POVERTY DYNAMICS AND LIVELIHOOD CHALLENGES AMONG SMALL-SCALE FISHING COMMUNITIES ON LAKE KARIBA - ZIMBABWE

DARLINGTON MUSHONGERA

Student No: 2866840

A mini thesis submitted in partial fulfillment of the requirements for the degree of Magister Philosophiae (M.Phil.) in Poverty, Land and Agrarian Studies in the Institute of Poverty, Land and Agrarian Studies (PLAAS), University of the Western Cape.

Supervisor/Mentor

Assoc Prof. Moenieba Isaacs

May 2013

KEYWORDS

Zimbabwe

Lake Kariba

Small-scale fishers

Poverty

Livelihood

Vulnerability

Access

Governance

Kapenta

Gill-net fishing

ABSTRACT

Poverty dynamics and livelihood challenges among small-scale fishing communities on Lake Kariba (Zimbabwe)

The aim of this study was to assess poverty among small-scale fishing communities on Lake Kariba (Zimbabwe) as well to as identify livelihood challenges that confront them. Two fishing communities were used as case studies and were uniquely selected from among the many fishing camps/villages dotted along the Zimbabwean shoreline of Lake Kariba. Depending on gear type, fishing activities on Lake Kariba target both the smaller-sized *Kapenta* species and larger species such as the bream and the tiger. Fishing activities are a major livelihood source for fishers in the two case studies upon which they obtain food and derive income to address other family needs. Mutual linkages and exchanges also exist between fishing camps/villages and communal areas where land-based activities such as cropping and livestock rearing are carried out.

Before fieldwork, there was a pre-conceived notion that members of fishing communities on Lake Kariba were very poor. Although the fishers expressed desires for a better life than they were experiencing, they did not consider themselves poor. Instead, they rated their economic position as well off compared to some of their urban counterparts. However, on further interrogation, the study revealed that the fishers were facing a set of vulnerabilities that is commonly associated with the fishing profession. These vulnerabilities had substantial impacts on the livelihood system of these fishers. Using vulnerability ladders, a picture was painted depicting the severity of these vulnerabilities. It emerged that fishers were more vulnerable to existing state institutions that are designed to manage access to and the use of

natural resources in the country. There are several reasons to suggest why this is the case which include, (i) the high cost of accessing the fishery, (ii) the stern measures in place that restrict access to and use of the fishery, and (iii) the punitive measures imposed for contravening rules of access and use of the fishery.

Although restricting access is in line with the principle of long run sustainability of the fishery, it may threaten the development of the fishing industry and impact negatively on livelihoods of communities involved. Unlike fisheries elsewhere in the world, Lake Kariba is not viewed as a vehicle for reducing poverty and achieving food security. On the contrary, government places emphasis on preserving and enhancing the natural environment both aquatic and non-aquatic with a view to sustaining tourism. Under such a paradigm, fishing is viewed as a threat to the natural environment and requires strict management. Heavy fines are therefore imposed on users that violate the rules of access. Many of the fishers have had their properties attached after failing to raise the necessary amounts to cover the fines.

By shifting away from the promotion of fisheries, government has accelerated the decline of the small-scale fishing industry on Lake Kariba, through narrowing the fishers action space and creating an environment conducive for corruption. The decline has subsequently shrunk the livelihoods base of local communities as well as many others who are associated with the fishing industry. While the sustainability of the fishery is paramount, government needs to reconsider its strategy on governing and managing fisheries on Lake Kariba. Given enough support, small-scale fisheries on Lake Kariba have the potential to contribute significantly to the country's Gross Domestic Product. Small-scale fisheries have also proved their resilience in the wake of the severe economic crisis that Zimbabwe experienced between 2007 and 2009. During this period, there were widespread shortages of basic food items in the country

and the demand for fish and fish products rose drastically. The fishers reported that there was an increase in the demand for fish during the crisis period to the extent that they could not supply enough to satisfy the market. This supports the observation by the United Nations (2010) that fisheries, in particular small-scale, can play an important role in the economy in terms of livelihoods, poverty reduction and food security. Fishing activities are also the perfect complement to other land-based livelihood activities for communities that live in close proximity to large water bodies.

DECLARATION

I declare that *Poverty Dynamics and Livelihood Challenges among the Small-Scale Fishing Communities on Lake Kariba (Zimbabwe)* is my own work, that it has not been submitted for any degree or examination in any other university, and that the sources I have used or quoted have been indicated and acknowledged by complete references.

Full name: Darlington Mushongera **Date……..**

Signed……

ACKNOWLEDGEMENTS

I am grateful to God the Almighty through His Son Jesus Christ for seeing me through this research project. Many thanks go to my supervisor, Assoc Prof Moenieba Isaacs, first for directing my attention towards this amazing territory of small-scale fisheries which is not only an interesting field in itself but one that is a mine of untapped knowledge, and secondly for her careful attention in molding this thesis. I also owe lots of gratitude to Richmond Ncube, a friend and colleague who assisted in reading and commenting on my initial drafts. Above all, I would like to thank my dear wife, Lilian, who kept me company during the writing of this thesis. I would also like to thank Padenga (Pvt) Limited in Kariba for facilitating cruise boats and accommodation during my field visit to Chalala fishing camp in Bumi Hills.

DEDICATION

To my wife Lilian and our two lovely children Patience and Pardon.

Table of Contents

List of figures

List of tables

CHAPTER 1

1.1 INTRODUCTORY CHAPTER

1.1.1 Introduction

"Most people in the world are poor and understanding the economics of the poor means understanding the economics that really matters" (Schultz 1980).

Schultz's statement, made over three decades ago, is still as true as it was when he said it in 1980. Poverty is a global issue. There is growing concern that the Millennium Development Goal (MDG) of eradicating extreme poverty by 2015 may not be achievable (United Nations, 2010). Despite advances in knowledge and technology worldwide, poverty remains an intractable foe affecting many people, in particular the developing world. In its 2010 *World Development Report*, the World Bank estimated that in 2005, the number of people living in extreme poverty i.e. on less than US$1.25 a day was 1.4 billion (Todaro and Smith, 2011). Earlier studies by Hersoug (2005) showed that an estimated 1.3 billion people in developing countries live in absolute poverty and have incomes of less than US$1 a day. These statistics reflect a phenomenal increase in the number of people living in extreme poverty across the globe.

Researchers agree that the majority of the poor, particularly in developing countries, are found in rural areas, predominantly in Asia and Africa. Here, the poor are estimated to constitute 80% of the poor globally (Todaro and Smith, 2005). Natural resources such as soils, forests, water and wildlife form a fundamental economic base for rural communities. As a result rural dwellers are forced to engage in primary activities such as agriculture, livestock rearing, fishing and hunting (Barret, 2003). It has also been established that the majority of the poor are mostly women and children, as opposed to adult males, and are

concentrated among minority ethnic groups (Todaro and Smith, 2005). However, as the results of this research show, such conclusions must be approached with caution because many aggregate statistics do mask much of what the poor really go through on a daily basis (Du Toit, 2005). Poverty may or may not be severe depending on how it is defined, in particular if defined by those who experience it. This study concurs with Narayan et al (2000) who argue that the true poverty "experts" are the poor people themselves.

1.1.2 Global context of fisheries and poverty

The small-scale fishing sector in Africa and Asia is laden with symptoms of poverty enough to attract the attention of both academics and development experts (Béné, 2003). As early as 1974, the Food and Agriculture Organisation (FAO, 1974) observed that poverty was widespread among the small-scale fishing sector. The FAO concluded that the people engaged in small-scale fisheries including their families continue to live at the margin of subsistence and human dignity (FAO, 1974). Despite this early realization and the relatively large size of the sector, knowledge about the extent of poverty in the small-scale fisheries sector was limited in both development and academic circles until mid-2000 (FAO, 2002; Béné, 2003, 2004; Hersoug, 2005). According to FAO (2002), an estimated 30 million people globally are engaged in fishing and around 22 million of them are in the small-scale fisheries sector. If other fishery-related activities are taken into account, including dependant family members, up to 150 million people could be deriving their livelihoods from small-scale fisheries (Hersoug, 2005). Sadly, data estimates show that 23 million fishery-dependent people are living on less than US$1 per day (World Fish Center/FAO, 2005). Despite a rather grim picture, there is consensus that fisheries contribute to economic growth and can assist in meeting the United Nations MDG of eradicating extreme poverty (United Nations, 2010; Jentoft and Eide, 2011). However, the sector is plagued by challenges that suppress prospects for expansion and growth (Jentoft and Eide, 2011).

Fisheries and in particular small-scale fisheries is an active area of research and important questions are being asked on why poverty in the sector is persisting and what action is needed to realise the full economic potential of the sector. Earlier research in the sector was dominated by economists and biologists who applied the discourse of income and over-exploitation and painted a picture that fishing communities were by definition poor (Béné 2004; Hersoug, 2005). More recent research is looking beyond the economic and biological views by focusing on other previously ignored but important dimensions of the sector. One such initiative was a project called *Poverty Mosaics: Realities and Prospects in Small-Scale Fisheries,* published in 2011. This work, edited by Jentoft and Eide, draw case studies on small-scale fisheries from a number of countries in Africa, Asia, South America and Europe. A key conclusion from this work is that that the state of the fisheries sector at any given point in time depends upon a set of both endogenous and exogenous factors such as gear and effort, the natural environment, the socio- economic environment as well as the the political and legal framework (Chuenpagdee and Jentoft, 2011). Using case studies from a number developed and developing countries, the authors acknowledge the socio-economic importance of the fisheries sector and highlight the need for more robust approaches in the analysis of poverty.

1.1.3 Fisheries on Lake Kariba (Zimbabwe)

Although the fisheries sector in Zimbabwe has economic significance, there is very little research that focuses on the poverty conditions and livelihood challenges that people in this sector endure such as on Lake Kariba. Fishing on Lake Kariba set off in 1967 after the introduction of the *Kapenta* fish species by the Zambian government and by 1978 the industry began to expand along the Zimbabwean shoreline (Madamombe, 2002). A lot of the infrastructural developments that took place along the lake shore prior to and soon after independence were a result of the expansion of the *Kapenta* industry. Physical infrastructure

was needed to improve accessibility to the Lake as well as to ease the harvesting, processing and transportation.

The Zimbabwean government went ahead and established a more pronounced and structured fishing sector of up to five major fishing basins and over 40 fishing camps/villages (Mtada, 1985; Songore et al, 1998; Nyikahadzoi, 1999). Research activities on the lake ecosystem were also initiated which focused mainly on stock assessment, fish population dynamics, yield prediction, multi-species modeling and other environmental and sustainability issues (e.g. Kolding et al, 1992; Marshall, 1992; Nyikahadzoi, 1999; Madamombe 2002, among others). The Lake Kariba Fisheries Research Institute (LKFRI, 2011) has also carried out frame surveys and collected data on harvests and catch per unit effort, over the years. By focusing on scientific aspects of the fishery, research on Lake Kariba paid less attention to the poverty conditions that most fishing communities endure. The main reason for this is that, state policy classified Lake Kariba and parts of the adjacent area as national parks they serve recreational purposes hence generating revenue for government through tourism. Operating under the Parks and Wildlife Act of 1975, the Zimbabwe Parks & Wildlife Management Authority (Zimparks) was established to manage and protect natural resources and wildlife, which are naturally situated around national lakes, dams and other large water bodies. Zimparks was also mandated to monitor the impact of recreational activities on the environment. Other pieces of legislation such as the Natural Resources Act (Chapter 20:13), and the Forest Act (Chapter 19:05) were amended to deal with specific aspects of the natural environment such as vegetation and water.

1.1.4 Fisheries legislation

From the onset, fishing policy regulations in Zimbabwe were always premised on the promotion of fishing as sport (Malasha, 2004). Such an approach was in direct contrast to

that taken by the Zambian government. Zambia's policy on fisheries viewed fisheries as playing a very pivotal role in providing food to a growing labour population in urban areas, but Zimbabwe viewed fisheries from a recreational and tourism point of view (Malasha, 2004). Consequently, fishing regulations in Zimbabwe were tightly controlled, limiting access to local communities. Although the new government promoted commercial fishing after 1980, there was no dramatic shift in fisheries policy which continued to favour tourism and limiting the number of fishing permits. Such a policy has resulted in under-fishing on the Zimbabwean side of Lake Kariba (Kolding et al, 2004; Malasha, 2004).

1.1.5 Accessing fisheries on Lake Kariba (Zimbabwe)

Lake Kariba is renowned for its *Kapenta*, bream and tiger fish species. However, there are over 40 fish species found in the lake (Madamombe, 2002). Accessing fisheries resources such as lakes and dams in Zimbabwe carries a financial cost to users. The costs vary depending on the type of fishing activity as well as on the resource being accessed. Table 1 below shows the access fees (or permit fees) applicable to different types of fishing levied at the various fisheries resources in the country.

Table 1: Classification of fishers and permit fees[1]

Type of fishing	Vicinity	Permit Fees (US$/Annum)	Conditions
Sport Fishing- Tour Operators	Kariba	$400.00	Excluding river usage
Angling	Prime fishing areas of lake - Tiger Bay - Antelope Park and - Crocodile Park	US$ 5, 00 resident/day US$10,00 Non Resident/day	Excluding river usage
Motorised Fishing	All Areas	US$10,00 Locals, US$20,00	Inclusive of river usage Bag limit of 6/day
Motorised Fishing	Commercial seine/gill-net fishing	US$10000	
Kapenta fishing	Kariba	TBA (Base Price)	Actual to be based on turnover
Gill-net fishing block permit	Binga & Nyaminyami Rural Council	US$2400.00/Annum	

Source: http://www.zimparks.org , accessed 04/10/2012

[1] Source: Zimbabwe Parks and Wildlife Management Authority. http://www.zimparks.org accessed 04/10/2012

An analysis of the permits fees shows that, large water bodies in Zimbabwe serve multiple purposes and governments generate revenue for the fiscus through these levies. However, evidence on the ground showed that the government's approach to the management of fisheries resources such as Lake Kariba has important implications for fishing communities on Lake Kariba. Most of these communities depend heavily on fishing and any increase in the cost of accessing the lake resource has a devastating impact on their livelihoods.

1.1.6 The Lake Kariba fishery

Lake Kariba is a large man-made lake jointly owned by the governments of Zimbabwe and Zambia. The lake emerged from the construction of the Kariba Dam. The dam was built in the early 1950s by the federal government of Rhodesia and Nyasaland with the sole aim of generating hydroelectric power. At the time of its construction, it was the largest man-made reservoir in the world and is currently the second largest reservoir in Africa by volume (Malasha, 2008). Its completion in 1956 gave rise to a new ecosystem in the area. The lives of the Tonga people who once lived and derived their livelihoods from the perennial Zambezi River were also affected (Integrated Regional Information Networks (IRIN), 2007)[2]. The two riparian countries, Zambia and Zimbabwe now share the lake on a ratio of 45% to 55% respectively (Malasha, 2008). Although fishing activities are taking place on both sides of the Lake, they operate under two completely different management regimes.

[2] Integrated Regional Information Networks (IRIN) is a humanitarian news and analysis service covering the parts of the world often under-reported, misunderstood or ignored.

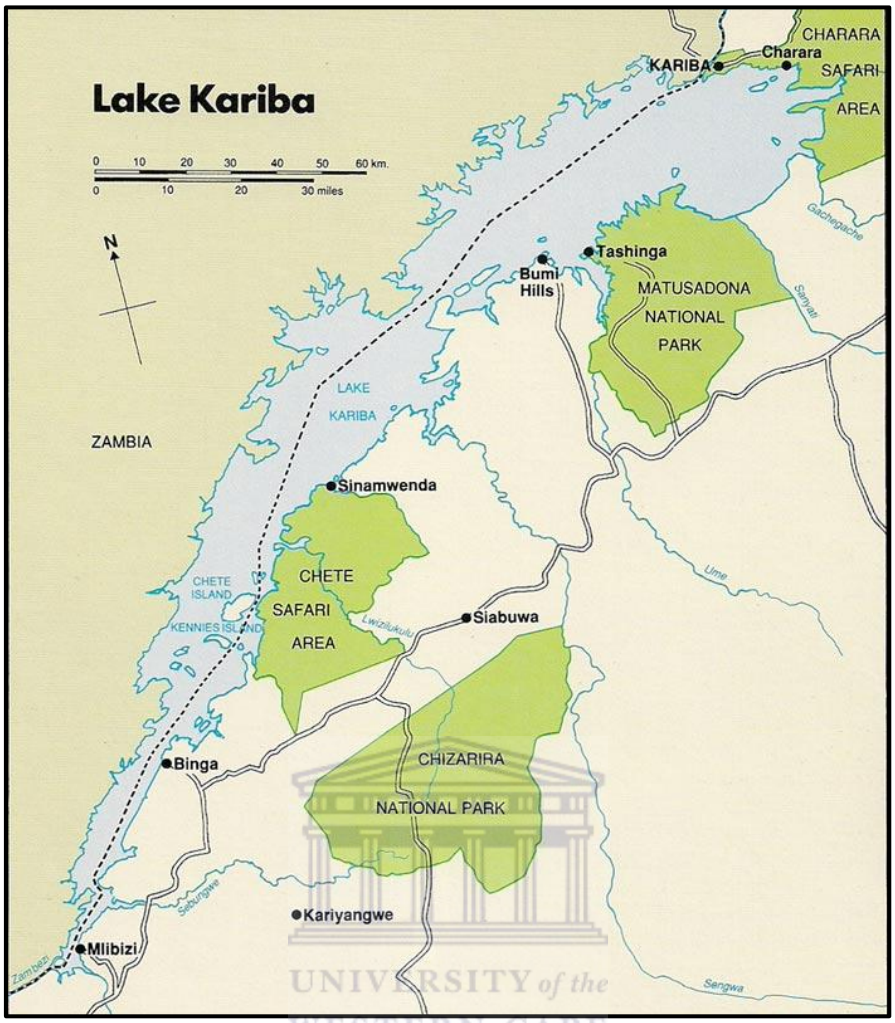

Figure 1: A map of Lake Kariba (including Safari areas and National Parks)[3]

Administratively, different parts of the Zimbabwean lakeshore fall under different authorities, which are, Nyaminyami Rural District Council (RDC), Binga RDC, and Zimparks. Figure 1 above show the extent of Lake Kariba as well as national parks and safari areas (in green) that lie adjacent to the Lake. These are directly administered by Zimparks.

1.1.7 Post-independence developments in Zimbabwe

Zimbabwe gained independence from British colonial rule in 1980. The new government immediately embarked on a series of reforms that were aimed at strengthening political power as well as promoting equitable economic growth. Some of these reforms included land

[3] Source: http://www.victoriafalls-guide.net/kariba-ferry.html accessed 04/04/2013

resettlement and the creation of credit and product markets in both communal and resettlement areas. Capacity building programmes were also extended to communal farmers through the Agricultural Technical and Extension Services Department (AGRITEX, now AREX). Due to this support, agricultural output from the smallholder sector increased significantly between 1980 and 1986 (Rukuni and Eicher, 1994; Dore, 2012).

The fishing sector on Lake Kariba also received a boost as similar reforms led government to increase support to the fishing industry. The private sector also gained interest in the industry and extended support to fishing cooperatives that had been established on the shoreline of Lake Kariba. As the results of this study show, the fishers and community members interviewed narrated on how vibrant fishing activities were during the 1980s and 1990s. Companies such as Irvin and Johnson (I&J) entered into partnerships with fishers supporting them with fishing gear and training while also acting as the main buyer of the fish harvest.

1.1.8 Economic crisis

The 1980's decade in Zimbabwe was a period of remarkable economic development. However, the negotiated settlement for independence at Lancaster in 1979 did not fully resolve the land question. During the first decade of independence, government failed to embark on land reform on a full-scale due to the restrictions set by the Lancaster House Agreement of 1979. Although resettlement activities that took place during the 1980s were successful, they could not satisfy the demand for land. At the lapse of the Lancaster House Agreement in 1990, the land reform programme was faced with a serious challenge after Britain reneged on its earlier commitment to fund the programme on the basis that there was no rule of law in the country. On the other hand, the World Bank coerced Zimbabwe to introduce an economic structural adjustment programme that subsequently led to loss of jobs and calls by the public for land. Failure by government to adequately address these

challenges caused government to lose the confidence of the public. An attempt to fast track the land reform process in 2000, led to the collapse of the agricultural sector and other related industries. Widespread shortages of fuel, i.e. petrol and diesel dealt a major blow to the fishing industry on Lake Kariba. The impact of these new economic challenges was strongly felt by fishing communities to the extent that they were threatening their livelihoods.

1.1.9 Aim of the study

This study aims to analyse the poverty conditions and livelihood challenges of communities on Lake Kariba that depend on inshore fishing for their livelihood. As noted earlier, fisheries, in particular small-scale, are an important sector that has potential to contribute significantly to poverty-reduction. Using two case studies of fishing communities on Lake Kariba in Zimbabwe's Mashonaland West province, this research aims at the following:

a) Add to the current body of literature on the economic significance of small-scale fisheries.
b) Assess the livelihood challenges and coping strategies of small-scale fishing communities.
c) Assess the role of institutions in the governance and development of the small-scale fisheries sector.

The study was undertaken against the background that poverty is multi-dimensional (Organisation for Economic Cooperation and Development (OECD), 2001; Barret 2003; Béné 2004; Walmsley et al 2006). Hence, any research into the causes and consequences of poverty needs to consider this. In-depth studies are needed to expose the structural dimensions that render people vulnerable to poverty over long periods of time (du Toit, 2005). Researchers have developed a renewed research interest in the poverty conditions in the small-scale fisheries sector and are using mixed approaches to understand the economic

conditions of people who derive their livelihoods from small-scale fishing (Jentoft and Eide, 2011). In addition, there is an emerging view that fisheries do not always "rhyme with poverty" as initially assumed by Béné in 2003 and 2004 (Jentoft and Eide, 2011).

1.1.10 Research Questions

This research sought to answer the following questions:

a. What is the nature and extent of poverty among the small-scale fishing communities on Lake Kariba and what changes have taken place over time?
b. How is governance and access to fisheries' resources structured and with what impact on fishers' local organization and ability to access the fishery?
c. What livelihood challenges are facing small-scale fishing communities and what coping mechanisms do they apply?

1.1.11 Assumptions of the study

a. Although the study embraces the much-agreed notion that poverty is multidimensional, it also takes the view that poverty is a relative concept and is best explained by those who experience it.
b. Fisheries do not always "rhyme with poverty" and fishing is not necessarily a "safety valve" (Onyango, 2011), but a way of life.
c. The way in which people are positioned in society through their access to resources and their insertion into political and social relations is critical if people are to escape poverty (du Toit, 2005).
d. The socio-institutional mechanisms that govern people's access to the fisheries play a critical role in determining people's vulnerability to poverty (Béné, 2003; du Toit, 2005).

1.1.12 Rationale and significance of the study

The study of poverty and livelihoods in the fisheries sector on Lake Kariba is of significance to Zimbabwe. The collapse of Zimbabwe's agricultural sector, in particular after 2000, sent a clear signal that over-reliance on a single sector was not in the best interests of the economy. Although the fishing sector showed potential to grow, government focused more on land-based agricultural activities because fishing was contributing less to the economy. Besides, government had always faced challenges in reaching out to remote communities such as those in Nyaminyami and Binga districts. Yet for many years, fishing activities on Lake Kariba were a source of livelihood for these communities. The development of commercial fishing on the Lake led to the creation of fishery related industries in the town of Kariba, hence generating employment for many local people. The influence of the fishing industry extended way beyond the Lake's hinterland to as far as the capital Harare where I&J had established retails stores for selling fish and other meat products to the public. All these developments demonstrated the importance of the fisheries industry to the Zimbabwean economy in general and to local communities in particular by offering opportunities for livelihood diversification.

1.1.13 Summary

This chapter set the scene for the study by situating poverty in the fisheries sector in an international context. There is growing interest in understanding this sector with a view to determine, not only why poverty persists but also how the sector's potential may be unlocked. The economic developments that gave rise to the establishment of the fishing industry on Lake Kariba in Zimbabwe were also described. Although there was a boom in the fisheries industry in the 1980s and 1990s, the importance of the fishing industry was not considered critical. However, with the collapse of the agricultural sector, following the fast track land reform programme and subsequently the political and economic crises, brought renewed

interest in the sector as people sought alternative forms of livelihoods.

The chapter also highlighted the existence of fisheries research on Lake Kariba and how this research skirts around poverty and livelihoods and focuses on scientific aspects of fisheries. This has created a knowledge gap in terms of the economic conditions facing fishery dependent communities that live on the shoreline of Lake Kariba (Zimbabwe). The Lake Kariba Fisheries Research Institute (LKFRI) has conducted a number of Frame Surveys over the years, but these surveys are mere statistics that show the profile and distribution of fishers in the various fishing basins. Detailed analysis of the poverty conditions among these fishers is still scarce and this study hopes to fill this gap and add to the existing body of literature on poverty in fisheries. The aim is to highlight the conditions that render these communities poor for longer periods.

2 CHAPTER II

2.1 RESEARCH METHODOLOGY

2.1.1 Introduction

In order to understand the poverty conditions and livelihood challenges of fishing communities on Lake Kariba, the study employed familiar methodologies in the social sciences. The research design was selected to suit both the location of the communities and their organizational set up. Appropriate techniques were used during fieldwork in the collection and analysis of information. A purely qualitative approach was used due to the nature of the research and the information that was to be collected. In the social sciences, qualitative research methodologies are very important and widely used. They enable researchers to undertake a detailed inquiry of factors that affect people's lives as well how people adapt their lives. The case of the fishing communities on Lake Kariba is well suited for a qualitative inquiry. This chapter provides an account of the various qualitative research methods that were used during the study to collect and analyse information.

2.1.2 Research design

2.1.2.1 Case study approach

A case study approach was used for this study. Fishing communities on Lake Kariba are organized as fishing camps/villages that are uniquely identifiable and located at particular points on the lakeshore. There are 41 fishing camps/villages, and two of these were purposively selected for the study (LKFRI, 2011). Although it was ideal to study more than two camps/villages, the logistical difficulty and high cost of accessing most of these camps/villages were major limiting factors. The most convenient mode of transport for reaching most of these camps/villages is by boat from Kariba town. However, the cost of hiring a boat to move across the Lake and reach out to these camps/villages was very high. Based on these logistical complexities the two communities of Gatshe-Gatshe and Chalala

were eventually chosen. Gatshe-Gatshe is very close to the town of Kariba and was accessible without the need for overnight stay (since there are no accommodation facilities). Although Chalala is 80km from Kariba, there were facilities for overnight stay in the area.

These sites, however, are some of the most well-known fishing communities on Lake Kariba. They have a fishing history that dates back to the early 1970s and were instrumental in providing fairly detailed accounts of the development of inshore fisheries on Lake Kariba as well as highlighting the challenges and opportunities that faced communities during those periods. The historical accounts were also important in revealing how the interaction of factors such as location, government policy, economic change and social capital shaped the economic behavior and the livelihood systems of fishing communities on Lake Kariba. It was also possible to understand the reasons behind the existing trans-boundary conflicts between Zimbabwean and Zambian fishers over the shared fishery resource.

2.1.2.2 Comparative approach

This study also used comparative analytical approaches with a view to understanding the commonalities and differences between fishing communities located at different points on the Lake. Although the same legal framework governs fishers at Gatshe-Gatshe and Chalala, there were important operational factors that were unique to each community. These factors further highlighted the impact that location has on the livelihood structure and what challenges face these communities. Comparative analysis has several advantages. Firstly, it permits the exposition of similarity and variance. Secondly, it allows one to separate patterns that are more general from those that are unique (Mills et al, 2006). The use of this approach was instrumental in triangulating and hence confirming the observed patterns and trends in fishing activities and fisheries governance on the Lake.

2.1.3 Basis for choosing the two communities

The two camps/villages were selected for the following reasons:

- *Firstly*, both fishing communities are engaged in different types of fishing. The fishers at Gatshe-Gatshe specialize in gill-net fishing only while Chalala fishers specialize mainly in Kapenta and a few practice gill-net fishing. This disparity in fishing methods enabled the research to establish challenges that face fishers who use particular methods of fishing.
- *Secondly*, there are differences in the way the two communities are organized. Institutionally the fishers at Gatshe-Gatshe are organized as a cooperative. They are expected to live and work as a single group. However, as shown in later sections, these fishers have their own operational methods within the broader framework of cooperatives. The Chalala fishing community consists of a diverse set of fisher arrangements namely cooperatives, private commercial companies, family, and individual fishers. These different arrangements imply that the fishers face different challenges unique to their institutional set up over and above the general challenges common to all fishers.
- *Thirdly*, there are distinct locational differences between these two communities. Gatshe-Gatshe is situated in close proximity to the town of Kariba, making it convenient and less costly to access markets. However, Chalala is located a considerable distance from the town of Kariba. As discussed in the results section, these locational differences have significant implications for the fishers in terms of marketing, sourcing of inputs and accessing public services. Although some of the challenges were similar, the magnitude of the difference was determined by location.
- *Fourthly*, the two communities face the same fisheries governance system. However, they fall under different authorities. The Gatshe-Gatshe community is located within

the Zimparks area while Chalala falls under Nyaminyami Rural District Council. This had implications in terms of how fishers accessed basic services. In addition, their position on the lake also had an influence on the extent to which these communities participated in other non-fishing livelihood activities.

2.1.4 Target population

The target population consisted of the individuals who were directly and indirectly involved in fishing activities on the Lake (hence forming a fisheries' dependent community). A diversity of occupations existed, particularly at communities like Chalala, with strong links to fishing. These linkages between fishers and non-fishers were critical in understanding livelihoods and poverty within the fishing camps/villages. As discussed in the results section, important insights about fisheries livelihoods were revealed by members of the communities, from both fishers and non-fishers. The focus was also on small-scale fishers as defined in Section 3.1.2 below. Most of these fishers use inferior equipment for fishing and given their linkages with communal areas, their fishing is seasonal and is supplemented by other land-based activities. The other respondents were the new entrants into the industry, whose capital outlay was very to afford only a single fishing rig and a handful of workers. There are refered here as own-operators. The rest were community members, people whose livelihoods were associated with fisheries or who worked in the service industry that served the fishing community.

Permission to interview members of the Chalala community was sought from the local ward councillor. The boat captain who was a native of the area facilitated entry into the community. His ability to speak the local Tonga language also assisted in facilitating interviews with some members who were not conversant with the vernacular Shona language. Given his fisheries background, the boat captain was also included in the list of people

interviewed at Chalala.

2.1.5 Research techniques and tools

2.1.5.1 Focus group discussion

Given that the Gatshe-Gatshe fishing community is organized as a cooperative, a single focus group discussion was used to obtain information from this site. As a cooperative, Gatshe-Gatshe uses a committee system to run the affairs of the fishing village. The committee also acts as a window of communication between the village and state authorities. The cooperative had 10 households and was located in the Zimparks area, a considerable distance from the communal areas of Nyaminyami district. As a result, this community has limitations in terms of how much non-fishing activities they can undertake. Since there was a fair amount of uniformity in this group compared to Chalala, there was no value in carrying out individual interviews because their experiences were similar. The Gatshe-Gatshe focus group consisted of four people, three of whom were members of the committee. The interview was conducted on the 3rd of January 2012.

2.1.5.2 Face to face interviews

Given the diversity of occupations and the variation in fishing arrangements at Chalala, several interviews were conducted with both fisher and non-fisher members of the community. This approach was instrumental in highlighting the diversity of livelihoods and major challenges that affect the community's broader lifestyle but with bearing on their livelihoods and well-being. Seven face-to-face interviews were conducted with the following:

- *Gill-net fisher* – This was an elderly fisherman who lived on a separate compound with his family. Fishing has been his main occupation since he was a child in the 1960s. His fishing method was gill-net fishing. (Interviewed on 05/01/2012).
- *Community member* (*fisher-cum-communal farmer*) – This interviewee was a man who engaged in both fishing and land based livelihood activities in the communal

areas of Nyaminyami district. This interview shed light on the dual life that most fishers in Chalala live and the livelihood linkages that are created between the communal home and the fishing village. (Interviewed on 05/01/2012).

- *Police Officer* – Crime is one of the major challenges facing fishing communities on Lake Kariba. An interview with the law-keeping agent, the police, revealed the extent to which livelihoods are affected by local criminal activities committed by both locals and foreigners. (Interviewed on 05/01/2012).
- *Health Official* – Fishing livelihoods depend not only on the size of the catch but also on the sanitary conditions within the fishing camps/villages. Access to clean drinking water and proper sanitary facilities were some of the challenges facing the Chalala community. An interview with the health official at Chalala clinic revealed some disturbing trends relating to the fishing industry in the area. (Interviewed on 05/01/2012).

In addition to the face-to-face interviews discussed above, a further three in-depth interviews were also carried out with a view to obtain authoritative evidence on poverty and livelihoods at Chalala. The three members who acted as key informants were:

- *Sole commercial Kapenta fisher* – This was a male member of the community at Chalala. He was a retired senior manager from a nearby crocodile farm owned by Padenga (Pvt.) Ltd. at the Ume River estuary. Using his retirement funds as capital, this fisher took up Kapenta fishing as his new form of livelihood. This interview provided useful information on the institutional challenges facing new entrants and those intending to officially enter into commercial Kapenta fishing on Lake Kariba. His knowledge of the area and interaction with fishers also provided important information on fisher behavior under different organisational settings. (Interviewed on

05/01/2012).

- *Boat captain* – This middle-aged man spent his early years as a fisher in a family business. This interview revealed the changes that took place in the fishing industry on Lake Kariba since the 1980s. Some of these changes were responsible for the observed decline in fishing activities on Lake Kariba in general and in Chalala in particular. The decline also explains why he took up formal employment as a boat captain at a nearby crocodile farm. (Interviewed on 05/01/2012).
- *Ex-employee of a commercial Kapenta company*

  Evidence provided in this interview confirmed some of the issues raised by the boat captain, in particular the decline in fisheries causing employees in the sector to either establish their own fishing enterprises or to seek alternative employment. This respondent described that *Kapenta* fishing had challenges that had to do with relationships between employers and employees. His testimony also confirmed the diversity of occupations and the importance of skills in livelihood adaptation within fishing communities. (Interviewed on 05/01/2012).

2.1.6 Data presentation, analysis and interpretation

There are several methods for presenting and analyzing qualitative information: the deductive approach and the inductive approach. The deductive approach bases the analysis on a set of pre-determined theories. Given the new theories on poverty among fishing communities, this method was used in the analysis and interpretation of the research findings. The inductive approach, which uses empirical evidence to make generalisations, was also used in developing a set of common themes that were based on the findings. This process was useful in detailing the livelihood challenges facing the two communities as well as in constructing vulnerability ladders for the two communities. Direct quotations, tables and pictures were also used to present some of the information emerging from the study. A number of analytical

frameworks that were used in the deductive approach were based on recent concepts that assist in explaining poverty in fisheries. These are:

2.1.6.1 Social capital and relational perspectives

This approach takes the view that small-scale fishers are not a homogeneous group but consist of different people i.e men and women who perform different tasks, fishing, processing, boat construction and repair works among others. The need to make that distinction is important because different groups derive benefits from fishing in ways that indicate subordination and/ or exploitation (Hara, 2011; Isaacs, 2011). There are also several relational aspects among the Gatshe-Gatshe and Chalala communities that depend heavily on existing fishing arrangements. Depending on how these relationships are managed, significant and positive livelihood outcomes may be obtained by those involved. In other cases, these relationships determine the conditions of entry into and exit from the fishing industry.

2.1.6.2 Co-management and governance theory

This aspect puts Zimbabwe's fisheries sector on Lake Kariba into perspective. Lake Kariba and its immediate surroundings have been designated as protected areas and since there are people living in these areas, the government cannot avoid exploitation of the natural resources particularly wildlife and fisheries. Co-management was tried as an option to bridge this divide. However, due to failure by government to adequately incorporate concerns and interests of communities involved, the system was not very successful. The co-management arrangements that existed impacted on the livelihood structures of the local communities, in particular communities located in areas that fall under Zimparks, such as Gatshe-Gatshe.

2.1.6.3 Environmental entitlements

Access is a very important aspect particularly where common resources exist or where access is controlled as in the case of Lake Kariba. Government possesses full rights to the Lake,

wildlife and vegetation in the area and has set up an authority with a mandate to protect natural resources and wildlife. Without a license, both current and prospective fishers are not able to utilize the Lake's fisheries resource. As Sen (1981) puts it, it is not the scarcity of resources that lead to poverty but lack of access to the resources. Access is therefore important for fishing communities on the Lake.

2.1.6.4 Livelihoods approach

This approach emphasizes that income is not a true assessment of poverty (Béné, 2004). Therefore people may not necessarily be classified as poor even if they may lack money. A money metric approach to poverty is quite narrow and fails to capture adequately the assets and opportunities that communities face. This approach emphasizes the importance of establishing appropriate institutions that enable communities to access and utilize resources.

2.1.6.5 Chain Analysis

An important analysis framework that was relevant to this study was the Chain Analysis, as proposed by Chuenpagdee and Jentoft (2011). By analysing poverty through the Chain Analysis lens, it is acknowledged that the causes of poverty and the drivers of poverty among fishing communities lie at different points on the fish chain. As a result, government interventions and responses aimed at improving livelihood conditions in the fisheries sector must occur at all these points (Chuenpagdee and Jentoft, 2011). Depending on their organisational set up, fishers on Lake Kariba face different challenges along their chain. Factors such as group relations and dynamics, fisheries policy, transport infrastructure, and market conditions are critical in determining the success of a fishing enterprise.

These analysis frameworks, elaborated fully in Chapter 3, were useful in contextualising and analysing poverty and livelihood conditions among fishing communities on Lake Kariba including the challenges they face.

2.1.7 Location of research sites

Inshore fishing camps/villages are distributed into seven fishing areas C1 to C7 (see Figure 2 below). Areas C1 and C3 are under the control of Zimparks. Areas C2, C4 and part of C5 are under the jurisdiction of the Nyaminyami Rural District Council. The other part of C5 through to C7 fall under Binga District Council (LKFRI, 2011). (See Figure 2 on page 23).

According to the 2011 frame survey by LKFRI, the total population in the fishing camps/villages is 6700 (LKFRI, 2011). In terms of this classification, Gatshe-Gatshe lies in area C1 and Chalala is within C4. Gatshe-Gatshe is the nearest to Kariba town at 12km while Chalala is among the furthest from the town at 80km (Table 2 below).

Table 2: Research sites[4]

Sites	Fishing zone	Authority	Distance from Kariba
Kariba town	-	Kariba Town Council	-
Gatshe-Gatshe	C5	Zimparks	12km
Chalala	C1	Nyaminyami RDC	80km

As discussed in Chapter 4, the distance from key places has important implications for livelihoods and livelihood challenges facing the different fishing communities. The fact that the two fishing camps/villages have separate authorities, imposes further differences in terms of the nature and level of service delivery they receive.

2.1.8 Chalala fishing village

Chalala is located on latitude 16^0 $50^{'}$ $24.93^{"}$ S and longitude 28^0 $17^{'}$ $19.25^{"}$.E Although remote and secluded, Chalala is located closer to other commercial activities such as Padenga Crocodile Farm, the famous Bumi Hills Hotel and several safari and game lodges. Road infrastructure in the area is however in bad shape hence making access by road very difficult.

[4] Source: Author

The hinterland of Chalala consists of the Nyaminyami communal lands where villagers engage in crop farming and livestock rearing. As discussed later, some of the fishers at Chalala alternate between the fishery and communal farming activities. The main crops grown in the area are cotton and other drought resistant crops such as sorghum due to the arid conditions experienced in the area. The annual average rainfall is only 650mm and temperatures can rise up to 40 degrees Celsius (Taylor, 1990). The soils are of poor quality and with a rugged topography, intensive agriculture is rendered almost impossible (Murombedzi, 1992). The linkage between farming and fishing activities is of importance to the Chalala community.

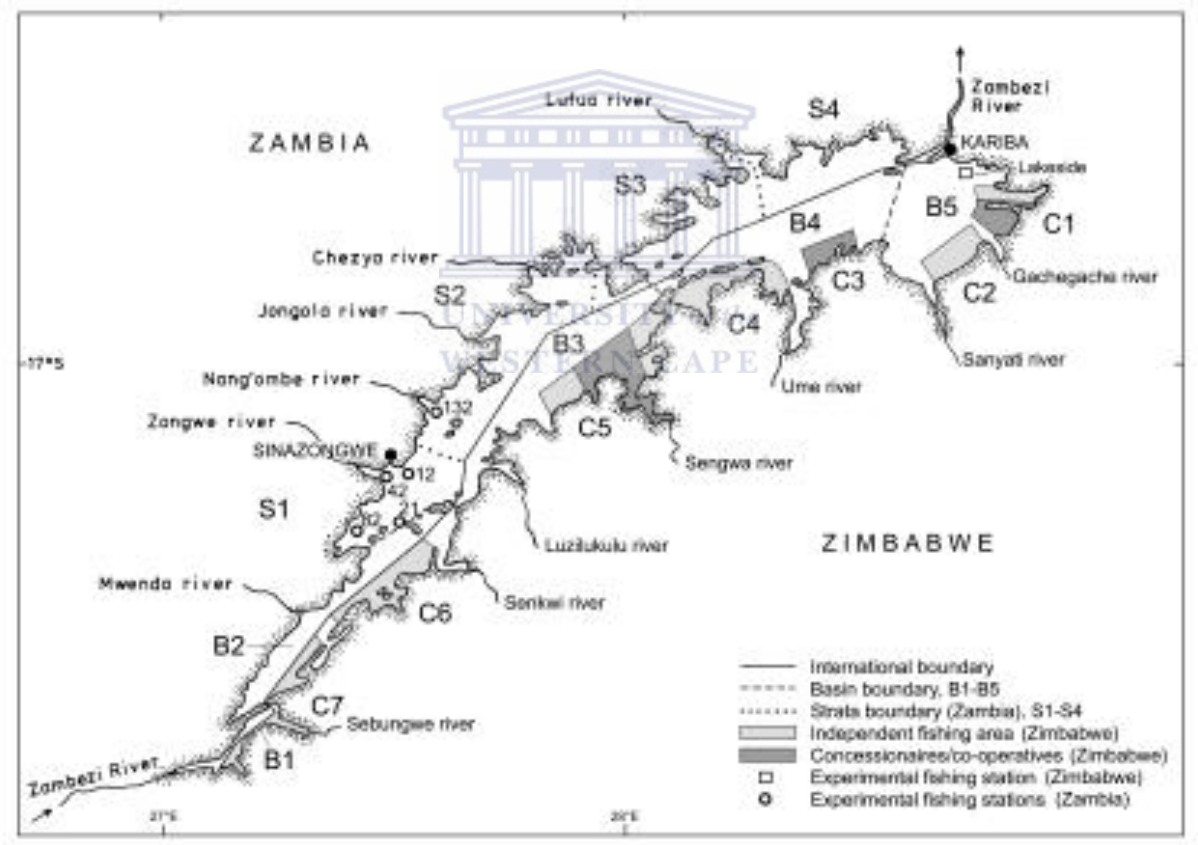

Figure 2: Map showing fishing areas on the Zimbabwean shore of Lake Kariba[5]

2.1.9 Gatshe-Gatshe Fishing Camp

Gatshe-Gatshe is located on the shoreline of Lake Kariba on latitude 16^0 $35^{'}$ $48.56^{"}$ S and

[5] ***Source:*** *Madamombe, (2002)*

longitude 28^0 $55^{'}$ $10.96^{"}$ E and is the closest to Kariba town. Given its location in the Zimparks area, communities here face a number of challenges. First, government forbids the construction of permanent home structures and secondly, engaging in land-based activities such as growing vegetables is prohibited. Although maintaining a vegetable garden is not permissible, maintaining one is also difficult due to the presence of wild animals. The fishers in Gatshe-Gatshe therefore depend heavily on their communal linkages for staples such as maize. However, their proximity to Kariba offers them a number of advantages, in particular quick and easy access by fish traders from Harare and other places. Gatshe-Gatshe is therefore a strategic and less costly location from a marketing point of view.

2.1.10 Accessibility

Access to these research sites was easiest; it required only using boats travelling from Kariba town. Kariba town is linked to other towns (including Harare) by wide tarred roads. Access by road to places like Chalala is very difficult. Due to financial constraints, economic and political crises, and the rising cost of building and maintaining public infrastructures, government has generally struggled to provide passable roads in such remote areas. As a result, most fishing communities on Lake Kariba have become very marginalized. The use of boats to access markets, purchase equipment and supplies such as fuel, spare parts and groceries, is the most convenient in spite of the cost. The sites are also serviced by cellular communication and this facility has greatly reduced the frequency of trips between the fishing camp and the town of Kariba.

2.1.11 Socio-economic conditions

Nyaminyami rural district is one of the six districts in Mashonaland West province of Zimbabwe. This area is mostly inhabited by the Tonga tribe who lived along the Zambezi River before the construction of the Lake. The rural council built houses and provided space for a business centre and hence it is a planned settlement, but there are also informal housing

structures that form part of the settlement. Unlike Gatshe-Gatshe and despite its smaller size, Chalala relies on the RDC for services such as water and sanitation. The majority of people at Chalala live as family units due to the presence of public facilities such as a clinic and a school. This contrasts sharply with the situation at Gatshe-Gatshe where neither a school nor clinic exists, and housing structures are merely temporary. School and health facilities are only accessible in Kariba town and as a result the Gatshe-Gatshe fishers are forced to maintain a home in town for the rest of the family. Women and children only visit the fishing camp during the school holidays. A common feature in both cases however, is the presence of other non-fishing activities, mainly vending, e.g. tuck-shops and flea markets. However, these activities are more pronounced at Chalala than at Gatshe-Gatshe due to the high population at Chalala which also includes communities in nearby communal settlements.

2.1.12 Kariba Town

Kariba town is strategic in so far as the fishing industry is concerned. The town acts as a window for trade, markets and supplies. Kariba town emerged during the construction of the Kariba Dam in the 1950s and generated interest as an important tourist destination. The damming of the Zambezi River to form the Lake was a mega project designed to generate electricity to power the city of Harare in Zimbabwe (then Southern Rhodesia) as well as supporting the copper mines in Zambia's Copperbelt region (then Northern Rhodesia) (Malasha, 2008). The introduction of the *Kapenta* fish species into Lake Kariba provided opportunities for both commercial and subsistence fishing. Tourism also sprang up as well as other secondary industries that complemented fishing and tourism.

2.1.13 Summary

This chapter gave a detailed description of the research design, data collection and analysis methods. A thorough description of the research sites was also given as well as the criteria for choosing the two research sites. The study takes a comparative approach, the merits of which

were outlined in this section. This chapter also gave a description of the area with the view to situating the fishing community in the context of the environment, which affects their fishing activities as well as other non-fishing activities. The importance of location was also highlighted as a key determinant of the livelihood structure. Most of the livelihood challenges facing the selected communities are associated with their physical position in relation to the Lake. Another important feature with respect to location is that the two communities fall under two contrasting jurisdictions, namely Nyaminyami RDC and Zimparks. This creates contrasting opportunities and constraints for the two communities.

3 CHAPTER III

3.1 LITERATURE REVIEW

3.1.1 Introduction

In this chapter, a review of recent literature on poverty in small-scale fisheries is given. Given the growing importance of fisheries, there have been concerted efforts by both academics and policy makers to understand and explain poverty in this sector. Several concepts, perspectives and models that explain poverty have been proposed. Backed by evidence from both the developed and developing world, these approaches have proved invaluable in explaining poverty in the fisheries sector and Lake Kariba is no exception. In view of the findings of this study, this chapter explores the various concepts and approaches. Of particular interest is the notion and general thinking that fishing communities are by definition poor (Béné 2003, 2009). Findings from this study challenge this notion hence necessitating the need to find other approaches of defining and explaining poverty. There is also a large and growing body of evidence that highlights the economic potential of this sector. The United Nations has also noted that the fisheries sector globally, has the potential to improve food security (United Nations, 2010). However, this can only be possible if there is a paradigm shift towards viewing the fisheries sectors as a key economic sector capable of contributing significantly to national economies. In this chapter, we proceed by defining small-scale fisheries, hence providing context to the analysis. This is followed by a review of key concepts and analysis approaches that have relevance to this particular study. Where appropriate, reference to the case studies is also provided. The chapter ends with a summary of these concepts as well as an analysis of how they contribute to the understanding of poverty in the sector.

3.1.2 Small-Scale Fisheries

The definition of small-scale fisheries has evolved over time. According to Hersoug, (2005),

small-scale fisheries have been defined from both technological and sociological perspectives. A more comprehensive definition of small-scale fisheries adopted in this study is that which was proposed by FAO's and has been widely considered as useful in describing the small-scale fishing sector (e.g. Béné, 2003, 2004; Hersoug, 2005; Walmsley et al, 2006). This definition summarises the sector as follows:

- It is a dynamic and evolving sector.
- It is very labour intensive in harvesting, processing and distribution.
- It involves both men and women but at different stages.
- It generates other forms of employment and livelihoods.
- It varies widely by place, form and organization.

More recently this definition has been expanding to include own-operators, fishers who use manually operated gear as well as allied workers in the fishing industry (Kumar, 2011). This is an appropriate description of many fishing communities across Africa, Asia and Latin America. It highlights adequately, similarities as well extreme variations that are generally associated with small-scale fisheries (Béné, 2003; Hersoug, 2005). Although there are no competing views regarding the FAO definition, there are additional aspects such as institutions and access that can be considered. These aspects have a significant influence on the life and livelihoods of small-scale fishers. Their application to the case of Lake Kariba is highlighted in this study.

3.1.3 Scale

Fisheries all over the world vary in terms of the scale of operations. Assessment of scale is based on the technology, capital use, economic performance and market linkages (Jentoft and Eide, 2011). In addition, fisheries may also be classified as either commercial or subsistence (*ibid*). Although these approaches are suitable and justifiable, they only serve to compare

differences between two or more groups of fishers. The question of size remains unresolved and according to Jentoft and Eide (2011), there are various ways in which small-scale fisheries can be defined and most of them are context specific. Therefore it is not uncommon to find that the perception of "small" differs across countries and regions. Fishing on Lake Kariba is classified into (a) artisanal (inshore) fisheries and (b) Kapenta (pelagic) fishing. In this study, artisanal inshore fishers are considered "small" due to the scale of their activities as well their relatively inferior technology (in particular their boating equipment). Their fishing activities are mainly conducted during the peak season after which some engage in other land based activities in the communal areas. On the other hand, Kapenta fishing is classified as commercial. It requires considerable capital investment and an operational license must be obtained (Frame Survey, 2011). These fishers constitute part of the study since they represent a class of aspiring fishers determined to make a living out of fishing.

3.1.4 Access

Access to aquatic resources ensures food security and self-sufficiency for a large number of poor people living in coastal areas. Despite their potential contribution to poverty alleviation, small-scale fisheries all over the world are subject to major challenges related to access such as resource depletion and conflict over space and resources (Jentoft and Eide, 2011). Conditions of access vary across countries and significantly influence the nature and extent of fishing activities that communities engage in.

3.1.5 Importance of Small Scale Fisheries

The small-scale fishing sector contributes critically and in diverse ways to the livelihoods of poor communities (Walmsley et al, 2006; United Nations, 2010). Firstly, fish is a source of protein and hence contributes towards improved nutrition. Kawarazuka (2010) notes that the small-scale fishing sector makes important dietary contributions compared to aquaculture because it occurs on a wider scale and involves a variety of fish species. Secondly, small-

scale fishing is a form of employment and therefore helps generate income for those involved in it. Article 6.18 of the FAO'S *Technical guidelines for responsible fisheries* of 2005 also recognizes the important contributions of small-scale fisheries to employment, income and food security. Overall and regardless of the size of operations, aquatic resources are an important global asset (Walmsley et al, 2006; Eide et al, 2011**).** Although few countries record GDP contributions of higher than 5%, fisheries are generating both upstream and downstream activities for a large number of countries (Delgado et al, 2003; World Bank, 2004). For example, fish exports contribute significantly to economies in the West Indian Ocean (WIO) such as Comoros, Kenya, Madagascar, Mozambique, Reunion, Seychelles, Somalia, South Africa and Tanzania (FAO 2002, Eide et al, 2011; Jentoft and Eide, 2011). Elsewhere in world, aquatic resources contribute to food security and livelihood opportunities for millions of people (Eide et al, 2011; Jentoft and Eide, 2011; Malasha, 2005).

3.1.6 The Concept of Poverty

The concept of poverty is the key concept for this study. Poverty is a well-researched subject given its direct relevance on people's living conditions. However, as a term, poverty itself is relative and analysts and policy makers define and use it differently. Others are also of the view that the true "poverty experts" are the poor themselves (Narayan et al, 2000). The "listening to the poor" approach is considered a very important approach through which the lived realities of fishers and fishing communities can be understood. Table 3 below shows a succinct outline of the various ways in which poverty was conceptualized based on Jentoft and Midré (2011).

Table 3: Conceptualising poverty[6]

Concept	Description
Poverty as a trap	- Poverty viewed as a limited set of livelihood options giving people little or no choice to live and work - Poverty perceived as a trap from which escape is difficult
Alternative and supplementary livelihoods	- all available resources are used for immediate necessities
Space and Agency	- Political space concept, the existence of structures and processes enabling the poorto alter conditions that disadvantage them
Poverty as a "Wicked Problem"	- Hardin's theory that poverty is a problem that has no technical solution -
Relative and absolute poverty	- Poverty is understood as the lack in basic needs varying over place, groups and time on one hand while others, e.g.Sen (1983) argue for the inclusion of a basic core of absolute deprivation
Poverty as a Relational Issue	- Social relations important in defining poverty (Townsend, 1979) - Two types of relationships distinguishable: (i) relationship to the system of production and (ii) relationship to extended family, neighbourhood, and informal help systems (Room, 2000)
Gendered Poverty	- By virtue of their roles as mother, women express influence on the well-being of present and future generations (Okin, 2003)
Poverty and sufficiency	- Although the people have aspirations for a better future, the current state is still sufficient - Their basic needs are covered and fishing is a way of life and the only thing they know and can do
Poverty as a Process	- Poverty may seem to be an unchanging condition defining the fate of individuals and classes of people - For the poor, it is something to be endured
Vulnerability	- Small-scale fishers are themselves poor of means to sustain livelihoods, but also vulnerable to shocks - Risk of harm through exposure to environmental stresses and social change, while lacking capacity to adapt (Agder, 2006)

Despite varied and sometimes divergent views (see Table 3 above), it is generally accepted that poverty is multi-dimensional, complex and represents a low level of well-being (Barret, 2003; Walmsley et al, 2006). There are three major aspects upon which explanations of poverty are centered which are: (i) the individual, household and community, (ii) assets and changes in returns to assets and (iii) the impact of shocks on welfare (Barret, 2003). Barret

[6] Constructed from Jentoft and Midré (2011)

(2003 asserts that the third class of explanations offers important clues toward understanding rural poverty dynamics.

Amidst a plethora of concepts, this study places particular interest on the following concepts and approaches to poverty due to the relevance to small-scale fisheries on Lake Kariba.

i) Space and agency

ii) Poverty as a relational issue

iii) Poverty and sufficiency

iv) Poverty as a process

v) Vulnerability

vi) Institutions and governance

3.1.7 Space and agency

The central concept in this line of thought is that of 'political space'. There are three inter-related issues that can be considered under this theory. These are:

- the scope for effective participation in policy formation and implementation
- the depiction of poverty in political discourse and
- the poor's own forms of political organization and practice.

In their book Webster and Engberg-Pedersen (2002), illustrate the politics of poverty reduction from the perspective of the poor themselves. The authors show that, at local level, there are no simple or frequently recurring relationships between actions by the poor themselves and the political arena. Instead, there is a great diversity in the complex realities of the political agency of the poor, the strategic use of discourse, the limits of institutional reforms, the contested nature of poverty reduction and the significance of political space for challenging conditions of marginalization (Webster and Engberg-Pedersen, 2002).

Such a framework is important in understanding the situation in the Nyaminyami area, where

the political space is predetermined by policy and relevant legislation has been put in place to protect and govern the use of natural resources. The organisation of fishers into different groupings creates local level "political" institutions that decide on how to exploit natural resources in their favour but within the restrictions imposed by the law. While in other countries action space was increased at least on paper, e.g. Isaacs (2011), in other areas the reverse is true. As discussed later in the results, the action space on the Zimbawean side was narrowed compared to that of Zambia. Failure to extensively manoeuvre within the state instituted action space leaves fishers with no choice but to utilize the informal action space referred to by Isaacs (2011) as "weapons of the poor". It is not uncommon therefore to find agents exercising unethical coping mechanism such as intrusion, poaching and corruption.

In an effort to increase action space, the Government of Zimbabwe implemented a co-management arrangement using the CAMPFIRE[7] model. The hope was that, through this model, action space as well as freedoms essential for poverty alleviation would be created (Nussbaum, 2000; Sen, 2000; Webster and Engberg-Pedersen, 2002). By adopting the CAMPFIRE model, government was also acknowledging that poverty was the "lack of entitlements and capabilities that provide a person with sufficient and secure action space, and therefore the freedom to choose the life tha he or she wants" (Jentoft and Midré, 2011, p. 51). In other words, the more the action space and freedom, the greater the chances of reducing poverty because the agent will have a wider choice set.

3.1.8 Poverty as a relational issue

Closely linked to the action space perspective is the view of poverty as a relational aspect. According to Townsend (1979), the concept of poverty needs to be viewed more broadly as an aspect of social relationships. Such relationships include (i) relationships between people

[7] Communal Management Programmes For Indigenous Resources

and the system of production and (ii) relationships with the extended family and other informal "help-systems" (Room, 2000). They create forms of social capital where ethnicity, caste, and class, create networks and linkages that enable people to take full advantage of the resources around them (Veit-Wilson, 2000). Where this is not possible, social exclusion may creep in and bar individuals from participating fully in the economy eventually leading to poverty (Burchardt, 2000).

In the case of fishers on Lake Kariba relational aspects are very important. Both formal and informal relationships exist that either limit or enhance access to the fishery. Given the importance of access to livelihoods, relations that hinder sufficient access to resources may cause people to sink deeper into poverty. This is discussed in detailed in the results section.

3.1.9 Poverty and sufficiency

The way in which fishers view themselves and their trade in relation to poverty is an important one. Fishers are commonly viewed as poor (in both absolute and relative terms) and fishing is also seen as an occupation for the poor (Béné, 2003, 2006). However, there is increasing evidence from several countries that this is not the case. To several communities relying on fishing for livelihoods, their occupation carries a lot meaning to them (Jentoft and Midré, 2011). Research has shown that fishing is not just a profession, but a way of life that is passed on from one generation to the other. In a country like Ghana, fishing is a form of identity (Kraan, 2011). According to Onyango and Jentoft (2011), governments need to take into account social values and principles that small-scale fishers attach to their way of life during the process of designing strategies to reduce poverty.

However, the question of sufficiency needs to be considered carefully. Princen (2005) argues that value is expressly attached to the process of acquisition and consumption in what he

terms the *logic of sufficiency*. Although fishers may be content with their status, the assessment is self-imposed (Princen, 2005). Jentoft and Midré (2011), further argue that sufficiency needs to be viewed in relation to the limits imposed by both the state and the limits of the environment.

3.1.10 Poverty as a process

A number of fishing communities, e.g. Yucatan fishers in Mexican do not view themselves as poor. To them, having access to fishing resources is more important (Salas et al, 2011). However, when poverty is viewed as a *process*, one is tempted to think otherwise. When viewed as a process, poverty is seen as an unchanging condition that lasts for generations. As a result, people accept it as a condition which they can only endure through adaptation, change and innovation (Jentoft et al, 2010). Such an understanding of poverty does not result from a self-assessment but from observing what people do and use. Evidence has shown that fishers are so attached to their profession or trade to the extent that they fail to realise that it is a routine and unchanging. When this happens, fishers are less keen to learn other professions nor realise opportunities that may be obtained outside of fishing.

3.1.11 Institutions and governance

Governance and institutions affect fishers in various ways depending on the nature and purpose of these institutions. According to Agrawal (2001), the nature of resources, and the relationships within and between groups of people are critical in determining the management of natural resources. It is the institutions that determine entitlement, access and/or exclusion to resources (Agrawal, 2002). Evidence from across the world has shown that small-scale fishing communities are always short-changed by formal institutions. Apart from institutions, fishers' positions are worsened by the fact that most fish are a common pool resource. In order for fishers to take advantage of common pool resources, government needs to take into account the socio-economic, political and power dynamics of fishing communities when

designing institutions to manage natural resources (Hara, 2006).

However, economists argue that natural resources are subject to the law of diminishing returns and therefore require careful management. They recommend that fishing must be controlled by a system of licensing and registration. In his study of the Indian fisheries, Bavinck (2011) discovers that registration and licensing are state instruments for controlling fishing activities. Space zoning has also been used to ensure that fishers in different locations do not interfere with each other.

3.1.12 Interactive governance theory

This theory captures the diversity and complexity of fishing communities and fisheries through a holistic framework (Bavinck et al, 2005). The interactive governance theory provides a rationale for governance and how it should be exercised (Kooiman and Bavnick, 2005). Unlike the unilateral version of governance, interactive governance theory calls for interaction between the public and private sectors during the process of policy formulation and design (Kooiman and Bavinck, 2005).

Jentoft et al (2010) came up with "alternative images of governance" that contrast with the traditional top down *pyramid* images of governance. They argue that, these new images of governance are more suitable for achieving desirable outcomes in the management of fisheries because they distinguish between the *governing system* and the *system to be governed*.

3.1.13 The Governing System

The conventional image of governance shows government as the superior lawgiver. The law is designed and implemented in a top down format. Lines of authority are clearly defined and the chain of communication is perfectly articulated. The resultant system is inflexible, self-

sufficient and explicitly states who the governed are and who the governor is. Users of resources are mere passive recipients of governance rules. Stakeholder input is not required and governance image is neither shared nor communicated to stakeholders but remain internal to the governing system. It is therefore uncommon to get responses such as "we do not know why they do it", or "we do not know why they do not act in this way".

As an alternative to the pyramid image, Jentoft et al (2010) designed a model that allows for the participation of stakeholder groups in the process of decision-making. In this model, stakeholders can proactively contribute to outcomes and expect the governing system to deliver to them certain deliverables such as rewards and entitlements. As a result, the governance system becomes interactive, dynamic and based on compromise (Jentoft et al, 2010). However, with no clear authority, the governance system becomes unstable and difficult to manage and most decisions are reached through voting. The key contestable issues are: (i) how the goals are decided, (ii) level of representation, and (iii) extent and basis of stakeholder participation (e.g. direct or indirect, equal or unequal). Figure 3 below depicts the two scenarios described by Jentoft et al, (2010).

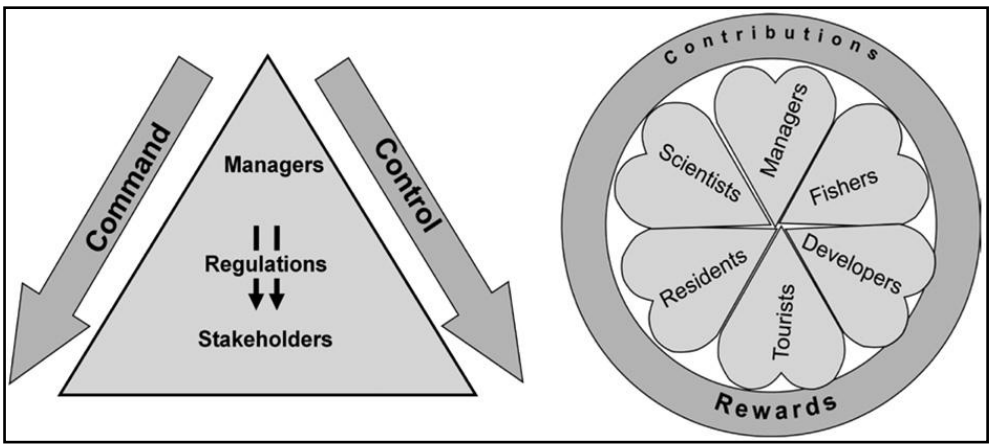

Figure 3: Pyramid and Roses governance models[8]

[8] Jentoft et al (2010) p1318. In the pyramid power sits at the top where in the rose there is no clarity as to where power rests.

The “pyramid” form of governance depicts, “endocracy” where governance is from within and “autocracy” prevails (Tivey, 1978). In contrast, the “rose” form of governance permits stakeholder involvement and engagement. The CAMPFIRE model that was implemented in Zimbabwe resembles the “rose” image. The model, which set off in the late 1980s, was the first Community Based Natural Resource Management programme (CBNRM) and was emulated by other neighbouring countries (Matanhire, 2003). However, its socio-economic and ecological outcomes were disappointing (Matanhire, 2003; Mashinya, 2007). Critics argue that retaining authority at the RDC level raised immediate doubts regarding how much control local communities have and how much long-term commitment to the program would be created at village level (Murphree 2000). Other scholars also argue that, with resource ownership in the hands of the RDCs, the participatory component of the programme was compromised even before CAMPFIRE was implemented (Murombedzi, 1999; Murphree 2000; Newsham, 2002).CAMPFIRE was set up to be implemented at village level but communities could not run independent programmes because their leverage was limited by the local authority (Newsham, 2002, Mashinya, 2007). This raises important questions about the commitment of government in engaging with communities over the access to and use of natural resources.

3.1.14 System to be governed

The system to be governed theoretically can take the pyramid form as depicted in Figure 4 below.

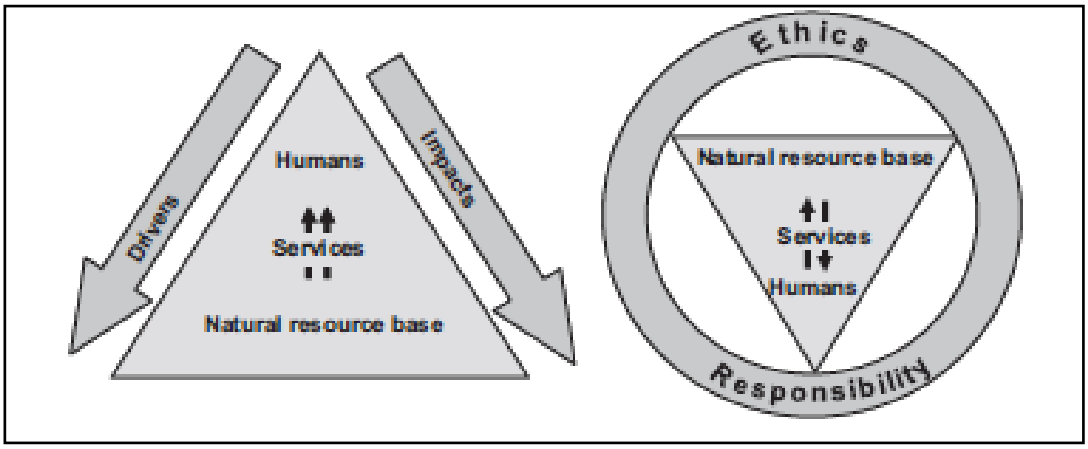

Figure 4: Pyramid and Inverted pyramid governance systems[9]

The pyramid represents a situation where people benefit from service provision while controlling the use. The inverted pyramid depicts a precarious balance or an unstable governed system (Jentoft et al, 2010). When engaging with the model and available empirical evidence, one finds that most natural resource or fisheries governance systems have not operated in favour of the governed even though, in principle, they are designed to do so. Examples include South Africa (Isaacs, 2011), Malawi (Njaya et al, 2011; Hara and Raakjaer-Nielsen, 2003), South East Asia (Nielsen et al, 2004) Zimbabwe, (Mashinya, 2007; Murombedzi, 1999; Murphree, 2000; Newsham, 2002) among others. Most of these systems have taken advantage of the vulnerability of fishing communities to create not such conducive conditions for the successful exploitation of fish resources.

3.1.15 Co-management

While there is potential benefit for particular arrangements such as co-management there are thorny issues that relate to the legitimacy of certain individuals involved in the framework. Maintaining such institutions becomes difficult especially where governance initiatives are not viewed as legitimate by the stakeholders (Jentoft et al, 2010). This is often the case where local people or villagers are allowed to set their own rules. In many instances, the rules break

[9] Jentoft et al (2010) pp. 1319

down because they are perceived by the majority to be informal.

In the case of fisheries co-management in Malawi, Njaya et al. (2011) observed that the distribution of power was unequal and roles were not clearly defined among the different actors. However, this is not very surprising because the concept of co-management has remained elusive and many people interpret it differently (Nielsen et al, 2004).

3.1.15.1 Instrumental co-management

Nielsen et al, (2004) elaborated on the concept of instrumental co-management as a power sharing arrangement between governments and fishing communities who hope to undertake fishing activities. In practice, however the fishing communities have only been involved in the implementation phase, hence the concept "*instrumental*". Governments have always maintained an upper hand because they have their own *images* of governance (Mashinya, 2007). This attitude by governments has been responsible for the failure of many co-management arrangements (Jentoft et al, 2010; Nielsen et al, (2004). The CAMPFIRE project in Zimbabwe and the Administrative Management Design for Game Management Areas in Zambia are often cited as examples of this kind of instrumental co-management where governments view it as a means to an end rather than a balance of power.

Attempts to involve traditional leaders have also been met with challenges. In their study of Malawi and Zambia, Nielsen et al, (2004) observed that traditional leaders either lacked transparency, furthered their own interests or those of government and in many cases they were overridden by government. Following a global review of fisheries co-management in sub-Saharan Africa, Béné et al, (2009) concluded that these forms of decentralization have not yielded positive results in a systematic way. Instead, decentralisation has altered the distribution of power and the weak small-scale fishers have not benefited despite the

existence of rights (Béné et al, 2009; Isaacs 2011).

3.1.16 Vulnerability

The susceptibility of individuals or groups of people to harm by natural forces or phenomena such as drought or floods has severe implications for livelihoods and poverty. Fishers rely heavily on natural resources and aquatic environments and this exposes them to the risks that are associated with nature. However, research has shown that fishers are vulnerable to natural hazards as well as other forms of vulnerability. Using participatory methods on fishing communities in Nigeria and Mali, The World Fish Center (2010) came up with *vulnerability ladders* in which communities ranked their livelihood challenges in order of severity. The results showed that, like other non-fishing communities, fishers were vulnerable in several ways. The vulnerability ladders for the two case studies are shown in Figure 5 below and food insecurity is highly severe for both. The two ladders show that although the sampled households in the two countries face a more or less similar set of vulnarabilities, the degree of severity varies widely. For example, lack of electricity is not a serious issue in Mali (and rank 13) while in Nigeria it is among the top four major vulnerabilities calculated on a normalized scale ranging between 0 and 1 (0 being least and 1 is totally vulnerable).

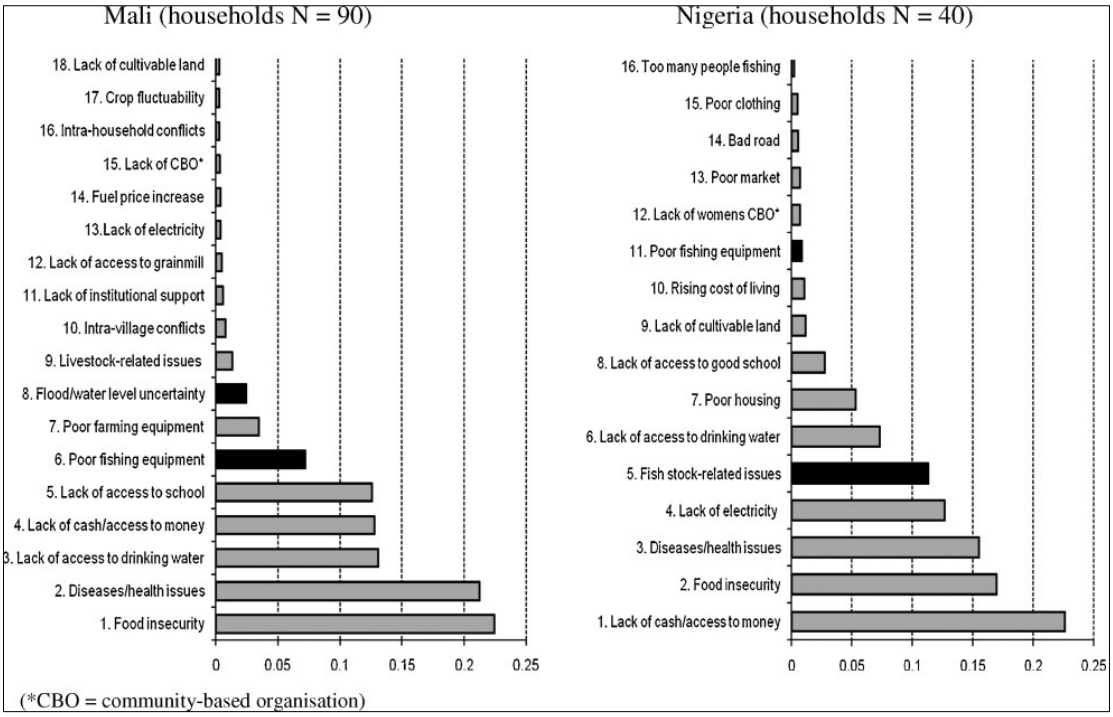

Figure 5: Vulnerability ladders[10]

3.1.17 Chain analysis of fisheries

Another important approach for analysing poverty in fishers was that proposed by Kooiman and Bavinck (2005). Here fisheries are viewed as a chain of activities that are occurring within the framework of a governance system. Fishers encounter challenges at distinct points along the production chain, from the bio-physical environment through to harvest and post-harvest periods (Chuenpagdee and Jentoft, 2011). In this model, the state of small-scale fisheries, including the challenges they face, is influenced by natural, governing, and social systems (Kooiman and Bavinck, 2005; Chuenpagdee and Jentoft, 2011). The fish value chain also offers opportunities for improving fisheries governance as shown in Figure 6 below.

[10] From World Fish Center (2010) p. 3
http://www.worldfishcenter.org/resource_centre/lesson%20learned%202105_1305.pdf accessed 10/10/12

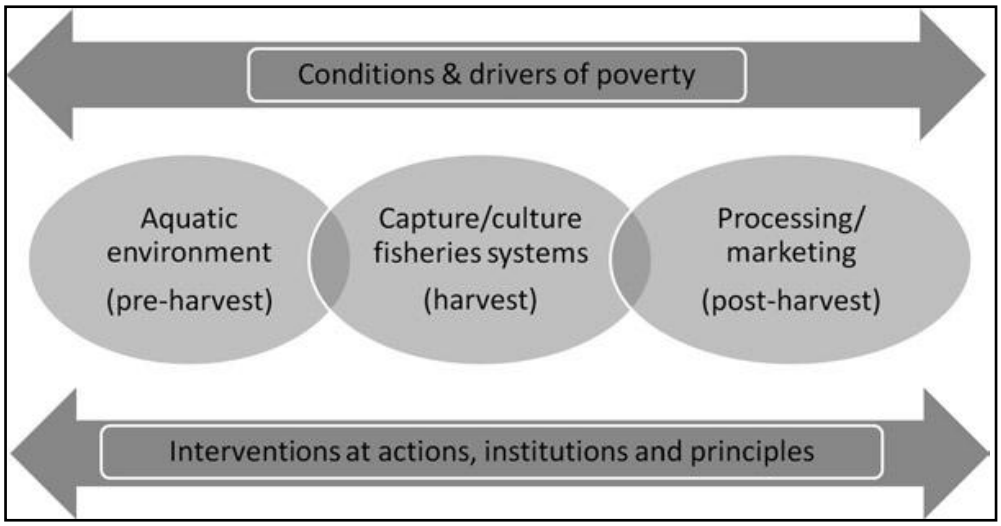

Figure 6: A chain analysis of poverty in fisheries[11]

However, different community characteristics pose challenges for governance at different points along the fish chain. First and second order interventions such as, setting up of effective rules and regulations and direct policing, are needed to ensure that the system is stable (Kooiman and Bavinck, 2005; Chuenpagdee and Jentoft, 2011).

3.1.18 Livelihood Challenges

Fisheries are an important source of household incomes and they contribute significantly to food security, livelihoods and economic growth (Marciniak, 2011). However, there are a number of challenges associated with fisheries livelihoods. Some of the challenges are common to most countries with fisheries while others are unique to particular countries. There are two main approaches in use in the identification of livelihood challenges in fishing communities, which are:

- *Typology of discriminating processes* – proposed by Béné's (2003). This typology focuses on social marginalisation, economic exclusion, class exploitation, and political disempowerment.

[11] Chuenpagdee and Jentoft, (2011) pp. 37

- *Fish chain framework* – for analysing governance in fisheries by Kooiman and Bavinck (2005)

Both frameworks emphasize different elements that limit command over resources by individuals or groups. As a result, the individual or group becomes vulnerable resulting in failure to progress economically. Below are some of the common challenges associated inherent with fisheries and in particular small-scale fishing:

3.1.18.1 Declining fish stocks

Declining fish stock is serious and the most common challenge confronting fishing communities across the world and in the sub region. The Chambo fish species have declined in Malawi (Hara, 2011), fish stocks have also declined in Poland, (Marciniak, 2011) and the upwelling of the gulf of Guinea is causing fish migration in Ghana (Kraan, 2011). Fish harvests are also declining in Mexico, Nicaragua and Vietnam (Salas et al, 2011; González, 2011; Nguyen and Flaaten, 2011). Some of the main reasons for stock decline that have been cited include the increase number of people engaged in fishing, over-exploitation and the use of illegal fishing methods (Bavinck, 2011). A decline in fish stock has direct implications for livelihoods, income and food security for communities involved in fishing.

3.1.18.2 Natural hazards

Fishing is a risky exercise given the hazards associated with aquatic environments. The environments are capable of being hostile and the availability of fish is always uncertain (Salas et al 2011; Kraan, 2011). Fishing environments, in particular marine, often experience storms, heavy currents and high tides that expose fishers to risk of injury and death. Inland fishing has other forms of hazards which include the presence of large mammals such as hippos and crocodiles. Where fishers are unable or adapt or cope, their poverty conditions are reinforced even further (Béné, 2009).

3.1.18.3 Physical marginalisation

Fisheries are often located in very remote areas. In cases where the infrastructure is poor or unavailable, these communities are marginalised even further. Access to services and markets also becomes difficult and costly. This leads to isolation as governments find fewer incentives to develop these areas (Isaacs et al, 2007).

3.1.18.4 Governance challenges

As discussed in earlier sections, fisheries governance is very problematic. Where government institutions such as co-management practices are not balanced, benefits to fishers are minimal. In other instances, the fishing industry may be dominated by a few elite who, by virtue of their position, may benefit at the expense of the poor (Isaacs et al, 2007).

3.1.18.5 Economic challenges

Fisheries offer employment opportunities and enhance food security. However, fishers suffer a number of economic and financial set-backs such as lack of access to credit, products and insurance markets (Amarasinghe and Bavinck, 2011; Marciniak, 2011; Nguyen and Flaaten, 2011). Other economic challenges include the rising cost of gear and other fishing equipment, the high cost of fuel and spare parts. In cases where fishers are faced with high operational costs, the use of inferior equipment or simple fishing tools that often endanger their lives become common (Nguyen and Flaaten, 2011).

3.1.18.6 Socio-politics

A major concern in fisheries is the inability of government and development practitioners to understand the changes taking place in the sector so as to formulate appropriate and acceptable solutions (Hara, 2011). Poor implementation and monitoring of policy often result in elite capture, hence causing the poor to be more vulnerable (Salas et al, 2011; Isaacs et al, 2007; Isaacs, 2011).

3.1.19 Coping strategies

Despite these challenges, fishers and fishing communities in different parts of the world have developed coping strategies. These strategies, albeit legal or illegal, are either pro-active or reactive depending on the socio-economic conditions and levels of organization of the fishers (Salas et al, 2011). In Malawi, fishers have invented new fishing techniques and introduced new gear type as a way of adapting to the decline in the Chambo fish species (Hara, 2011). In addition, fishing relations have altered and there is more diversification of livelihoods (Hara, 2011). In Sri Lanka, cooperative arrangements are providing linking capital that bridges the gap that was created by the lack of educational and training services necessary for improving the fishers' fishing potential (Amarasinghe and Bavinck, 2011). As a result, fishing efforts have increased significantly in Sri Lanka.

3.1.20 Summary

In this chapter, a survey of recent literature on fisheries was given. Based on available empirical evidence, we demonstrated the importance of small-scale fisheries globally in terms of employment and food security. We also showed that, given the rising importance of the fisheries sector globally, there is renewed interest in the need to understand and explain poverty in the sector. There is a call for researchers to find new ways of describing and explaining poverty in the fisheries sector. More recently, several theories have emerged that focus less on the traditional money-metric view of poverty. Rather, they focus on qualitative aspects such as sufficiency, space, and social capital. Such approaches help to systematically identify and define the challenges facing fishers and fishing dependent communities. Models such as vulnerability ladders and the chain analysis are among the most notable tools.

Apart from defining poverty, this chapter also focused on governance aspects of fisheries. The way in which governance arrangements are designed and implemented, exerts significant influence on access to and use of resources by fishers. Particular and often contradictory

images and assumptions about governance are held by both the governing and governed systems. Such divergent perspectives demand that there be consultation between the two parties, but world evidence shows that this is often missing. There is less consultation between the two parties and whenever it occurs, the balance of power is always in favour of government. As a result, fishers are usually passive recipients of rules and regulations,which they are expected to abide by. The failure of many co-management programmes has been attributed to the unbalanced negotiation between communities and government and most communities fail to benefit fully from the arrangement. In cases where the governance arrangements are not closely monitored, poor communities have fallen victims of elite capture e.g. the case in South Africa.

Despite their weak position, fishers have devised coping mechanisms to deal with flaws in the governing system, declining fish stocks, and other economic challenges. The literature concludes that these challenges need to be the focus of government policy if economic progression is to be realized among small-scale fishers across the world.

4 CHAPTER IV

4.1 RESEARCH FINDINGS

4.1.1 Introduction

The aim of this study was to explore the poverty conditions among fishers on Lake Kariba (Zimbabwe). In the study I also focused on analyzing livelihood challenges among the fishing communities as well the coping mechanisms they are applying. Following the recent advances in research on poverty in fisheries, a number of conceptual frameworks have emerged. These frameworks have been applied in line with the complex nature of fishing communities across the world. In this Chapter, a selection of these theoretical frameworks (discussed in the previous chapter) was used to contextualize the research findings from the two fishing communities i.e. Gatshe-Gatshe and Chalala. As indicated earlier, the two communities are located at different points on the Lake and their locational differences play an important role in shaping their lives and their livelihood structure. The two communities face the same fisheries legal regime but have different local administrative regimes. The manner in which the two communities are positioned in relation to local administration affects heavily on the way in which they respond and cope.

4.1.2 The fishing community

The focus of this study was not just on the fishers but the entire fishing community. It is not easy to dissociate fishers from the rest of the community and vice versa because the two are always intertwined. By conducting the research on the entire community, it was possible to extract important insights not just about fishing but other livelihoods as well. This was particularly so at Chalala where, despite varying professions, they are all connected to fisheries. Chalala is a much bigger settlement and most community members live as units. Therefore, government services such as water and sanitation, health, education and policing are required. The situation is not the same at Gatshe-Gatshe where the area is managed by the

wildlife authority, Zimparks. Services such as education, health, water and sanitation are not a direct responsibility of Zimparks and the community here has to seek them elsewhere.

4.1.3 Attitudes towards fishing

One of the key and preliminary questions posed to the fishers sought to determine the fishers' attitudes toward the fishing profession. This question was aimed at finding the reasons why they were fishers in the first place with a view to test Béné's adage that "they are fishermen because they are poor, and they are poor because they are fishermen." The general view was that although fisheries offered a form of secure livelihood, it was no better than other professions that allow people to enjoy a modern, wealthy and material based life. Although their incomes are consistent, they are not sufficient to enable them to own status assets such as cars. The chairperson of Gatshe-Gatshe cooperative responded that fishing,

> *".....is a lowly type of job. None of us here owns a car or a motor-bike. This shows that our job is for the poor."* Chairman of Gatshe-Gatshe fishing cooperative, interviewed 03/01/12.

Asset ownership was used by the fishers at Gatshe-Gatshe as a way to define the poor and viewed fishers as falling in this category because their incomes were so low to afford them assets. If fishing is indeed a trade for the poor, then the findings of this research speaks volumes about poverty in Zimbabwe. It is a misconception to think that fishing on Lake Kariba is a preserve of the Tonga tribe whose descendants lived and fished along the Zambezi River prior to the construction of the Lake (See IRIN, 2007). The truth is that there are more fishers originating from other parts of the country such as Murehwa, Hurungwe, Zvishavane, Harare, Gokwe, and Zvimba as revealed during fieldwork interviews. For these people, fishing on Lake Kariba is as good as any other profession and the fishing camp is a

place of work. Life therefore alternates between the fishery and the communal home. According to the fishers, dual lives offered them a number of advantages.

> *"We love fishing because it is self-employment. We work for our families and ourselves. To us, it is an independent enterprise."* Chairman of Gatshe-Gatshe fishing cooperative, interviewed 03/01/12.

Dual homes are a common phenomenon in Zimbabwe where husbands lived and worked in urban areas while wives maintained the rural home. Inter-linkages exist between the two homes where income from formal employment is used to purchase inputs for communal farming. Crop outputs from communal farming are used to supplement food to those working in urban areas. Similar linkages were observed among members of the two communities. However, according to some respondents, repeated exposure to the Lake led them to view fishing as an opportunity to derive an income and a livelihood. Such fishers did not share the view that they were pushed to fishing by poverty.

A number of fishers also mentioned that their participation in fishing was in fact a change of profession from fish vendor to fisher. Vendors who supply items such as sugar, soap and clothing frequently visit fishing camps/villages along Lake Kariba. These goods are exchanged for fish. The high demand for fish results in an increase in the number of trips to the fishing camps/villages. It was during these trips that some vendors sought opportunities to engage in fishing and cease to exist as vendors. Therefore, instead of poverty, it was the opportunity and existence of an alternative form of employment that drove some into fishing.

> *"We are here not because we are poor. If it were poverty, then everyone would have been here because there are so many poor people out there. It is the exposure to the Lake that entices people to enter the fishing industry. However, it is also true that unemployment in the country and lack of education drove some people into fishing because it is an easy alterative. We work so hard so that we can send our children to school because we want*

them to get better jobs in the future." Secretary of Gatshe-Gatshe fishing cooperative, interviewed 03/01/12.

4.1.4 Poverty

The attitude of fishers in the two communities was a challenge to the famous statement, *"They are poor because they are fishermen and they are fishermen because they are poor"* (Béné, 2003). An assessment of the fisher's daily income from fish sales at Gatshe-Gatshe revealed that their daily income was much higher than that earned by people employed in other professions. Therefore, from a money-metric perspective, the Gatshe-Gatshe fishers could not be labelled "poor". However, social values and principles as well as people's perspective need to be considered where assessing poverty and in the designing of poverty reduction strategies (Narayan et al, 2000; Onyango and Jentoft, 2011).

4.1.5 Poverty and sufficiency

There are few debating points about poverty and sufficiency literature. The general conclusion is that the poor are best positioned to define poverty (Narayan et al, 2000). Findings from the two communities revealed clearly that in spite of aspirations for a better life, the fishers regard their present condition as sufficient. They had access to basic needs including food, and compared favourably to their urban counterparts. The economic crisis of 2007-2008 in Zimbabwe demonstrated that fisheries was a resilient trade and the fishers had good reasons to remain in the industry despite the existence of alternatives. The fishers believed that fishing is a way of life in which specific skills are required in the same way as other professions. The chairperson of Gatshe-Gatshe cooperative commented that:

"*We cannot leave fishing for another job because fishing is our life. We are so used to it and have become experienced in the trade, '*Zvapinda muropa' *(it is now in our veins). We do not desire any other job because we will need to learn it first and besides the new job can change your lifestyle completely".* Chairman of Gatshe-Gatshe fishing cooperative, interviewed on 03/01/2012.

The fishers consider fishing as sufficient for other important reasons. Apart from fish sales, the fishers are able to obtain fish products such as fish oil and fish eggs. These products enable them to be more self-sufficient during times of need. Figure 7 below shows the oil extract as well the fish eggs drying in the sun. The fishers claimed that fish eggs provide variety to their food.

Figure 7: Left, fisherman holding fish oil in a bottle and right, fish eggs drying in the sun[12]

Another important aspect of sufficiency was that the fishers were able to exchange fish for basic consumables such as soap, sugar and mealie-meal. There are fewer alternatives for fishers at Gatshe-Gatshe because they are barred from maintaining a vegetable garden by Zimparks laws. Apart from the law, the area is too arid for any cropping and crops often fall prey from wild animals. In spite of these constraints, the fishers at Gatshe-Gatshe felt they had sufficient income to sustain their families.

However, not all people in the two communities shared this view. There were some members who decided to quit fishing because they could not sustain their families, but sought other opportunities within the same fishing community. A closer analysis revealed that employees of commercial fishing companies were more likely to leave fishing for other but fishing

[12] Photo credits: Author, taken 03/01/2012

related professions due to lower wages and long working hours. For example, the radio technician interviewed at Chalala quit his job to work as a self-employed technician. By providing services to the local community and the commercial companies, the technician was realizing more income than as a formal employee. The ability to change professions is one of the important characteristics of fisheries and fishing communities in particular those of the order of Chalala where the population is much higher and people live as family units.

4.1.6 Poverty as process

When people have fewer alternatives, they may accept their condition and devise ways to adapt in order to suit their present circumstances (Jentoft et al, 2010). Nyaminyami district and the adjacent wildlife areas are within an arid region. The average temperature is always very high (above 25^0C)[13]. Physical access in and out of these areas is limited by distance as well as a poor network of roads. People have here learnt to live without many basic amenities that are otherwise enjoyed by people in larger urban areas. As a result, they have come to accept and adapt to their way of life and the fewer services they have access to. The expansion in communication technology has however enabled access to cellular communication, radio and television reception. The developments are viewed as major improvements to their way of life and they have fewer incentives to opt out. In fact, they are hoping for a much better future, in particular when they review their fortunes during a financial crisis in Zimbabwe. In spite of their fairly stable economy, the fishers highlighted a number of vulnerabilities that threaten their fishing activities.

4.1.7 Vulnerability ladders

Following the World Fish Center (2010), vulnerability ladders were constructed for both cases, i.e. Gatshe-Gatshe and Chalala fishers based on factors that fishers considered a threat to fishing. While the World Fish Center compared two counties, Mali and Nigeria, in this study we compared two communities. Unlike in Mills et al (2011), the vulnerability ranking

[13] Source: Weatherbase, accessed 20/04/2013

in the Gatshe-Gatshe/Chalala was based on fishers perceptions rated on an ordinal scale of 0 to 20 (0 = least vulnerability and 20 = maximum vulnerability). The result of this process was that, fishers rated the different vulnerability factors in a strikingly similar way. Where variations in ratings were observed, the differences were attributed to fishing methods. Certain fishing methods such as gillnet fishing were considered very risky because fishers use poor equipment and there are always threats from hippos and crocodiles. The resultant ordering of vulnerabilities was based on an assessment of the fishers' expressions. Figure 8 below shows the resultant vulnerability ladders for both Chalala and Gatshe-Gatshe fishers.

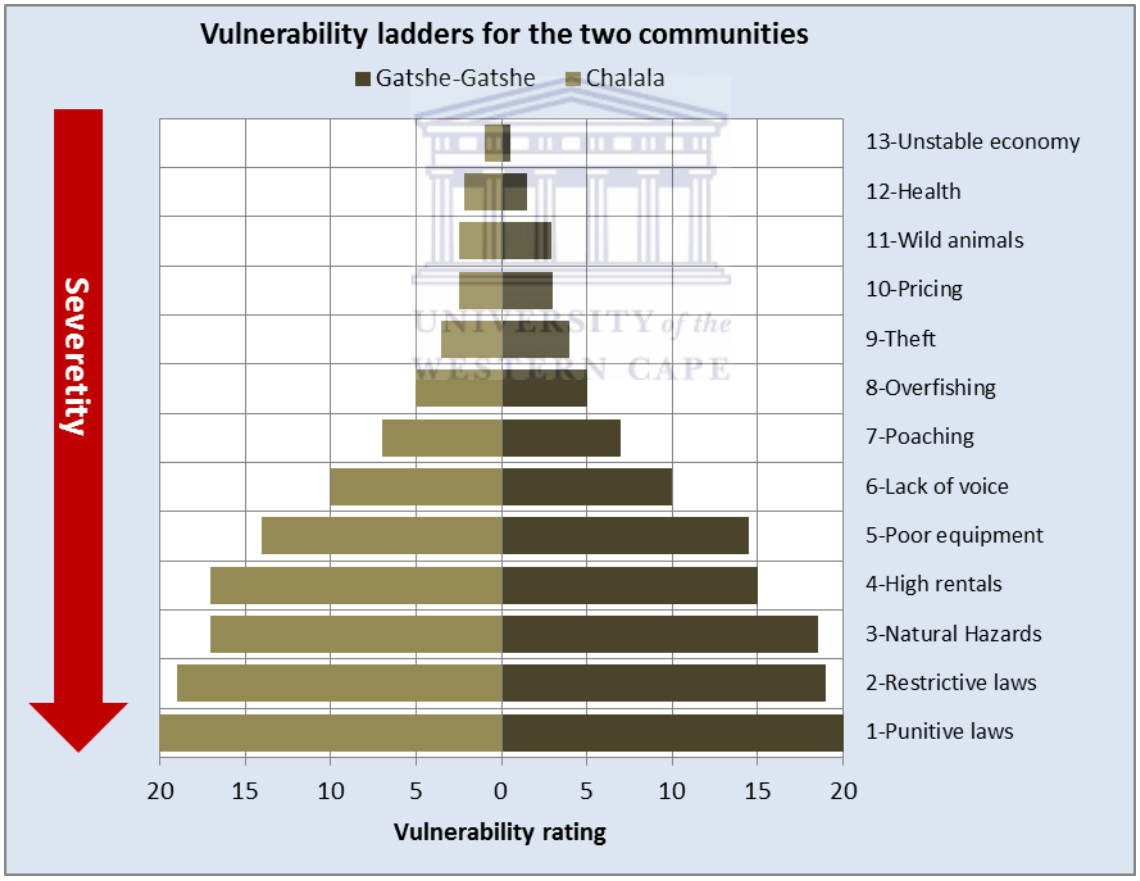

Figure 8: Vulnerability ladders for the two communities[14]

[14] The vulnerability ladders were constructed based on perceptions of the fishers of what they considered key factors that are stalling their economic progression as fishers.

Some of these vulnerabilities point to much bigger problems in the fishing industry, in particular those that have to do with the laws of accessing the fishery.

4.1.7.1 Punitive regulations

An important revelation of this study is that the fisheries governing system imposes highly punitive measures on users that violate the rules of accessing the Lake. Fines of up to US$600 are imposed on the fishers for contravening the regulations. Failure to pay the heavy fines saw many of the fishers losing their boats to government through attachment of property. The fishers, in particular those at Gatshe-Gatshe, attribute their declining status to the punitive measures that are imposed on them by the state. A more disturbing scenario is that all attached property belonging to fishers is auctioned for as low as US$30 and fishers allege that they are not informed about the auction. Therefore, in addition to punitive measures, there are allegations of corruption against government officials responsible for maintaining discipline in the fishing industry. Kapenta fishers are hardest hit because their fishing methods always require motorized equipment. Gill-net fishers have improvised makeshift equipment such as hand-made boats but these are at risk of capsizing resulting in injury or death. Figure 9 below shows evidence of a declining fishing industry due to alleged punitive measures imposed for contravening the rules of the Lake.

Figure 9: Evidence of a declining and "sinking" livelihood system at Chalala[15]

4.1.7.2 Restrictive laws

The Zimbabwean laws on fisheries are very restrictive and from a sustainability point of view, this is in order. Some of the fishers acknowledge restrictions were necessary because breeding is necessary for the sustainability of the fishery. As discussed earlier sustainability natural resource management takes precedence above everything else in the governance of Lake Kariba. Under this policy, several zones on the Lake have been set-aside as non-fishing areas. The downturn of this policy is that government has permitted excessive breeding of crocodiles and hippos in the Lake. These creatures are however a hazard to the fishers in particular the gill-net fishers. Another restriction is that of time. Gill-net fishers are only allowed to operate between 5 pm and 5 am and this means they have to operate in the darker part of the day. Although night fishing is conducive for Kapenta fishing, it posesa greater risk for gill-net fishers.

4.1.7.3 Theft

Unlike the Zimbabwean shore, fishing is regarded as an important livelihood source for communities on the Zambian shore. As a result, Zambian authorities have issued a relatively high number of fishing permits. However, this policy has produced the undesirable result – overfishing. The fishers at Gatshe-Gatshe and Chalala have reported that Zambian fishers are encroaching into Zimbabwean water and lots of poaching is taking place. In extreme cases, gill-net fishers have lost their nets and fish from these so called "roving bandits". The fishers reported that this situation does not attract much attention from the state to the extent that their activities are being threatened with decline. Fishers at Gatshe-Gatshe lamented that:

[15] Photo credits: Author, taken 05/01/2012

"We cannot stop them. They come here with guns and threaten to shoot us if we report them or try to chase them away. They even harvest our nets too and when you wake up in the morning to check your nets, you will find them gone". Chairman of Gatshe-Gatshe fishing cooperative interviewed in 03/01/2012.

Poaching and stealing have resulted in considerable economic loss among fishers in the two communities. During the financial crisis in Zimbabwe between 2007 and 2008, boats were stolen and taken to Zambia where they were sold in United States (US) dollars. The spate of theft barred the fishers from progressing economically because they have to work on replacing lost gear. The fishers commented that:

"It is not easy to guard your net from thieves during the night because of wind and rain. You may do it at times but when it rains, we return home. As soon as we leave, the thieves raid our area and disappear with our nets". Member of Gatshe-Gatshe cooperative interviewed on 03/01/2012.

While the problem is not so serious at Chalala, the fishers cited incidences when Zambians have encroached into the Zimbabwean fishing zone. The decline of the tourism industry was also cited as aiding the movement of Zambians across the lake. When tourism was at its peak, there were many boats on the lake and scared the Zambians away. However, the decline in tourism has opened up the waters between Zambia and Zimbabwe resulting in fishers overstepping their areas. In the Binga area, direct conflicts were reported and fishing had to be suspended.

4.1.7.4 Lake hazards

Apart from being vulnerable to foreign fishers, the fishers were also vulnerable to lake hazards. Fishing is generally risky due to the unpredictable nature of aquatic conditions. Other hazards are a result of the presence of crocodiles and hippos. Government policy at

present is focused on increasing the population of crocodiles and hippos on Lake Kariba. However, these mammals are a danger to fishers and their gear. Boats have crushed against hippos and sank to depths that make it difficult to recover them. In some extreme instances such accidents have resulted in the loss of life.

4.1.7.5 Lack of voice

An important vulnerability aspect affecting fishers is the governance structure of natural resources management in the area. Given the pyramid nature of the governance, fishers have found themselves without voice. Fishers are passive recipients of rules and regulations rather than partners in the management process. The CAMPFIRE project was designed to function as a partnership between government and communities in the management of natural resources. However, the communities' voice was compromised from the very beginning of the programme (Newsham, 2002, Mashinya, 2007). Government emerged as the superior law giver and the fishers became mere recipients of rules and regulations. Gatshe-Gatshe fishers complained that government was not considering suggestions by fishers in the fishing camps/villages. They also accused Zimparks of deploying junior officials with no decision-making powers to announce or administer new regulations. The fishers, in particular small-scale have not been able to influence conditions of access to the fishery.

4.1.8 The Governed system

A remarkable finding from this research was that the industry has declined if compared to the period of the 1980s. The fishers recalled that, the fishing industry was very vibrant during these early days. The period following independence was a time of heightened expectations by the people of Zimbabwe and the government was determined to fulfill its pre-independence promises. The new government intended to improve the living conditions of the people including those that were living in remote parts of the country such as the Nyaminyami and Binga districts. However, this also coincided with government policy that

was aimed at preserving natural resources. Access to resources such as wildlife and the fisheries was therefore controlled through a system of permits and licences.

Under the permit system, a number of options for accessing the fishing sector exist, which include cooperatives, commercial companies and individuals (see Table 4 below). Licenses are also classified depending on the type of fishing to be engaged in, e.g. commercial Kapenta, gill-net, and sport fishing. This whole system of licencing resulted in a system described here as the "governed system" and is briefly described below.

4.1.8.1 Cooperatives

As far back as 1980, the establishment of fishing cooperatives was a priority policy of the Zimbabwean government (Mtada, 1985). In a bid to raise the living standards among fishing communities, government sought to give financial support and credit to fishers that existed at the time. Government identified a system of Cooperatives as more feasible. Cooperatives were considered more credit-worthy compared to individual artisanal fishers and efforts to establish fishing cooperatives on Lake Kariba were initiated (Mtada, 1985). Following successful feasibility studies and generous financial support from the Swedish International Development Agency (SIDA), the first fishing cooperative – Gatshe-Gatshe, was established in 1983 (Mtada, 1985). As part of a start-up package, Gatshe-Gatshe cooperative was supplied with the following:

- 10 fiber-glass boats
- 4" x 130 nets measuring 46x20m when mounted
- 1.5kg of 12ply nylon twine for mending the nets
- Cash, enough to purchase out-board motor engines (Mtada, 1985).

The cooperative consisted of small-scale communal farmers from Nyaminyami district who lived a few kilometers from the Lake. Before the establishment of cooperatives, fishing was a way to supplement other land-based livelihoods for these communities. The increase in the demand for fish and fish products and the availability of supporting marketing infrastructure soon led to a realization that fishing was in fact a worthwhile enterprise. After a shaky start, the Gatshe-Gatshe fishing cooperative became operational and later, several other cooperatives were set up within the seven fishing zones of Lake Kariba. Marketing was facilitated through a company called Irvin and Johnson (I&J), which specialized in meat and fish products. According to the fishers, I&J also extended support to the cooperatives in the form of gear and equipment. In return, the cooperatives were to sell their fish to I&J. Currently, cooperatives account for 27% of all the Kapenta fishing entities.

4.1.8.2 Commercial companies

Commercial companies on the lake are mainly engaged in Kapenta fishing. According to a Fisheries Frame Survey conducted in 2001, 66% of these companies operate as private companies, 27% as cooperatives and 7% as sole proprietors. However, an interview with a sole propriety at Chalala revealed that much fewer companies were engaged in active fishing. A number of permit holders have resorted to leasing their permits to non-permit holders. A number of factors can be attributed to this change of behaviour. Most important is the general decline in the fishing industry which led some fishers, mostly whites, to either scale down or divert to other business ventures such as safari tourism and the hospitality industry but they maintained their fishing licenses. The other reason is that there are new entrants into the industry who are caught up in the government bureaucracy of issuing permits. One sole proprietor described how difficult it is to obtain a fishing licence.

"I was told by Zimparks official that their records show that they have already issued enough permits that ensure the sustainability of the fishery" Sole operator interviewed on 06/01/2012

. However, the reality on the ground is that some of these permit holders are no longer practicing fishing at all. Realising the benefit of leasing their permits, these permit holders have made a determination not to cancel their licensing but rather to lease them out. This has led to market failure and most leasees have to endure the exorbitant fees demanded by the lease holders. The main targets are the Kapenta fishers who cannot do without licensed motorised equipment to carry out their fishing activities. Another challenge for Kapenta fishers in the Chalala/Bumi area is that the lake shores here have been designated by government as fish breeding grounds as a result Kapenta fishers are forced to operate further offshore. Such expeditions require suitable and licensed gear which is very difficult to obtain.

4.1.8.3 Single operators

The number of registered sole proprietors is very small. However, several fishers have not managed to register for reasons cited in the preceding section. Most of these are new entrants into the industry who were either former employees of commercial companies or retired civil servants who have invested their retirement funds in fishing. In the absence of their own fishing permits, the only option to operate is through leasing permits form current holders.

Gill-net fishers

Unlike Kapenta fishers, gill-net fishers target several fish species mainly bream and tiger. Over and above the general conditions of access, gill-net fishers must abide by therules regarding mesh type and size as well as time restrictions (i.e. only operate between 5pm and 5am). Fishing in river mouth areas is also strictly prohibited. These rules have implications on catch size for the gill-net fishers. However, it was interesting to note that fishers understood the importance of the stringent rules, that it is in the interest of sustainability.

Overall, fishing on the Lake is either Kapenta or gill-net. Fishers in these two categories are organized as cooperatives, private companies or sole proprietors. Fishing on the Lake is also undertaken as a recreational activity mainly by local and foreign tourists who engage in tiger fish competitions. Other commercial companies such as Lake Harvest have engaged in fish breeding on the Lake using a system of cages. All these activities must be licensed and the rules have been designed such that they are accommodated. They key challenge emerging from the interaction with the fishers is that the licensing system is cumbersome and marred by corruption. Penalties imposed for contravening fishing rules or rules of the Lake, are highly punitive. The system of attaching property after fishers fail to pay the required fines has led to many of the fishers losing their fishing gear, especially boats. These are later auctioned in a process described by the fishers as unfair because they are not informed about the auction date. Those who are aware, mainly government officials, will have access to the equipment at ridiculously low prices.

4.1.9 The Governing System

On the other side of the *governed system* stands the governing system. Through state legislation, Lake Kariba and parts of the adjacent area have been designated as recreational and wildlife recreational areas. A state authority, Zimparks, was set up under the Parks and Wildlife Act of 1975 with a mandate to protect, manage and control the exploitation of wildlife resources including fisheries. Other key pieces of legislation include the Natural Resources Act (Chapter 20:13) and the Forest Act. Zimbabwean policy on natural resources is designed to expand the size of the country's natural resources, albeit terrestrial or aquatic. As the results of this study show, there are pros and cons associated with this policy in as far as it applies to the fisheries in particular small-scale fisheries.

4.1.9.1 Policy and legislative design

Local consultation in the formulation of policy is a rarity in Zimbabwe. The structure of governance is unilateral and both command and control flows from the apex towards the governed stakeholders at the bottom. According to Jentoft et al (2010), such a system of governance is referred to as the *pyramid* type if governance. The governed system at the base is merely a passive recipient of laws and statutes issued by the governing system handed down through a well-crafted channel of authority. Such a system contrasts sharply with the *interactive* governance theory and the *rose* image proposed by Kooiman and Bavnick (2005) and Jentoft et al (2010), where central government ceases to be authoritarian but consultative. The governance system of natural resources in Zimbabwe can best be described as "*autocracy*" and there is little room for users to claim entitlements. Access to and use of natural resources in Zimbabwe is at the discretion of the governing system, the government.

4.1.9.2 Local government

Much of the area adjacent to the Lake falls under the jurisdiction of local government in the form of Rural District Councils (RDCs). Only four fishing camps/villages are located under Zimparks jurisdiction while the rest fall under Nyaminyami and Binga. Table 4 below shows the distribution of fishing camps/villages by fishing areas and jurisdiction.

Table 4: Fishing camps/villages by fishing areas and local authority[16]

Fishing area	Number of fishing camps/villages	Local authority
C1, C3	4	Zimparks
C2, C4, C2	13	Nyaminyami RDC
C5, C6, C7	23	Binga RDC

The difference in jurisdictional authorities, in particular between RDC and Zimparks, presents fishers with a variety of challenges. As citizens, fishers rely on government for the provision of amenities such as roads, clean portable water, electricity, health facilities,

[16] Source: Lake Kariba Fisheries Research Frame Survey, 2011

education and policies, among others. At the level of the fishing village, fishers rely on the RDC for such services and camps/villages located in the council area rely on the RDC while those in Zimparks area rely on central government. This variation explains why there were more amenities at Chalala than at Gatshe-Gatshe. Zimparks has stricter rules governing people resident in their area and they provide fewer amenities if at all they do. Rather, they restrict human activity in favour of wildlife. For example, fishers at Gatshe-Gatshe reported that they were not allowed to build permanent home structures nor engage in any form of agriculture for as long as they are within the Zimparks area. On the other hand, Zimparks is not mandated to provide such services as road infrastructure, water, sanitation or health. The differences in authority play an important role in determining how the fishers behave. Despite these differences, conditions of access to the fishing resources are uniform across all camps/villages with subtle differences depending on the type of fisher arrangement and type of fishing.

There are further opportunities to be obtained by fishers who live in camps/villages located in RDC areas that are not be enjoyed by fishers in the Zimparks area. For example, at Chalala, there are housing business opportunities. Nyaminyami RDC has built houses where individuals may rent and set up a business area where others can establish shops and flea markets. As a result, Chalala offers a diverse set of economic and livelihood opportunities for both fishers and non-fishers. This is not possible at Gatshe-Gatshe and fishers here rely on Kariba town for most of their supplies and although one fisher established a tuck-shop on the camp, it was illegal and at risk of being demolished and the owner charged.

4.1.9.3 Co-management

Although highly authoritative, the Zimbabwean government rolled out an extensive national programme of co-managing natural resources with local communities called CAMPFIRE

(Communal Management Programme for Indigenous Resources). However, evidence from other countries has shown that co-management arrangements are usually characterized by unequal power distribution among the different actors (Njaya et al, 2011). The term co-management itself is known to be very elusive and roles of the different stakeholders are not clearly defined nor understood (Nielsen et al, 2004). In general when governments design such co-management programmes, they have an own *image* of what the concept means and what role or powers government should have. As a result co-management programmes have not succeeded in many areas (Jentoft et al, 2010; Nielsen et al, 2004).

The case of Chalala and Gatshe-Gatshe revealed that co-management in terms of fisheries only exist in principle and not necessarily in practice. Fishers in both camps/villages reported that there is very little information exchange between fishers and the Zimparks authorities. Instead, fishers are constantly issued with orders which they are to execute without failure. The fishers at the two camps/villages had this to say about the governing system and the non-existence co-management in practice:

> *"They come here only to give us orders of what we ought to do! They hold meetings in private and pass decisions in our absence. After that, they send junior officers here to give us the orders. We cannot negotiate with them because they have no power to change anything, they are just messengers".* Secretary of the Gatshe-Gatshe fishing camp, interviewed on 03/01/2012.

> *"We never held meetings to discuss development matters or solve problems affecting our community. We only know of ZANU (PF) meetings and collection of money. The local councillors take no initiative and lack willingness to improve the lives of people here. Each man lives for himself and his family".* Fisher at Chalala fishing camp interviewed on 06/01/2012.

4.1.9.4 Licencing and policing

An important feature of the governing system is licencing and policing. All forms of fishing on the Lake must be licenced through a permit and licencing system run by Zimparks. All gear, in particular Kapenta fishing rigs and motorized boats are also required to have licences in order for them to operate on the Lake. Each company, cooperative or individual is limited to a maximum of six fishing permits, one for each fishing rig. Fishing gear for Kapenta fishers is more sophisticated than that of gill-net fishers and obtaining a permit has been one of the greatest hurdles for new entrants into the Kapenta industry. Fishing permits are obtained at rates listed in Table 1 in Chapter 1. According to gill-net fishers at Gatshe-Gatshe, a charge of up to US$300 per term, (each term being three months), is excessive given the prevailing economic conditions in the country. However, that fact the fishers can afford the termly payments means that fishing on Lake Kariba is a lucrative business with potential to earn fishers more income if properly managed.

As part of the governing policing system, Zimparks carries out inspections on fishers that operate on the Lake. These inspections serve a number of purposes, including ascertaining the legitimacy and authenticity of the fishers as well as ensuring a steady flow of revenue for government by ensuring that fisher accounts are up to date. A routine inspection will have the following items on the checklist:

- That all motorized equipment operating on the Lake is licenced.
- That operator permit accounts are up to date.
- That fishers are operating within their designated zones.
- That they do not encroach into restricted zones (i.e. river mouths, maternity/breeding zones).
- That fishers (particularly gill-netters) use the permissible gear, i.e. right mesh size and twine type and size.

The governing system also has a system of fining perpetrators and the fines are as high as US$600. Failure to pay the fine may result in attachment of property by the authority; many cooperatives lost their motorized equipment in this way. The fishers at both camps/villages complained that the fines are too high and have been forced to operate on makeshift equipment after losing to the state. The fishers have also reported cases of corruption, where boats have been auctioned for very low prices without their knowledge.

In summary, the government has an effective system of detecting crime, convicting and punishing perpetrators. This has instilled discipline among fishers to ensure efficient fishing necessary for the sustainability of the fishery. However, the highly punitive measures and corrupt tendencies by those tasked with the execution of justice has rendered the whole governance system unsupportive to such an important livelihood system that is capable of raising household income, improving food security and lowering the level of poverty.

4.1.10 Space and Agency

Space is of essential importance for poverty alleviation in that it accords people freedom (Webster and Engberg-Pedersen, 2002; Sen 2000; Nussbaum 2000). Lack of space is perceived as poverty, given that it entails lack of entitlements which further limits people's freedom of choice (Jentoft and Midré, 2011). Fishers at the two sites have very limited space that is constrained by state rules and costs that are associated with access. Space is further constrained by punitive measures that exist for violating access rules and corrupt officials who capitalise on the ignorance and weakness of the small-scale fishers. When space is limited, fishers are not capable of attaining levels of fishing that are optimal.

4.1.10.1 Access

At the time of the research, Zimparks was not issuing any permits to new applicants who were intending to obtain fishing rights for the first time. The reason for this was that, based

on Zimparks records, the fishery was over-subscribed. However, it turned out that a number of registered fishers did not correspond with the number of fishers actually operating on the Lake. Several permit holders ran out of business due equipment breakdown while others had ceased fishing and diverted into tourism, but did not cede their fishing rights in case they preferred to return. This means that the shortage of permits was an artificial one and a new market has been created where permits are being leased outside the governance system. Leasing fees and some of the conditions demanded by the lessors are excessive and hence further constraining the space. Fishers reported that the some lessors demanded payment in kind and it was difficult to meet the quota and remain with a surplus for them to sell. Such a constrained environment results in lower income for fishers and this impacts directly on their poverty status. This phenomenon partly explains why the small-scale fishing industry on Lake Kariba is declining rather than improving because a number of them reported that they were always in debt. The withdrawal of donor support, from SIDA, has further limited the space for fishers by closing a much needed financial window. Government support has been limited due to the focus on land reform and the general economic downturn that faced the country starting in 2000.

4.1.10.2 Costly fishing rights

As alluded to in an earlier paragraph, obtaining access to fish on the Lake is very costly. Very high fees are levied on the fishers regardless of the economic status. An annual fee of US$1200 is a substantial amount of money for small-scale fishers who have families to support and whose catch is not consistent throughout the year. Monthly incomes vary depending on whether it is a peak and non-peak period. While fishing on the Lake generates employment, the act of fishing itself is not viewed as a poverty alleviation strategy. Rather, government is hoping to generate income for the fiscus while at the same time restricting fishing on the lake. The fishers interviewed at both camps/villages maintained that they put in

a lot of man hours to raise enough income to maintain service their fishing licences.. These high fees have had ripple effects in that fishers, in particular the individual fishers, can no longer afford the luxury of servicing their boating equipment. Some equipment has been run down to the extent that it is longer usable, forcing them to either rent or opt out of business.

Kapenta fishers are particularly at risk when it comes to the high cost of obtaining fishing rights. It is the biggest hurdle that also reflects the inefficiencies in the governing authority and threatens their livelihoods. Costs of acquiring equipment at entry level are very high and when licencing and operation and maintenance costs are taken into account, fishing becomes a costly enterprise. A Kapenta fishing permit costs US$1000 and for each term (i.e. 3 months), all licenced Kapenta fishers are obliged to pay a US$250 licence fee to Zimparks. Given these cost constraints, fishers have created their own space (i.e. coping strategies) through leasing and renting equipment. Through renting, unlicenced fishers do not have to go through difficult process of acquiring a licence; rather they operate under the name of the licenced individual. New institutions have emerged in which fishers have developed contractual relationships.

However, experiences of the fishers at Chalala have shown that these relationships have a number of challenges. Permit holders have been known to demand very high payments, sometimes in kind, from their clients. Other the other hand, the same permits holders have a tendency to default on their rentals to the state hence putting the clients at risk of being fined during inspection by the authorities. In extreme cases, boats may be confiscated and owners would demand replacement from clients. Such dynamics in contractual agreements arise from social capital and are instrumental in determining the economic status of fishers. Evidence

from Chalala showed that the economic progress of many small-scale fishers has been stalled due to state policies as well as complex and costly fisher relations.

4.1.10.3 Punitive measures

Fishers from both Gatshe-Gatshe and Chalala admitted that state legal instruments relating to fishing on the lake are too restrictive and highly punitive. The act of attaching property by the state has barred fishers from expanding and growing. Scenes such as those shown in Figure 8 below where fishers use makeshift equipment, are very common along the lakeshore. Such boating equipment is not stable and therefore dangerous to use in a lake infested with crocodiles and hippos.

Figure 10: Unsafe makeshift boats used by fishers[17]

Fishers are therefore physically and economically vulnerable due to the lack of proper equipment. State laws and the conduct of state employees have reinforced each other in shrinking the action space for small-scale fishers on Lake Kariba. Their potential to develop sustainable livelihoods and evade poverty is also compromised by a governance system that is not supportive of small-scale fishing.

Therefore, from a space and agency theory perspective, the small-scale fishers at both camps/villages can be labelled as poor because the operating environment is too narrow both

[17] Photo credits: Author, taken 03/01/2012

in terms of access and operating costs. The space is further narrowed by red tape, punitive laws and negative social capital returns.

4.1.11 Relational aspects of poverty

Relational aspects may either enhance or limit people from taking advantage of resources to address poverty in fisheries (Veit-Wilson, 2000). Room (2000) identifies two such relationships, namely (i) the fishers and the state relationship and (ii), the fishers and extended family. However, the Nyaminyami case presents a very interesting case of these kinds of relationships.

4.1.11.1 Fisher-state relationships

This has been addressed adequately in the preceding sections, but in order to emphasize the point, small-scale fishers on Lake Kariba must be registered with the authority and operate according to set rules. Failure to do so is certain to be met with severe consequences from the state.

4.1.11.2 Fisher-fisher relationships

Fishers organised as cooperatives such as the Gatshe-Gatshe gill-net fishers, and the Chalala Kapenta fishers also exhibit unique relationships. Cooperatives are structured units consisting of leadership in the form of a chairman, treasurer and a secretary, followed by the committee members and the rest of the group. These formations are important in terms of maintaining good and stable relationships with state authorities. They make certain that group members contribute toward the renewal of fishing rights through servicing their fees. They also make sure that none of the members are without assistance in time of need, e.g. in case of illness or death of a family member. However, a closer look has revealed that the cooperative exists in name only because members operate individually. This way of operating was necessitated by the economic crisis which occurred in the country in 2008 when handling cash became difficult. By operating individually, fishers were able to earn individual income which would

allow them to contribute toward the state fee for the group, of US$300 per term. This has proved to be an effective coping mechanism which allowed cooperative members to evade income poverty. Single unit operations were more efficient in terms of fishing expeditions and marketing of fish while collective action helped to ensure the persistence of the fishing rights.

However, such group dynamics worked best for cooperatives involved in gill-net fishing, i.e. at Gatshe-Gatshe, and not so well for the Kapenta cooperatives at Chalala. Unlike gill-net fishing, Kapenta fishers must travel to Harare to sell their harvests and group members often act in bad faith by declaring lower income than actually received from the sales. Kapenta fishers at Chalala cited this behaviour as a major drawback on their efforts to improve their economic status and secure their livelihoods.

4.1.11.3 Entrant-fisher relationship

Fishers in cooperatives have also developed other relationships with prospective fishers. Membership of a fishing cooperative had always been by inheritance and hence not very easy for outsiders to gain membership. However, at Gatshe-Gatshe, new fishers managed to gain entry by attaching themselves to any of the existing members. Their ability and commitment to fishing is assessed over a probation period during which they are engaged as casual employees of the cooperative. On successful completion of the probation period, the prospective individual elects either to work as an individual or to continue working under the member. If they decide to work as individuals, they proceed to acquire their own equipment and begin contributing towards the termly fees for the cooperative. Although these arrangements are informal, they turned out to be a successful coping mechanism for fishers, in particular the Gatshe-Gatshe fishing community. The catch per unit-effort by Gatshe-

Gatshe fishers was high because operating singly presented individual group members with incentives to work more and to generate income that accrues to them directly.

Social characteristics such as ethnicity and caste no longer matter much in the formation of these groups and for this reason cooperatives currently consist of members from provinces such as Mashonaland Central and Masvingo provinces.

4.1.11.4 Master-servant relationships

In setups such as sole owners or private companies, relationships are between the owner and workers (or crew). Evidence from Chalala showed that this type of relationship does not yield optimal benefit for both the owner and the workers. Owners offer very low wages and workers have devised ways to raise their returns by engaging in illicit trading during the night. This is very common among Kapenta fishers who by design have to always operate at night. A vicious circle is created where owners are not able to offer better wages because their returns are low and the workers will continue to act unfaithfully. Such behaviour in the industry has kept wages for employees very low. Since Kapenta fishing is a night-time activity, monitoring by the owners is very difficult and this has distorted the accurate picture of the fishing potential on Lake Kariba. In addition, living conditions for communities here i.e. Chalala, have stagnated and hardly show signs of improving.

4.1.11.5 Extended social relations

Extended social relations are clearly observable at both Gatshe-Gatshe and Chalala. According to Room (2000), such relationships are useful in easing poverty and providing what he calls “informal help systems” (Room, 2000). This is also known as social capital. All fishers in cooperatives and those employed in commercial companies or operating as new entrants, indicated that they have links with families back home, either in town or in the communal areas. Relationships with extended family members are particularly important in

that they help sustain livelihoods at the fishing camp by providing items such as mealie meal which is not readily available at the camps/villages. At camps/villages such as Gatshe-Gatshe, no form of cropping is allowed and this necessitates the need to import food from outside the fishing zone. Links with families elsewhere, create opportunities to retire during the off-peak period as well as to engage in crop production and animal rearing. The hinterland of Chalala consists of communal areas where farmers grow cotton and other drought resistant crops such as sorghum, both for sale and for subsistence. This complements livelihood activity for the fishers as well as fostering exchange between the two areas. Gill-net fishers at Chalala reported that they take time off from fishing in order to engage on a full time basis in crop farming. Others have considered the fishing camp to be a place where the household head lives and works while the rest of the family maintains the communal home. These relationships permit livelihoods diversification and create linkages in terms of food between the home and the fishing camp, eventually leading secure livelihoods that protect them from shocks arising from hunger and poverty. Activities such as cash cropping which the other family members engage in, generates income that affords them services such as schooling, health, transport and other household consumables. Due to these dynamics and linkages, the fishers at both Gatshe-Gatshe and Chalala are not desperate communities, as outsiders might want to suggest but they lead a life of self-sustenance irrespective of the narrow operational space created by the strict natural resource management regime.

4.1.12 Livelihood challenges

Despite general contentment in their way of life, the fishers at both camps/villages face a number of livelihood challenges. Some of these challenges have been described under the section on vulnerabilities above. Here, we adopt the Chain Analysis approach developed by Kooiman and Bavinck (2005). This model posits the fisheries sector as a series of inter-connected activities that occur in a multi-stage sequence. Regardless of the fishing methods,

fishers encounter a unique set of challenges in the chain from harvesting to marketing. The major challenges facing fishers on Lake Kariba include the following:

4.1.12.1 Seasonality

The fishing industry is seasonal and by no means is it possible for fishers to harvest continuously throughout the year. Fish behaviour is not consistent and varies widely during the four seasons. For example, during summer the fish migrate from shallow-waters areas to deep-water areas, usually these are river mouth areas where fishing is prohibited. Consequently, there exists a peak period, which stretches from January to May and the off-peak period starts from June up to the beginning of the following year. The gill-net fishers are hardest hit by seasonality because the river mouth areas are restricted areas where fishing is not allowed. Therefore, harvests tend to decline and income will fall since the two are correlated. Achieving sustainable livelihoods becomes difficult due to natural phenomena that affect fish behavior on the Lake. This is where diversification of livelihoods becomes important and it explains why fishers operate a dual economy, at fishing camp and in the communal area.

The peak period occurs mainly during the rainy season. According to the fishers, the rainy season is the time during which fish migrate towards the shore of the lake because (i) there is a large inflow of muddy waters containing a lot of fish food, (ii) the shore of the lake gets warmer during the rainy season and hence attract fish and (iii) the rainy season is also the breeding season and as a result fish move towards the shore for that purpose. Seasonality is therefore positively linked to income through the quantity-effect. Fishers at Gatshe-Gatshe reported that during the peak season, they harvest between 30-40 kilograms of fish from a single net. However, it is common, during the non-peak periods, to pull out an empty net in particular during the full moon phase of the month when night skies are very bright. The

challenge for fishers is to balance their annual income between family needs and their rental obligations to the state.

4.1.12.2 Marketing and market dynamics

Gill-net fishers face major challenges when it comes to the marketing of fish because of the high demand for the type of fish they harvest, i.e. bream and tiger. Individual and commercial buyers travel to the fishing camps/villages to purchase fresh fish each morning. The chairman of Gatshe-Gatshe said:

> *"Selling is not a problem. People come here on their own each morning and sometimes buyers return with their money after fish have been sold out"*. Interviewed on 03/01/2012.

However, the situation is not the same for Kapenta fishers. Kapenta needs to be dried first before it can be marketed and usually in larger quantities because smaller quantities are not cost effective. A further challenge for Kapenta fishers is that they have to make a trip to town, mainly to Harare where the market is large. Hence, returns for Kapenta fishers are not immediate and there is the risk of losing a whole catch if the weather is cloudy or rainy as this makes the drying process difficult and the Kapenta may rot.

4.1.12.3 Demand and supply

One of the greatest ironies of gill-net fishing discovered at Gatshe-Gatshe fishing camp was that during peak periods there is an abundance of fish on the market. Each camp will experience a strikingly similar increase in harvest. The basic law of supply and demand states that when there is excess supply, price will falls (all other things held constant). Hence, returns to fishers are lower per unit amount due to the increase in supply. Gatshe-Gatshe fishing camp is also located closer to other fishing camps/villages such as Fogger Hill and Nyawodza. Fishers at Gatshe-Gatshe reported that very often buyers start buying from camps/villages that are further away from Kariba and may run out of cash before they reach

them. As a result, they will resort to drying the fish for sale or consumption at some point in the future.

On the other hand, during the off-peak period, harvest levels are low and demand will far surpass the supply. In many cases, fishers return with excess cash because they could find sufficient amounts of fish form the fishing camps/villages. Receiving payment in advance is not permissible because the fishers are aware of the risks of fishing which may jeopardise their chances of harvesting enough to honour what they owe their clients. Risks include crocodiles and hippos that may disappear with nets, poachers (also known as roving bandits), as well as other lake hazards. This affects particularly the gill-net fishers.

4.1.12.4 Pricing

The pricing of fish poses a major challenge for fishers from both camps/villages. Due to spiralling inflation that reached a peak in Zimbabwe between 2008 and 2010, the country adopted the US Dollar as trading currency. While this was a welcome move by the people Zimbabwe, it did not work well for the fishers and indeed for many others due to the absence of smaller denominations of the dollar, especially coins. Transactions with a value of say US$1.50 were difficult because of lack of US coins. Rounding upwards (i.e. US$2) would make the portion expensive for the buyer and rounding downward (i.e. US$1) meant a loss to the fisher. Although this problem was solved by the use of the South African Rand (ZAR), fishers were still at risk of losing each time the US dollar devalued against the ZAR. This technically was a major concern of fishers at Gatshe-Gatshe who lamented that they were, in many instances, forced to underprice their fish. The problem worsened by the fact that fish were sold *in situ*,i.e. at the camp where there is no opportunity to acquire lower denominations of the currency.

4.1.12.5 Multiple demands on income

Although fishers, both Kapenta and gill-net fishers earn a reasonable income from fishing, they are faced with multiple demands on that income ranging from family needs, rental and maintaining their equipment. Meeting those demands at the same time was the biggest challenge for fishers on Lake Kariba. The following are some of the uses of income that were reported by the fishers at both camps/villages.

4.1.13 Re-investing

The fishers always need to repair or replace their fishing gear. Due to hazards associated with aquatic environments, loss or damage of fishing gear is a perennial problem. Other losses may be due to theft or normal wear and tear. Replacement or repair of fishing gear comes at a cost which the fishers must meet in order to ensure their income. The costs were also adjusting upwards due to macro-economic instability.

4.1.14 Rentals

In addition to maintaining their gear, fishers at both camps/villages were faced with the cost of access. We have described earlier that fishing on Lake Kariba is permissible only on the acquisition of a fishing permit. Apart from the hurdles of acquiring the licence itself, the rentals are very high and have to be met from the same income generated from fishing. The most affected are sole owners and private companies. Cooperatives have devised a way of sharing the cost of rental among the members.

4.1.15 Domestic use

For any household, priority for spending is usually given to household needs and this is uniform across households regardless of occupation type. The fishers at Gatshe-Gatshe reported that part of their income is spent on schooling for children who are forced to attend school in Kariba town because there are no schools at the camp. Other demands include rent, clothing and other household consumables such as soap and sugar. For the Gatshe-Gatshe

fishers, the fishing camp is regarded as “a place of work” and the rest of the family have a separate home in town.

4.1.16 Livelihood diversification

Livelihood diversification is a common feature among indigenous communities in Zimbabwe. With the development of industries during the colonial era many household heads migrated to towns where the demand for formal employment was high. Some worked in the primary sector, in particular farming, while others became part of the fishing community on Lake Kariba. Families were split into two with the household head employed formally in town and the rest of the family engaged in communal farming in the rural areas. Exchanges between the two economies were so important and still are where income flows either way both in cash and in kind. Such a dualist economy provides secure and diversified livelihoods.

The fishers at Gatshe-Gatshe as well as at Chalala highlighted the importance of maintaining a dual economy and how the two support and reinforce each other. The fishing area is regarded as a place of work from which they retire, to go to their communal homes during the off-peak period. Apart from the communal homes, fishers have also diversified their livelihood based within the fishing camp itself. One of the members of the Gatshe-Gatshe cooperative was running a tuck-shop which sold basic items such as sugar, salt and soap. More diversification was to be found at Chalala because of the size and type of settlement in comparison to Gatshe-Gatshe. People here were engaged not only in fishing but also in vending, repair work, tailoring, and operating a general deal shop. Others have quit fishing and ventured into petty business which they found more profitable and secure than employment in a fishing company. Since Kapenta fishing is done mostly at night, the fishers utilise the day time to engage in other income generating activities which helps supplement their income from fishing.

4.1.17 Summary

In this Chapter I presented the findings of the based on fieldwork interviews conducted at the two camps/villages on Lake Kariba. I highlighted the manner in which fishing communities are positioned in relation to state authority and in the process identifying that there are two systems, which are the governing, and the *governed* systems. I also found that the governing system represented by the state authority, Zimparks has designed a governance mechanism to manage natural resources. A key feature of this mechanism is that natural resources such as wildlife and aquatic are important and access should be restricted at all costs. The right to access has to be secured by presenting a formal application to the state authority and there is an associated fee. The decision making process by the governing system has little room for consultation with stakeholders, in particular the users. As a result, users are passive recipients of the law (typical pyramid type of governance). This creates a very narrow space for fishers to operate and this space is further narrowed by the high cost of access as well as punitive measures that exist for would-be perpetrators of the law. The policy to protect and grow natural resources on the Lake has created further risks for fishers due to the increasing number of hippos and crocodiles which have been allowed to breed. These creatures create a hazardous environment for fishers, in particular gill-net fishers who use nets and makeshift boating equipment.

I also saw that the fishers both camps/villages are faced with a set of factors that make them vulnerable to the extent of threatening their livelihoods. Vulnerability ladders were constructed based on the factors that affect fishing activities at both research sites. Surprisingly, the fishers reported that events such as the economic crisis in Zimbabwe never posed any risks to fishing. Rather, it was a period during which they experienced a boom and by engaging in barter trade they were spared the trouble of looking for household consumables as they were readily available from their clients. However, fishers are highly

prone to the restrictive laws, punitive measures imposed for law breaking, the high cost of access, red tape, and alleged corruption by government officials. Gatshe-Gatshe fishers reported that government policy of confiscating gear, especially boats was partly responsible for the decline in fishing activities.

The challenges and vulnerabilities that face fishers were also found to occur at each stage in the production chain (i.e. from the fishery to the market). Using the Chain Approach, factors such as the cost of access, penalties (which include confiscating gear), seasonality, market dynamics (i.e. supply, demand and pricing), group dynamics and multiple demands on income were significant in determining fishers' economic status. The combined effect of these factors also explains why the fishers' economic status was hardly improving despite generating a reasonable income from fishing activities. However, the fishers, in particular the Gatshe-Gatshe fishers, denied that they were poor, rather they considered themselves well off compared to their counterparts in other sectors. In spite of these challenges, fishers at both Gatshe-Gatshe and Chalala have devised mechanisms for coping. A key feature of their coping strategies has been livelihood diversification and the insistence on maintaining a dual economy (i.e. a rural home and the fishing village). The flow of income and goods between the two homes creates mutually reinforcing economic forces that secure and sustain livelihoods for the fishers.

Lastly, an important message from these results is that government priorities on the Lake are not centred on alleviating poverty for communities that live and derive part of their livelihoods from the Lake. Rather, government is using the fishing sector as a cash cow. This is evidenced by the high fees that are levied for accessing the fishery as well as excessively high penalties imposed on fishers who violate the rules of access.

5 CHAPTER V

5.1 SUMMARY AND CONCLUSION

5.1.1 Introduction

This chapter gives a summary of the research findings and presents some concluding remarks. Some recommendations are also suggested that could of interest to other researchers in the area. The study was aimed at analyzing the nature and extent of poverty among small-scale fishers on Lake Kariba – Zimbabwe. It also sought to outline and explain the livelihood challenges facing these communities and how they have managed to cope over the years. The chapter is divided into four major sectionsnamely: defining and assessing poverty, natural resource governance, livelihood and diversification challenges and the importance of fisheries to the economy.

A survey of literature revealed that there is renewed interest in fisheries research. Evidence from across the world demonstrates that the sector is not only important but it is capable of contributing immensely towards poverty reduction efforts in many countries (Jentoft and Eide, 2011). The United Nations (2010) has also admitted that the fisheries sector, in particular small-scale fisheries, is instrumental in achieving food security if properly managed. The story of Gatshe-Gatshe and Chalala fishers supports this claim in two important ways.

a) The fishers have a long history of organized and successful fishing since the establishment of fishing cooperatives in Zimbabwe in the early 1980s. Since independence in 1980, government, donor organisations and the private sector, have supported small-scale fisheries on Lake Kariba. As a result, the sector became vibrant and generated a significant number of jobs along the chain.

b) Fishing, in particular artisanal fishing, plays an important role in the livelihoods of many households on the shoreline (Malasha 2005). Although the contribution to GDP is minimal, fisheries are an important safety net during periods of macro-economic instability such as that experienced in Zimbabwe after 2000. Fishing also assists vulnerable households to sustain their livelihoods and prevent them from sinking deeper into deprivation (Béné, 2004; Malasha, 2005). The boom experienced by the fishers in 2007/08 when there were food shortages in the country underscores the importance of fisheries as a livelihood source and an important contributor to food security.

5.1.2 Defining and assessing poverty

A number of frameworks for analyzing poverty in fisheries have emerged in recent years. This study has utilized some of these emerging frameworks with a view to capture as well as explain the state of poverty among fishing communities on Lake Kariba. The use of these frameworks was useful in picturing poverty and livelihoods among fishing communities from different perspectives. Such an analysis is important if the economic position of fishers as well as their likelihood of falling into a poverty trap is to be determined.

5.1.2.1 Income poverty

Based on self-assessment, the fishers at Gatshe-Gatshe claimed that they were not "poor". This self-assessment was based on monetary considerations that reflected on the amounts of money generated from fish sales, which compared favourably and even surpassed that of white collar professions. Using this money-metric approach, the fishers were not income poor. This finding was in line with the proposal by Onyango (2011) that, it is critical when considering small-scale fisheries to account for the social values and principles that are attached to their way of life in order to understand them. According to Narayan et al, (2000) the "poverty experts" are the poor themselves and the situation on the ground showed proved

it when the fishers were confident to claim that they were not poor. Hence, conceptions such Béné's (2003) famous assertion that "fisheries rhymes with poverty" are mere stereotypes that should not be generalised.

However, conclusions based on a money-metric analysis are not sufficient to craft a robust development policy. Other analytical approaches are needed that take into consideration other factors that impact on communities in the sector. By applying other approaches to the analysis of poverty, the study revealed that in fact, the fishers at both sites face numerous challenges. Most of these challenges were responsible for the rather unchanging and even worsening economic position of the fishers. For example, the fishers admitted that although they were better off than people in other sectors, they are much worse now than they were in the 1980s decade. A combination of the governance culture, natural and economic forces have led to a gradual decline in the scale of inland fishing on Lake Kariba and communities such as Gatshe-Gatshe and Chalala being the most affected.

5.1.2.2 Poverty as a process

An important view to assess the poverty conditions of the fishing communities on Lake Kariba is to consider poverty as a process. Although the fishers at the two sites had aspirations for a better life than at present, they seem to hold strong views that their present state is their way of life. They could not foresee themselves opting out of fisheries to start a new profession because they have gained sufficient knowledge and experience in what they do. According to them, fishing is a *way of life*, and they have to accept their living circumstances as permanent. Such perceptions are a result of the process of adaptation due to limited alternatives for deriving livelihoods (Jentoft et al, 2010). The climatic conditions of this north-western area of the country are quite arid and offer limited opportunities for land based activities due to high temperatures and marauding wild animals. In addition,

Nyaminyami district very is a remote district and hence very difficult to access by road. Communication by telephone was also a challenge but recent developments in cellular technology have made life much better for these communities. Such technological developments are viewed as important improvements to life hence further reinforcing their convictions to stay in these areas. Besides, the movement of people from other parts of the country in search of livelihoods here, is a sign that fisheries livelihoods are important and less vulnerable to economic shocks.

5.1.2.3 Vulnerability ladders

The use of vulnerability ladders was instrumental in exposing the downside of life in the fishing village. Fishing activities are by nature subject to vulnerability because the exploitation of aquatic resources is very risky and the environment is unpredictable. Predators such as crocodiles and other animals such as hippos dominate these environments and their behaviour is a threat to human life. Using fishers' assessment of the different vulnerabilities and following the World Fish Center (2010) example, I constructed vulnerability ladders for both cases. What was interesting and rather amazing from this analysis was that natural hazards were not the greatest of threats to the fishers. Fishers indicted that the manner in which natural resources were governed and protected posed a far greater threat to their livelihoods than did natural hazards. Government policy was, according to the fishers, causing them to be more vulnerable to the environment due to the following factors:

a) The government policy of non-culling has caused the population of crocodiles and hippos to increase in the Lake. This has increased the risk of fish and gear loss for gill-net fishers in particular those who now have to compete for fish with the crocodiles. Their nets are prone to being rolled away by crocodiles or hippos as they swim or move under the water.

b) Due to the restrictive policy by government, access to the fishery is very costly and fishers pay heavy fines for contravening the rules of access. Failure to pay results in the attachment of property, which is usually their fishing gear that they desperately need in harvesting. Fishers reported that they lost most of their motorized equipment through this process. They have resorted to using makeshift equipment such as that shown in Figure 7 above. Such equipment is not safe to use in an aquatic environment because it is prone to wind and predators such as crocodiles and hippos.

5.1.3 Governance of natural resources

An important aspect about fisheries on Lake Kariba is the governance of natural resources. Natural resources are an important facet of the Zimbabwean economy and government put in place legislation and institutions to ensure that they are protected and used properly. Lake Kariba supports a vibrant tourist industry for Zimbabwe and there are limits to which fishing can expand given the significance of tourism to the economy (Malasha, 2005). Government, through the Wildlife Authority designated the area along Lake Kariba as a national park and declared that fishing must be properly controlled so that it does not disturb tourism. As a result, obtaining access to the fishery is not easy and is also very costly.

With the view to addressing poverty and affording local communities a share of the natural resource cake, government came up with the CAMPFIRE project. By adopting this programme, government was acknowledging that poverty was due to "lack of entitlements and capabilities that provide a person with sufficient and secure action space, and therefore the freedom to choose the life that he or she wants" as proposed by Jentoft and Midré, (2011). However, evidence on how fisheries are governed in Zimbabwe runs contrary to this view because the user-pays principle restricts access. The access fees are quite exorbitant indicating that the poverty alleviation principle is not part of government policy with respect

to fishing in the country. Rather, the state views access to fisheries resources as way of generating revenue for the fiscus. In addition, there are highly punitive measures in place to ensure that perpetrators are punished and resources are protected.

However, in the CAMPFIRE model, the fishers have not been given an adequate *voice* to be able to influence planning. Instead, they are mere passive recipients of the law which they must abide by it, at all costs. Governance of natural resources follows the conventional *pyramid* (top down) style as opposed to the *rose* type proposed by Jentoft et al (2010). The CAMPFIRE model was supposed to operate as a *rose* model (see Figure 3) in which local communities would be shareholders in natural resource management under the principle of co-management. As observed by Njaya et al, (2011), co-management arrangements are usually characterized by unequal power distribution among the different actors and as a result they have not been very successful. The evidence from this study has also shown that the CAMPFIRE project has not worked in favour of fishing communities on Lake Kariba.

5.1.3.1 Space and Agency

Given the foregoing, the fishers on Lake Kariba have a challenge of finding *space*. Space is essential for poverty alleviation in that it accords people freedom (Webster and Engberg-Pedersen, 2002; Sen 2000; Nussbaum 2000). Limitations in terms of space translate into poverty because it entails lack of entitlements and further limits people's freedom of choice (Jentoft and Midré, 2011). The situation of tfishers on Lake Kariba is one of limited space given that fishing is not a priority. This is further compounded by red tape and allegations of corruption within the state structures.

5.1.4 Livelihood challenges

Despite a general contentment with their way of life, fishers on Lake Kariba face a number of challenges across the entire production and marketing chain. Seasonality is an important

challenge affecting fishers. Fishing on Lake Kariba is seasonal and is characterized by peak and off-peak periods. For Kapenta fishers, the monthly phases of the moon also affect fishing activities to the extent that they are unable to work for an entire month. Seasonality does not guarantee fishers a steady flow of income. However, fishers are obliged to pay their fees to government every quarter wihich is quite a challenge during the off peak months of June to December.

As a fall-back mechanism, most fishers on Lake Kariba have maintained a dual economy. They have communal homes to which they retire and engage in land-based activities such as cropping and animal rearing. Land ownership is therefore an important component of survival for small-scale fishers. This contrasts sharply with the cases in Bangladesh, Nicaragua, and Vietnam where poverty among small-scale fishers is associated with the lack of land ownership (Jentoft and Midre, 2011).

5.1.4.1 Marketing and market dynamics

The marketing of fish presents fewer problems for gill-net fishers in particular, because buyers personally travel to the fishing camps/villages. This drastically cuts down the costs of transport on the part of the fishers. However, the demand and supply of fish is also seasonal and is ironically lower during the peak-harvest period due to increased supply. The use of the US dollar as medium of exchange has also presented challenges that lead to the underpricing of fish and a loss to the fishers. Kapenta fishers at Chalala faced the challenge of ferrying their harvest to the market (in Harare) which is more that 300km away. There were reports from some fishers that members often cheat during the process of marketing leading to the loss of income for others.

5.1.4.2 Multiple demands on income

Most fishers interviewed indicated that, although they earn reasonable amounts of income from fishing, the income is expected to satisfy a multiple set of demands. These demands include reinvesting in the business and domestic or family demands. Due to the perennial loss of fishing gear due to damage, ageing or confiscation, the fishers have been forced to always replace with new or make repairs to existing equipment. Kapenta fishers are faced with further costs of operating because their equipment requires fuel for propelling the fishing rig and for lighting during fishing expeditions. There is a higher rate of wear and tear on their equipment and the costs of maintenance are high and unavoidable.

Fishers were found to be facing challenges that were similar to their counterparts elsewhere in the country. A common feature affecting most fishers was the debt problem. Fishers at Chalala were found to be heavily indebted due to:

- *Renting* boats from licenced individuals who usually demand in-kind payment.
- *Buying from shops on credit.* Fishers buy goods on credit from the shop owners and use their expected harvest as security.
- *Moral irresponsibility*. This is a common occurrence at Chalala where some fishers engaged in immoral behaviour such as prostitution where payment is demanded in in kind (mostly portion of Kapenta).

A high level of debt impedes greatly on the economic progress of fishers and threatens to lock them in poverty for much longer periods.

5.1.5 Concluding remarks

A major finding from this research is that, fisheries on Lake Kariba have the potential to contribute much more to the economy than they currently do. The increase in the importance of fish was highlighted during the economic crisis of 2006 to 2009. During this period, fishers on Lake Kariba experienced an incredibly high demand for fish, which they bartered

with for key household items such as sugar, soap and clothing. This demonstrated the importance of fisheries as a safety net to livelihoods and supports evidence from across the world that small-scale fishing sector contributes significantly to livelihoods of poor communities (Walmsley et al, 2006; United Nations, 2010).

However, for communities practicing fishing on Lake Kariba, there are a number of challenges that bar them from contributing fully to livelihoods and poverty reduction efforts. These challenges include the natural resource governance policy in Zimbabwe. This policy restricts access, punishes offenders too severely and does not give voice to users. The licencing system is poorly managed and monitored to the extent that the state has no perfect knowledge of how many licenced vessels are actually operating on the Lake. Despite the down-sizing of many commercial fishing companies, the state claims that its database is over-subscribed. Combined with red tape in government, the assumed over-subscription has made it difficult for prospective fishers to enter the industry.

It is recommended that research by the Fisheries Institute on Lake Kariba makes efforts to tally the state database of licenced fishers and equipment with what actually obtains on the ground. This in a way will allay fears by government that the fishing sector is over-subscribed. Fisheries contribute significantly to household nutrition and livelihoods and government desperately needs to find ways of extending financial support to fishing communities here, as was the case in the 1990s. The donor community was instrumental in this regard and it would be in the interest of government to attract local and international donors, who are capable of providing the much needed finance and capacity building support.

Another area that needs attention is the balance between economic activities and natural resources. Lake Kariba is a multiple use lake and tourism is an important economic activity. The policy of government to grow natural resources includes increasing the population of crocodiles and hippos but this runs contrary to fishing activities, in particular gill-net fishing. The proposal by fishers at Gatshe-Gatshe that government needs to cull these creatures needs serious consideration because the increase in the numbers of crocodiles may lead to the demise of the whole gill-net fishing industry hence destroying a livelihoods source for thousands of fishery dependent families. This does not underplay the importance of achieving sustainable fishing. As the Zambian experience has shown, fishing grounds have been exhausted due to an open access policy. There were reports by the fishers that Zambian fishers were encroaching illegally onto the Zimbabwean territory, and in many cases harvesting other people's nets and threatening local fishers.

Government needs to make a significant policy shift with respect to natural resources. The current approach makes it too difficult for individuals to have meaningful access to the fishing sector. Evidence from the two communities has shown that the impact of fisheries extends beyond the fishing communities themselves and supports related sub-industries such as vending and repair works. Scientific research carried out in 2003, has shown that the fishing policy persued by Zimbabwe has resulted in under-fishing and this is in sharp contrast to the Zambian case where fishing is viewed as an important food source. Therefore, a policy paradigm shift by the Zimbabwean government is necessary if economic conditions among fishing communities are to improve. Without such a step, these communities will be more marginalised due to lack of action space as economic challenges facing the country.

REFERENCES

Agder, W.N. (2006). 'Vulnerability', *Global environmental change*, Vol. 16(3): 268-281.

Agrawal, A. (2001). 'Common property institutions and sustainable governance of resources', *World Development*, Vol. 29: 1649–1672.

Agrawal, A. (2002). 'Common resources and institutional sustainability', in E. Ostrom, T. Dietz, N. Dolšak, P.C. Stern, S. Stonich, E.U. Weber (eds): *The drama of the commons*. National Academy Press, Washington, DC.

Amarasinghe, O. and M. Bavinck (2011). 'Building resilience: Fisheries cooperatives in Southern Sri Lanka', in S. Jentoft and A. Eide (eds.) *Poverty mosaics: Realities and prospects in small-scale fisheries*, Springer Science Business Media B.V.

Barret, C.B. (2003). 'Rural poverty dynamics: Development policy implications'. Unpublished paper presented at the 25th International Conference of Agricultural Economists, Durban, South Africa: September.

Bavinck, M. (2011). 'Wealth, poverty, and immigration: The role of institutions in the fisheries of Tamil Nadu, India', in S. Jentoft and A. Eide (eds.) *Poverty mosaics: Realities and prospects in small-scale fisheries*, Springer Science Business Media B.V..

Bavinck, M., R. Chuenpagdee, M. Dialo, P. Van der Heijen, J. Kooiman, R. Mahon, and S. Williams (2005). 'Interactive fisheries governance', Centre for Maritime Studies (MARE), Eburon Academic Publishers, Delft, Netherlands.

Béné, C. (2003). 'When fishery rhymes with poverty: A first step beyond the old paradigm on poverty in small-scale fisheries'. *World Development*, Vol. 31(6): 949-975.

Béné, C. (2006). 'Small-scale fisheries: Assessing their contribution to rural livelihoods in developing countries'. Unpublished report for the Food and Agriculture Organisation (FAO), Fisheries circular No. 108. Rome.

Béné C. (2009). 'Are fishers poor or vulnerable? Assessing economic vulnerability in small-scale fishing communities'. *Journal of Development Studies*, Vol. 45(6): 911-933.

Béné C, E. Belal, M.O. Baba, S. Ovie, A. Raji, I. Malasha, F. Njaya M.N. Andi, A. Russell, A. Neiland (2009). 'Power struggle, dispute and alliance over local resources: Analysing "democratic" decentralization of natural resources through the lenses of Africa inland isheries'. *World Development*, Vol. 37(12): 1935‑1950.

Burchardt, T. (2000). 'Social exclusion: Concepts and evidence', in D. Gordon and P. Townsend (eds.), *Breadline Europe: The measurement of poverty*, Policy Press, Bristol.

Chuenpagdee R. and S. Jentoft (2011). 'Situating poverty: A chain analysis of small-scale fisheries,' in S. Jentoft and A. Eide (eds.) *Poverty mosaics: Realities and prospects in small-scale fisheries*, Springer Science Business Media B.V.

Delgado, C.L., N. Wada, M.W. Rosegrant, S. Meijer, M. Ahmed (2003). 'Fish to 2020: Supply and demand in changing global markets', International Food Policy Research Institute (in association with World Fish Centre), Washington DC.

Dore, D. (2012). 'The poverty trap: The economics of communal land use'. Zimbabwe Land Series,' Occasional Paper for *Sokwanele*. http://www.sokwanele.com/node/2380 (accessed 12/10/2012).

Du Toit, A. (2005). 'Chronic and structural poverty in South Africa: Challenges for action and research', *PLAAS Chronic Poverty and Development Policy Series*; No. 6, Programme for Land and Agrarian Studies, Cape Town.

Eide A, M. Bavinck, and J. Raakjær-Nielsen (2011). 'Avoiding poverty: Distributing wealth in fisheries research', in S. Jentoft and A. Eide (eds.) *Poverty mosaics: Realities and prospects in small-scale* fisheries, Springer Science Business Media B.V. 2011.

Food and Agriculture Organisation (FAO) (1974). 'Central Fisheries Research Institute Zambia, Interim Report', Report prepared for the Government of Zambia by FAO, Rome, FAO, FI: SF/ZAM/68/511.

Food and Agriculture Organisation (FAO) (2002). 'The state of food insecurity in the world'. Food and Agriculture Organisation of the United Nations, Rome Italy. http://www.fao.org/docrep/005/y7352e/y7352e00.htm (accessed 15/08/2012).

Food and Agriculture Organisation (FAO) (2005). 'Increasing the contribution of small-scale fisheries to poverty alleviation and food security'. FAO Technical guidelines for responsible fisheries, Rome.
ftp://ftp.fao.org/docrep/fao/008/a0237e/a0237e00.pdf (accessed 20/03/2011).

González, M. (2011). 'To make a fishing life: Community empowerment in small-scale fisheries in the Pearl Lagoon, Nicaragua', in S. Jentoft and A. Eide (eds.) *Poverty mosaics: Realities and prospects in small-scale* fisheries, Springer Science Business Media B.V. 2011.

Hara, M.M. (2006). 'Production relations and dynamics among user-groups in the artisanal fisheries of Malawi: Implications for representation in co-management arrangements', *Maritime Studies*, Vol. 4(2): 53-71.

Hara, M.M. (2011). Community response: Decline of the Chambo in Lake Malawi's Southeast Arm in S. Jentoft and A. Eide (eds.) *Poverty mosaics: Realities and prospects in small-scale fisheries*, Springer Science Business Media B.V.

Hara, M.M. and J. Raakjær-Nielsen (2003). 'Experiences with fisheries co-management in Africa', in D.C. Wilson and J. Raakjær-Nielsen (2003) (eds.) *The fisheries co-management experience, accomplishments, challenges and prospects*. Kluwer, Netherlands.

Hersoug, B. (2005). 'Small-scale isheries: Potential for development', Draft Discussion Paper', Norwegian College of Fishery Science, University of Tromsø.

Integrated Regional Information Networks (IRIN) (2007). 'Zambia-Zimbabwe: The Tonga: Left high and dry'.
http://www.irinnews.org/Report/74139 (accessed 11/2008).

Isaacs M. (2011). 'Creating action space: Small-scale fisheries policy reform in South Africa', in S. Jentoft and A. Eide (eds.) *Poverty mosaics: Realities and prospects in small-scale fisheries.* Springer Science Business Media B.V.

Isaacs, M., M. Hara and J. Raakjær-Nielsen (2007). 'Has reforming South African fisheries contributed to wealth redistribution and poverty alleviation?*' Ocean & Coastal Management*, 50(5-6): 301–313.

Jentoft, S., A. Eide (eds.) (2011). 'Setting the stage' in S. Jentoft and A. Eide (eds.) *Poverty mosaics: Realities and prospects in small-scale fisheries.* Springer Science Business Media B.V.

Jentoft, S. and G. Midré (2011). 'The meaning of poverty: Conceptual issues in small-scale fisheries research', in S. Jentoft and A. Eide (eds.) *Poverty mosaics: Realities and prospects in small-scale fisheries.* Springer Science Business Media B.V.

Jentoft S, R. Chuenpagdee, A. Bundy, and R. Mahon (2010). 'Pyramids and roses: alternative images for the governance of fisheries systems'. *Marine Policy* 4(6):1315–1321.

Kawarazuka, N. (2010). 'The contribution of fish intake, aquaculture, and small-scale fisheries to improving food and nutrition security: A literature review', *The World Fish Center* Working Paper No 2106, Penang, Malaysia.

Kolding, J., B. Musando and N. Songore (2004). 'In-shore fisheries and fish population changes in Lake Kariba', in E. Jul-Larsen, J. Kolding, R. Overå, J. Raakjær-Nielsen, P. van Zwieten (eds), *Management, co-management or no management? Major dilemmas in Southern African freshwater fisheries*. FAO, Technical paper No. 462/2. Rome.

Kolding, J, E.M. Tiraşin and L. Karenge (1992). 'Growth, mortality, maturity and length-weight parameters of fishes in Lake Kariba, Africa'. NAGA, The ICLARM Quarterly October.

Kooiman, J and M. Bavinck (2005). 'The governance perspective', in J. Kooiman, M. Bavinck, S. Jentoft, R. Pullin (eds), *'Fish for life: Interactive governance for fisheries'*, Centre for Maritime Research (MARE), Amsterdam University Press, Amsterdam.

Kraan, M. (2011). 'More than income alone: The Anlo-Ewe Beach Seine Fishery in Ghana', in S. Jentoft and A. Eide (eds.) *Poverty mosaics: Realities and prospects in small-scale fisheries.* Springer Science Business Media B.V.

Kumar, K.G. (ed) (2011). Sustainable small-scale fisheries: Towards FAO guidelines on marine and inland small-scale fisheries**.** Workshop Proceedings published by Chandrika Sharma for International Collective in Support of Fish workers (ICSF), September.

Lake Kariba Fisheries Research Institute (LKFRI) (2011). *Frame Survey, 2011*. Lake Kariba Fisheries Research Institute.

Madamombe, L. (2002). 'The economic development of the Kapenta fishing , Lake Kariba (Zimbabwe/Zambia)', Unpublished Master of Science thesis, University of Tromsø, Norway.

Malasha, I. (2004). 'Colonial and post-colonial fisheries regulations: the cases of Zambia and Zimbabwe, in E. Jul-Larsen, J. Kolding, R. Overå, J. Raakjær-Nielsen, P. van Zwieten (eds), *Management, co-management or no management? Major dilemmas in Southern African freshwater fisheries.* FAO Fisheries technical paper No. 426/2. Rome.

Malasha, I. (2005). 'Contested fishing grounds: Examining the possibility of trans-boundary management regimes in the Lake Kariba Fishery', *Commons Southern Africa Occasional Paper Series*, No. 13, PLAAS/CASS.

Malasha, I. (2008). 'Fisheries co-management, mobility and poverty alleviation in small-scale fishing: Examples from Lake Kariba (Zambia)'. Draft paper that Isaac Malasha was working on prior to his death. http://www.cmi.no/file/?787 accessed 04/10/2012

Marciniak, B. (2011). 'Vanished prosperity: Poverty and marginalization in a small Polish fishing community', in S. Jentoft and A. Eide (eds.) *Poverty mosaics: Realities and prospects in small-scale fisheries.* Springer Science Business Media B.V.

Marshall, B.E. (1992). 'The relationship between catch and effort and its effect on predicted yields of sardine fisheries in Lake Kariba'. NAGA, the ICLARM Quarterly, October.

Mashinya, J. (2007). 'Participation and devolution in Zimbabwe's CAMPFIRE programme: Findings from local projects in Mahenye and Nyaminyami'. Unpublished D.Phil. thesis, University of Maryland, USA.

Matanhire, S. (2003). 'Process Oriented Monitoring System (POMS) - Evaluation of Select Sub-District CAMPFIRE Institutions'. Zimbabwe Trust, Harare.

Mills, M., G.G. Van de Bunt, J. De Bruijn (2006). 'Comparative research: Persistent problems and promising solutions', *International Sociology*, Vol. 219(5): 619-631.

Mtada, O.M.S. (1985). 'The Gatshe-Gatshe Fishing Co-operative, July 1984-June 1985'. *Lake Kariba Fisheries Research Institute*, Project Report No. 50, Department of National Parks and Wildlife (Zimbabwe).

Mubaya, C.P. (2006). 'Community-based natural resources management (CBNRM) in distress: Experience of Omay communal lands, Zimbabwe', CIRAD-funded research.

Murombedzi, J. (1992). 'Decentralization or recentralization? Implementing CAMPFIRE in the Omay communal lands of the Nyaminyami District', Centre for Applied Social Sciences (CASS) Occasional paper, University of Zimbabwe, Harare.

Murombedzi, J. (1999). 'Devolution and stewardship in Zimbabwe's CAMPFIRE Programme', *Journal of International Development*, Vol. 11(2): 287-293.

Murphree, M. (2000). 'The lessons from Mahenye', in J. Hutton, and B. Dickson (eds), *Endangered species, threatened convention: The past, present, and future of the Convention on International Trade in Endangered Species (CITES), of wild flora and fauna*, Earthscan, London, United Kingdom.

Narayan, D., R. Chambers, M.K. Shah and P. Petesch (2000). *Voices of the poor: Crying out for change.* Oxford University Press/World Bank, New York.

Newsham, A. (2002). 'Participation: Processes, problematics and CAMPFIRE', Occasional Paper, Centre of African Studies, University of Edinburgh, Scotland.

Nguyen K.A.T. and O. Flaaten (2011). 'Facilitating change: A Mekong Vietnamese small-scale fishing community', in S. Jentoft and A. Eide (eds.) *Poverty mosaics: Realities and prospects in small-scale fisheries.* Springer Science Business Media B.V.

Nielsen J.R., P. Degnbol, K.K. Viswanathan, M. Ahmed, M. Hara, N.M.R. Abdullah (2004). 'Fisheries co-management: An institutional innovation? Lessons from South East Asia and Southern Africa'. *Marine Policy*, Vol. 28: 151–160.

Njaya, F., S. Donda and C. Béné (2011). 'Analysis of power in fisheries co-management: Experiences from Malawi', *Society & Natural Resources*, 0:1-15 Taylor and Francis Group, LLC.

Nussbaum, M.C. (2000). *Women and human development: the Capabilities approach*. Cambridge University Press, Cambridge.

Nyikahadzoi, K. (1999). 'Introducing co-management arrangement in Lake Kariba in-shore fishing: Progress, opportunities andcConstraints'. Paper presented at an International Workshop on Fisheries Co-management, Penang, Malaysia, 23-28 August.

Okin, S.M. (2003). 'Poverty, well-being and gender: What counts, who's heard?' *Philosophy of Public Affairs*, Vol. 31(3): 280-316.

Onyango, P.O. and S. Jentoft (2011). 'Climbing the hill: Poverty alleviation, gender relationships, and women's social entrepreneurship in Lake Victoria, Tanzania', *Maritime Studies* Vol. 10(2): 117-140.

Organisation for Economic Cooperation and Development (OECD) (2007). 'The DAC guideline: Poverty reduction'. *International Development* (OECD).

Princen T. (2005). *The logic of sufficiency*, MIT Press, Cambridge.

Room, G. (2000). 'Trajectories of social exclusion: The wider context for the third and first worlds', in D. Gordon and P. Townsend (eds.), *Breadline Europe: The measurement of poverty.* Polity, Bristol.

Rukuni, M. and C. Eicher (eds) (1994). *Zimbabwe's Agricultural Revolution*. University of Zimbabwe, Harare.

Salas, S., M. Bjørkan, F. Bobadilla, and M. A. Cabrera (2011). 'Addressing vulnerability: Coping strategies of fishing communities in Yucatan, Mexico' in S. Jentoft, S. and A. Eide (eds.), *Poverty mosaics: Realities and prospects in small-scale fisheries*, Springer Science Business Media B.V.

Schultz, T.W. (1980). 'Nobel Lecture: The economics of being poor'. *The Journal of Political Economy*, Vol. 88(4): 639-651. University of Chicago Press, USA.

Sen, A. (1981). *Poverty and famines*, Oxford University Press, Oxford.

Sen, A. (1983). *'Poor, relatively speaking'*, Oxford Economic Paper Vol. 35(2):153-169.

Sen, A. (2000). *Development as freedom*, Anchor Books, New York.

Songore N., M. Mugwagwa and A. Moyo (1998). 'Results of the 1998 Frame Survey: Lake Kariba Shore - Zimbabwe', Lake Kariba Fisheries Research Institute, Project Report No. 92.

Taylor, T.D. (1990). 'Wildlife management and utilization in Zimbabwean communal land: A preliminary evaluation in Nyaminyami District', Multispecies Project, Harare, Zimbabwe.

Tivey, L. (1978). *The politics of the firm'*, Martin Robertson, Oxford.

Todaro, M.P. and S.C. Smith (2005). *Economic Development,* 9th Edition. Pearson, Hallow, England

Todaro, M.P. and S.C. Smith (2011). *Economic Development,* 11th Edition. Pearson, Hallow, England.

Townsend P. (1979). *Poverty in the United Kingdom: A survey of household resources and standards of living*, Penguin, Harmondsworth, United Kingdom.

United Nations (2010). 'Millennium Development Goals'. http://www.un.org (accessed 04/10/2012).

Veit-Wilson, J. (2000). 'Horses for discourses: Poverty, purpose and closure in minimum income standard policy', in D. Gordon and P. Townsend (eds.) *Breadline Europe: The measurement of poverty.* Polity Press, Bristol, United Kingdom.

Walmsley, S., J. Purvis and C. Ninnes, (2006). 'The role of small-scale fisheries in poverty reduction strategies'. *Ocean & Coastal Management*, Vol. 49(11): 812–833.

Webster N. and L. Engberg-Pedersen (eds) (2002). *In the name of the poor: Contesting political space for poverty reduction*, ZED Books, London.

World Bank (2004). 'Saving fish and fishers: Towards sustainable and equitable governance of the global fishing sector', Report No. 29090-glb., World Bank, Washington DC.

World Bank (2010). 'Development and climate change: World development report', The International Bank for Reconstruction and Development, The World Bank, Washington DC.

World Fish Center/FAO (2005). 'Inter-disciplinary assessment and management of small-scale fisheries and their role in food security and poverty alleviation: A project concept note', World Fish Center/FAO, Malaysia.

World Fish Center (2010). 'Vulnerability in inland fishing communities in Africa: Lessons learned', Occasional Paper, The World Fish Center, Malaysia.