (Leavy et al. 2007).

Von Braun et al. (1994) have proposed a number of other ratios to measure the degree of commercialization,³⁴ for example: the proportion of the output sold to the market and input acquired from market to the total value of production, and the ratio of the value of goods and services acquired through market transactions to total household income, and the ratio of the value of goods and services acquired by cash transaction to the total household income (von Braun et al. 1994). Their propositions in formulating these relations are that as farms become more commercial they tend to rely less on own-produced inputs and services and instead depend more on markets to supply their inputs and services (von Braun et al. 1994). In this proposition, commercialized households also rely increasingly on hired labor, with family labor focusing more on supervisory and managerial tasks (Von Braun et al. 1994). Thus, measurements of commercialization orientation also need to look at changes on the organization of production.

This study, argues that the reason for making the share of the output sold as a less consistent indicator in measuring subsistence fishing is also the fact that, to be consumed, fish products need other complementary food. For instance, a household cannot consume fish without staples like maize, rice or potato, but a farmer can produce maize, beans and other crops which may be used as a complete meal. Thus, while a fisher needs rice to complement his meal, a farming household can feed itself without turning to fish. For this reason, a fisher will always sell, exchange (part of his catches) or diversify its activities in order to acquire the complementary food (such as, rice or potato). The nature of fishing activities forces subsistence fishers to participate in transactions, but the gains accrued from these transactions are sometimes smaller than those from commercial fishers.

Whatever the indicators used in measuring subsistence orientation, it is clear that subsistence fishing literature usually lacks the benchmark indicators that may rigorously distinguish subsistence from other sectors including the commercial. Application of the HCI to the fisheries context is quite complex issue, because it makes no meaningful distinction between a household

³⁴ Some authors (de Janvry et al. 1991) have measured commercialization in small-scale farming by using econometric models derived from the conventional non-separable agricultural household models (Jaleta et al 2009), to evaluate the resource allocation mechanisms for producing commodities for consumption and selling. In these models, the dichotomy between food and cash crops is used as the proxy to the level of a smallholder commercialization.

or individual who produces one kilogram and sells that kilogram and another household or individual producing 100 kg and selling 20 kg. For this reason the ratio of marketed output up to a certain minimum level cannot be taken as a measure of commercialization. It is perhaps that variables based on the structure of ownership, technology used and the amount of fish caught could be a better measure of subsistence fishing than the percentage of the catches which are sold or consumed.

5.4. Compared benefits of commercialization to subsistence fisheries

Béné (2008) and (Béné et al. 2010) also discuss the implications of commercialization of fisheries on food security, and identify two opposite dimensions: On the one hand, the fish trade can support economic growth processes by providing an important source of cash revenue through exportations. According to this vision, the foreign exchange generated by this trade can be used to service international debt, pay fast growing import bills and fund the operations of national governments (Béné, 2008, Thorpe et al. 2004; Kurien 2005). On the other hand, the fish trade is also said to lead to a decline in food security and a decrease in the availability of fish for the local population” (Béné, 2008: 5). Fisheries trade-oriented policies can lead to a decline in local fish supply, livelihoods options for the poor (Abila and Jansen, 1997) when access to food markets is largely skewed in favor of large-scale suppliers or when the rights of access of the poorest are not clearly defined and enforced. Béné et al (2010a: 937) for example, have confirmed that:“despite the huge revenues generated by the international fish export in a few individual sub-Saharan countries, this trade has failed to compensate for the increasing gap between fish demand and supply at the African level”. Thus, according to this vision, “contrary to what the pro-fish trade narrative claims, international fish trade does not seem to contribute effectively to economic growth or to poverty alleviation either” (Béné et al. 2010: 947).

At a very micro level, the marketization of subsistence systems could mean not just the observed increments on the proportion of the outputs that are sold at markets, but also the fact that the proportion of self- produced food can decline as significant part of the household labor will be allocated somewhere else (Pingali, 1997). Price changes for both producers and consumers may generate positive or negative impacts on the livelihoods of poor communities. On the technological side, commercialization also leads to specialization and modernization.

Specialization may be susceptible to the risks of prices fluctuations and yields that result in fluctuating household income. Inflation on prices of consumption goods may reinforce the substitution effect of a price by encouraging households to sell food products to the market instead of consuming them on-farm (Gale et al, 2005). Policies encouraging commercialization cannot disregard the role of these uncertainties, and need to keep the self-sufficiency mechanisms as part of the strategies of commercialization at household level. Modernization can reduce employment and income options in poor communities. Where modernization is the case, opportunities for commercialization need to be created and allocated through institutional mechanisms. This includes creating spaces for the employment of marginal and vulnerable people as well.

5.5. International debate on the determinants of subsistence fishing

Economists agree that market failures are the most important causes of subsistence production. According to this vision, “the lower the share of marketed produce, the higher the degree of subsistence orientation (Abele and Frohberg, 2003:iii). The logic of this position is that, households living under weak linkage with (input and output) markets will give more priority to satisfying family basic needs (Heidues et al. 2003) at the expense of activities with higher comparative advantage in increasing incomes, saving rates and investments. In such conditions, the determinant aspect for this difference between subsistence and other forms of production lies in market failures. According to de Janvry et al (1991:48) “a market fails when the cost of a transaction through market exchange creates disutility greater than the utility gain that it produces, with the result that the market is not used for the transaction”. An extreme case of market failure could be the non-existence of a market that is not common around the world. When a household is excluded from markets it will give more priority to satisfying family basic needs in expense of activities with a higher comparative advantage. A transaction cost is a central concept in explaining market failures. This concept “was first discussed in the economic literature by Ronald Coase (1937) in his seminal paper “The Nature of the Firm” (Kuperan et al. 1998:2) and belongs to the New Institutional Economics (NIE) theory, consolidated in the late 1970s to merge institutionalism into neoclassical economics (Williamson 2000; Menard and Shirley 2005). The NIE is built on the basis of three important models of human behavior:

- Rational choice model, which assumes that individuals choose the alternative that maximizes their personal preferences and thus make decisions that lead to efficient outcomes;
- Individual choice model, which assumes that individuals have the freedom to choose between alternatives, and
- The bounded rationality, which assumes that human actors lack complete knowledge to assess their decision alternatives due to their cognitive limitations, time and information constraints (Lieberherr, 2009).

The NIE's understanding is that "institutions have a profound influence on economic growth" as well as "economic growth and development often results in a change in institutions" (Makhura, 2001). One of the most important achievements of this branch of theories is that it recognizes the role that organizations or institutions play in coordinating development processes. Accordingly, organizations are means to overcome humans' limited cognitive abilities through coordination and cooperation as well as by using low-powered incentives (Williamson 2005; Brousseau and Glachant, 2008). In the absence of institutions that help to coordinate development functions or to link producers to markets, the associated high costs undermine the processes of exchange (Kranton 1996, Brünrup and Heidhues, 2002). According to the NIE, transaction costs also makes selling less attractive (Abele et al 2003) and can force people holding their money instead of investing it valuable projects (de Janvry et al. 1991; Brünrup and Heidhues, 2002). In the presence of transaction costs there is no single effective market price at which exchange occurs (de Janvry et al. 1991) and individuals can face different prices for the same good. This may create conditions for social and economic inequalities.

However, the transaction costs paradigm shares some shortcomings in explaining subsistence fishing. One of the shortcomings is that this paradigm can be just a temporal explanation of subsistence production. As far as transaction costs and the resulting margins are concerned, "one could as well assume that, when supply decreases, and producers turn to their own subsistence production, traders would offer higher prices to producers and lower prices to consumers (Abele and Frohberg, 2003:iii). The second shortcoming resides on the fact that the transaction cost paradigm it is based on the strong assumption that only surplus-producers will commercialize

their produce, and that deficit producers will not be driven to participate in market (Makhura, 2001). Evidence from South Africa (Makura, 2001) and rural Mozambique (IFAD, 2000) have shown that in fact, when conditions allow, households at different levels of production will commercialize.

The third shortcoming of the transaction costs and market failures' approach is the fact that it is excessively focussed on producers to whom the market can 'liberate' from subsistence, while neglecting the self-sufficient households, who need different forms of support. Because of this shortcoming the transaction costs approach cannot account for non-market benefits that may derive from the self-sufficiency mechanisms. The problem is that if the purchased crops and the households' self-sufficient goods were perfect substitutes, subsistence households would not keep producing even at higher opportunity transaction cost than the market price. This study, argues that the focus on market failures provides just a small part of the problem affecting subsistence fishers. Production, exchange and consumption activities are embedded in social, political and institutional processes that are crucial to the analysis of subsistence fisheries.

5.6 Summary of the chapter

The main objective of this chapter was to discuss the concept of subsistence fishing based on the existing literature. The chapter discussed the concept of subsistence fishing and the theoretical explanations of its determinants. The first challenge faced in this chapter lays to the varied approaches on the definition of the word subsistence. Economists have defined this subsistence a material consumption basket that is necessary for (working) people to make a living for themselves (Brüntrup and Heidhues, 2002). Social scientists have criticized this approach as it ignored the social processes in which the production, exchange and consumption are embedded. Similar complexities are also found in the definition of subsistence fishing and particularly on its difference from what is known as small-scale and artisanal fisheries. The study has also found very important insights from the international literature on how other developing countries deal with the definition of this fishing system. However, the study makes important observations on the approaches that the international literature uses in conceptualizing subsistence fishing and

criticizes the excessive use of market-based approaches on it. But the biggest confusion lays on the use of the word small-scale fisheries.

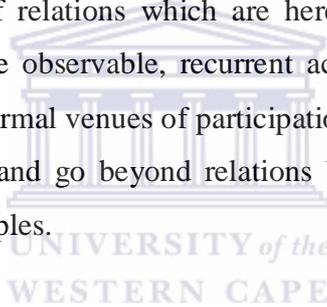
The study argues that the thirteen (13) parameters used by the Artisanal Fisheries Development Strategy to characterize subsistence fishing activities are all useful, but give us just a small part of the factors that may justify the existence of the subsistence systems. A broad picture of subsistence systems could be possible if human centred indicators were incorporated into the current characterization of subsistence fisheries to highlight the social complexities associated with this sector. It is perhaps that parameters such as age and gender structures, forms of contribution to food security and livelihoods, skills and knowledge basis of the subsistence fishers, key motivation for fishing, patterns of access to formal networks of decision-making and access to formal networks of social protection can make sense when addressing conceptual issues of subsistence fishing. Particularly age, gender and motivation for fishing are taken in this study as very important parameters as they form the central aspects that differentiate subsistence fishing from other fishing systems. Age can also be an important factor helping to address fisheries in terms of human rights by looking at the impacts the proliferation of children in fishing activities has on formal education, for instance.

The second important discussion brought in this chapter is related to the excessive and exclusive attention the fisheries policy gives to the market failure when discussing determinants of subsistence fishing. An important message on this regard is sent to the fisheries authorities who see subsistence fishing only in terms of its difficulties in accessing markets. The study highlights that fisheries authorities need to stop seeing subsistence fishing as a last choice people have when other alternatives do not offer better opportunities and start seeing it as a choice people can freely make. Policy makers need to pay more attention to the complex factors that really hinder the participation of subsistence fishers in development process and bring them into policy vision. Factors such as exclusion of vulnerable groups from formal venues of fisheries governance, complexities associated with the systems of distribution of opportunities and other structural problems related to the ways institutions of fisheries operate need to be brought into policy debate with more clarity.

CHAPTER SIX: CONTEXTUALIZING SUBSISTENCE FISHERIES IN PALMA DISTRICT: THE SIGNS OF VULNERABILITY

6.1. Introduction

The main objective of this chapter is to understand the nature of social vulnerability of subsistence fishers and the responses they give to specific situations. The chapter is based on the field evidence. The chapter starts with an overview of the life in a community and will end with the analyses of the informal structures that provide these groups of fishers with livelihood functions. Findings from this chapter provide insights for the policy makers and researchers to change their image in relation to subsistence fishing and stop disassociating subsistence fishing from markets. Subsistence fishing will need to be seen as a system of relations whose motivation is not just the fishing itself but a need for global security of the livelihood system to which it belongs. The patterns of relations which are here conceptualized in the context of informal action spaces include the observable, recurrent activities and interactions which are created and enforced outside the formal venues of participation. It is assumed that these relations play critical livelihood functions and go beyond relations by including and involving certain systems of social values and principles.



6.2. The fishing industry in Palma district

6.2.1. Overview

In Palma district, fishing can be divided into artisanal-commercial and subsistence fishing. The former type of fishing mostly use fishing gear such as purse nets, hand lines, beach seines and gillnets. This gear is commercially oriented. They tend to rely less on own-produced inputs and services and depend more on markets to supply their inputs and services. They also increasingly rely on hired labor (between 8-10 for the beach seine, 10-20 for the purse nets and 5-9 for the gillnets), with family labor focusing more on managerial tasks. These people normally sell most of their catches and are highly dependent on Tanzanian markets to supply inputs and fishing gear. Normally seine netting takes place in waters between 5m and 7m deep, while the maximum depth for pursing nets is around 100m (depending on the size of the net). Hand line fishers fish in waters with a maximum depth of 200m. Divers seldom exceed 30m, and only a few very

skilled divers are capable of exceeding these depths (*Impacto Lda*, 2012:110). According to the oral tradition, purse netting and spear gun utilization are not local practices. They were brought to Palma by fishers from Tanzania and Nacala (Nampula province-Mozambique). Fishing activity occurs mostly in the intertidal areas and particularly in the areas close to the islands. The relatively high productivity of fishing grounds around the islands has been one of the major attractions to the fishers from mainland areas.

Table 23: The main fishing methods of Palma district

Fishing Gear	Characteristics
Gillnets (drifting)	This type of fishing is done with a sailboat or motorboat, with the net being launched in two sections by 6 to 10 fishermen. The net remains in the sea overnight or for one or two weeks. In the first case, the fishermen gather the net and the fish a few hours afterwards or the next day, while in the second case the fishermen check and remove the fish over a period of a few days. First grade fish is selected.
Pursing net	This type of fishing requires a motor boat and a 1 ½ inch net. It is conducted during the night with the assistance of lanterns/flashlights (as light sources), catching schools of fish.
Seine net	This type of fishing occurs in areas near the shore or other shallow areas, where the net can be dragged to the beach or through shallow water. A midsize boat is used for this type of fishing with between 10 and 14 fishermen who pull the net from the sea to the shore (or in the water).
Hand line	Fishing in shallow waters and transportation via canoe. Fish are caught with a fishing line and hook.
Collection by hand	The work is primarily done by women in the intertidal areas. Some catch seafood in up to knee-deep water, while others travel to the islands in canoes to dive for shellfish.
Diving	Divers descend to a depth of up to 15m, without diving equipment. Fishermen swim or travel in canoes to the dive site.
Spear guns	Long handgun made of wood with a separate steel harpoon with sharpened tip, which is propelled by rubber strips (Macalister Elliot and Partners, 2013).

Source: *Impacto Lda*, 2012; MEP, 2013.

Beach seine and gill nets are classified as originally local, although being improved by outsiders (from Nacala and Tanzania). Beach seines as well as pursing nets have changed in time in terms of scale and operations. The most frequently used vessel is the dugout canoe which may reach 3m long. Dugouts are used with fishing gear such as the hand lines, basket traps or gill nets.

Fishers have referred that in the past (mainly in 1980s) these nets were very small and operated in the intertidal shallow waters. Actually, this gear and especially the purse nets are very big and can even fish during the nights. The fishing journeys from the mainland to the fishing areas are made on a regular basis. As with other fishing areas in Cabo Delgado, the fishing journeys occur during early morning (starting at 02h00) or late evening (starting from 18h00). For the subsistence intertidal fishing, fishing journeys are shorter and fishing activity is carried out during the day light. The mobility of fishers is variable. Some fishers can fish in the same area 5 days per week on average; others can go fishing less number of times due to the commitments they have with other activities. However, it was evident that the decision of where to fish and when was made according to the number of fishers operating in the same area simultaneously, early success catch rate in certain areas or wind speed and direction. If the predominant winds are unfavorable, a fisher will change his decision in relation to the fishing area.

6.2.2. The collectors: harpoon and hand

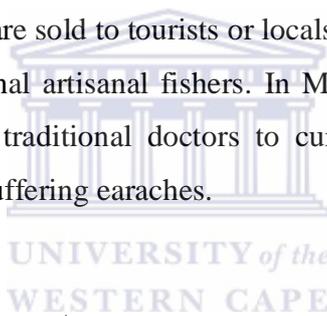
Similar to the mosquito dragnet, collection is also widespread in all Palma coastal areas and particularly in all accessible beach fronts, including some adjacent islands. Collection as a group is diversified and includes youth, adult males and females as well as children harvesting sea cucumbers, octopus, oysters and fish using small homemade harpoons, spear guns, basket traps and by hand. The homemade harpoons can be a wooden pole with a metallic tip normally used to kill the octopus or the sea cucumbers (Macalister and Eliot Partners, 2014). Normally these resources are found in coral reefs or in areas close to the estuaries. To catch the target, the collectors need to break the reef (Interviews in Palma-sede, 2012). This group of fishers normally operates in small groups who join efforts to rent a boat to reach the suitable areas for their activity. Their operations depend on the tide variations. They can harvest between 30kg to 40kg of octopus per day (in Olumbi), or 20 kg to 30kg (in Quiwia), although these quantities may vary according to the season of the year. The harpoon can be used from the shore or from a boat, with the fisher out of the water harpooning the fish or invertebrate through the surface (*Impacto, Lda*, 2011). A harpoon is operated by one person, normally the owner.

Another gear used by collectors is the spear gun. It is a long handgun made of a piece of wood with a separate steel harpoon with sharpened tip, which is propelled by rubber strips (Macalister and Eliot Partners, 2013). Fishers using the spear guns also use a face-mask to improve visual accuracy. The spear is a “steel rod sharpened at one end, sometimes barbed, with or without a wooden handle. Fishermen swim on the surface while hunting for fish and invertebrates, which they stab with the spear” (Macalister and Eliot, 2013:10).

There are also collectors who do not use any equipment to harvest but their hands. These groups normally collect oysters. They can walk for about 3 to 5 km per day searching for invertebrates. Collection by hand is the most diversified activity in terms of groups involved and species targeted. It is most active during spring tides and targets oysters, sea cucumbers, octopus and sometimes fish. All of them operate in areas near their homes, near estuaries and in coral reefs, sand banks and normally target resources like crabs, sea cucumbers and oysters, octopus and a variety of organisms used by other fishers as bait. Most of these fishers (with the exception of some of those using harpoons) do not use boats for fishing. They also operate in areas fairly close to their homesteads, on empty beaches, estuaries, or very shallow waters. Some of them may out-migrate to more productive fishing grounds but never take more than a week. Their harvesting campaigns are determined by the weather (tides, and winds). Winds for instance, play an important role because the resources the collectors target are easily moved from one side to the other by wind. Collection is not an entertainment; and sometimes it is not just a last resort; it is also a choice. According to oral traditions, collection is the oldest type of fishing in Palma area. It is dated from the pre-colonial era, resisted the colonial domination and continues to be transferred across generations. During the focus groups discussions in Palma, some people interviewed explained that have been harvesting octopus since 10 to 25 years ago. Some have been invited to leave this activity for another, like fish processing, but did not accept. According to them, there are perceptions in Palma district that subsistence fishing is not a profession. But the reality shows that many women are feeding families, buying consumption goods and investing in other small businesses thanks to the subsistence fishing (Interview, Palma district: 2011). The roles of subsistence fishing and intertidal areas are diverse. According to the fishers interviewed in Mbwize and Quiwia, intertidal subsistence fishing sustains several aspects of life

in the village: subsistence fishing raises, what people eat, wear, drink and pays school fees for children. Thanks to collection some women who interviewed during the focus groups are able to feed their families every day. Subsistence fishing is also good because it allows that people diversify their activities. As a result, subsistence fishers are considerably involved in agriculture and small business (which is often fish processing). Their involvement in farming is more expressive during the rainy season than in the dry season. In areas located close to the fish landing sites and on the islands, women can spend more time harvesting intertidal resources and processing fish during the dry season than in the wet season. These variations coincide with the trends in fish resources availability in the intertidal areas as will be demonstrated in the following sections.

Some of the species harvested by subsistence fishers (oysters for instance) are not necessarily harvested by the other fishers and are sold to tourists or locals at a price higher than some species of fish captured by the conventional artisanal fishers. In Maganja, people informed that some oysters are highly demanded by traditional doctors to cure pregnant women, children with deficiencies on growth or people suffering earaches.



6.2.3. The mosquito dragnet

In Mozambique, mosquito dragnets are illegal as they normally catch small fish and shrimps in estuaries. The discussion presented in this section is not willing to contradict this norm, but to demonstrate how this gear operates in practice and how it is socially important to the local communities. The discussion on the feasibility of mosquito dragnets from the fisheries management point of view will not be sustained here.

Mosquito dragnet fishing is quite a recent practice in Palma district. According to the focus groups, until the middle of the 1980s, there were no people fishing with this type of gear in this district. Mosquito dragnetting became a practice during the civil war when people from the unsafe inland areas migrated to the coastal areas searching for safer and better conditions of life. Some groups can organize trips to the fishing areas close to the islands. According to the focus groups, smaller mosquito net (small dragnet), is normally pulled by three people where two are

dedicated to pull the net and the third is responsible to drive the fish into the net. A bigger mosquito dragnet may reach 20 meters in length and it requires 20 women to operate.



Photo 6: Women returning home after a fishing campaign
Source: Horácio Gervásio



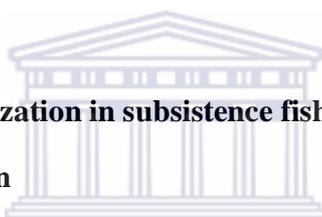
Photo 7: A member of mosquito dragnet fishing group searching for more suitable fishing areas
Source: Horácio Gervásio

The mosquito dragnet fishers work during the day and in water less than 1 meter deep. They can fish during the low or high tides. Women involved in these activities are normally heads of families. Similar to the collectors, these women are also not full-time fishers, but part of their lives critically depends on this activity. Their main activity is agriculture or trade but fishing appears in their livelihood system as a very important source of fish and income. The women heads of families for instance, do feed themselves with these nets. Their main objective when fishing is to sustain their families by selling or consuming part of their catches.

During the focus groups carried out in Palma and Olumbi Bays, women using the mosquito nets made it clear that mosquito net fishing is one of their sources of livelihood. Accordingly, this type of fishing has many social advantages to them and their families especially during the dry season when people cannot rely much on agriculture.

Mosquito nets were observed with same frequencies and quantities in Palma, Olumbi and some fishing centers from Quionga. They normally fish during the spring tides. Most of the nets are supplied in local markets by traders from Tanzania or Pemba (the capital city of Cabo Delgado) or distributed by the local health authorities to prevent malaria. Most of the women using

mosquito nets said that the first time they had their mosquito net it was provided by the health authorities to use for malaria prevention. However, in some villages, women reported that they used to buy their nets with their own income, although the men claimed that husbands bought them for their spouses. The most important characteristic of this group lays to the fact that, normally it is composed of people belonging to the same household or family. The roles of the members of the group are very well defined. The women join in cluster compounds. Each group holds a mosquito net sheet, from the edges and immerse it into water, while spread. It takes a few times for the fish to come around the mosquito net area and then, the women shrink and haul the mosquito net from the water. The process is repeated several times, and each time, the mosquito dragnet appears with small fish that is gathered in pots. The captured fish is very small, with the biggest ones not more than 1.37 inches, in length (Interviews with women operating a mosquito net at Palma beach, 2012).



6.3. Production and commercialization in subsistence fisheries

6.3.1. Fishing production

According to the district government the district is supplying an average of 2,707 Tonnes of several resources among which almost 50% is supplied by subsistence fishers (See the rows highlighted in the Table 24).

Table 24: Fisheries production in Palma district (Tons)

	2008	2009	2010	2011	2012	2013
Shrimp	32.62	36.28	31.62	38.30	42.50	42.50
Octopus	159.90	164.42	135.46	112.10	227,10	321,10
Lobster	4.81	5.12	10.80	11.40	10.80	12.30
Sea cucumber	74.30	75.68			40.60	31,20
Squid	74.30	281.16	344.49	478.30	498.10	600,17
Oyster	395.98	426.70	135.46	478.30	489.10	440,50
Crab	353.85	364.88	102.15	128.40	301.40	100,30
Fish from Open sea	569.37	641.19	849.53	954.60	962.80	1380,82
Fish from aquaculture			2.55	2.71	1.89	1.88
Total	1665.13	1995.43	1612.06	2204.11	2.643.6	2.954,3

Source: *Serviços Distritais de Atividades Económicas*³⁵ de Palma, 2013.

³⁵ District Services of Economic Activities

The most important species captured by the intertidal subsistence fishers include diverse types of sea cucumbers, molluscs and crustaceans. Oysters are exclusively collected by subsistence fishers. The most important species include *Epinephelus spp* and *Cephalopholis spp*, snappers (*Lutjanus spp*), sweetlips (*Plectorinhus spp.*), goatfish (*Parupeneus spp*), grunters (*Pomadasy kaakari*), rabbit fish (*Siganus spp*), scad (*Decapterus spp*), fuzilieirs (*Pterocaesio tile*), barracudas (*Sphyraena spp*), and needlefish (*Ablennes hians*). Fish as well as the other aquatic resources caught in Palma can be sold in four forms, namely: sun-dried, salt-dried, smoked and fresh. Some oysters, octopus and sea cucumbers are also sold fresh or dried. The salt-dried fish is the most common practice and it is categorized by first, second and third grade species. The octopus and oysters are essentially captured/collected by subsistence women. A seasonal calendar was drawn up to identify the most important species captured by the subsistence fishers and visualize changes in conditions or activities through the years. A period of twenty-five years was defined by the focus groups as the best reference to be enough for changes examination.

Table 25: Historical trends on fisheries availability, trends on number of collectors and level of catches

	During the civil war	1992-2000	20000-2010	Current days
Resource availability	+++	+++	+	++
Number of collectors	+++	+++	++	++
Level of catches	+++	++	+	-
+++ Means High ++ Means moderate - Means Low				

Source: Interviews with subsistence fishers in Palma

The result of this exercise has indicated that subsistence fishing has been changing during the last 25 years. During the civil war (1975-1992) intertidal resources were much more available than today. However, the number of users rapidly increased in this period and this caused some reductions on levels of catches in the subsequent periods. However, the most important products captured by subsistence fishers continued to be small fish, octopus (*Octopus spp*), oysters and sea cucumber. Significant changes have also occurred in relation to the value of intertidal fisheries resources. One of the most important changes is the size of the species. There is consensus among all focus groups that the levels of catches reported have been reducing in

quality. Twenty-five years ago, collectors did not need to migrate to the islands to catch good products.

6.3.2. The market where fishing products are commercialized

Most of the fish commodities from the study area are sold in the main towns to the consumers and intermediaries. In Palma the most important markets are Palma Sede and the secondary markets are Olumbi (southern part) and Quirinde/Quinga (northern part). In the study area, the level of fish demand is relatively higher in district capital towns (due to the strong presence of Tanzanian traders) and quite low in the secondary markets mentioned above. The reason for this difference is that the most important buyers of fish are usually concentrated in the main towns due to the better conditions (better roads, electricity and telecommunication). Access to the secondary markets is poor and there is no energy for fish storage. Generally, fish commodities sold in most of mainland markets come from the islands. Traders from these areas prefer to travel to the islands to purchase fish commodities to sell at mainland sites. They can remain on the islands for up to three days or until they purchase enough fish for selling in the mainland markets. Consumers from Palma and Mocimboa often blame intermediaries for high fish prices.

At regional level, the most important markets of dried (and fresh) fish are Pemba, Montepuez, Chiuri, Namapa, Nampula and Tanzania. Boats, public transport, pickup trucks as well as hired lorries are the most important means of transport. Mocimboa da Praia is an important distribution area in which large quantities of fish are sold and resold in bulk to intermediaries from Nampula, Montepuez, Nangade, Pemba and Tanzania. Tanzanian traders export fresh and dried fish to Tanzania by hired truck or by boat via the local port, although there are also those who export fish illegally via sea routes. The major constraints to the fish markets include the lack of basic infrastructure, such as primarily roads to landing sites; lack of electrical power for fish conservation in most areas away from Pemba; poor technology in fish production, conservation and processing sector. Also, the current data collection system does not include information from Tanzanian fishers (or at least does not specify this information). During the fieldwork, attempts at obtaining statistical data on gathering, failed. However, it has been reported that, more than 60% of fish products traded in the study area were consumed by the

Tanzanian markets. It is possible that the actual contribution of this market to national foreign exchange is underestimated.

Fish supply and demand are determined by the dry and rainy season cycles, type of product, location of the market, and the level of development of boat landing sites. Fishers indicated that during the rainy season (October – April) the catches are substantially higher than in the dry season. However, although profits in the rainy season seem to be much lower, due to supply variations, prices do not vary too much along the year. Also, during the rainy season fish commodities demand has been reported as relatively lower compared to the dry season. The problem is the local road infrastructure, which for large parts of the rainy season becomes almost impassable. This then prevents bulk traders from accessing fishing villages, and single traders from selling fish in the interior. Ice for the trading of fresh fish is currently brought from either Mocímboa or Pemba in cold boxes. The lack of local availability of ice not only limits the duration of trading cycles, but also increases the risk of the activity. Should ice be available locally, traders would only buy ice commensurate with product availability.

Almost all production is processed by salting and sun-drying in the fishing centre and it then travels out to provincial markets via a network of informal, small-scale traders. Transport routes are by road where possible, but sea routes may be used to get access to the nearest land transport terminal. Both sea and land transport depend on boats and vehicles that are used to take general cargo and / or people. No examples were found of specialized fish transport of any kind. There are many participants in the trade, with varying degrees of specialization - some traders only deal in fish, while for others the fish trade plays only a secondary role, usually to the trade in other products. In common with fisheries value chains, transport and marketing may be repeated several times before the product is sold to the consumer, and in general value can only be added through transporting the product – it is only at the very last sale to the consumer that the seller may have purchased the product in the same town as where it is being sold.

Fish traders can be grouped into two main categories: fishers selling to consumers, and fishers selling to traders. Traders can be residents of Palma or visitors. In some areas, visitor traders can be more than residents in numbers and quantities they buy. Sale to consumers takes place at the landing sites where fishers bring in the catch after a fishing trip. The catch sold to local

consumers consists of fresh products although some consumers prefer processed products. Traders from the mainland frequently travel to the islands to purchase fish. These traders then either process the fish on the island, or take it back to the mainland for selling as fresh or processed fish. Buyers from Tanzania frequent Mocimboa da Praia and buy large quantities of dried fish, which are taken back to Tanzania by road or boat.

Focus groups indicated the existence of two categories of traders: the regional traders, who travel and sell fish in a market distant from the center and the local traders who buy and sell locally, without travelling. The regional traders can diversify their businesses by selling other goods apart from fish, and accept foods, clothing or items for domestic consumption on the return leg of the trading cycle. Where margins permit, traders prefer not to purchase return materials, but travel back with cash and purchase more fish without delay. The exception to this is the purchase of fishing gear, where traders may travel with an order from a known fisher, and return knowing that the gear has a waiting buyer. As outlined above, the trader may supply the gear partially or “wholly on credit, in return for a commitment from the fisher to supply fish at a given price” (Macalister Eliot and Partners, 2014:11). Prices of fresh and processed fish are determined by grade, based on size and weight. Average prices in the study area that are paid to the primary producers for selling a unit of fresh fish-resources range between 15.00 Meticaís³⁶ and 100.00 Mtn per kg. However, some differences were found between the price received by intermediaries who sell their product in the main towns, and those who sell fish at the secondary markets.

³⁶ Meticaís is Mozambique’s currency

Table 26: Average price (in Meticais) per kilogram received by subsistence fishers, intermediaries at landing sites of different categories of markets

Type of fish	Price per kg received by the primary producers (Meticais/kg)	Price per kg received by the intermediaries in the main towns (Meticais/kg)
Shrimp		
• Grade one	60.5	67.1
• Grade two	30.6	47.5
• Grade three	10.1	30.8
Squid		
• Fresh	50	80.0
• Dried	75.0	100
Octopus		
• Fresh	15	35.0
• Dried	30	40.5
Shark	20	35
Crabs	15	20.5
Lobster	100	160
Oysters	55	65
Ray	10	12

Source: Interviews in Palma, Quionga and Olumbi Bays: 2011-12

Prices may have doubled or tripled by the time the product reaches the main urban centers. Prices will also vary according to the season of the year, but the variation is not significant enough for a detailed reference. In islands where fish is mostly sold by the primary producers to intermediaries from mainland fishing centers, the price corresponds to that presented in the first column of Table 26. No intermediaries sell their products in these areas. In Palma-sede markets, there are primary producers who will sell their products to the consumers at intermediaries' prices if some intermediaries are also selling their products at the same time. Important to note from this information is that, despite the visible differences between artisanal-commercial and subsistence fishers in terms of catches and business structure, these groups are using the same markets and sometimes receiving the same prices per unit they sell. This configuration can have serious implications in the conceptualization of the policy for subsistence fisheries. The merit from subsistence fishing also comes from the fact that, it is not just a source of income. The sections below reveal some other functions which are associated with subsistence fisheries.

6.4. Livelihood functions associated with subsistence fishing in community

6.4.1. The value(s) of subsistence fishing

In Palma district, intertidal subsistence fishing is associated with multiple social and cultural utilities: intertidal subsistence fishing is a livelihood, business, food, cultural and a social system. Many people engaged during the fieldwork in Palma district associate the intertidal subsistence fishing with three important values: livelihood (income and employment), food security and social habits. The discussion on these aspects starts with the interpretation of key statements and life stories which were told by different groups of subsistence fishing.

The first key statement was told by a group of collectors in 2011 in Quiwia (Palma bay) in relation to the social significance of the intertidal fishing area. It will be around this statement that the analysis of the socio-cultural value of the intertidal subsistence fishing will be discussed.

The statement is as follows:

“At the beach we fish, we make business, we raise families and friends, we fight with famine and we make important decisions. It is at the beach where most of our lives are decided and performed and most of the time we do this during the intertidal activities” (Focus groups, Palma bay, 2011).

The second key statement was conveyed, by all groups interviewed (in a similar way) in all three bays in 2012 and 2013. This statement emphasizes the role of subsistence fishing in wealth generation. It denies the fact that subsistence fishing is regarded as motivated by food necessities by demonstrating that subsistence fishers do also generate considerable incomes which need to be accounted in the national policy. The statement is as follows:

“Intertidal subsistence collection is a big business: it pays schools, health, entertainment and other goods. Products from the intertidal subsistence fishing are demanded by rich people and are sold at the same price as any other fishing products here” (Interviews, Palma district, 2012-13).

The third and last key statement was conveyed by groups living in more remote areas. These have been interviewed since 2010 up to 2013. Their key statement emphasizes the role of subsistence fishing in food supply. They emphasize that what people eat comes from the subsistence fisheries and that very often artisanal-commercial fishers save most of their money

and fish because their wives contribute to the household food supply through the products from subsistence fisheries. The statement is as follows:

Subsistence fishing is financially and politically invisible, but it feeds all these bosses you have seen in the village. Big commercial fishers do eat food brought by their wives and sell their catches. When the sea is brave no commercial fisher has the courage to get in the sea, but subsistence fishers can get in, and bring at least a meal for a day. Subsistence fishing helps in solving big problems when the crisis knocks at the door in our families.

The sections below draw from these statements to reveal the multiple roles subsistence fisheries play in providing a minimum livelihood for the coastal communities. The association between subsistence fishing, intertidal collection and the community life gives an indication of the diversity of the utilities the intertidal spaces provide to community life and most important, the role subsistence fishing plays in mobilizing social interactions at those spaces. In fact many things happen in the intertidal grounds: young people come to sell their goods or to exchange them with fresh fish, children go with their parents to learn how to fish and how to swim, tourists go with boats for recreation, the religious leaders go to pray or cure their patients, etc. All these functions are linked to subsistence fishing in one or other ways. In areas like Olumbi and Quirinde, where subsistence fishing is more concentrated, fishers associate this activity with their way of life.

“We live our lives day by day collecting and selling molluscs and we must say that we are proud of being collectors, because there are things we do, other fishers can’t. It doesn’t matter if we are poor. This is what we do since long time ago and we encourage our children and relatives to learn how important the intertidal spaces are soon after their initiation rites. But listen: we are not saying that we want to be poor forever. We want to be rich but keeping our interaction with the intertidal spaces” (Focus groups, Palma bay, 2012).

Normally, other fishers using gear such as gillnets, beach seines or purse seines, saw fishing as a factor of poverty and they did not mind to give up the fishing if other opportunities of employment or income generation came across. Collectors do recognize themselves as poor, but they do not necessarily associate their poverty with the intertidal subsistence fishing. They are proud of being collectors, still want to be identified with this activity and are not willing to stop their interaction with the intertidal fishing even if new opportunities are raised to improve their livelihoods. This type of manifestations link to Onyango’s (2011) submission of the need for a formal recognition of the human dimension of fisheries in small-scale fisheries. A group of

fishers interviewed in the village of Quiwia, explains that fishermen normally do not do intertidal collection but encourage women, especially the wives to keep doing it. There is no way to stop the intertidal subsistence fishing because it is a very important activity.

All these findings are demonstrating that subsistence fishing does not take place in a social vacuum and that most of the interactions taking place at the intertidal spaces are motivated by subsistence fishers. It is also clear that subsistence fishing is a practise of something that is structurally learned in the context of the family or relatives. Most of the fishers learned fishing with parents or friends. In most cases the underlying motivation to learn subsistence fishing is not just the need for food or cash, but the fact that interaction with the intertidal spaces through fishing or other activity is a “way of coastal communities’ life”. In coastal areas women are educated to deal with two eco-systems at the same time: the agricultural and fisheries ecosystems. Differing from the artisanal-commercial fishers, subsistence fishers are involved in agriculture and fisheries at the same levels. They have to adapt to the requirements and challenges of both systems and must find ways to cohabitate with them. Farming is perceived to be a joint effort between the husband and the wife, whereas fishing, including processing and trading, and inter-tidal collection is undertaken separately by the spouses, either individually or in male and female groups respectively. It is thus probably easier to introduce changes in the area of fishing and collection, as they would not affect the patterns of collaboration within the family as much as changes in farming would. Most families have a piece of land for farming. The land is inherited by the husband, and it is through him the wife gets access to land for farming, as she moves to his place in marriage. In one instance it was noted that single women can get land from someone who has a bigger area than they need, paying for this access with a part of their harvest.

6.4.2. Subsistence fishing as a safety net

The notion of safety nets has been associated with the small-scale fisheries since many years now. According to Béné et al. (2010:338), fisheries can function as a safety net by the fact that “in periods of individual or collective economic crisis, fishing can provide alternative or additional sources of income, employment and food for the poor and vulnerable households whose livelihoods have been temporarily reduced or affected by unexpected shocks.” The late 1980s and earlier 1990s have been mentioned in several interviews with intertidal collectors of

bivalves and cephalopods as the years which make the role of the intertidal-subsistence, became more visible. The civil war (1975-1992) led to migrations of people from unsafe inland areas to the coastal area. Most of the islands became occupied since that time. The refugees of the civil war found the intertidal collection of bivalves and cephalopods as a last resort activity to survive.

Intertidal fishing is also an important source of livelihood when agricultural productivity is low. Agricultural performance in Palma coastal area is very vulnerable to climate oscillations, and according to local authorities “most of the years during the 1990s and middle 2000s were dominated by droughts. Agriculture did not provide enough food for locals and anyone, including people who immigrated from the inland to the coastal areas, became collectors. The role played by intertidal fishing became very important since back then” (Interview, SDAE: 2011).

Intertidal fishing was also mentioned as a livelihood buffer for the most vulnerable people, namely: children who lost parents, women heads of households or fishers who lost their fishing gear/capital. A group of respondents in Palma confirmed that, intertidal collection offers many advantages, when compared with the other conventional fishing activities:

“Collection can be performed in all tides; all you need is to change your tactics. You don’t need to make big decisions to get in the collection industry. All you need is time. It is easy to learn and once you know it you never forget it, even if you abandon it for some time. Resources targeted in the intertidal are easy to find especially when natural conditions allow. Collection is simple, but help in solving big problems when the crisis knock the door in our families”.

During the fieldwork, intertidal fishing activities were observed every day. The presence of mosquito nets, traps, harpoons, and *conches de oysters* was observed everywhere in the village. In areas such as Palma Township, children were involved with more intensity in the intertidal subsistence collection during the school holidays. Some children were intentionally sent by their parents to collect food for special events/ceremonies. A group of 15 children found in Quirinde for instance (December 2011), organized a tour of intertidal collection seeking for food for their initiation rites festivals. A similar tour was observed in Maganja fishing village where women usually moved at least once in a month to the areas close to the islands during the dry season to collect oysters and octopus.

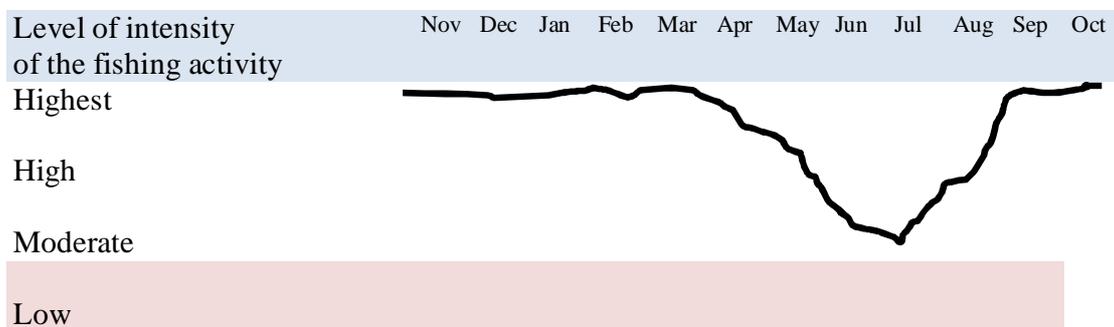
Intertidal-collection as a food safety net is notably important during all the year. Tables 27, 28 and 29 indicate the season calendars for agriculture and intertidal fisheries in Palma and Quirinde bays. According to Table 27, in most parts of Palma district the harvest of the basic agricultural staples (e.g. cassava, rice and maize) begins in April and can go up to July. The sowing period begins in December and can go until February. Informants in Palma Bay have argued that, during the rainy season (September – January) is the period when stocks from the previous harvests begin to run low. It is during this period that families find the intertidal subsistence fishing the main source of food. The season calendars for the intertidal fishing in Palma and Olumbi bays district also tell us that people will be more involved in the intertidal collection during the period between November and April and less involved in the intertidal fishing between June and August (Table 29). Informants from Palma Bay have argued that it is also during the rainy season that the intertidal subsistence fishing is more productive.

Table 27: The season calendar of agricultural production

Agricultural activities	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Land preparation	•	•									•	•
Sowing		♦	♦	♦								
Crops growing and development			γ	γ	γ	γ						
Harvest						♣	♣	♣	♣			

Sources: Focus groups in Palma, Quirinde and OlumbI bays.

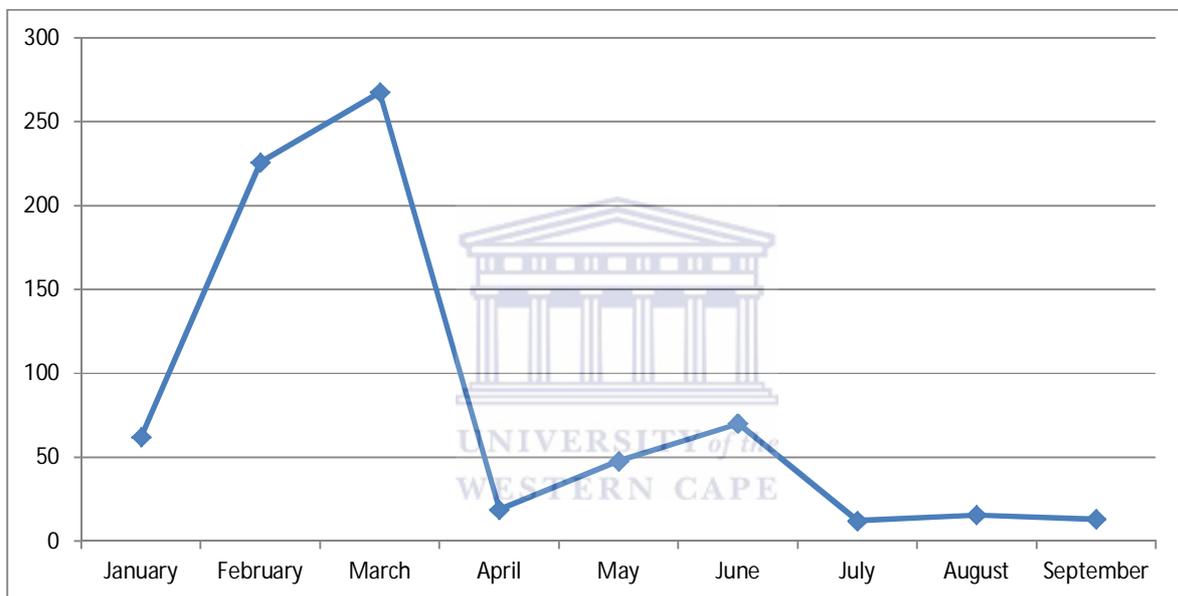
Table 28: The season calendar of intertidal subsistence fishing in Palma



Source: Focus groups in Palma and OlumbI bays, 2012.

In Quirinde Bay (which includes Mbwize, Quirunde and Suavo), the annual seasonal calendar of the intertidal subsistence fishing was reported to be different from the other areas. People are more involved in subsistence fishing between April and September and the month of August is when production is higher. The role of subsistence fishing is critically important in this period because it is also when other fisheries (gillnets; beach seines and hand line) are less productive and unable to provide enough food for the community.

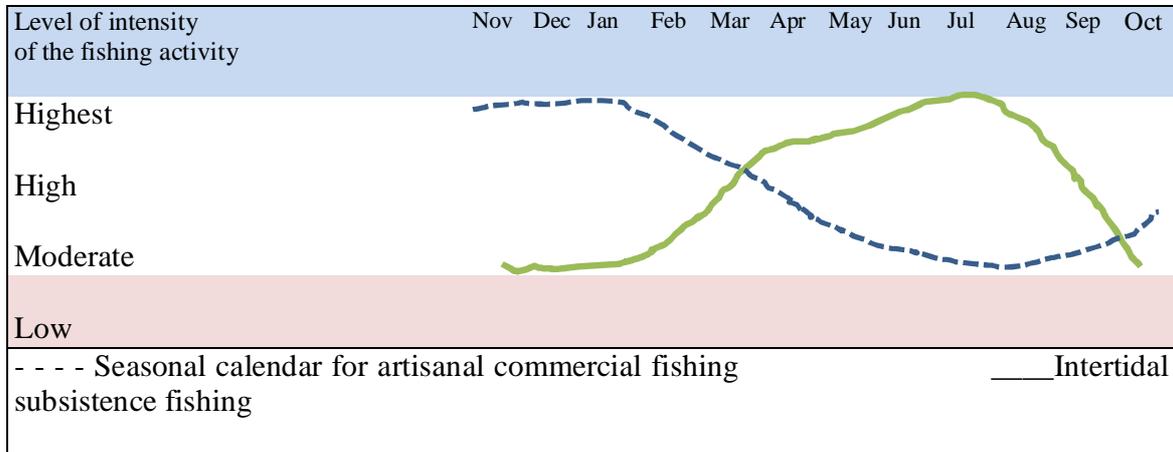
Graph 3: Monthly production of beach seine, purse nets, gill nets and hand line (2009)



Source: *Instituto Nacional de Investigaçao Pesqueira*³⁷, 2009.

³⁷ National Institute for Fisheries Research

Table 29: The season calendar of intertidal subsistence fishing in Quirinde



Source: Focus groups in Quirinde and Mbwise.

Food supplied by the intertidal subsistence fishing, as argued by a group of informants in Quiwia, is consumed every day or used to acquire other necessary food by the majority of people living in Palma coastal areas. Some species of oysters, for instance are even argued to be of high prestige. An informant in Palma explains:

“You will find no one who does not eat oyster, sea cucumbers and crabs here in Palma. If there is someone, he must be a guest! These resources are exclusively supplied by the intertidal subsistence fishers although some artisanal fishers may also capture. Oysters, for instance, taste very well and take longer time before it rots after cooking. They are also a prestigious food. In culture of Palma, any guests can be happy if served with Oysters, sea cucumber or fish” (Interviews, Palma: 2012).

During the fieldwork ten women were asked to provide their daily menus of meals they consumed. Half of the women selected for that exercise live in Palma bay; the others live in Olumbi and Quirinde bays. Each woman was given a questionnaire with just two questions and was asked to fill it daily, during the first and last weeks of the sampled month, namely December, April, and August. The women were trained but in most cases, they delegated their children to fill the forms. All of them were also contactable via cell phone. The three questions asked in the form were as follows:

- Did you collect sea cucumbers, oysters or octopus yesterday?
- Were the sea cucumbers, oysters or octopus part of your main meal yesterday?
- How did the family get the meal they had yesterday?

The questionnaire was written in Kiswahili and the respondents were given freedom to fill it using the language they felt more comfortable with. Some filled it in Kiswahili, or Macue and others Portuguese. The exercise was done in just one village (Palma-sede) and was very elementary. No statistical significance analysis was done to this process. The interest was to see how often that group of families consumed or sold the resources they collected at the intertidal area during the sampled period. The month selected for that work was August because it was referred to be the most productive. The results of that exercise indicate that products which are directly collected by the families (sea cucumbers, octopus or oysters) were not the most frequently consumed goods in that period. Most of the food consumed by those families was purchased through the cash earned by selling the intertidal fishing products (sea cucumbers, oysters, octopus and small fish).

6.4.3. Subsistence fishing as an income

Subsistence fishers also associate subsistence fishing with cash. They see subsistence fishing not just as a “basic level of living” or a source of food but also, as an activity that sells, purchases and interacts with markets. The economic theory did not provide a final explanation on how the subsistence sector interacts or coexists with markets or whether life at the subsistence level has necessarily to be based on an ideological rejection of profit maximization (Schumann and Macinko, 2006).



Photo 8: Woman processing clams

Source: Horácio Gervásio

Schumann and Macinko (2006) raise important questions in relation to the coexistence between commercial and subsistence sectors. They ask whether subsistence can simultaneously be commercial or whether it can exist within market economies. Schumann et al (2006) provide a number of tips which opens spaces for policy discussion and choice. This research started the discussion on the association between subsistence fishing and business³⁸ by asking the respondents to provide ten statements from which the following was selected:

“Intertidal fishing is a business because it pays what we need for our day by day.” (Focus groups, Quirinde: 2012).

“Intertidal fishing is a business because some of us can sell and buy very useful goods like bicycles, radios and fishing gear like hooks, etc.” (Focus groups, Quiwia: 2011).

“We see this as a business because there are people interested in resources we catch. For example Mr. Nasoro is willing to buy our oysters and export it to Asia. He can pay very well” (Focus groups, Palma: 2012).

“Intertidal fishing is a business because we all do it for money, not for food. We do consume some of what we catch, but the intention is not really to consume. It is to make money” (Focus groups, Palma: 2012).

³⁸ According to Marcoux (2006: 57-61) business is a practice, “not an organizational form, for two main reasons. First, there are organizations that don't do business. Second, there are business-doers who are not organizations. The sole entrepreneur who sells her services, performs them, and accepts the payment for them is undoubtedly doing business, but she is not an organization and doesn't have recourse to one in order to do business...”

These statements give an idea of the image people has on what subsistence fishing is today, and how they see it tomorrow or in the future. Although playing an important role in food provision, subsistence fishing does not see it or at least idealize it as an activity for food provision– but as a business. The association, between subsistence fishing and business is an important finding because it will also impact important positions in the future policy for fisheries. Responding to the question on what motivated people to be subsistence fishers, most of them responded as follows:

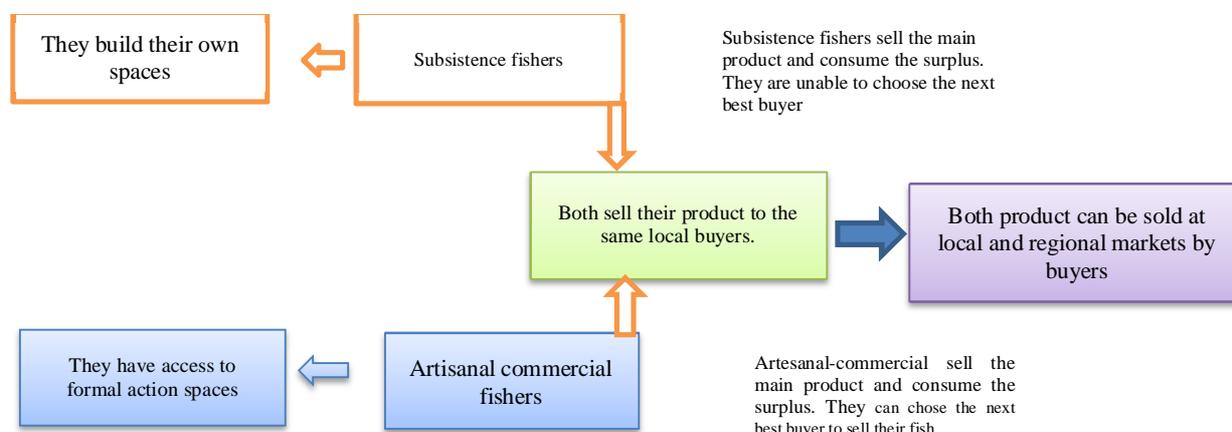
“Because intertidal marine resources are demanded by local buyers.” (Focus groups with women, Mbwise: 2011).

“Because we all need money.” (Focus group with divers in Palma, 2013).

“Because I learned by fishers coming from Nacala and saw them making money with selling sea cucumbers, octopus and oysters.” (Interview with an elder Wachokozi, Farol: 2011).

During the ethnographic observation in the field, it was evident that, in fact, intertidal subsistence fishers are connected to the local and regional market systems. They do sell their catches to local fishers or traders at the same prices and places with their homologous, the artisanal-commercial fishers. The difference is that, subsistence fishers do not have access to opportunities that are created in Formal Action Spaces. They can not have access to formal credits and formal organizations that provide fishers with the ability and power to penetrate the formal venues of fisheries governance and management. It is the access to these formal action spaces that give artisanal-commercial fishers abilities to bargain prices and rights as well as to access other resources in the markets they operate. This finding is consistent with the idea that, although market failures play important roles in subsistence fisheries development, it is the barrier to access the formal venues of fisheries development that cause the insecurity and fragility of subsistence fishing systems.

Figure 2: Participation of subsistence fishers in fish chain



Source: Author

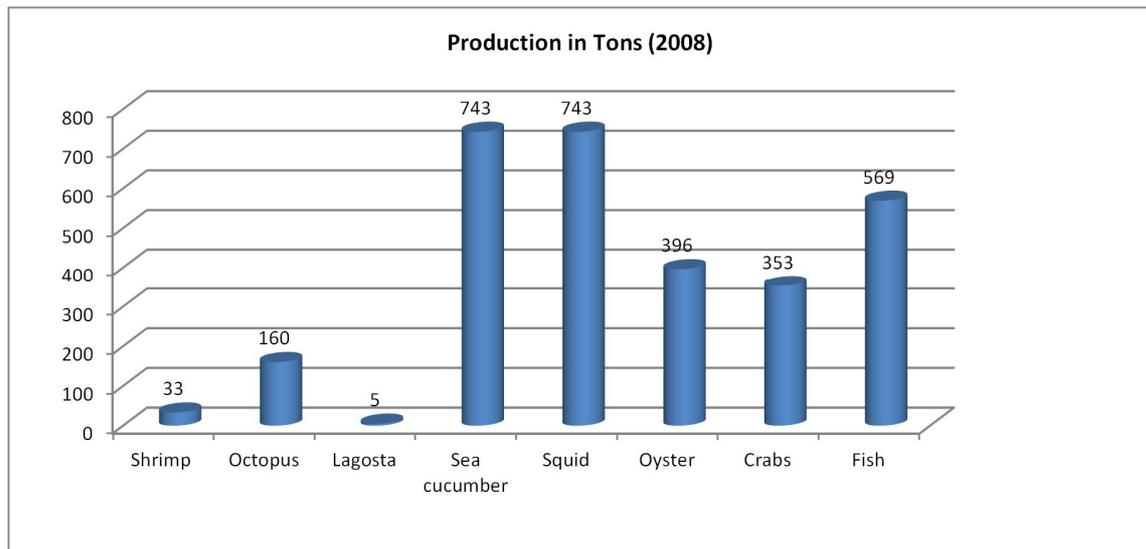
After the harvests, both groups of fishers meet at the same landing sites and markets to sell their catches to the same traders. Initial contacts between collectors and some artisanal commercial fishers may happen before the landing to exchange fish and bits. The most important fish markets observed during the fieldwork were Palma-Sede, Quionga, Farol and Olumbi. The level of demand of the products from subsistence fishing in these markets was visibly high. Controlled statistics from the district government of Palma estimated that in 2008 at least 13% of the total catch in Palma was made by oysters, 25% by sea cucumbers and 12% by crabs, all supplied by intertidal collectors (Table 30).

Table 30: Controlled fisheries production in Tons (Palma district)

	2008	2009	2010	2011	2012
	1%	1.8%	2.0%	1.7%	1.6%
Octopus	5%	8.2%	8.4%	5.1%	4.6%
Lobster	0%	0.3%	0.7%	0.5%	0.4%
Sea Cucumbers	25%	3.8%	0.0%	0.0%	0.0%
Squid	25%	14.1%	21.4%	21.7%	23.3%
Oysters	13%	21.4%	8.4%	21.7%	23.3%
Crab	12%	18.3%	6.3%	5.8%	11.1%
Fish from the open sea	19%	32.1%	52.7%	43.3%	35.6%
Fish from aquaculture	0.0%	0.0%	0.2%	0.1%	0.1%
Total	100%	100%	100%	100%	100%

Source: *Serviços Distritais de Actividades Económicas de Palma*, 2013.

Graph 4: Numerical illustration of the production rates of Palma district in 2008



It has been commented among fishers that resources such as octopus, sea cucumbers and oysters are demanded by both local traders and elites and occasionally exported to Asia (one case of a trader exporting oysters to Asia). At regional level, the most important markets of dried (and fresh) fish are Pemba, Montepuez, Chiuri, Namapa, Nampula and Tanzania.

An interesting aspect is that despite these constraints these fishers and particularly the collectors are confident that intertidal fishing is still a promising business for the future. They believe that as a business, subsistence fishing can be a successful initiative and can sell and purchase more than it does at present (Focus groups in Palma and Olumbi, 2012). Most of the informants associated their expectations with the stories of their relatives or people they know, who improved their lives by selling sea cucumbers or oysters in other provinces or areas. A fisher interviewed in Olumbi explained,

“A friend of mine, Issa Momade, lives in Palma and he has been involved in intertidal collection for more than 20 years. He is not rich, but everybody knows him as a successful business man because he at least managed to have a motorbike, a good house and most of his children are studying thanks to his business”.

Another fisher talks about the successful businesses of people fishing sea cucumber and squid in Tanzania and Nacala and hopes that the same will happen in his village,

“I know many people in Tanzania and Nacala who sustain their lives by subsistence fishing. To me the problem is not the subsistence fishing as such but those people who decide on its behalf.”

During the last moments of the fieldwork in Palma (September, 2013) interviews were conducted with some acknowledged collectors from Palma (1), Olumbi (1) and Quirinde (2) to establish if they have produced any surplus or profit. Five amongst the seven families reported some profits (Table 31).

Table 31: Case studies on cost and revenues generated by some intertidal subsistence fishers

Case studies	Cost, revenue and margins (Meticais/bi-weekly)			
	Location	Average Cost	Average Revenue	Average Margin
Collector of oysters (Female)	Palma	250	1700	1,450
Collector of Octopus (Male)	Quirinde	500	3200	2,700
Collector of Sea cucumber (Male)	Maganja	2000	5,500	2,500
Collectors of mixed products (a team of two members)	Mbwize	700	3,700	3,000

Source: Interviews with fishers.

A fisher interviewed in Mbwize, remarked:

“It is not fair that people and government see us as fishing for immediate consumption only. It is true that some days, when catches are lower, we consume all. But this happens to any fishermen. We are fighting every day for money and our intention is not just food, but also money to buy other goods. If the government sees us as fishers for food, why does it charge us an annual license fee?” (Interview, Mbwize: 2013).

Subsistence as well as artisanal fishers pay license fees. In some cases, the fees they pay are higher than some commercial sections (Appendix 3). For instance, intertidal harpoon divers pay twice as much as beach seine users, and collectors of sea cucumbers pay higher fees than all other fishers. This finding has serious implications for the policy and theoretical frameworks on subsistence systems, according to which the basic purpose of subsistence economy is not to produce for wealth or profit, but for immediate use³⁹.

³⁹ According to Lonner (1980:17) “while the introduction of cash into this system, either from wages or the community store, does not necessarily indicate that the exchange is commercial rather than subsistence”.

6.5. Signs of vulnerability and community responses in subsistence fisheries communities

6.5.1. Signs of vulnerability in the communities

Palma district has three important bays where fishing and fisheries are the most important source of human livelihoods: the Quionga, Palma-sede and Olumbi Bays (See Map 1). These bays are all inhabited and accounts for approximately twenty fish landing sites (or fishing centres). There are two types of villages: the main and secondary villages. Main villages are what is referred in this study as fishing communities, while the second is called a fishing centre. The fishing centre is the fish landing site or fishing camp, where people are not supposed to stay for long time in a year. The community is where people live their entire lives. The main difference between these two population settings is that a community is formally recognized by the government as a village. A fishing camp is known as a production zone, but not recognized formally as a village. The main fishing villages are the main residence areas of the fishing community which were created by the government. Subsistence fishers live in both villages, although the formal village is their main area of concentration. But it is in the production zones where most of the fishing operations (fishing preparation, fish landing, gear reparation, fish processing, etc.) are executed. Areas like Quibunju (Palma bay), Mbwize and Farol (Quionga bay), Nsangue Ponta (Olumbi) and Nfunzi (Maganja community) are the most important sites for subsistence fishing.

Differing from the fishing main villages, fish landing sites or production zones are smaller, not well organized in terms of spatial planning and are normally not considered as priorities in terms of social investments (schools, health facilities, roads and markets) by the government of Mozambique. More than 90% of the fish landing sites have poor infrastructure – i.e. access roads, markets and cold chain facilities. As a consequence, it normally takes individuals long periods of time and distances to move from their place of residency and the closest school, water well, health care facility, paved road, market, and other services. Geographical isolation also serves as a driver of the increasing isolation of these areas and their residents in relation to the district planning processes. In most cases, people living in production zones are required to walk more than 5 km to fetch water or more than 10 km to access a health service. As most of these services are located in areas quite distant from the official fishing communities, the people are excluded from many other opportunities. The government assumes that fish landing sites or

fishing centers are temporary villages and for that reason government does not consider significant investments in them.

During the last two decades, production zones became very important social spaces, where the majority of the immigrant fishers have been concentrated. Structurally a production zone contains everything a formal village has, namely: markets, TV rooms and night clubs, meeting spaces, rudimentary stores, churches or mosques, but all are organized and built by the residents themselves without external agents' support. Table 32 provides a summary of the main fishing communities.

Table 32: Fishing communities and centres

Area	Fishing communities	Fishing centres or fish Landing Sites
Quionga bay	Suavo, Quionga, Quirinde, Quiuia, Mbwize	Ntwara, Bandaniefo, Mikate, Alili, Balamba, Nvinjeni, Semuko, Farol, Nkoma, Yombe, Mangongo, Missuaky Lipungaty, Minhembe, Quitala, Samududu Muchangani, Shalaty, Gogo, N'nengue, Licomua
Palma bay	Palma-sede, Maganja, Maganja velha,	Macong; Ngodji, Milamba 1, Milamba 2, Nsemo, Quibunju, Mpaia, Nfunzi
Olumbi bay	Olumbi-sede, Vamize island, Mondlane	Nongue, domingo, nacala, Macambi Aribi, Nsangué ponta

Source: Author

Each main village contains spaces for mosques, schools, meeting places and soccer fields. Informal meeting places are very important spaces in all villages. It is in these places where most of the informal social networks are formed and maintained. In these spaces people get know each other, youth play different games or engage new (boys/girl) friends. In some villages, the informal meeting places are also used as alternative spaces for those contesting the village governance system. A group of youths interviewed in Maganja village, explains in the following way: "This is our place, the place for people seen as marginal in the village, people who do not agree with the leader and his board. We cannot accept meeting in other place than this". During the fieldwork, most of the focus groups with subsistence fishers were held in informal places as subsistence fishers and the majority of youth refused to meet in the formal meeting venues.

In Palma district, the community in the fish landing sites is composed of two important classes of people: the native households and the immigrants. The natives are the poorest, normally live in the areas longer than the immigrants. In some areas like Nsemo, the natives claim to be the owners of all land. The majority of the natives are subsistence fishers. There are very few native people enjoying privileged economic and financial conditions in these sites. As they hold little capital and are less literate, immigrants have better fishing equipment and in most cases they can write and speak Portuguese. Due to these characteristics, most of them are not elected as the chiefs of zones.

Boat and gear owners and larger-scale traders are among the wealthier members in Palma communities. The most important groups of immigrants are from Tanzania and Nampula province. Informants in Palma identified two types of Tanzanian migrants: the legal (via local ports) and illegal fishers (via marine routes). The former type is made up of business people and they live mainly in the main townships. They normally sell several goods, including electronic equipment (radios, cellphones, and computers), clothes and other luxuries. These immigrants belong to the class of rich people and are normally young people. The second one is composed of people working in fisheries (fishers or fish traders) and they normally live in fishing camps although some are found in the townships. Immigrants from Nampula are all fishers or fish buyers who come from time to time to carry out their activities. In both groups of fish buyers, the majority are women. In general, some immigrants who arrived many decades ago have raised new families but have never made serious investments on their houses, as they plan to return to their areas when conditions allow.

Immigrants are also the most important in terms of fishing expertise and doing business. There are fishing centers like Farol and Quiwia where the commercialization of fish is completely dominated by these groups. Migrations have both positive and negative impacts on the fisheries and social relations. The positive impacts include an increase in the fish supply to the local consumers and the exchange of fishing and processing knowledge, technology and experiences. Fishers from Palma have made a number of references related to what they learnt from the immigrants. The use of spear guns, the technology of purse netting as well as the art of diving for fishing are some examples of good experiences which are consequences of immigration. The negative impacts include the conflicts between the locals and immigrants as well as the violation of local rules by immigrants. Because they own large boats, better fishing gear and enjoy a

privileged socio-economic position in these areas, immigrants have access to many opportunities provided by the government.

One can also assess the differences between immigrants and natives by their mother tongue language. Normally immigrants are Swahili or Makua speakers. The natives normally speak Macue, Maconde and Quimuane which is considered as the languages of Palma. In fact, in all Bays of Palma district, very few people speak Portuguese (less than 10%) (*Governo do distrito de Palma*, 2013). The Macue language results from the mix between the Makonde and Macua languages while Swahili results from Tanzania's influence. However, with time, and mostly because of the influence of neighboring Tanzania, Swahili became a dominant language among the local idioms. A particular aspect is that men mostly communicate with their wives and children in Swahili, while women and their children, in turn, communicate with men in Macue. For this reason, Swahili is historically known as the language of the men while Macue as the language of the women. During the fieldwork it was evident that for the focus group discussions, men wanted to converse in Swahili, while women wanted to do it in Macue or Quimuane. Another interesting aspect is also that the Quimuane and Macue have some variants. According to the oral traditions, the Quimuane spoken in villages like Maganja, is considered much more local and original than the Quimuane spoken in the neighboring villages like Quitupo or Milamba.

The gender relations in each village are different, even though the inhabitants of most of the villages are Muslim. In villages with a higher influence of Macuas, women and men can mix freely with each other and women can speak freely during the meetings. In the coastal-northern part of the district, women are less active than men and in meetings they never mix with each other. For the women to talk, they must be authorized by the men. Their opinion reflects what men want them to say. Women's organizations in the northern part (Quionga) of the district are less active than in the centre (Palma bay). These gender relations have a critical influence on the other aspects of the life of women in these villages. It is based on these rules that women are not considered as active fishers and even when they hold some fishing capital, their voice in village decision-making events, never counts for much.

6.5.2. Being excluded from the village decision-making networks

The first dimension of subsistence representation is measured in this study by the number of subsistence fishers or women who occupy relevant positions on village governance positions. The result of this study has indicated that there are 30 village leaders in Palma and none of them has subsistence fishing as their first or relevant occupation. This result was tested by screening the backgrounds of people participating in village governance. Their interest when participating in village governance is not necessarily the subsistence fishing, but their sympathy with the politics.

Community leaders are elected by government or elected by the villagers and backed by government assistance. The leader works with two important groups: the traditional/religious leaders and the members of the community government. The community representatives include the leader and his deputy, the chiefs of the village divisions, a scribe, the police commander and a number of civil society organizations, namely: the Mozambican Organization of Women (OMM), the Mozambican Organization of Youth (OJM), representatives of the community on education, health, water and economic activities. The OMM and OJM are the oldest organizations of civil society in all villages. There are many women who are members of the political organizations called OMM and OJM, but most of these women are not subsistence fishers. Members of OMM and OJM (Table 33) are those sympathizing with the party in charge (FRELIMO). These organizations are dated since the socialist experiment era and their tasks are more oriented to political activities.

Table 33: Village structures

Position	Role
The village leader and his deputy	The chief of the village or community leader represents the government at village/community level. He can be elected by local villagers or appointed by the government. He is responsible for managing governance within his jurisdiction
Chief of division (neighbourhoods)	The chief of divisions oversees administration in smaller villages and sub-divisions and reports to the village leader
The Court	Includes a community appointed judge support staff commensurate to the village population to preside over traditional dispute resolution
Community health activist	Activists are traditional healers and midwives. They coordinate with government health representatives to promote health presence in the villages
School committee	Includes teachers/ informal educators from the village responsible for advocating the education system
Mozambican Women Association (OMM)	OMM is focused on business promotion for the youth. They are responsible for coordinating the initiation ceremonies for the women.
Mozambican Youth Association (OJM)	OJM is a politically focused organization (founded by FRELIMO, the main political party in Mozambique)
Community Chief of production	The chief of production is appointed by the community and endorsed by District Government. The chief of production can authorize access to land for agriculture, assists in land allocation and encouraging participation in agricultural activities, and provides advice to district authorities on agricultural production strategies. The chief of production also coordinates the various water, fisheries and agricultural committees in the village.
Fisheries Community Councils	Assist the fisheries administration authorities in fisheries management.
Community Committees of Water	Water committees are mandated with responsibility for management and upkeep of community funded water wells. The water committee will work with village leadership, community members, and third parties (i.e., donor organisations) to manage the water supply assets, and collect contributions from community members to fund maintenance.

The second dimension of representation is measured by the willingness of the village government to include subsistence fisheries in their agenda of village development. To test the sensibility of this, the village leaders were asked to list five priorities of development of their villages. The results are as follows:

Figure 3: Development priorities per village

Priority	Quionga Bay	Palma Bay	Olumbi Bay
Agriculture	++++	+	++++
Intertidal collection	+	-	+
Intertidal diving	++	+++	++
Intertidal harpoon fishing	+	+	++
Trade	++++	++++	++

Source: Focus groups discussions in Quionga, Palma and Olumbi Bays

Of critical importance is the lack of functional linkage between the intertidal subsistence fishing and the village governance agenda/structure. It can be clear that subsistence collection is not a priority in village governance perspective. Leaders see collection as an activity that needs no planning for the future for several reasons: First they argue that collection is free, does not pay a license, it can be performed freely anytime (Interviews at Olumbi bay, 2011), is not mentioned by the government as a priority (Interviews, Palma Bay 2011), is not a full-time occupation. People can do it whenever they want, as long as it is combined with other activities (Interviews in Quionga Bay, 2011).

These results are crucial and show that despite the political recognition of the role of intertidal collection of molluscs and bivalves in the local economy, this activity is not part of the village development and governance agenda. Village leaders had no idea on how many collectors were living in their villages as well as no idea of government's vision on the prospect of this activity. The conclusion here is that despite the relevance of policy vision on subsistence fishing as demonstrated in the previous chapters of this thesis, these policy inputs in relation to this sector will not have any practical effect at village level if the village leaderships are not properly informed. The lack of connectivity between the policy and the village planning processes has been evidenced in almost all communities.

The lack of sensitivity of village leaders in relation to subsistence fishing also derives from the fact that most of the village leaders are immigrants from other areas. Because subsistence fishing is often connoted with an activity for local poor people, leaders do not associate their community prosperities with this activity. In all visited areas, intertidal subsistence collectors are not considered fishers, but collectors. It has been argued that intertidal subsistence collectors are not

fishers – and that males should not be involved in this activity because it is for females. They (the artisanal fishers) feminize the subsistence collection and repeatedly affirm that they do not care if the collection disappears, because it makes no difference. The owners of the fishing gear also use this argument to exclude subsistence fishers from the fisheries co-management councils and producer associations for income generation.

The differences between collection and artisanal fishing are many but the most important are related to the efforts and expertise in fishing, the risks they take during operations and the investments they need to get ready for fishing. Of the ten fishers whose wives are collectors, who were questioned about the occupation of their wives, almost 90% explained that their wives were farmers. But during the conversation about food consumption practices at their homes, it showed they consumed foods caught in the intertidal zone, using subsistence fishing. Gradually they admitted that apart from farming, their wives were involved in subsistence fishing collection and that this activity played an important role in their households.

Lack of recognition of the intertidal subsistence fishers puts them in a very unfavourable place in their communities. Subsistence fishers are not invited to meetings as collectors, but as members of the community. They have no access to any opportunity as collectors, but as farmers or as traders. They cannot say anything about fisheries because their counterparts - the artisanal-commercial fishers – do not see them as fishers. They cannot bargain for their rights for fishing because the activity they do is not socially acknowledged. But, the subsistence collectors have one advantage over the fishers: they are the only source of bait for other fishers and oysters for local markets. This is the only motive that keeps artisanal fishers still professionally connected to subsistence collectors.

A group of collectors interviewed in Quirinde argues:

“Commercial fishers are very interesting. They put commercial interest ahead of any other interests. They don’t see us as fishers; don’t share information about existing opportunities, but every day they come to us looking for baits. Now the subsistence collectors agreed to increase the price of baits...”

Another collector emphasized:

“We do have relations with fishers as community members because most of them are our relatives. But as fishers we only talk about commercial interests – selling and buying.

Sometimes, they want baits from us and we need fish for food from them! Other times we rent their boats! Or they buy our delicious oysters, etc.! There are no other interests. We still have not a space for long term professional relations with them because they undermine us or accuse us of destructing corals.”

These pronouncements give a good indication of some tensions between subsistence and artisanal-commercial fishers. So, putting subsistence collectors working in the same spaces of opportunities like the government tries to do in their credit systems, cannot work properly. As community members, subsistence collectors are more related to the subsistence agricultural systems than artisanal fisheries. A significant part of people who are members of influential organizations like Fisheries Community Councils (CCPs), producer associations are owners of fishing gear like beach seines, gillnets and pursing nets. They participate in all the state promoted farming campaigns but are not involved in fisheries promotion activities. They develop commercial relations with the seed or agricultural inputs providers but not with fishing input suppliers. They are very active and proactive in agricultural associations but never participate in fisheries promotion campaigns/meetings. This means that as community members, the subsistence fishing collectors are broadly viewed as subsistence farmers - not as fishers. A group of harpoon users interviewed in Palma, react to these perceptions:

“we see ourselves as a fisher, and we proud of that, but my community sees me as a subsistence farmer. We do have field for farming but I also dedicate most of my time in the intertidal collection. We do supply food for many people in my community - that is why we think we deserve same opportunities as them. We have information that people are receiving credits from the government. Some of us went to the District Administration to ask whether people fishing with harpoons could have access to same opportunities. We were informed that to have credit we must have a fishing gear. We understood that harpoon is not a fishing gear.”

The way the community conceptualizes subsistence collection has serious implications for the fisheries policy as well as for the quotidian of subsistence fishers for many reasons. First, it hinders subsistence fishers in getting access to any kind of opportunities for fisheries development which are created by and for the community. Second, it reduces the space for subsistence fishers to impose themselves and claim for their prosperity as fishers. Third, it opens spaces for excessive exploration for the intertidal resources. Fourth, it reduces the chances for formal integration of subsistence fishing collection into the community system of fisheries management/development.

6.5.3. Relying on informal institutions

Some villages like Quirinde are still very conservative: the sale of alcohol is forbidden in local markets due to Muslim rules⁴⁰, building churches or promoting religions other than Islam is also forbidden. Children are encouraged to attend the Islamic schools (Madrassa) rather than the official schools. This informal institution (the Madrassa) is very important to the local people. The ancient traditions of ancestor worship and ceremonial rites of initiation are still of high importance, and are commonly performed in all villages by using places they see as sacred or appropriate for conducting the ceremonies (*Governo do Distrito de Palma*, 2011). The animism and ancestor worship practices are also frequently found in different places in Palma district. In general, such spaces are located in the middle of forests, at the beach, or where important people from the communities (traditional leaders, religious leaders and spiritual leaders) have been buried.

Initiation rites, consisting of activities and ceremonies that mark the entry of children into adulthood, often occur in the study area (*Governo distrital de Palma*, 2009). Typically, male children are taken to specific locations (usually near a river or pond), where for nearly a month they are educated in key activities that await them in adulthood. Issues related to gender are strongly rooted in traditional systems and rules of how to behave socially, including the ancient myths and traditions, are conveyed to children via the elders. The female initiation rites normally occur inside houses. Girls are educated about the activities that they reserve for adulthood, including aspects related to sex and sexuality. During this time, the girls are also taken to specific areas in the forest, where they stay for a day, performing traditional dances and other customs related to initiation rites. In general, initiation rites occur during December and January, and this is to avoid conflicts with the period of lectures at schools, since this is the holiday period.

In the coastal south and central parts of the district, cultural singing and dancing are frequent practices. The dancing such as Yangakla, Quilimo, Makuaela and Ziiri, were mentioned during the focus groups in Palma Bay as a critically important means of information dissemination and

⁴⁰ Alcohol is freely sold in fishing centres because these areas are inhabited by people coming from different areas and sharing different cultural values.

community sensitization. Cultural singing and dancing groups are structured according to age and gender aspects. Normally females do not mix with males. Women sing about freedom, peace and marriage, while the males sing about heroes, battles, hunting, fishing and stories about witchcraft. In some areas, sacred places such as forests and ancestor cemeteries are used to ask for more rain or good harvests, such as forests or mountains. The Xarifo sacred grave is the most famous in the Palma district. Rich people from Pemba, Namputa, Tanzania and other distant areas travel long distances to this grave seeking for luck. In Quionga Bay alone, there are approximately 16 sacred sites (interviews and direct observations, 2012). Some of them are in the middle of the bushes, forests or at the beach.

A study from Lopes et al. (1999) in northern Mozambique identified several traditional practises for fisheries management and preservation. Myths, beliefs, customary habits and other moral and social values that were culturally inherited from ancestors and managed by traditional religious institutions were all used as a means of fisheries and fishers' migrations control. Despite changes that occurred as the consequence of the political and institutional reforms in Mozambique, subsistence fishing still relies considerably on informal action spaces to secure their livelihood systems. These practises secure the inter- and intra-household allocation of food, incomes, jobs, credit and other opportunities. Trust is the most important tool for the enforcement of agreements among members. It is based on trust and social relations that the informal financial groups have emerged in most of the rural areas. Membership of these groups involves an implicit mutual agreement or obligation to share resources and claim resources. In this way, risk is pooled and vulnerabilities shared. Poor households' economic behaviour also depends on social relations who make markets work in certain ways for some peasants and in different ways for others (Ellis, 2000).

6.6. Summary of the chapter

This chapter is about the key findings from the fieldwork done in the district of Palma. The objective is to provide the general context of social vulnerability of the subsistence fishing in Palma district. The chapter starts with an overview of the fisheries sector in Palma district with

an emphasis on the description of subsistence fisheries and ends with the characterization of the context of vulnerability of this fishing system. Fishing in Palma district is practiced by two important groups: the artisanal-commercial and the so called subsistence fishers. Subsistence fishing is a highly diversified activity involving different sorts of groups using fishing gear which stem from collection by hand up to the fishing gear manufactured at home or by small gear builders. Important observations have been done in relation to the subsistence fishing. Firstly, the analysis on markets and price dynamics also gives a clear indication of the level of participation of subsistence fishers. It has been critically surprising that despite the difficulties they face in accessing markets subsistence fishers do participate in markets, and sometimes sell their products at the same price as the artisanal-commercial fishers. Informants have highlighted that their motivations when fishing are commercial: they sell the main product and consume the surplus. This is an important finding as it brings reasons for more reflections around the concept of what is known as subsistence fishing in Mozambique. Motivation to the fishing should be used by the policy makers as an important tool for decision-making as it gives indications to the underlying goals people have when practicing subsistence fishing.

Secondly, despite the problems being highlighted by the government of Mozambique in the possible negative impacts the mosquito dragnets may cause to the fishing ecosystem, its social role is critical. Thirdly, subsistence fishing is of a particular quality due to the fact that it involves children, women and other social groups which are strategically defined as vulnerable in the poverty alleviation strategies in Mozambique. Fourthly, it was demonstrated by the interviewees, that subsistence fishing provides an important social function to the families involved in it. Data on catch trends used in this chapter have demonstrated how subsistence fishing assists the local people with incomes and food in times when other fishing gear cannot do much for their markets. The functions of subsistence fishing stem from the mere provision of food and incomes to the cultural practices tending to introduce boys and girls into the fishing life. Seen on this angle, subsistence fishing may be considered as an important contributor to human life in all communities of Palma district.

However, despite these functions, subsistence fishing in Palma, still falls under what has been presented as social vulnerability in the Chapter Three. As highlighted in that chapter, social

vulnerability as a concept gave space to a more comprehensive assessment of the prevailing social and institutional context of this fishing system. The fact that subsistence fishing is concentrated in areas where the government has no plans to improve the quality of the public services, the fact that subsistence fishers are often excluded from the important spheres of the community life and governance as well as the lack of clarity of the prospect of subsistence fisheries development at village levels, altogether, create conditions for the vulnerability of subsistence fishers. Actions tending to support this sector need to take both the social functions and constraints affecting this group as a departure point towards a more sustainable development strategy.



CHAPTER SEVEN: FORMAL AND INFORMAL ACTION SPACES IN PALMA DISTRICT: OPPORTUNITIES, INSTITUTIONS AND MARGINALIZATION OF SUBSISTENCE FISHERIES

7.1. Introduction

Chapter Three informed that this study relies on the concept of Action Space to explain subsistence fishing participation in fisheries governance. This concept has proved to be useful mainly when addressing questions of marginalization, vulnerability, social exclusion and other topics tending to address fisheries governance. This chapter brings the summary of the key findings of this study which resulted from the application of the concept of action space in Palma district. The objective of this chapter is to understand the nature of formal action spaces created by the district government of Palma to offset the vulnerability of subsistence fishers and the nature of strategies adopted by subsistence fishers to cope with a situation of exclusion. The study brings evidence of elite capturing and power disputes, structural mismatches between opportunities and endowments on capital, gender, age and skills and rescues some aspects of the informal action spaces to elucidate their role and importance in fisheries governance. One of the important findings of this study is that despite the government efforts in creating platforms of participation for the poor, there are still critical barriers for the poor to fairly participate and get access to the opportunities being created through formal mechanisms of fisheries governance.

7.2. Formal Action Spaces

7.2.1. The District Development Strategic Plan

The Law No 8/2003 (art. 12) and its regulation (Decree No 11/2005) state that the district is the main territorial unit of the organization of local state administration and the basis of economic, social and cultural development planning of the Republic of Mozambique. This legislation emphasizes that the local organs of the state of Mozambique, “must ensure participation of the citizens, local communities, associations and other forms of organizations” with interest for development. The word “participatory local development” is used to emphasize the need for a more participative and coordinated planning process and determines that the district plans are elaborated with the participation of local people or the human population living in the district.

According to this law, participation of local communities and other stakeholders in the governance can be done through three important institutions for community participation and consultation: district consultative councils, local councils, and village councils.

The Law 8/2003 (Art. 12) also permits that communities choose alternative forms of participation through village committees, community councils or local forums. It is under these legal orientations that communities in different villages of Palma district have been promoting community fisheries councils, water management committees, fishers associations and village governance councils. Local councils are implanted at four administrative levels: village, locality, administrative post and district levels. At village level local councils can be classified into two types: the Main Council which is the prolongation of the Administrative Post, locality and district councils and sector councils which are promoted according to the needs of each sector. The Main Village Council is generally composed of the political leadership with some very small participation of representatives of non-leading members. District and local councils are theoretically promoted based on the principles of equal participation, equitable representation, diversity, transparency and open dialogue (*República de Moçambique*, 2009).

One of the biggest outcomes of the district consultative council is the District Development Strategic Plan (DDSP). As determined by the Law No 8/2003 and its regulation (11/2005) the district has to have a District Development Strategic Plan (DDSP), which is a five-year document reflecting the visions of development of the district. The DDSP, according to the Law No 8/2003 must be elaborated by the district government with direct assistance and advice of the District Consultative Council.

The DDSP of Palma was introduced in 2008 for five years⁴¹. This plan was recently reviewed and a new DDSP (2014-2019), was approved. This document provides a general picture of the problems, solutions and priorities for the district. The vision of development elected by the

⁴¹ The Ministry of Planning and Development (MPD) in coordination with the Ministry of State Administration (MAE) have developed several tools to assist the district authorities in planning and monitoring their plans and activities. Diagnosis of the current context is the most important stage of DDSP development and as stated by the Ministry of Planning and Development, to fulfil the methodological requirements, the diagnosis must include among other aspects, the analysis of aspects related to land access and utilization, population growth, environmental problems, food security and nutrition, HIV/AIDS, the performance of public services and gender integration.

council for the period between 2014 and 2019 is as follows (District Government of Palma, 2014:50): “Transforming the natural resources of Palma in favor of human, social and economic sustainable development”. The DDSP (2014 - 2019) contains five important pillars of development, namely:

- Development Administration and Justice - public administration institutions as well as the relationship between the governing and governed systems;
- Social and Human Development - services that by law must be provided to citizens as well as actions that may improve the relations between different social groups;
- Economic Development - social and economic development challenges including the strategies for wealth distribution at household and business levels;
- Development of Infrastructures - technical interventions that facilitate the economic and social development: roads, energy, sanitation, among others;
- Cross Cutting Issues - gender, food security and nutrition, natural calamities or disasters, environment and climate change, HIV and AIDS and local economy development (Government of Palma district, 2013).

The Economic Development pillar is where fisheries are incorporated within the DDSP. However, this pillar is mostly dominated by actions for agricultural development. Actions for fisheries development are summarized. The major threat identified for the fisheries sector is the persistent use of mosquito dragnets by subsistence fishers and district government thinks that priorities of the fisheries development for the period between 2013 and 2017 should be focused on setting up infrastructures to support artisanal fisheries, promotion of aquaculture, enforcements of fisheries licensing and collective actions among fishers (associations).

Table 34: Goals for fisheries development according to the DDSP

	2013	2014	2015	2016	2017	Total
Building new infrastructures for post-harvest processing	1	1	1	1		4
Aquaculture Tanks	2	3	3	2	2	12
Surveillance campaigns	4	4	4	4	4	20
Promotion of producer associations		3	3	3		9

Source: *Governo do Distrito de Palma, 2013.*

The District Development Strategic Plan shares some strengths and weaknesses. It is a positive policy instrument because it represents the vision, formulated through an inclusive consultative

process which incorporates interests from the government and civil society as well. As will be seen later in this study, the district consultative council is an extensive governance body which includes representatives of all villages and localities, including some sections of the civil society organizations. However, the DDSF is also weak in terms of the ways it approaches food security and fisheries. Food security in this important document is reduced to the agricultural sector (SDAE, 2012). Fisheries do not appear as important contributors to food security. The district estimates that more than 80% of what is produced by the agricultural sector is reserved for consumption and that food crop reserves per-capita ranges between -0,008 tons and 2, 4 tons. Cassava is the most important crop contributing to food provision, according to the district.

Table 35: Food reserve (in Tons) in Palma district between 2010 and 2011

	Total Produced	Total Commercialized	Total reserves of Food	Food reserve (tons/per-capita)
Maize	13,843	3,690	10,153	0,2100129
Rice	14,900	4,378	10,522	0,217766
Sorghum	2,780	1,474	1,306	0,027029
Cassava	129,616	13,330	116,286	2,406681
Beans	2,540	2,540	-428	-0,00889
Peanut	1,314	65	1,249	0,02585
Sesame	1,284	418	866	0,017923
Total	166,277	25,467	140,810	2,896519

Source: *Serviços Distritais de Atividades Económicas de Palma* 2013.

The district assures that during the last three years the district did not register cases of food insecurity but recognizes that despite the availability of food crop reserves, the diet among the population of Palma is still unsatisfactory. One of the biggest reasons for this situation is that despite the availability of fisheries resources in coastal communities, patterns of consumption and utilization/absorption of fish are still structurally poor. Despite the role fisheries play in food security, “limited attention has been given so far to fish as a key element in food security and nutrition strategies” (HLPE, 2014:14) at district level. District development plans regard only agriculture as the main source of food.

According to the fisheries and health authorities in Palma district, fish food is not properly consumed due to several factors, namely: the poor conditions of hygiene, poor knowledge on how to maximize nutrients from fish, inadequate maternal and child care, insufficient health services and inadequate access to production, labor or trade entitlements. Malnutrition, as reported by the fisheries authorities also exists even in communities where fish is plenty, such as Maganja, Quirinde and Olumbi. A four-year statistical analysis on malnutrition among children between zero and four years old (Table 36) has indicated that less than 4% of children in the district have access to health assistance. On average, cases of malnutrition among children under 5 years old vary between 1.82% and 3%⁴² and the coastal villages such as Maganja, Olumbi and Quionga are the ones with significant cases of malnutrition.

Table 36: Malnutrition in proportion of children under age of 5 years old in selected areas of Palma District

	Location	2008	2009	2010	2011	2012	2013
Palma-sede	Coastal	0.50%	0.20%	1.00%	1.00%	1.60%	0.90%
Mute	Inland	4.20%	5.80%	1,3%	1,8%	1.60%	1.60%
Olumbe	Coastal	2.00%	2.80%	2.00%	0.90%	1.00%	1.60%
Maganja	Coastal	2.30%	No data	0,5%	1,9%	8.40%	3.10%
Pundanhar	Inland	1.80%	2.50%	0,6%	0,5%	0.50%	2.20%
Quionga	Coastal	0.10%	0.70%	0,3%	0,3%	0.80%	0.90%
Average of the district	Coastal and inland	1.82%	2.00%	3.00%	1.90%	2.32%	1.72%

Source: District Government of Palma, 2013.

In the international literature (HLPE, 2014), the coexistence between fish in plenty and malnutrition has been attributed to several factors, which include inadequate individual production, trade or labor-entitlements, inadequate conditions of hygiene and health needed for the food to be absorbed by the human body, prevalence of strong social and cultural preferences against fish consumption (Kurien, 2004), inadequate policies, institutions or social networks to ensure that all citizens have access to food or the capacity to transform their entitlement into

⁴² 41% of children under five years old, or about 1.3 million children, suffer from chronic malnutrition, showing that levels of poverty are high in the country. The statistics show a small difference between rural and urban areas in terms of malnutrition. Hunger is both a cause and a result of poverty. Thus poverty relief is essential to achieve food and nutritional security (*Ministerio das Pescas*, 2009:46)

feeding utilities. According to Kurien (2004:8), in cases where fish in plenty coexists with malnutrition “one national strategy can be to trade the fish and use the earnings to buy other food. Another long-term approach could be to take measures to inculcate a taste for fish in the population and thereby utilize it to contribute directly to food security.” The roles of fisheries in this policy instrument are very much undermined. Important fisheries development and management goals such as, the promotion of sustainable fisheries development, promotion of fisheries co-management networks, or pro-poor credit systems and all those actions that could reduce the marginalization of poor fishing groups as recommended by the fisheries policy instruments, are not accounted for in this district development plan. Policies on fisheries development and management such as the Fisheries Master Plan II, the Artisanal Fisheries Development Strategy, the Rural Development Strategic Plan, the Strategy and Plan of Action for Food Security and Nutrition (2008-2015), the Fisheries Master Plan II (2010-2019), Fisheries Research Development Strategy (2008-2012) and the Strategy for Aquaculture Development are not even connected to the spirit of development or supported in the DDSP.

This means that despite the emphasis given by the AFDS on subsistence fishing, the district government is still not committed to take subsistence fishing as a priority in its development vision. This is an important gap as in Palma district fishing constitutes the basis of social and economic development. Fish could be taken as an integral element in the inter-sectoral local food security and nutritional activities “aiming at tackling micronutrient deficiencies especially among children and women” (HLPE, 2014:19). The implications of these gaps will be critically evident in the following sections on the analysis of the structure of opportunities created for poor people in Palma district.

7.2.2. The District Development Fund

Armando Guebuza, the president of Mozambique, has mandated the government to create a District Development Fund (DDF) to support local development. According to the district government, this fund should be directed to initiatives of those people who are unable to access financial assistance from commercial banks. The fund has to be “allocated in line with the District Development Strategic Plan and must be requested by individuals, associations, groups

and other community-based recognized forms” (*República de Moçambique*, 2009:6). The limits of the budgets to be submitted per each candidate, according to the sector of development are indicated in the Table 37.

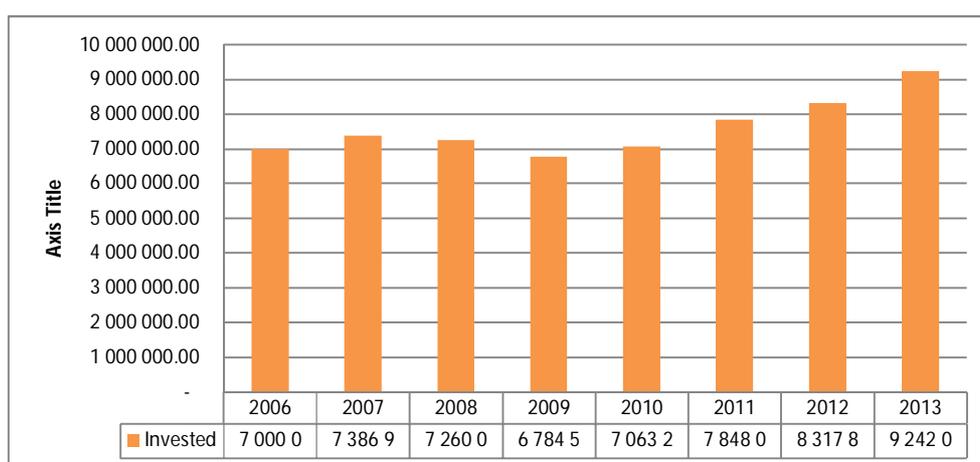
Table 37: Maximum budget in Meticaís allocated to each sector (Palma – 2012)

	Projects submitted by an individual	Project submitted by a group of people (associations)
Agriculture	200.0000	350.0000
Livestock	75.000	350.0000
Agro-processing	200.0000	350.0000
Fishing and aquaculture	350.0000	350.0000
Industry	100.000	200.0000
Trade	100.000	150.000
Services	100.000	200.000
Tourism	100.000	130.000

Source: *Governo do distrito de Palma*, 2013

Since 2006 up to 2014, the government of Palma spent a total of 60,902,647.09Mts (USD 2,030,088.24) to sponsor projects that were submitted by local people. However, the distribution of the District Development Funds is geographically inconsistent. More than 80% of the funds were allocated to the headquarter areas of Palma-sede (50%) and Olumbi (30%).

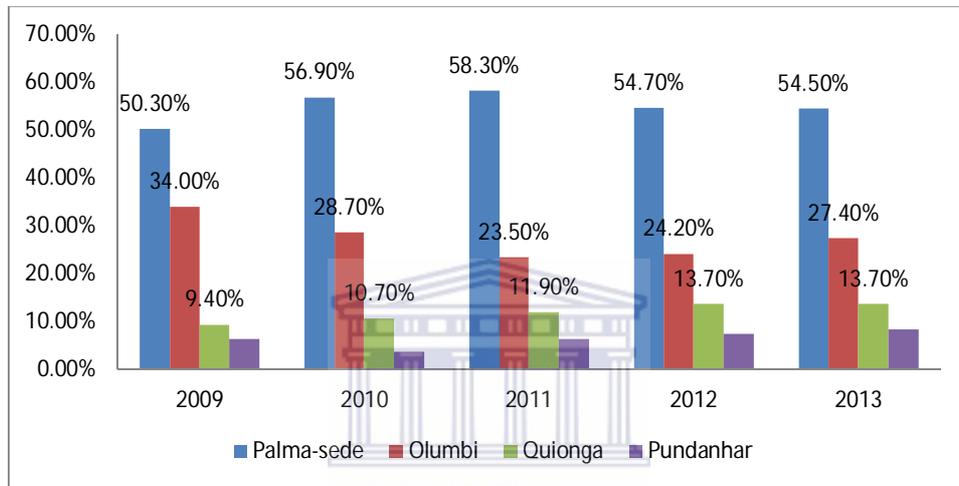
Graph 5: Total District Development Funds spent on the investment of local initiatives in Palma district (Meticais per year)



Source: *Governo do distrito de Palma*, 2013

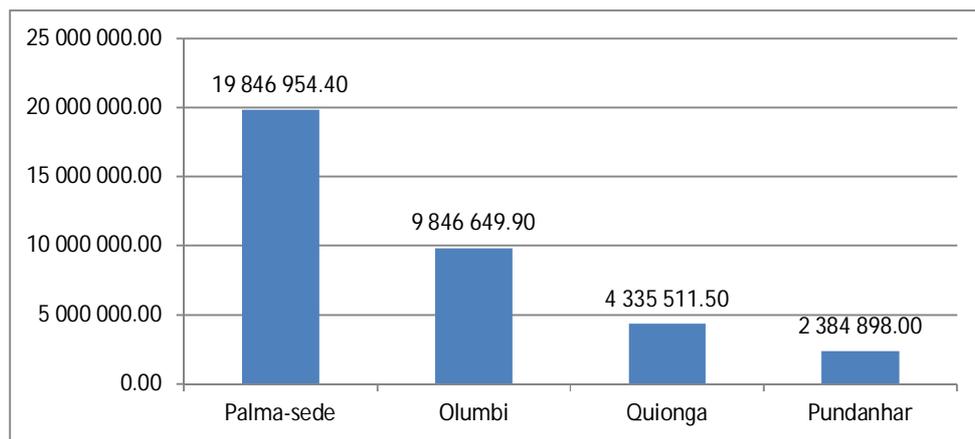
According to the district authorities, one of the criteria used by local authorities in choosing the target groups is the existence of access roads. People living in rural remote areas are normally excluded from these opportunities because of the problems of access. Graphs 6 and 7 give an idea of the distribution of funds (in percentage) per geographical area. It may be seen that Palma-sede and Olumbi are the areas highly benefiting from these funds.

Graph 6: Geographical coverage of the District Development Funds



Source: *Governo do Distrito de Palma*, 2013.

Graph 7: Total of District Development Funds in Meticaís invested between 2009 and 2013



Source: *Governo do Distrito de Palma*, 2013.

There are several factors explaining the reasons why the government has given more funds to the areas like Palma-sede and Olumbi. The first is that, Palma-sede is the headquarters of Palma district. The second is that both Palma-sede and Olumbi are the areas with a larger population. The third reason is that Palma-sede is relatively well developed in terms of infrastructures such roads, markets and public service infrastructures. Due to these advantages, residents of Palma-sede and Olumbi are much better informed and educated than in the other areas of the district. For these reasons, project proposals from individuals or associations living in Palma-sede and Olumbi were technically improved in comparison with the rest of the other areas. The projects financed through the district development fund cover three important development areas: food security, employment and income generation (Table 38).

Table 38: Number of projects which were sponsored as per district development strategic objectives

	Food Production	Income Generation	Employment Creation
2007	37	86	27
2008	48	100	33
2009	29	42	11
2010	17	43	13
2011	23	43	18
2012	5	32	21
2013	19	48	7
Total	178	394	130

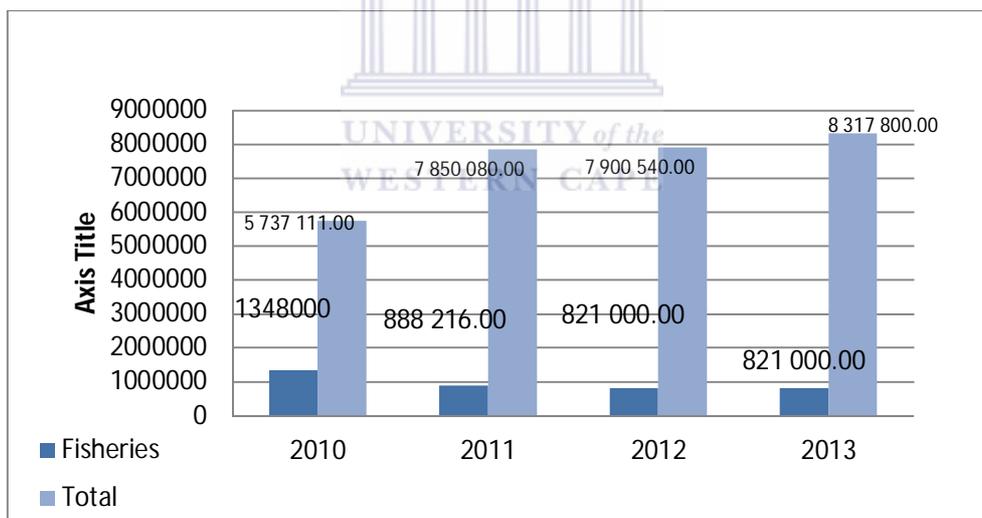
Source: *Governo do Distrito de Palma*, 2013

An interesting aspect is that none of the 178 projects on food security indicated in Table 38 are related to fisheries. The government understands that projects for food production should be more related to agriculture while projects for income and employment generation should come from trade, agriculture and fisheries. At least 22% and 38% of the projects sponsored through these funds were agricultural and commercial related activities, respectively. The dominant role of trade⁴³ in the Palma economy as well as the political interest in supporting less risky activities like trade can constitute one of the most powerful explanations of this distribution. In the current stage of development of this district, which is motivated by the appearance of new industries and

⁴³ The average cost of each project in the trade sector is 78,626 Mts and the number of projects in 2011 was 39.

companies working on gas and civil works, trade became an opportunity to incentivize the provision of services which are demanded by these industries and associated operations. Trade includes the restaurants, guest houses and small stores selling cold drinks and basic goods for domestic use. In addition, attraction to agriculture and fisheries by the lenders, also reduces due to the risks involving agriculture and fisheries. According to district authorities, agriculture became highly risky due to the problem of wild life (elephants), uncontrolled fires and pests destroying crops and creating unsafe conditions for the communities. Despite the increase of the DDF registered during the period between 2009 and 2013, the amount of funds allocated to the fisheries development projects has reduced from 1,348,000 Mt to 821,000 Mt between the years 2009 and 2010 and kept constant (821,000 Mt) between 2011 and 2013 (District government of Palma, 2013). The average number of projects financed during this period is 6 per year, which means an average cost of 135,333 Mts per project.

Graph 8: Credits in Meticais allocated to the fisheries sector (2014)



Source: *Governo do Distrito de Palma, 2014.*

Difficulties of access to the District Development Funds can also be explained by the ways district government addresses some specific issues which are related to subsistence fishing, for instance food security. Despite the role fisheries play in food security as demonstrated in Chapter 6, the government has not included fisheries in its assessment on food security and nutrition. Financial support of food security is all driven to agricultural projects, which is not

correct. Fisheries have to be included in all debates on food security and nutrition at district level as they provide important nutritional inputs to Palma residents.

7.3. Mismatches between endowments and opportunities

Despite some successful stories on the impacts and performance of the institutions for the district and fisheries governance in providing opportunities for local communities very few cases of subsistence fishers being helped by these systems were reported. Very often opportunities are offered to the communities through these structures are benefiting the minorities such as the owners of commercially oriented fishing units, local political agents, public service staff, recognized traders and other elites. In the theoretical framework, this study mentions two types of marginalization or exclusion: active and passive. It was argued that passive exclusion can be derived from the ways opportunities or systems of inclusion are structured. Osman's (2007) concept of structural mismatches was used as an example of passive marginalization/exclusion. The disputes between fishers over the access to opportunities as well as the exclusion of villagers through mechanisms which are based on social, economic or political attributes was classified in the theory as active exclusion/marginalization. This section explores the patterns of access of subsistence fishers to opportunities and raises concerns on the ways the opportunities are structured and access determined at district level. The following questions are used as the guide for this discussion: What opportunities have been given to fishers and how accessible are they to the subsistence fishers? What factors have been determining the access to these opportunities? What can we learn from the literature on structural mismatches about access to opportunities by vulnerable groups?

The overall picture is that despite the roles the district development funds play in helping the poor, these funds are more accessible to the elite who are already participating in other spheres of district governance positions. Access to these funds is not easy as the mechanisms of allocation are also not clear for all. Only elites can access them. During the fieldwork, access was gained to 20 project documents among which 13 were being implemented and the other 7 were not approved. After analysing the contents of each project document, the researcher visited and conducted interviews with each of the proponents of those projects. The result was that 12 of

the twenty proponents were residing in Palma – sede (the headquarter of Palma district) although implementing projects in other villages.

All of them were owners of fishing gear (pursing nets, gillnets and beach seine) and members of the village local councils. The other eight were fish sellers living in Palma-sede and neighbouring villages. None of those people were for instance, a fishing worker or collector dedicated to the intertidal collection. Five proponents of the projects were fishers from Nacala and residing in Palma for more than five years. These fishers were already implementing their projects, and employing a total of 20 people, 18 of which were immigrants from Nacala and Tanzania. The owners of the fishing gear were also dedicated to other activities, normally trade and deviated the execution of credits which were intended to be implemented in fisheries to other activities which include trade. Most of the proponents of the twenty projects were male and in most of cases they heard about credits through the meetings of the district consultative committee and village leaders. Apparently, the majority of these 20 proponents were also active members of the village councils in their communities. None of them was able to write a project proposal and that function was outsourced to a consultant that had to pay a specialist to write their projects and that, the specialist came from the district government office.

The strategy the government uses in helping fisheries is very different from other sectors. In fisheries, the focus of the government is the artisanal-commercial operators using fishing gear such as gillnet, pursing nets and beach seines. As a result the number of fisheries projects financed by these funds is very low, but the average cost of each project, is higher than in other sectors. For example, in 2011, the government has financed only four projects in fishing. According to the project documents consulted during the fieldwork, each of these four projects' budget is approximately 360,400 Mts which is higher than the average of each project submitted in other sectors.

Table 39: Number of projects on fisheries and budget (2011)

	No. of projects	Total cost (Meticais)	Average cost of each project (Meticais)
Trade	39	3,066,400.00	78,626
Fisheries	4	1,441,600	360,400
Other projects	44	3,341,480	75,943
Total	87	7,849,480	90,224

Source: District Government of Palma, 2013

During the period of 2011, **no** collectors of molluscs and bivalves using hands, harpoons, hand line/hooks, cages and spear guns had access to these funds. A member of the District Technical Commission for Monitoring and Evaluation of the Projects funded under District Development Fund has commented on this gap in the following terms:

“We know that if we give a credit to collectors of molluscs and bivalves, they will not pay back the credit. Also, our focus is on fishers who can produce profits, employ other people and contribute on public taxes. Collectors, generally don’t employ many people, don’t generate margins enough for profit production and most of them don’t pay licenses. Fishing gear like gillnets, purse nets and beach seine employ on average 15 people and this is important for our development purposes” (Member of District Technical Commission for Monitoring and Evaluation, 2012).

Participation of women in these opportunities is still very low (an average of 11 female and 70 male between 2007 and 2013). (See Table 40).

Table 40: The structure of beneficiaries of the credit systems according to gender

	2007	2008	2009	2010	2011	2012	2013	Total
Male	66 (75%)	94 (91%)	72 (90%)	64 (93%)	80 (92%)	53 (82%)	60 (78%)	445 (86%)
Female	22 (25%)	9 (9%)	8 (10%)	5 (7%)	7 (8%)	12 (18%)	17 (22%)	124 (14%)
Total	88	103	80	69	87	65	77	569

Source: The Government of District of Palma, 2013.

The strategy of the district government, which consists of assisting fishing activities which proves to be profitable (e.g. beach seining, purse netting and gillnetting) seems to be less effective in helping subsistence fishers to escape from their conditions of vulnerability. The

majority of the intertidal subsistence fishers do not have information about the district development fund because information on these funds is made available to communities through the channels to which subsistence fishers do not have access and most of the time in Portuguese. Some subsistence fishers have accessed some credit but not as fishers, but as informal traders or farmers. The requirements demanded by the government for people to apply to these funds, play a very important role in excluding some segments of the population from these opportunities. A project submitted to the District Commission for Project Monitoring and Evaluation must contain the following items (*República de Moçambique*, 2009):

- description of the context in which the project will be implemented,
- justification of the project,
- objectives of the project,
- expected results of the project,
- activities to be carried out,
- performance indicators and means of verification of the project,
- the level of community involvement,
- the project schedule and the budget.

Filling all these items properly requires some understanding of the technical terms and concepts which is not easy for an illiterate group of people. In most cases, projects were rejected because they did not mention some technical terms such as performance indicators and means of verification, expected results, etc. Only those people who had access to the district governance networks and information were able to submit acceptable applications. In fisheries this group is composed of the owners of the most profitable fishing gear such as pursing nets, beach seines and gill nets or by well-known fish buyers. Even most of these groups, were not able to compose the project by themselves. There are times when they had to resort the government officers to assist them with composing acceptable proposals. The government has not created a strong complementary program which could assist people in transforming their visions and ambitions into projects. A fisherman from Olumbi, explained:

“My project was approved and I had a credit in 2010. I am still paying. But what happened is that, the amount I received is not the one I proposed in my project. They just cut off some items without changing the proposed outcomes of the project. My project, according to my projections, could cost 200,000 Mts, but I was just given 110000 Mts. The plan continued the same. So I am paying for activities and goals to which I am not prepared to accomplish”.

In summary, it must be reasonable to say that the opportunities which are created under the DDF do not match with the endowments on gender, skills and needs of subsistence fishers. Women are critically excluded through the requirements for access. Subsistence fishers are required to apply with projects which are different from subsistence fishing or to which fishers do not have the skills to operate. In addition, the government has not distinguished actions to vulnerable groups from actions to those groups which are not necessarily vulnerable. More than poor, subsistence fishers are the vulnerable and marginal groups which are deprived of many things at the same time. For this reason, opportunities for this group should be focused on actions that help them in reducing risks while “increasing safety net functions in a general context of vulnerability” (Béné, 2008:12). For the difference between poor-vulnerable and poor-not vulnerable we need to resort to the literature on vulnerability which distinguishes development strategies into two grounds: the actions which help people to alleviate poverty and those which prevent people to fall into chronic poverty. Poverty prevention actions are those which help “people to maintain a minimum standard of living, even when it is below a given poverty line, which helps them to survive. Poverty prevention refers to reducing risks and increasing safety net functions in a general context of vulnerability. In contrast, poverty reduction deals with a situation where wealth is generated and capital accumulated through capital and labor investment made in the fishery, and which then helps to lift people out of poverty” (Béné, 2008:11).

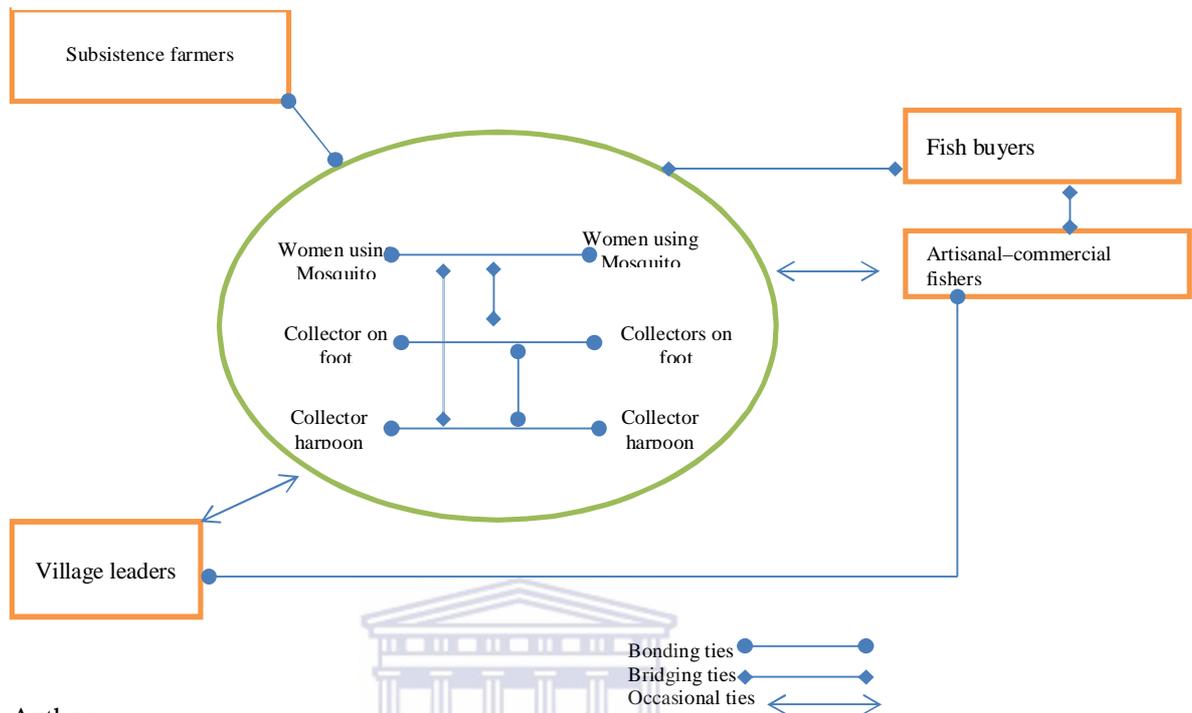
7.4. The Informal Action Spaces

This section of the chapter intends to understand the patterns of relations between subsistence fishing with the other systems of relations in their communities. Subsistence fishers are positioned as the central actors and from them questions are asked related to how they feel linked to the rest of the system in their communities.

7.4.1. Social networks

Figure 4 shows that, as professionals, subsistence collectors develop bonding relations among themselves and with subsistence farmers, bridging relations with traders and occasional relations with artisanal-commercial fishers and village leaders.

Figure 4: A typology of social network relations within a fishing community



Source: Author

An easy way to look at these networks is by categorizing them into *bonding*, *bridging* and *linking* networks. *Bonding* relations involve linkages or strong ties within homogenous groups like families, friends or fishing groups using the same types of fishing gear. Strong ties are particularly important because they involve reciprocity and trust and encourage individual fishers to cooperate. *Bridging ties* are concerned with relations across different people or groups with similar interests. *Linking* or occasional social relations refer to connections across disparate groups or networks although at different hierarchies, geographical areas or social realities.

Bonding relations form an important dimension of subsistence fishers' agency because it denotes the social foundations of this group as a social entity. Women using mosquito nets and adult males collecting molluscs by hand or with harpoons are the most visible examples of this kind of relations. They normally fish in small groups and most of the members are their relatives or people with whom they share tied relations in other spheres of community life. Together they join efforts to purchase their fishing gear, to sell their products, to rent boats (as transport for the most productive fishing areas), and help each other in situations of danger, shocks, crisis or

sadness. A woman interviewed in Palma explains the reasons why she has to go fishing with her relatives:

“Fishing with mosquito net is complex because it requires a combination of different roles: some of us must push the net, others must agitate the water in order to drive the fish to the net and others must collect the fish to the tins after the net is taken to the shore. Also, sometimes we fish very far from home. In that case we have to rent the boat. A boat is not cheap therefore we need to combine efforts. The money we pay for the boat must be returned through our production. All these aspects require that people trust each other and trust can easily be found among members of same family of people who have a similar history”.

Several cases of women working with their relatives were found in areas like Quiwia, Mbwize and Farol. Motivations for working in families are also related to the need to maintain subsistence fishing as a family practise, as explained by a group of women interviewed in Quiwia: “We are getting old now, so we need to teach someone who will continue bringing food at home. Our children are the right people to take over” (Interviews, Quiwia, 2012).

There are not many cases of males working with direct families, but rather with friends, or people from the same origin. Subsistence fishing males do not work in large groups, but very small ones (2 to 3 people). The reason is that, many fishers cannot work alone, because if anything happens they will need a support. Collection is a very risky activity as it involves many dangers. The work conditions of subsistence fishers are even worse than any other fisher. Some fishers have been injured by octopus, sea cucumber and rays.

These pronouncements open the space for a better understanding of the nature of the content that ties have. It is not just fishing that motivates those ties, but the fact that the members share the same vision, spaces and stories. Some fishers work with their children, others with people praying at same mosque and others with friends. It is not just a professional partnership. An interesting fact is also that, networks linking collectors (for instance women and adult males) are not mixed with people using different fishing gear. Collectors feel more comfortable when associated with a person who targets the same type of resources and who shares the same vision and values. This research found no cases of networks, pairs or groups of collectors containing members who use different fishing gear.



Photo 9: A team of 2 women collecting molluscs.

Source: Horácio Gervásio.

These networks are also not too large in terms of the number of members and most of them derive a livelihood from the everyday life in the community. It is very interesting that in most cases, people working in these networks are very reluctant to join other types of networks involving strangers or fishers using commercial fishing gear. This explains the fact that attempts to group collectors with other people in formal associations have failed a number of times. This is not to say that associational initiatives need to

follow these standards always, but the underpinning motivations of groups need to be considered when groups have to be formed. Subsistence women have shown strong abilities to cooperate with subsistence farmers rather than owners of fishing gear like beach seines due to the fact that they have something in common with those groups. Very strong bonding ties were also found between subsistence collectors with subsistence farmers. For illustration, most of the subsistence collectors are members of at least one farming association and within these groups they play very active and decision-making roles. Adult males who use harpoons to collect octopus or sea cucumbers have similar relations with their colleagues. Their social nets are not very expressive and cannot be easily identified.

Bridging relations mean *ties* that are concerned with relations across people or groups somehow similar, but different. In Figure 4, it is evident that subsistence fishers as a group perform specific relations with traders, and traders with artisanal-commercial fishers. As mentioned, in this research the content of the relation is more important than the nature of ties. The relations traders form with subsistence fishers and artisanal fishers are exclusively commercial, however with some levels of trust. Traders buy fish from both subsistence and artisanal fishers. In areas like Palma, where the market for fish is still undeveloped, any person willing to buy fish is welcome. But the relations actually formed between buyers and fishers are special because in times of crisis, and particularly during the low income seasons (dry seasons) traders appear as a salvation by providing credit to both subsistence and artisanal fishers. This credit system is based

on trust. Traders can wait between two or three months before they receive back their money. The costs of these arrangements are also unfavourable for the fishers. During a discussion, a group of fishers interviewed in Palma, remarked:

“They give money and receive fish. They never accept money, but fish. This arrangement helps us, but the problem is that when it comes to the low production times, we take almost four months to pay the debt. But this is because we have no other opportunities than these.”

Normally buyers are very important people in any fishing community of Palma because they have enough capital to buy fish. Buyers do provide credit for fishers and can financially assist them in several aspects of their needs. A fisher in Mbwise explains:

“In the absence of government support, buyers are the salvation. They have money because they buy our fish at very low prices and sell it at inland districts at very high prices. Buyers can lend us credits, but the interest rate involved on it is very high.”

Very often, collectors and artisanal fishers request financial assistance credit from buyers. Table 41 is a sample of several cases of informal credit arrangements between fish buyers and fishers. The arrangement involves agreements where the credit is paid in kind (fish). The fisher who receives the credit from the buyer is required to supply an agreed quantity of fish on a regular basis to the buyer until he finishes. The buyers collect the fish, process it and when conditions allow, they take it to market. The figures on Table 41 reveal approximate margins fish buyers receive with these arrangements. It is clear that this mechanism is very expensive for the fishers. In most cases fishers can take a very long time to pay the credits. Fish buyers can take their boats or fishing gear if they fail the payment.

Table 41: Case studies on credit systems involving traders and fishers (Meticais)

Case studies	A fish buyer gave credits (Meticais) to two fishers	Approximated value (in Meticais) equivalent to the fish received from the fisher	Profit in Meticais received by the fish buyer	Observation
Case 1: Fisher from the Community of Mbwize (April 2011)	10,000	15,000	5,000	This fisher is still paying
Case 2: Fisher from the community of Quiwia (September 2013)	20,000	27,000	7,000	Paid
Case 3: Fisher from the community of Maganja (December 2013)	5,000	7,500	2,500	He is still paying.
Case 4: Fisher from the Quirinde (December 2011)	3,000	5,000	2,000	Paid.

Source: Interviews: 2011-2013.

In other cases informal credit schemes involve more than two actors. In this case fishermen are normally organised in groups (of 6 people for instance) with historical relations – so, they trusted one another. The fish buyer bought a fishing net (at USD 250) and gave it to the group of fishers. The fishers paid 50% of their daily catches until they completed the buying price (this is based on the price /kg) and after that the buyer has the right to buy 100 kg at 50% of the price. Accordingly, the fishermen, they managed paying back in 70 days of fishing (Elim, Lda, 2012)

Another important finding is that the systems of interactions between female buyers (normally immigrants) and the local male fishers are based on sexual relations. Very often female buyers will prefer to have sexual or intimate relations with local fishers for fish. This practice was found to be very frequent in the northeast part of Palma where most female buyers come from Tanzania (in areas like Farol, and Mbwize). These relations are here described as bridging because, their underlying purpose is the business of fish. At least seven females involved in this practice were found in some villages and three of them were interviewed, however, just two of them spoke openly about this matter. Both were married and their husbands were left in their homelands.

They argue that they use this as a strategy to bargain the price of fish. Accordingly, having sex with fishers does not mean they will not pay money for fish, but will pay very low prices.

“I buy fish, but not at same prices than others. I have two friends (fishers) who sell me fish once they have. Because they are my friends they sell me fish at very low price. I can give an example: a kg of first grade fresh fish costs approximately 70 Meticaais at this fishing center. But my friends can sell me same fish at 30 Meticaais Kg and sometimes less than this. Sometimes, they request me to take their dried fish to sell in Tanzania or in Nangade. Only a friend can do this type of favor... Many local women don't like us here because they think we are seducing their husbands – but most of times the male fishers are the ones who start with this kind of business” (Interview with fish a buyer in Farol, 2013).

The male collectors of octopus and sea cucumbers, the owners of fishing gear like gillnets and pursing nets as well as divers are some of the groups frequently mentioned by the female buyers as the “best friends”. Evidence of this practice can also be captured from the proliferation of polygamy in fishing communities. Normally, most fishers, and particularly the owners of fishing gear have two wives: one lives in their original village and the other (the friend) lives in the fishing center. A fisher interviewed in Palma, explains how these mechanisms work:

“I have one wife and one friend. The friend lives here and my wife lives in Palma Township. I take two weeks here before I go home. She knows I have a friend here, but she doesn't care because she also knows that I love her, and I will never leave her. It is important that we have female friends here because our work is hard and sometimes the friends help us in doing some small jobs like fish drying, cooking or taking care of my house.”

Another male explained:

“I also have a friend, but this is just a short term relation, because I know she has another man at her home. I can never tell my wife about this – it is a business” (Interviews with a fisher in Palma, 2013).

The implications of the sexual practices for fishing are critically negative: health authorities have found that the cases of sexually transmitted diseases increased during the last 10 years. They do not associate these trends directly with the sex for fish practices, but believe that the proliferation of immigrant fishers in some islands contributed to these trends.

7.4.2. Informal Saving groups: a case study

Saving and credit groups are the most prominent business oriented structure and it forms the selected special case study for this chapter. The Rotating Credit and Saving Groups are not new practises. They exist for a very long time and many institutions have taken their advantage to promote more professionalized financial safety nets. In Palma, there are about 9 saving groups, most of them promoted with the technical assistance of the government and some NGOs like Food for Hunger, working in Palma on the promotion of rural development and livelihoods.

This section is dedicated to a group called Atussana, an association founded in 2005 by a group of 4 women. These women are dedicated to buying and selling fish in local markets. As individuals, the members are also involved in fishing with mosquito nets. They fish together and divide the daily production into equal shares for everyone. The net belongs to all of them, as they bought it together. Historically, the women live in the same village, pray in the same mosque,

Box 1: Key aspects of saving mechanisms of the Atussana group

- Group of 15 females
- Savings made weekly
- Money is kept in appropriate box with two padlocks
- The group saves the amount enough to start to give credit to the members
- All transactions are registered in appropriate files
- After 9-12 months, the group shares the money accumulated proportionally to that saved by each member
- The group begins the new saving cycle after sharing the credit
- In all this process no money was given to the group by an external agency

grow rice and cassava in the same area and belong to the same cultural and ethical groups. Since 2005 the number of members increased from 4 to 15. The group normally was designed in a way that members are able to save regularly without sacrificing their basic needs on food and other basic goods. The group meets once a week to collect their savings or distribute credit, the savings vary between 10 to 50MT and are systematically recorded (Elim, 2012). The amount collected

is made available to members as loans with interest rates that vary between 10Mt to 100 Mt. The amount collected is divided as per the contribution on an annual basis (Elim, Lda, 2012). This group was composed of 15 members and started from a smaller group of sisters and friends who

used to join savings to invest in fishing and agriculture. The chief of the group is a female and her role is to receive and keep the money safe and plan the distribution of credit to the other members. Since its foundation the group was able to save about 150,000 Mt and all the members received credit at least four rounds. Each of them invested their credit in different areas, but the most prominent were trade, Fish for Cash and agriculture. At the last interview, the group had an amount of approximately 50,000 Mt in its safe.

Interviews with the group were made in three ways: the first and the second were group discussions and the second were individual interviews. The objective was to understand the nature of informal mechanisms they adopted to keep the group united, the enforcement strategies to mobilize the members to pay the credit and the ways they planned their investments. The result of these discussions indicated that the key element that kept the group alive was trust. They all trusted one another and the chief of the group was a much admired person. One of the sources of the trust was the fact that the members shared a similar history and life in their communities played a critical role.

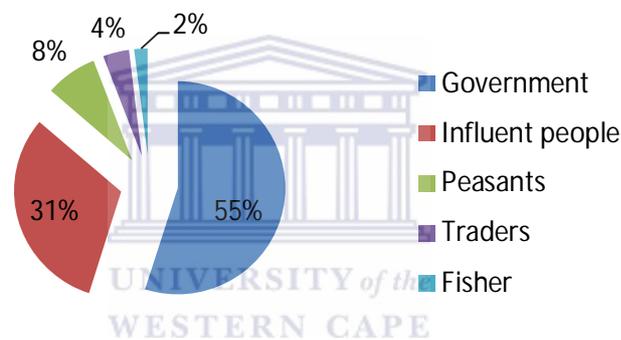
The group did not use any sophisticated method to keep the organization operational. Meetings were conducted in the same way they did in other social spheres and decisions were made collectively. Because of the social trust and norms of reciprocity, the group successfully carries out collective actions, cooperates with the community in several aspects of the village life and resolve disputes with other stakeholders in a most appropriate way. In summary, trust constitutes the major component of this group and still plays a significant role in the cooperation among members. Every commercial transaction made in this group has within itself an element of trust. As argued by Knack and Keefer (1997) societies characterized by high levels of trust are also less dependent on formal institutions to enforce agreements and that trusting societies not only have stronger incentives to innovate and to accumulate physical capital, but are also likely to have higher returns to accumulation of human capital.

7.5. The difficult integration of Informal into Formal Action Spaces

Theoretically all sectors of communities as well as their interests should be well represented in local councils (MAE et al. 2003). Existing community institutions and organizations, such as the

fisheries community councils, fisheries associations, credit or saving groups were supposed to be utilized as a means for greater participation of fishers (including subsistence fishers) in the ICPCs activities. It is through these institutions that fishers and everyone in the community, especially the most disadvantaged people could be able to have an influence on the community's governance (MAE et al. 2003). The district consultative council of Palma is composed of 51 members among which 55% are community political leaders representing all villages, 31% are known as influential people (which include private entrepreneurs, people normally who sympathize with the main party), 8% are peasants and only 2% are fishers (See Graph 9).

Graph 9: The composition of the District Consultative Council of Palma



The number of members per level of participation is indicated in Table 42.

Table 42: Number of members per level of participation

	<i>Total Members</i>	<i>Representation of women</i>
Councils of the district	50	15
Councils of administrative posts	160	48
Council of the localities	160	48
Village councils	260	78

Source: Interviews with the district government officers, 2013.

The district consultative council is clearly composed of two groups of elites: the first group is made up of political elites (administrator, chiefs of administrative posts, localities and villages), religious leaders and local public administration officers (teachers, nurses, etc.). The second

group is made up of influential people, normally the business people, or members of influential groups and religious leaders. These groups of elites are created by the way people or participants are selected in each level of participation. According to the Decree 11/2005, in each level of participation (village, locality, administrative post and district), candidates are chosen (not elected) among the most influential people who are mostly business people or members of organizations/institutions such as village committees, fisheries or farmer's associations, public administration officers (e.g. teachers, nurses) and community leaders.

When selected, people do not really represent the interests of the institution or organization they belong to. Their mission is not to represent the interests of the organization or institution they represent – they are chosen because they have an influence. A list of potential candidates is submitted to the chief of locality, Administrative Post or District Administrator for approval. After the chief approves, the candidates are presented to the rest of the public. The chiefs decide who are suitable members and approves. The public or community in general is not given space to comment on the proposed members. Decree 11/2005 establishes that “members of each level of participation (except villages), are chosen from the immediate lower levels of administration (villages elect their representatives to the locality, the localities elect their representatives to the administrative post level, and the post administrative elect their representatives for the district). The Decree 11/2005 also states that the government chief of administration of each level of participation is responsible for the selection of participants for the local councils. This principle of selection is the same from the village to the district. Members are not chosen from the massive community, but from already existing notable people or associations, councils, committees, etc. For this reason, people who do not belong to any kind of elites or notable social systems are not influential, and will not be selected to the local councils and their visions or opinions will probably not be transported to the councils because the interaction between the councils and the vast communities of the society does not happen.

The exclusion of subsistence fishers from the district consultative councils, starts from the village. In the village a maximum of only 10 members are selected from the already existing other forms of organizations. The criteria for selection are not well known by the majority of people and particularly fishers. In some areas it was informed that criteria are based on sympathy

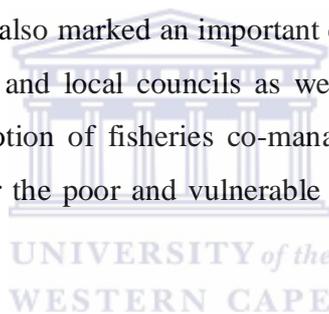
with the FRELIMO, the political party on power. In other areas it was referred that a candidate to be selected they have to pay the teams that lead the process of selection be a member of any kind of social organization. But when is or she is selected, he or she will not represent the interests of its organization, but the community. There are cases (Olumbi) where participants in focus groups confirmed that members are elected by the communities' to the local councils. The ways members are evoked and chosen to the local councils creates conditions for the exclusion of vulnerable groups such as subsistence fishers and farmers. The village chief determines who participates and who does not. The locality, Administrative Post and district levels have no mechanisms to ensure that people, who for any reasons are excluded from the lower levels of governance, are rescued or given another chance. Members of the community in the village of Quirinde commented on this exclusion system in the following ways:

“What they call council is a group of friends of the village leader. I personally don't agree with the ways the leader governs this village and I would like to have a space to expose my thoughts, but I can't because he can't even give me a chance to say anything. I tried to elevate this concern to the chief of Administrative Post, but I didn't anything to solve. He just told me to bring back my concern to the village leader” (Interview, Quirinde, 2012).

During the fieldwork the researcher participated in five ordinary meetings of the district consultative council and two meetings of the local council of Quirinde locality. The district government did not allow the researcher to collect the minutes of the meetings. At both levels it was noted that in all six meetings the agendas were prepared by the district government or its representative. The district council's meetings were chaired by the district Administrator while the meetings at locality levels were chaired by the chief of locality with direct support from technicians sent from the district central government. In all meetings the format of the discussions was hierarchical with very little motivations of debate and although some participants tended to raise questions which had to be discussed, the number of people (particularly women) speaking, discussing and addressing questions was very low. A positive aspect is the fact that despite the limitations on participation, all the problems identified during the meetings were presented in the plenary and in some cases working group sessions were promoted for more debate. Working groups normally happen when the subject of discussion are critical (credit for instance).

7.6. Summary of the chapter

This chapter is dedicated to the analysis of the effectiveness of the fisheries governance policies and structures in Palma district. The main objective was to identify the nature of formal spaces, institutions and opportunities created by the government of Mozambique at district level to assist vulnerable groups through an effective participation and access to benefits. The study has found that the government has made significant efforts in creating democratic institutions to drive participation of the citizens on district development planning process. The Law No 8/2003 (art. 12) and its regulation (Decree No 11/2005) has given the district government the rights and powers to make important decisions on the economic and social development arenas. This law also permitted that the district government has the mandate to elaborate its own Development Strategic Plan with the participation of the key social actors. The district development fund created under the same legislation also marked an important change in terms of opportunities for poor. The creation of the district and local councils as well as the waves of decentralization which culminated with the promotion of fisheries co-management structures at district level, have all increased possibilities for the poor and vulnerable groups to participate in the district development processes.



However, despite these developments towards the creation of formal action spaces for all the district citizens, the level and scales of participation of vulnerable groups such as poor women, elders and youth residing in Palma area did not necessarily increase. There are structural problems that hinder groups such as subsistence fishers to access the opportunities created under these reforms. The first biggest gap identified by this study lays to the deficient integration of the fisheries sector into the district development planning platforms. The new district Development Strategic Plan for instance has provided very little actions tending to help fisheries development. This has to be seen in this study as a critical concern as fishing is one of the most important economic and social sectors in this area. The study has also found critical mismatches between the vision of development as stated in the Artisanal Fisheries Development Strategy and the actions being implemented on the ground. The idea that subsistence fishing would be seen as a development priority in fisheries development actions, and that the role of fisheries on food security should be increased as stated in the Artisanal Fisheries Development Strategy, are not

translated into practice at local level. There are no strategic linkages between fisheries and food security or between fisheries and local development priorities. When opportunities come at district level (for instance credits) priority is given to the fishing practices which are outside the range of subsistence fishers. To get access to these opportunities, subsistence fishers are forced to replace a set of their self-enforced informal arrangements by formal arrangements normally imposed by the development proponents. This process is subject to structural changes which is often problematic and causes critical mismatches between the pre-existing values and the new imposed arrangements.

The second dimension of gaps identified by this study is related to the inability of the institutions for fisheries and district governance to assure the inclusion of subsistence fishers in the district and fisheries governance platforms. The Law 8/2003 has emphasized that the local organs of the state of Mozambique, are to ensure participation of the citizens and their organizational forms in formal action spaces and that this process has to be done through transparent and democratic mechanisms. There are critical efforts local councils are making in creating space for participation of the village representatives. However, barriers still exist that inhibit people who are already excluded from community governance systems to access these spaces. Participants of the local councils do not necessarily represent the interests of the majority or fishers in particular. Critical factor is the fact that these processes of inclusion-exclusion are also reflected in the community-based formal organizations such as producer associations and the community fisheries councils which are frequently captured by people with significant political and economic influence. None among the four CCPs visited in Palma district has included subsistence fishers in their organizational structures or decision-making processes. The problems that CCPs take care of are all of interest of the minority, normally the owners of the artisanal (commercial) fishing gear.

As a response subsistence fishers are building their own spaces – the informal action spaces. The study has categorized the informal action spaces into social networks and informal organizations. The networks are very less visible, but are powerful as they involve relations which are family extended partnerships. Informal organizations such as the rotating and saving groups are better organized and relations among the members more consolidated than the formal organizations.

Attempts to transform these organizations into formal associations have failed due to the inability of the informal members to deal with formal routines and procedures. This study argues that the contemporary self-enforcing structures embedding subsistence fishing in Palma district have to be seen as an opportunity to support policy and governance progresses. The importance of informal structures comes from the fact that they are often derived from social values and rooted in the local identity (Pascual-Fernández, 2005). Partnership with informal structures, according to neo-classic institutional scholars (North, 1990) can add value to policy efficiency via legitimacy mechanisms. Interactive governance framework offers significant suggestions on the possibility of the interactions between formal and informal structures. Respect to individual autonomy, rights and values are critical aspects that allow interactions between them.



CHAPTER EIGHT: DISCUSSION

The prevailing perception is that subsistence fishing is a good thing as it provides food and livelihoods for coastal communities (*Ministério das Pescas*, 2006; HLPE, 2014). In Mozambique, there is recognition that at least 30% of the products supplied by the artisanal fisheries comes from subsistence sub-sector (*Ministério das Pescas*, 2014), and that about 35% of the people directly involved in artisanal fisheries are subsistence fishers (IDPPE, 2014). The creation of the Artisanal Fisheries Development Strategy in 2009 and the revision of the Fisheries Master Plan represent a clear demonstration of the will of the government to promote actions that may help subsistence fisheries. In both policy documents subsistence fishing households and particularly households headed by vulnerable groups such as women, elderly and children appear as the priority for the poverty alleviation actions (*Ministério das Pescas*, 2006). Subsistence fishing also appears in the Fisheries Act as an activity which is exempt from paying licenses and as the only fishing activity which is allowed to operate inside the Marine Protected Areas. This study raises five important questions, namely:

- To what extent is subsistence fishing recognized within Mozambique's fisheries development policy?
- How can Formal and Informal Action Spaces be understood in the context of subsistence fisheries governance?
- To what extent can marginalization and vulnerability of subsistence fisheries result in exclusion from the Formal Action Spaces?
- To what extent are institutions promoted under the fisheries governance reforms able to mediate access to opportunities created under the existing fisheries policy?
- Are there mismatches between the fisheries policy vision on subsistence fisheries and the district governance implementation strategies?

In Chapter Two, this study has presented in detail the main vision of the government of Mozambique in relation to subsistence fisheries. The study raises important questions in relation of how subsistence fishing is conceptualized within the fisheries policy and presented suggestions on parameters that could be included in the current conceptualization of this sector.

This study argues that participation of subsistence fisheries in markets need to be interpreted carefully. It has been observed that at any condition of market development a subsistence fisher will prefer to sell its product than to consume it at all. What subsistence fishers sell is not the surplus: they sell the main product and consume the surplus. This is an important finding of this study as it will have serious implications on the ways subsistence fishers have to be dealt with. On the other hand, subsistence fishers who are participating in output markets, are using the same markets and fish chains with commercial fishers, selling their products sometimes at the same prices. What differentiates them from their counterparts, the artisanal-commercial fishers is that, subsistence fishers produce much less catches due to the nature of the technology they use. Thus subsistence fishing may not be very important in terms of the quantity of products it supplies to local market, but it is very rich in terms of the value it adds to the fish chain.

The second concern the study raises is with regards to the emphasis fisheries authorities place in market failures when addressing determinants of subsistence fishing. According to the Artisanal Fisheries Development Strategy, subsistence fisheries are to a large extent, determined by the lack of access to markets. Market failures are the most important factors keeping subsistence fishers at margin of development processes in fisheries sector. Fisheries authorities believe that as markets become established, through the promotion of more infrastructures, local economies become better connected to larger markets and this will help the transformation of subsistence into commercial fishing (*Ministério das Pescas, 2006*). The artisanal Fisheries Development Strategy has taken this position as the central strategic vision for the development of subsistence fishing. The evidences of this case study are indicating that despite the role market failures and transaction costs play in the production and commercialization of subsistence fisheries, there are other factors that keep subsistence fishers at margin of development processes that need to be incorporated in fisheries policy vision. By using the concepts of vulnerability, social exclusion and marginalization, the study found that determinants of subsistence fisheries are multiple. It is the general context of marginalization and exclusion of subsistence fishers from the formal venues of fisheries governance, which causes the vulnerability of subsistence fisheries.

The third important concern the study raises is with regard to the fact that the intertidal subsistence fishing tends to be seen by policy makers as the last alternative people have when the

better opportunities fail (*Ministerio das Pescas*, 2006). According to the Artisanal Fishers Development Strategy:

“... artisanal fishing sub-sector acts as a buffer from social pressure in periods when the normal basis of subsistence is at risk. Fishing is thus an alternative to which the poorest people resort in their struggle for survival. Although the numbers are not known, it may be accepted that, in the artisanal fisheries sub-sector, poverty levels are higher than the national and provincial averages, both for maritime and the major inland fisheries. For this reason, the artisanal fisheries sub-sector, particularly subsistence fishing, has a very high turnover of fishermen entering and leaving (*Ministerio das Pescas*, 2006:21).

By this conceptualization, subsistence fishing is then, a temporal sector that may disappear with time. Subsistence fishing is not seen as an integral sector within which people can intentionally plan to enter in, structure their goals and secure their livelihoods. This (pessimistic) way of looking at subsistence fishing loses the whole complex repertoires of livelihoods, safety net functions, values and roles subsistence fishing has been playing in community systems and reduces subsistence fishing to something that has to be eliminated. As Béné (2003:955) argues,

“...what the ‘last resort’ hypothesis tends to assume or even to assert is that fisheries are not merely one among several Common Pool Resources but the very last one, i.e., the one toward which the poorest turn when they are denied access to the other Common Pool Resources.”

With this conceptualization, subsistence fishing is not seen as an integral sector within which people can make choices, plan their goals, form their values and assess their outcomes. Social researchers around the world (Onyango, 2011; Isaacs, 2003, Jentoft, 1997) have been arguing for the existence of non-profit or non-market values that keep fishers in fishing and their importance in fisheries policy development. This study has also found that in Palma district subsistence fishing is associated with material and non-material systems of values, namely: incomes, food, wealth and tradition. Accordingly, intertidal subsistence fishing is:

- an important source of income;
- an important source of food for direct consumption;
- a source of wealth and future prosperity; and
- a tradition, a cultural value and a sense of self-direction.

Subsistence fishers normally use these systems of values to make their judgments or choices between subsistence fishing and other alternatives⁴⁴. Without a clear understanding of these

⁴⁴ Examples of subsistence fishers who remained in the fishing subsistence sector for a very long time even in urban areas where markets are quite well developed (Maputo, Pemba, Beira, etc.), are many.

systems of values, subsistence fishing cannot be governable, as values expression reflects “people’s judgments, perceptions, and meanings in relation to their well-being, capabilities and satisfaction” (Onyango, 2011:120). If values assigned to subsistence fisheries are not compatible with the values held by those practising this activity, policy and community choices will be incompatible (Kooiman et al. 2005a). As Onyango (2011:120) remarks,

“Fisheries management and poverty reduction strategies should therefore be formulated within a broader framework where values and principles such as the meanings that fishers attach to their fishing, the satisfaction they generate, and the identity they receive are central. Policies should be formulated in a manner that will enable fishers to make sustainable decisions on their own and not force it on them. If management is not built on these fundamental issues about what fishing means to those who fish but on purely technical assumptions with regard to the ‘how and how much’ question as is the case with most fisheries’ management strategies, then such management mechanisms are likely to misfire and/or backfire”.

This study has used the concept of Action Spaces to understand the context of exclusion of subsistence fishing in development processes. While acknowledging the efforts undertaken by the government of Mozambique in creating institutional mechanisms for decentralization, this study argues that there are still critical barriers which inhibit subsistence fishers to effectively access those opportunities and get the desired outcomes. The factors keeping subsistence fishers at the margin of fisheries development, are multiple. On the one hand, the barriers are caused by the ways access to the institutions such as the District Councils, the Fisheries Community Councils is determined. On the other hand, the barriers go beyond institutional organization, reflecting the existence of structural mismatches between policy vision at national level and the governance practices at local level. It has been argued that, the institutions for community participation are still serving the interests of the dominant elites. These groups use their networks, structures, systems of language and rules to dominate or exclude the vulnerable. The elites as identified in the study include the owners of artisanal-commercial fishing gear, people with political influence and people with easy access to different forms of capitals (financial, political or economic). Access to opportunities such as the district development funds, decision-making and formal organizations are conditioned by institutional principles and systems which favour the elites. For example, the systems of language used in the application forms to gain credit from the district development fund, the document that is required for the project submission to be accepted by the government officers and the budget calculations that candidates

are required to present, are all complex and very difficult for an individual who has no experience in business cycle planning and management. These findings have confirmed that formal spaces created by the government to assist marginal people are not empty, but full of systems of structured powers that hinder marginal groups to access opportunities and decision-making spheres. Thus, as stated by Allison et al (2010), in situations where failures of basic entitlements are evident, “it will be most effective to first address the factors that fisher folk perceive as the greatest threat to their livelihood security or indeed their lives.” (Allison et al. 2010: 23). Accordingly,

“... When people are relatively secure and have secure rights of access to resources, then addressing remaining market failures that limit profitability of fisheries becomes a priority. Investing out of sequence, for example strengthening access to global markets without first (or also) addressing resource governance failures and failures of basic entitlements, will jeopardize the existing economic support functions of fisheries and further marginalize the poor without bringing tangible benefits for wider poverty reduction.” (Allison et al. 2010: 23).

Incorporating the values that fishers and non-fishers associate with, should have a direct bearing on the management of this natural resource (Sharp, 2003:10). As Sharp et al (2003:10) argue “public participations in one way in which community values and social concerns can be included in the management process”. The fisheries governance framework supports this argument by adding that for the public participation to be functional “people who govern and those who are governed have to exert influence on each other” and societies like subsistence fishers, can draw on their values and structures as a weapon to participate and bargain for their rights. Fishers will not cooperate and will find alternative spaces to develop their proper agency and governing identity if they feel their values are excluded from a governing system in place. Values, according to the interactive governance literature can make collective and policy choices hard or easy⁴⁵. It is on values and principles, that institutions regulating and enabling the informal fisheries organizations (the levees) are built. Without a clear understanding of values and basic principles, no system can be governable. Values and structures are linked to culture,

⁴⁵“Easy choices are characterized by values that are basically comparable, commensurable and compatible. ‘Moderate’ choices involve mixes of comparable and commensurable values. ‘Hard choices are those where basically values at stake are incomparable, incommensurable and incompatible” (Kooiman et al. 2005: 828-829)

identity and traditional knowledge systems that are handed down through generations by cultural transmission (Berkes, et al. 1997). For this reason, “the process through which values... and means are determined must be open, transparent, and participatory because it is ridden with hard choices all the way (Kooiman et al. 2005:298).

The concept of Action Spaces as applied in this study permitted the understanding of how the institutions created under the ongoing fisheries policy reforms are unable to rescue the values, motivations and expectations of the subsistence fishers in Palma. The study resorts to the concepts of symbolic capital from Bourdieu (1977, 1991, 1998) and Bourdieu and Wacquant (1992) and later applied by Isaacs (2003) in her research on small-scale fisheries in South Africa. In the presence of symbolic capitals actors sharing what Bourdieu (1977) calls social fields can use the influence of social, political, or economic capital to structure their position, manipulate one another and hijack the opportunities which are created by the formal action spaces for their own benefit. The lessons from this study are denoting the presence of a symbolic capital game in fisheries governance structures. People who are making decisions on subsistence fisheries at district level do not represent the subsistence fishing sector. Also, people having access to the formal action spaces are those equipped with some economic and political symbolic capitals and use the opportunities provided by these spaces to consolidate their positions in markets. This finding confirms that although infrastructures and markets are important in fisheries development, it is the ability to access the spheres of fisheries governance and decision-making which determines the positions of people in markets. In other words, despite the interest the government has demonstrated in relation to subsistence fishing, in practice, fisheries policy continues to support those who are already equipped by specific kind of economic / political symbolic capitals.

This is the reason for the deficient incorporation of subsistence fishing into the district development plans. Looking specifically at local contexts one may ascertain that, although formally announced as a priority at national policy level, no references have been made on the role of subsistence fishing on food security and nutrition in the District Strategic Development Plan of Palma. When addressing questions related to food security, subsistence fishing is not mentioned as a potential contributor. Agriculture has been taken as the engine for food security.

At village level, subsistence fishing is also not recognized by the most influential members as an important contributor to food security and nutrition. In most villages subsistence fishing was not mentioned as part of the village development agenda and subsistence fishers remained amongst the most excluded groups.



CHAPTER NINE: CONCLUSIONS

This study confirms that subsistence fishing needs to be seen as a distinctive fishing system which is especially suited to solve specific problems, is based on particular sets of human, technological and institutional resources and designed to operate under specific social conditions. Chapter 6 of this study provided useful information on informal structures and social values which are specifically associated with subsistence fisheries and the role these sets of structures play in providing certain resources (food and incomes) to the community. This finding is consistent with the observation that the “livelihoods of fishing communities are linked to culture and several aspects of life such as customs, food habits, rhythm of life, rituals, spiritual beliefs, value systems, etc.” (Sharma, 2011:43). Because subsistence fishers are marginalized by the rules of the game in formal action spaces, they resort to the informal structures to pursue several goals of their lives. Informal structures as described in this study include patterns of relations such as social networks, saving groups and organizations, etc., which are not normally reducible to individuals (Hays, 1994) and are based on long-term relations of reciprocity, collaboration and social accountability. These patterns of relations are observable on a daily basis and fishing community members as those observed in Palma, normally rely on these systems to obtain more food for their households, diversify their sources of income, and add value to their fishing activities, exchange information or to secure a minimum level of resilience in times of crises.

Evidence abounds that these informal structures have very little space for action in formal venues of fisheries governance (Chapter 7). Attempts to rescue these structures have been made through the creation of the Law 8/2003 (and Decree No 11/2005), the Law 3/90 and the Decree 43/2003. This legal framework recognizes the importance of traditional and informal structures in district development planning and supports the constitution of local consultative councils and fisheries co-management structures at village and district levels. However, neither the fisheries co-management arrangements at local level, nor the district or local consultation forums address informal structures in a transparent way. First of all, access to these structures at village level is very limited to a group of people who supports the local leaderships or to the elites with economic or political influence. Women who are the most vulnerable groups are significantly

excluded from these fora. Secondly, the rules of access to these spaces do not create space for people who use their informal organizations or networks to apply. The organizational scripts of the district consultative councils for instance, are constructed in a way that members are chosen by (the influence of) a district administrator or other political chiefs and evoked as individuals representing very limited sets of interests (normally political and economic). In other contexts, the problem has been related to the well-known problem of *structural isomorphism*, which means the reproduction of structures among similar organizations independently of the context in which an organization is embedded (DiMaggio and Powell, 1983).

The study has found a number of reasons why the informal structures deserve a better institutional recognition. More than simple relationships, or livelihood security strategies, these systems of organizations and relations, are somehow, a way of life as they carry with them certain values and beliefs which conjure the image of people's "perceptions of what constitutes a preferred life" and "habits that they want to be identified with" (Onyango, 2011: 90-101). Many other valuable things can be found within these relations: first of all, these relations serve as the basis from which a prospective fisher is trained. It will be seen in the findings that more than 90% of artisanal fishers interviewed in this study in Palma fishing area were involved in subsistence collection in certain phases of their lives. Secondly, networks associated with the intertidal collection are vital because they provide insights on gender roles definition especially during the earlier phases of childhood development. Groups of women involved in subsistence fishing normally carry their children with them to the fishing campaigns to teach them how to identify and harvest their targets, how to deal with the aquatic environments as well as how important it is for the people to fish in groups. Thirdly, the informal structures associated with the subsistence fisheries carry with them a certain amount of knowledge about fishing and fishing grounds of the less known resources: oysters, molluscs, etc. differently from the male artisanal fishing structures, the systems of relations which are prevalent in subsistence fishing.

Authors such as Jentoft (2005); Kooiman and Bavinck, (2005); Chuenpagdee et al. (2008), Jentoft and Chuenpagdee, (2009) have provided valuable insights into the possibilities for engaging the informal and increase its role in fisheries development. Jentoft et al. (2006) for

instance, suggest that goals of a governing institution should not be given, but negotiated⁴⁶. When goals are negotiated the stakeholder's visions, needs, knowledge and rights⁴⁷, including the preferential access rights to fisheries resources and fishing grounds, rights to fisheries management regimes that protect resources and sustain livelihoods, traditional knowledge and social and cultural rights, rights of fair access to markets, credit and trade, rights of women in fisheries and fishing communities and the right to participate in decision-making and management, are secured and incorporated into the governing process (Sharma, 2011). Also, motivation can be achieved if participants are given opportunities that change their lives.

Fisheries governance theory also states that governing systems should support the pre-existing structures instead of imposing new ones or changing them completely. This observation is based on the assumption that to participate in formal venues of governance, people should not be separated from their structures, organizations and values. Structural separation creates conditions for the separation between governing actions and context. If the government promotes interactions between the formal and the informal, Mozambique can enhance policies that are better adapted to local socio-cultural conditions and reduce the exclusion of women and other vulnerable groups on the periphery of decision-making.

According to the sociological reasoning, two or more structures can inter-penetrate each other. The inter-penetration occurs when structures overlap each other and actors embedded in different structural complexes claim resources or borrow appropriate schemas from one structural complex and apply to another (Sewell, 1992). When structures or entities are mutually inter-penetrated, power and responsibilities are shared and as a consequence, people or groups of people can be in a position to claim their values, exert influence on each other and enjoy equality in decision-making, resource exchange and reciprocal accountability. Where structures inter-penetrate their boundaries overlap, and their values can be shared.

In this case study, a legal and practical recognition of the autonomy of informal structures should be seen as one of the several means to ensure that informal structures coexist with the formal.

⁴⁶Also, goals should not be static but variant according to the relative strength of participants who come and go (Jentoft et al. 2006) as well as to the problems that the institution is intended to resolve.

⁴⁷For instance the preferential rights to access fishing ground, rights to participate in fisheries management, rights to protect traditional knowledge and other socio-cultural rights, etc.

This recognition should not be seen as a privilege (as happens in current days) but as a right. The use of the human rights approach to secure these rights should be useful. This is clearly addressed by the United Nations Voluntary Guidelines on the Responsible Governance of Tenure, when it argues that the effective participation of men, women and all other members in decisions regarding their tenure systems should be promoted through their local or traditional institutions, including in the case of collective tenure systems”. In addition, where “informal tenure to land, fisheries and forests exists, states should: (a) acknowledge and respect the existing formal rights under national law, (b) recognize and protect the tenure rights of the indigenous, and (c) consider adapting their legal and organizational frameworks to recognize tenure systems of indigenous people and other communities (FAO, 2012:14-15).



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APPENDIXES

Appendix 1: Marine resources and the status of their exploration

<i>RESOURCE</i>	<i>POTENTIAL CATCHES (TON/YEAR/ANNUM)</i>	<i>ESTIMATED CATCHES (TON/YEAR/ANNUM)</i>	<i>THE STATUS OF EXPLOITATION</i>
CRUSTACEANS	21.990 - 24.208	11.765	
Lobster	150 - 158		Moderate to intense
Crabs	7.550 - 7.700	320	Low
Deep water prawns	2.900 - 3.100	1.432	Low
Shrimp	11.240 - 12.850	9.913	Intense
Lagostine	150 - 400	100	Low to moderate
Others	3210 - 3742		
MARINE FISH	70.068 - 130.344	73.437 - 82.437	
Large pelagics (oceanic waters)	?	6.568	Moderate to intense
Small pelagics (Sofala Bank)	55.000 - 85.200	56.000 - 65.000	Low to moderate
Demersals for artisanal fishing	5.500 - 10.200	10.221	Intense
Demersals for Industrial and semi-industrial fishing	600 - 1.990	648	Intense to moderate
Demersals for the trawling (Sofala Bank)	3.200		Moderate to intense
Banana fish	6.676 - 21.528		Low
Shark	2.106 - 2.603		Low
Ray	135 - 4.904		Low
Corvine	51 - 719		Low
Others	65832 - 116556		Low
MOLUSKS	14.089 - 21.262	1,773	
Sea cucumbers	750		Intense
Cephalopods	9.241 - 15.070	773	Low
Bivalves	2.200	1.000	Low
Chocos	1.398 - 2.741		
Algae	500		Low
TOTAL	106.147 - 175.814	86975 - 95975	

Source: *Ministério das Pescas*, 2013.

Appendix 2: List of Interviewees

Provincial government: Relevant institutions

		Dates of interviews		
		2010	2013	2014
Mário António Carvalho*	Provincial Director of Fisheries	March 11 th	October 29 th	
	Permanent Secretary	March 11 th	October 29 th	
Carlos Paulo	Chief of district services of Economic activities	February 1 st		January 15 th
Amad Garret	Social promoter at IDPPE-Pemba	February 3 rd		January 15 th
Juliana Supeta	Chief of the section of social development at IDPPE - Pemba	February 3 rd		

- Passed away

District government: Relevant institutions

		Dates of interviews		
		2010	2013	2014
Pedro Romao	District Administrator	March 3 rd	October 15 th	
Rachide Picones	Permanent Secretary	March 3 rd	October 20 th	
Carlos Paulo	Chief of district services of Economic activities	March 3 rd	October 15 th	
Veronica Pangrancio	Chief of district services of Planning and Infrastructures	March 3 rd	October 20 th	
Mario Gamito	Chief of district services of Health and Social Affairs	March 3 rd		
Amina Zacarias	Chief of district services of Education, youth and Technology	March 3 rd		
Adamo Rachide	Maritime Administration	March 4 th	October 21 st	
Veronica Nalyambipano	General secretary of Mozambique Women's Organization in	March 5 th	October 20 th	

	Palma			
Gracinda MATEUS	Fisheries extensionist	March 6 th	October 21 st	February 5 th
Arcanjo Muhai	Planning officer at District government cabinet	March 8 th	October 25 th	February 5 th
Gilberto Muanarata	Planning officer at District government cabinet	March 9 th		February 7 th
Aldino Bernardo	Planning and infrastructure officer	March 9 th		
Tiago Simao	INAQUA (National Institute for Aquaculture Development)	March 9 th		

Focus groups with the members of district and local councils

	Dates of interviews		
	2011	2012	2013
PALMA SEDE			
Pius Nankulangue	March 10 th	October 16 th	
Augusto Chande Namiva	March 10 th	October 16 th	February 3 rd
Bendita Namwite	March 10 th	October 16 th	
Martins Chai	March 10 th	October 16 th	
Rosalina Tiago	March 10 th	October 19 th	February 2 nd
OLUMBE			
Roberto Joao Awiquile	April 6 th	October 20 th	February 2 nd
Sebastiao Matumba	April 6 th	-	February 2 nd
Ali Salimo Wassigala	April 6 th	-	February 2 nd
Madalena Henriques	April 6 th	-	February 2 nd
Wazir Andremane	April 6 th	-	
Quibibe Caisse	April 6 th	-	
Muanesse Abdala	April 6 th		
QUIONGA			
Muiliho de Carlos Aquili	April 10 th		
Sumail Salimo Nabahane	April 10 th		February 8 th
Antonio Cardoso	April 10 th		
Saide Momade Agosten	April 10 th		
Bernardo Bacar	April 10 th		
Sabina Miguel Valombe	April 10 th		

Members of formal fisheries organizations

Organization	Location	Activity developed	Interviews in group	Interviews individually
			2011	2013
Fisheries Community Council	Quirinde	Fisheries co-management	April 12 nd	
Fisheries Community Council	Palma-sede	Fisheries co-management	April 15 th	
Fisheries Community Council	Olumbi	Fisheries co-management	April 15 th	
Atussana Fisheries Association	Palma-sede	Fishing and fish trade	April 16 th	
Armando Guebuza Fishers' Association	Palma-sede	Fish trade and fishing	April 17 th	
Bazaruto Fisheries Association		Fish trade and fishing	October 25 th	
Fisheries Association of Olumbi	Olumbi	Fish trade and fishing		June 20 th

Members of informal organizations

Group	Location	Activity developed	Interviews in group	
			2011	2013
Quirinde women collectors group (<i>Grupo de Mulheres colectoras de bivalves Quirinde</i>)	Quirinde	Fish trade and fishing		June 21 st
10 Congress Fishers Group (only 2 people)	Palma-sede	Fish trade	October 22 nd	
Informal fishing network (Americo Bacar and Saide Dade)	Palma-sede	Fish trade		
Atussana Saving and Rotating credit group	Palma-sede	Saving and Rotating credit		November 1 st
Women made Saving and Rotating credit group	Olumbi	Saving and Rotating credit		November 2 nd
Male made Saving and Rotating credit group	Olumbi	Saving and Rotating credit		November 1 st
Male and Female made Saving and Rotating credit group	Olumbi	Saving and Rotating credit		October 30 th
Female group of collectors	Maganja	Fishing		
Male group of collectors (harpoons)	Maganja	Fishing and fish trade		
Family extended network (Fatima Ali, children and neighbours)	Mbuize	Fishing (mosquito net)		October 17 th
Family extended network (Abdul Sefo and friends)	Quiwia	Collection with Harpoon	October 23 rd	

Family group (Neidine Salimo and daughters)	Quiwia	Collection of oysters and commercialization	October 23 rd	
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Influential Individuals in community

Name	Location	Position	Date of the interview	
			2011	2013
Luis Abdala	Milamba	Community leader	October 14 th	
Muidine AII (866246700)	Mbwize	Community leader	October 13 nd	
Francisco Kawawa	Quionga	Chief of Administrative Post	October 13 rd	
Saide Tarize	Palma-sede	Chief of village (Bagala)		November 2 nd
Awase Saide	Palma-sede	Community leader-Quelimane		November 2 nd
Naface Naface	Quirinde	Community leader - Quirinde		November 4 th
Momade Assan	Nsemo (Maganja)	Community leader - Nsemo		November 10 th
Achirafe Alupai	Quibunju (Maganja)	Community leader - Quibunju		November 10 th
Assane Nassoro	Quiwia	Community deputy leader		November 11 th
Imede Abdul	Olumbi	IDPPE extentionist	October 15 th	January 10 th

Appendix 3: Cense Fees for Artisanal and Subsistence Fisheries

<i>Fishing gear</i>	<i>Price (Mts)</i>	<i>Fishing gear</i>	<i>Price (Mts)</i>
Seine (on board)		Purse net	
<i>With onboard engine</i>	1559,30	<i>With onboard engine</i>	262,50
<i>With outboard engine</i>	1018,50	<i>With outboard engine</i>	131,30
Beach seine		<i>With no motorized boat</i>	105
<i>With outboard engine</i>	630	Hand line	
<i>With no boat</i>	451.50	<i>With onboard engine</i>	420
Gillnet		<i>With outboard engine</i>	357
<i>With onboard engine</i>	210	<i>With no motorized boat</i>	168
<i>With outboard engine</i>	178,50	Palangre	
<i>With no motorized boat</i>	115,50	<i>With onboard engine</i>	199,50
Traps (portable)		<i>With outboard engine</i>	357
Lobster	210	Collection	168
Crabs	141,80	– Bivalves	52,50
Fish	52,50	– Crabs	115,50
Traps	78,80	– Sea cucumber	1,575
Diving		Other not specified gear	183,80
Lobster (with harpoon)	1,470		
Lobster with gancho	787,50		
Other	525		

Source: Serviços Distritais de Actividades Económicas de Palma, 2012.

Appendix 4: Questionnaire

INTERVIEWS WITH THE MEMBERS OF THE DISTRICT GOVERNMENT

Questions on the Background of the fisheries sector in the region

Introduction: Researchers explain the project and its focus on subsistence fisheries.

1. Role of fisheries in livelihoods and food security

- What is the status of the livelihoods and food security in the district?
- What are the main sectors sustaining people's livelihoods and food security?
- What is the evidence of the contribution of fisheries to the economy of the district?

2. Subsistence fishing

- What do you understand by subsistence fisheries?
- Who are the subsistence fishers in your district?
- What fishing gear do they use and where do they fish?
- What has been the contribution of subsistence fisheries to food security and livelihoods?
- What are the main constraints of subsistence fisheries development in this area?

3. Formal spaces of participation

- What processes have been developed for the implementation of the ongoing decentralization program?
- What are the institutions that were created for the implementation of the decentralization program at district level?
- What mechanisms have been formally created to secure participation of all people in these institutions?
- Who are the actors evoked (by right) in these processes and how is their participation secured?
- What villages have been less included in these processes and why?
- Who determines the selection of those actors and villages and why?
- What are the conditions for people to participate in these processes?

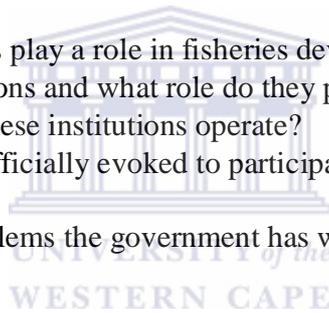
4. Functions of the district and local councils

- Who organizes the consultative councils?
- What are the main topics being discussed in these forums since their creation?

- Who determines the topics?
- Who are the actors evoked (by right) in these processes and how is their participation secured?
- What villages have been less included in these processes and why?
- Who determines the selection of those actors and villages and why?
- What are the conditions for people to participate in these processes?
- What opportunities have been created in these spaces and who decides on the allocation?
- What are the conditions for people to have access to these opportunities?
- Who are the people having more access to these opportunities?
- Who are the most excluded and why?
- What are the main changes brought about by the implementation of the local councils?

5. Informal structures

- Do informal institutions play a role in fisheries development?
- What are those institutions and what role do they play?
- Can you explain how these institutions operate?
- Are these institutions officially evoked to participate in meetings or decisions made in the local councils?
- What are the main problems the government has when working with these structures?



FOCUS GROUPS WITH THE VILLAGE LEADERSHIP

Location

District_____

Administrative Post_____

Locality_____

Village/community_____

Fishing centre_____

Questions guiding the discussion:

General

- What is the history of this village?
- Who founded the village?
- Where do people from this village come from?
- What motivated people to come to this place?
- How many people live in this village?
- What are the main economic activities?

Subsistence fishing

- What types of fishing are practised in this village?
- Are there collectors in this village?
- Does the village leader know how many collectors live in this village?
- Is subsistence fishing important for this village?
- What do you think is the role of this sector in the local food system?
- What are the other roles that subsistence fishing and its product plays in this village?
- What is the village leadership planning to do to help subsistence fisheries?
- What are the main constraints for subsistence fisheries development in this area?

Leadership

- Can you explain who governs this village?
- What are the main structures of decision-making?
- Who appoints the leaders?
- What is the role of the leader in fisheries development?

Spaces of participation

- How do people from this village participate in the village decision-making?
- What are the mechanisms that the village has to motivate the participation of people?
- How does the village interact with the Administrative Posts and localities?
- What type of organizations exist in this area?

- Who are the members?
- Who determines the selection of those actors and villages and why?
- What are the conditions for people to participate in these organizations?



FOCUS GROUPS WITH ARTISANAL – COMMERCIAL FISHERS

Location

District _____
Administrative Post _____
Locality _____
Village/community _____
Fishing centre _____

Questions guiding the discussion:

- Do you see collectors as fishers?
- What roles do subsistence fishers play in this community?
- Can these roles be played by other types of fishing?
- What are the main differences between artisanal-commercial fishers and subsistence fishers?
- Do you agree that:
 - a) Intertidal subsistence fishing offers more than an income to local communities?
 - b) Intertidal subsistence fishing provides food especially when the other activities cannot feed enough people?
 - c) Intertidal fishing can make someone's life prosper?

FOCUS GROUPS WITH SUBSISTENCE FISHERMEN and FISHERWOMEN

Location

District _____
Administrative Post _____
Locality _____
Village/community _____
Fishing centre _____

Questions guiding the discussion

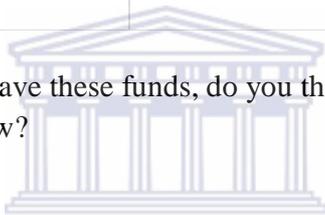
- What type of subsistence fishing exists in this area?
- What is the main fishing gear?
- Who is more involved in subsistence fishing: men or women?
- What resources are captured by this fishing?
- What are the main fishing areas members' of this communities use for subsistence fishing?
- How do you use your catches?
 - a. Do you sell or consume all catches?
 - b. Do you sell more or less than you consume at home?
 - c. Do you sell more than or less than you consume at home?
- Can you explain how subsistence fishing operations are organized, including your daily routines?
- Is there any other role that products from subsistence fisheries play, rather than food and incomes?
- Do you agree that:
 - d) Intertidal subsistence fishing offers more than an income to local communities?
 - e) Intertidal subsistence fishing provides food especially when the other activities cannot feed enough people?
 - f) Intertidal fishing can make someone's life prosper?
- What would subsistence fishers like to achieve in life as fishers?
- Do you think subsistence fishing can make someone's life good?
- Are you involved in any decision-making in this village?
- What are the main reasons that subsistence fishers do not attend or finish school?
- In your opinion, what does it mean to have 'power' or to be 'powerful' in the community?
- Do subsistence fishers participate in village or district meetings? If not, why not?
- Do you know the district consultative council?

- Have you heard about the district development fund (normally called 7 million Mets?)?
- Do you think these two are useful for subsistence fishing?
- How many subsistence fishers have benefited from receiving credit from 7 million?
- Who do you think have more access to these funds and why? (Examples)
- If you had a chance to have these funds, do you think you as subsistence fishers could be able to payback? How?

Prices of the product sold by subsistence fishers at local markets.

Name of the product	Price per kg (dried)	Price fresh	Name of the markets used

- If you had a chance to have these funds, do you think you as subsistence fishers could be able to payback? How?



The routine of the subsistence fishermen.

Hour	Men	Mulheres
22:00-4:00		
4:00-5:00		
5:00-6:00		
6:00-7:00		
7:00-8:00		
8:00-9:00		
9:00-10:00		
10:00-11:00		
11:00-12:00		
12:00-13:00		
13:00-14:00		
14:00-15:00		
15:00-16:00		
16:00-17:00		
17:00-18:00		

18:00-19:00			
19:00-20:00			
20:00-21:00			
21:00-22:00			
22:00-04:00			

The seasonal calendar (agriculture)

Production levels	J	F	M	A	M	J	J	A	S	O	N	D
High												
Moderate												
Low												

The seasonal calendar (subsistence fishers - Harpoons)

Production levels	J	F	M	A	M	J	J	A	S	O	N	D
High												
Moderate												
Low												

The seasonal calendar (subsistence fishers – Mosquito nets)

Production levels	J	F	M	A	M	J	J	A	S	O	N	D
High												
Moderate												
Low												

The seasonal calendar (subsistence fishers – Collection by hand)

Production levels	J	F	M	A	M	J	J	A	S	O	N	D
High												
Moderate												
Low												

FOCUS GROUPS WITH FORMAL AND FORMAL ORGANIZATIONS

Location

District_____

Administrative Post_____

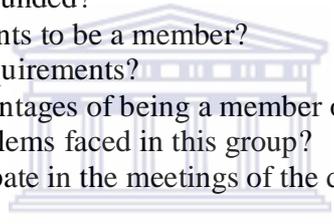
Locality_____

Village/community_____

Fishing centre_____

Questions guiding the discussion

- Tell us the story of this group.
- Who are the members and how they did come together?
- What are the main functions of this group?
- When was this group founded?
- What are the requirements to be a member?
- Who determines the requirements?
- What are the main advantages of being a member of this group?
- What are the main problems faced in this group?
- Does this group participate in the meetings of the district councils or fisheries community councils?

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Questionnaire for women: Food routines

District _____
 Administrative post _____
 Locality _____
 Village _____
 Household (Name of the head) _____

Number of weeks	Did you collect sea cucumbers, oysters or octopus yesterday?	Were the sea cucumbers, oysters or octopus part of your main meal yesterday?	How did the family get the meal they had yesterday?	Comments
1				
2				
3				
4				
5				



Appendix 5: The Structure of Governance of the Ministry of Fisheries

POLICY AND GOVERNANCE

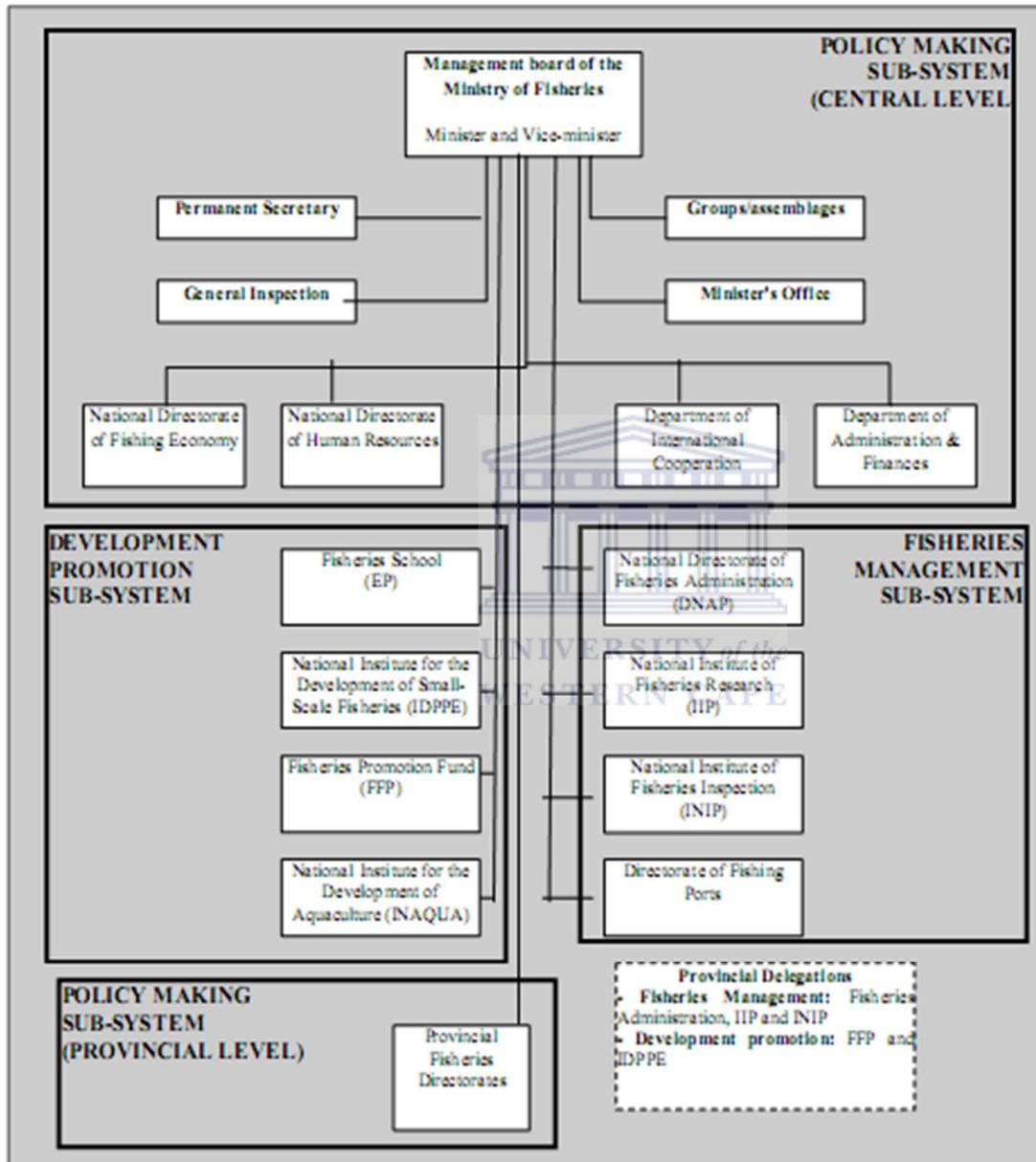


Figure 1. Framework of the fisheries sector in Mozambique (adapted from Ministério das Pescas, 2009^[1] and Ministério das Pescas, without date^[36])