

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.

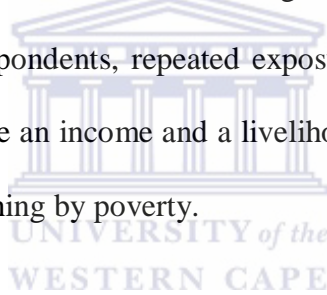


Asset ownership was used by the fishers at Gatshe-Gatshe as a way to define the poor and viewed fishers as falling in this category because their incomes were so low to afford them assets. If fishing is indeed a trade for the poor, then the findings of this research speaks volumes about poverty in Zimbabwe. 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 alternative. 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 sun¹²

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 25⁰C)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.

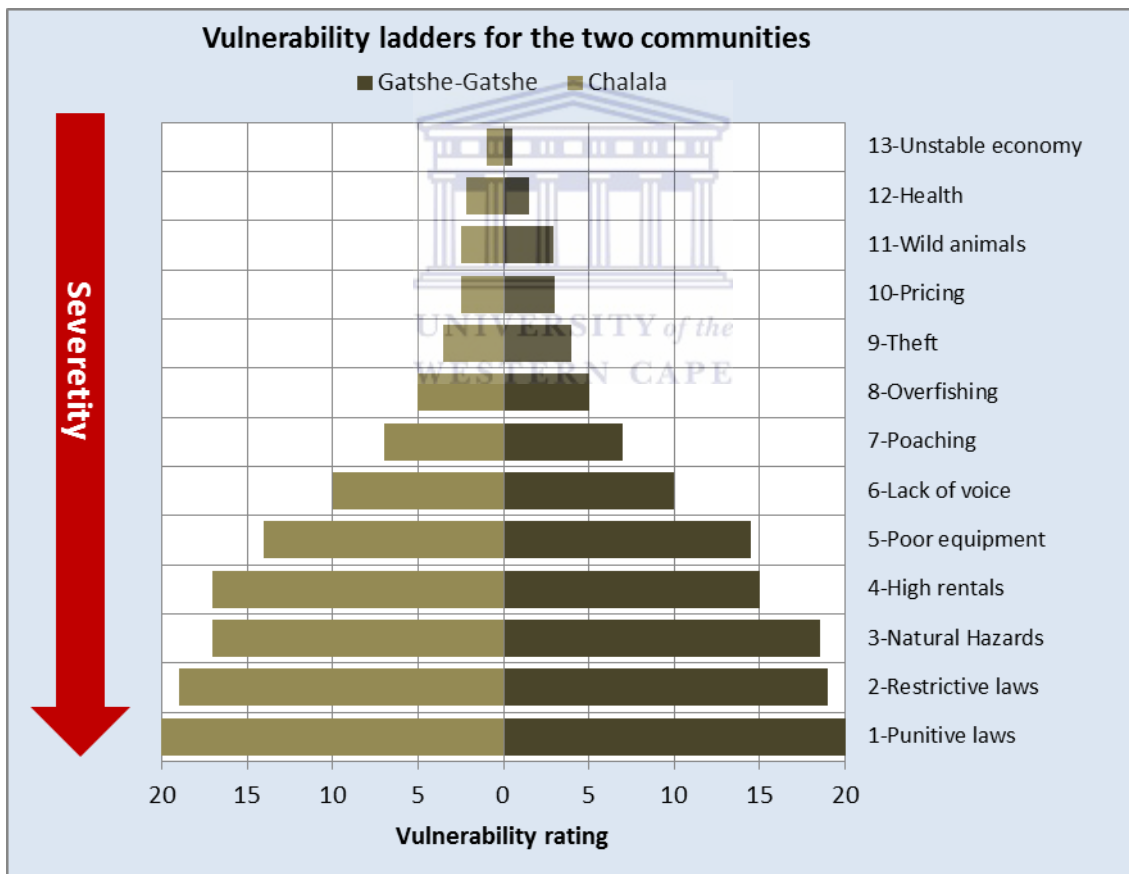


Figure 8: Vulnerability ladders for the two communities¹⁴

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.

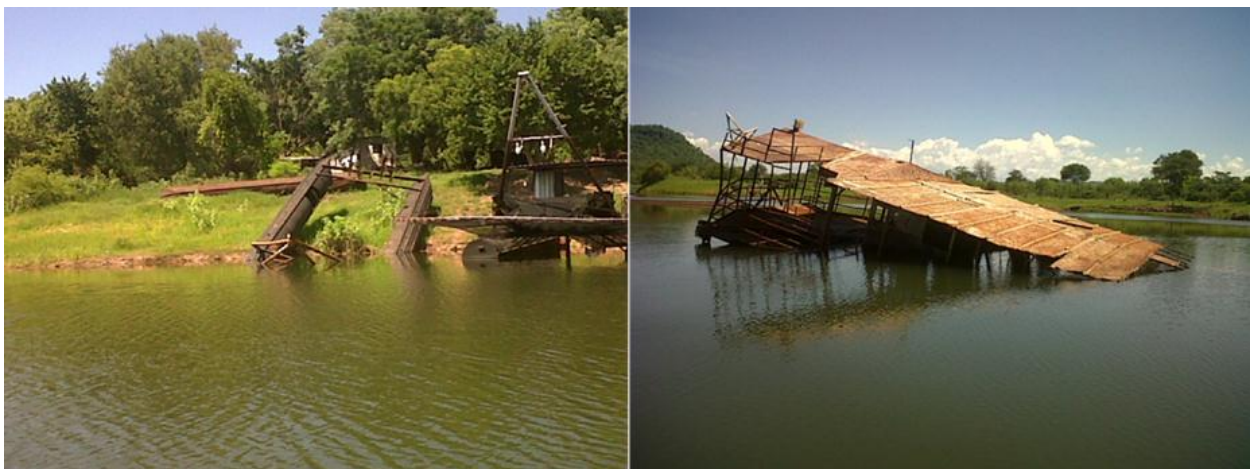
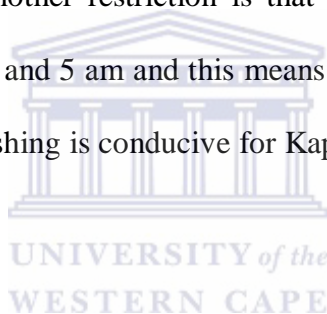


Figure 9: Evidence of a declining and “sinking” livelihood system at Chalala¹⁵

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 poses a greater risk for gill-net fishers.



4.1.7.3 *Theft*

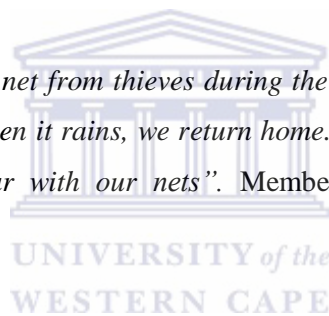
Unlike the Zimbabwean shore, fishing is regarded as an important livelihood source for communities on the Zambian shore. As a result, Zambian authorities have issued a relatively high number of fishing permits. However, this policy has produced the undesirable result – overfishing. The fishers at Gatshe-Gatshe 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.

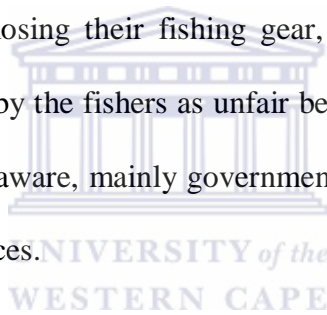
4.1.8.3 Single operators

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 from 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 the rules 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. The 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 of 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.

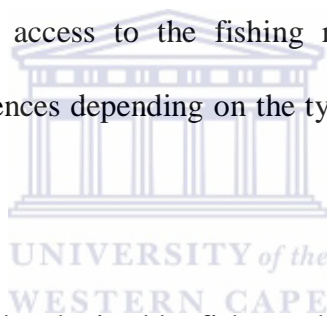
Table 4: Fishing camps/villages by fishing areas and local authority¹⁶

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).

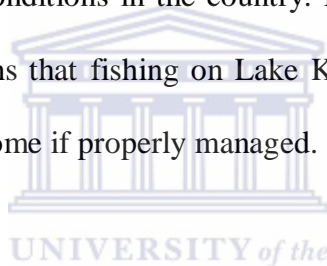
The case of Chalala and Gatshe-Gatshe revealed that co-management in terms of fisheries only exist in principle and not necessarily in practice. Fishers in both camps/villages reported that there is very little information exchange between fishers and the Zimparks authorities. Instead, fishers are constantly 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, unlicensed 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 fishers¹⁷

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 interconnected 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 fall (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 from 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.

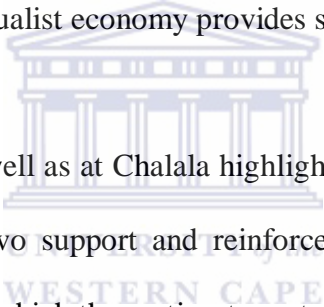
4.1.15 Domestic use

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.

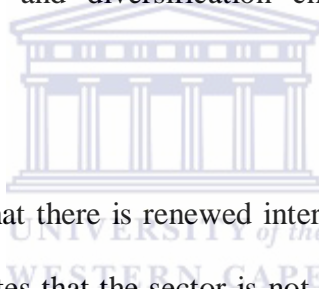
Lastly, an important message from these results is that government priorities on the Lake are not centred on alleviating poverty for communities that live and derive part of their livelihoods from the Lake. Rather, government is using the fishing sector as a cash cow. This is evidenced by the high fees 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

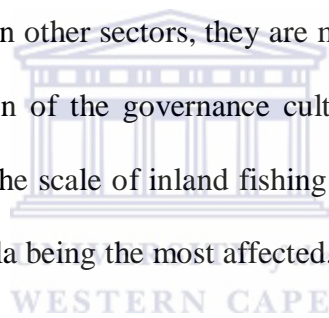
A number of frameworks for analyzing poverty in fisheries have emerged in recent years. This study has utilized some of these emerging frameworks with a view to capture as well as explain the state of poverty among fishing communities on Lake Kariba. The use of these frameworks was useful in picturing 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 as 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.

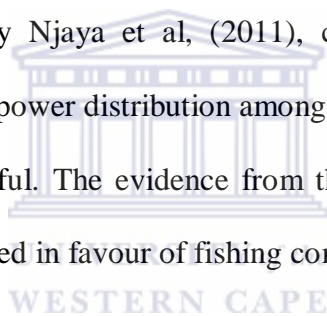
5.1.3 Governance of natural resources

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 fishers 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 which 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 than 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).

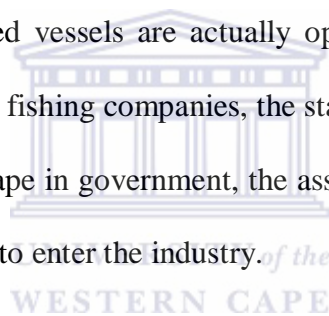
A high level of debt impedes greatly on the economic progress of fishers and threatens to lock them in poverty for much longer periods.

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

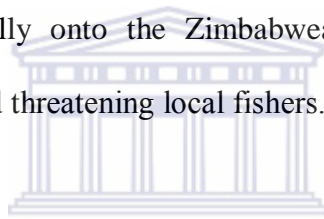
with for key household items such as sugar, soap and clothing. This demonstrated the importance of fisheries as a safety net to livelihoods and supports evidence from across the world that small-scale fishing sector contributes significantly to livelihoods of poor communities (Walmsley et al, 2006; United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

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