

ABSTRACT

The focus of this study is the livelihoods of men and women involved in fishery related activities in the Lake Kariba and in the Zambezi River, Southern Province of Zambia.

The main questions concerns how norms and rules for gender roles and relations affect livelihood strategies and to which extent occupational diversification and geographical mobility is important as mechanisms to achieve livelihood security.

It was found that the majority of the households both apply occupational diversification and geographical mobility as important strategies to reduce risks and achieve livelihood security. The way men and women delegate responsibilities based on gender roles, seasonal livelihoods, strategies for occupational diversification and mobility throughout the year, emphasises the importance of looking at all activities derived from all members within a household when assessing livelihood security. The study also shows that the gender division of labour is important for the households' viability as many husbands and wives work in partnership as fishermen and fish traders. Because both are involved in the same activities, the inequalities regarding control over income and resources within the household are less than in households where only the husband has an income-generating occupation.

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Abbreviations

CMI	Chr. Michelsen Institute
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit GmbH
IDS	Institute of Development Studies
IIED	International Institute for Environment and Development
UNDP	United Nations Development Programme
VMC	Village Management Committee
WELFARE	Wellbeing among Fisherfolks in Africa Research

1. INTRODUCTION

There is a growing recognition that fishing communities, as well as other rural communities, are affected by the “multi-dimensional nature of poverty” (Béné 2004:13). As Béné states; “the cause of poverty in small-scale fishing communities is not necessarily directly –or only- related to the levels of the resource-base or the catch, but to other socio-institutional constraints as well” (ibid:13). These issues emphasise the importance of assessing the institutions and power relations within the socio-economic environment of fishery communities as well as the macro-economic conditions, to better understand the factors that affect the livelihood options of people in fishery communities.

Furthermore, there is a lack of empirical case studies based on fisheries in poverty research. The empirical studies which have been conducted in rural fishery communities have mostly focused on fishing as a fulltime activity, and ignored the diversification of other livelihoods (see Béné 2003:951). For this reason the significance of studying livelihood strategies in small-scale fisheries can be justified, as well as the importance of conducting a holistic analysis that considers all activities within a household that have an impact on the livelihood security.

The aim of this study is to learn how households involved in small-scale fisheries cope with their daily livelihoods and how a variety of factors affect their livelihood options and strategies. More specifically, the study questions to which extent occupational diversification and geographical mobility are important as mechanisms to achieve livelihood security in fishery households. Occupational diversification can be combined fishing and trade activities, keeping of livestock or crop income and geographical mobility can be work-migration or fishermen that follow the resources in the lake. Furthermore, the study questions how gender relations affect the livelihood options and outcome of livelihood strategies. When investigating the livelihoods of fisherfolk in Lake Kariba, the focus has been on people’s assets, entitlements and patterns of mobility, as well as gender relations and distribution and control over resources in the household.

This study is inspired by a current research project at Chr. Michelsen Institute (CMI) in Bergen, Norway, entitled: “Well-being among Fisherfolks in Africa Research (WELFARE)”. I was introduced to the project by my supervisor Ragnhild Overå, who is one of the project members, together with Eyolf Jul-Larsen and five other researchers at CMI and in African

research institutes. The CMI project is funded by the Research Council of Norway and considers poverty in small-scale fisheries and examines fisheries role in poverty producing and poverty reducing processes. Central themes in relation to poverty producing processes in the WELFARE project include: Geographical and occupational mobility, flexibility in the production systems, local access regulating mechanisms, trade systems and technological changes.

1.1 The study area

Data collection was conducted in Siavonga district, Southern Province of Zambia. Interviews were done in Siavonga town, the district capital, as well as in two fishing villages along the shore of Lake Kariba and one fishing village by the Lower Zambezi River.

Siavonga district situated by Lake Kariba is both close to the border of Zimbabwe and Lusaka. This makes it particularly well suited to study livelihood strategies in relation to patterns of fisheries exploitation and trade based on mobility as an adaptation to the ecological and economic environment. Many fisherfolk follow the resources in the lake, because of the variable catch rates during the seasons that correlates with the mean monthly rainfall, and the fluctuating water level which is among other factors related to the electricity production of the dam (Kolding *et al.* 2003). In addition, the number of people involved in the fishery changes throughout the year due to high degree of mobility amongst traders as well as the varying number of seasonal migrants involved in the fishery. For example, young Tonga farmers work as part-time fishermen during the off-farm season (Overå 2003:220).

The background of the region and the lake itself is particularly interesting since the lake is of anthropogenic origin. The construction of the Kariba dam on the Zambezi floodplain started in 1955, and in 1958 the dam wall was sealed. The damming led to big changes in the ecology of the area and forced 56 000 Tonga people who inhabited the Gwembe Valley to relocate. The main purpose of building the dam was and is today, to provide hydropower to Zambia and Zimbabwe (Losse 1998).

There are two distinct types of fisheries in Lake Kariba. The Kapenta fishery operates from semi-industrial rigs offshore and only catches Kapenta¹, while the inshore artisanal fishery, which is the core of attention in this study, is low-cost, non-mechanized and catches multiple

¹ The small pelagic species of Kapenta (*Limnothrissa miodon*) was stocked into Lake Kariba in 1967 and 1969 from Lake Tanganyika (Jul-Larsen *et al.* 2003).

species (see Kolding *et al.* 2003 and Overå 2003). Livelihood strategies are particularly interesting to study in Lake Kariba due to the role of the artisanal fishery in relation to poverty alleviation. First of all, the activities related to the artisanal fishery are important for the poorest in terms of being a safety-net that prevents them from falling deeper into deprivation, as well as for vulnerable households that face a sudden decline in income (see Béné 2003, Jul-Larsen *et al.* 2003b and Allison *et al.* 2007). The fishery creates important livelihoods for the poorest due to the simple technology and low-cost investment necessary, and it is easily combined with other livelihoods, applied as a seasonal or part-time activity (see Allison *et al.* 2007:22). In addition, the inshore fishery has been important in periods of decreasing job opportunities, particularly since the mid 1980s when many people had to relocate in search of employment (Jul-Larsen 2003). When general economic problems and unemployment increase the recruitment of fishers grows, while good job opportunities elsewhere lead to a decrease of fishers (*ibid.*).

With regards to the macro-economic trends, there are other contextual factors that have an impact on livelihood strategies. Local institutions, such as rules and customs concerning sea and land tenure, gender division of labour, in addition to social relations such as gender, class, age and ethnicity are also significant, as they modify the livelihood options of people.

1.2 Research questions

The research problems below try to comprise aspects related to women and men's access to livelihood resources, as well as alternatives and strategies in regard to choice of livelihoods.

The research problems are as follows:

Firstly, what are the main livelihood strategies of women and men in small-scale fishery households, and to what extent do institutions, in particular norms and rules concerning gender roles and relations, affect these strategies?

Secondly, to which degree are occupational diversification and geographical mobility used as mechanisms to achieve livelihood security in fishery households?

To assess the livelihood strategies of fishery households in Siavonga district, this study applies the theoretical perspective known as *the livelihoods approach*. The livelihoods approach includes an analytical framework that attempts to sum up all the elements affecting

the livelihood security of an individual's or household's way of living. Further, the analytical framework requires a holistic point of view when mapping the different strategies and elements, actors and institutions that influence the livelihoods, in contexts at both micro- and macro-levels. Furthermore it focuses on a "seasonal and cyclical complexity of livelihood strategies" (Allison *et al.* 2001:378)

The thesis is organised into six main sections. The first section outlines the objectives of the paper as well as the research questions. Section two briefly presents Zambia and the study area as well as the role of small-scale fisheries in poverty research and the role of the Lake Kariba fisheries in the study area. Section three reviews key elements of the livelihoods approach, as well as key concepts like gender, migration and institutions. The analytical micro policy framework of the sustainable rural livelihoods approach provides a useful entry point for the analysis of institutions, social relations, context and trends that modify the outcome of the livelihood strategies. The fourth section describes the qualitative method that was applied to address the research objectives as well as the processes of data collection. Section five briefly outlines the contextual frame of the fishery communities such as the households' capital assets. Further, it presents the local institutions as well as social relations that may modify access to livelihood strategies. It will also connect the theoretical framework to the empirical findings, and looks at these issues in relation to the research objectives. The final section summarizes the key points from the study and attempts to answer the research objectives, and discusses aspects that could have been carried out differently.

2. BACKGROUND FOR THE STUDY

This chapter will firstly present a brief description of Zambia and the study area, followed by, an overview of the development of the Lake Kariba fisheries, related to trends and livelihoods. Thirdly, an extensive discussion of small-scale fisheries' role in poverty research will be given. The main focus will be on fisheries as either a wealth generating mechanism, by investments in activities that reduce poverty, or as a safety-net mechanism, that prevent people from falling deeper into poverty (Béné 2003). The key points in that debate are illustrated by the Lake Kariba inshore fishery.

2.1 The study area

Zambia covers an area of 752,614 square kilometres, and shares a boundary with eight other countries. The United Nations estimates that Zambia's population was 11. 479 000 by mid-2004 (Williams 2006). The population density seems to be relatively low compared with other African countries, about 13.7 inhabitants per square kilometre. However, this figure is misleading, as 46.9 percent of Zambia's population in 2000 was classified as urban by the African Development (ibid). 78 percent of the urban population was located in the 10 largest urban areas, all located along the railway from the Copperbelt, through Lusaka and further to Livingstone and Victoria Falls (ibid).

There are 73 ethnic groups in Zambia. Major groups are the Tonga of the Southern Province, the Nyanja of the Eastern Province who is also dominant in Lusaka, the Lozi of the west and the Bemba of the north as well as widespread in the Copperbelt (ibid).

The economy of Zambia is currently in a bad state with a huge national debt. Copper exports accounted for about 54 percent of the country's foreign exchange in 2000. This percent is decreasing, but still leaves the country dependent on the global copper price (Williams 2006). By the mid-1990s Zambia was Africa's largest producer in terms of copper output and the 11th largest producer worldwide. However, it has been estimated that the country's profitable reserves will be exhausted by 2010, with the current production rates (ibid). The production of cobalt, a by-product of copper mining, has recently been expanded to compensate for the decreasing copper production (ibid).

Subsistence farming is vital in most parts of the country, and commercial forestry particularly in the Copperbelt as well as in the South-west. However, only about seven percent of the surface area of Zambia is cultivated, while 40 percent are used as permanent pasture and 43 percent is forest (Williams 2006). The main fisheries are located in the Northern Province and in Lake Kariba in the Southern Province. Furthermore, the fisheries of Kafue in Lusaka Province and the Lukanga swamps in the Central Province are also of importance.

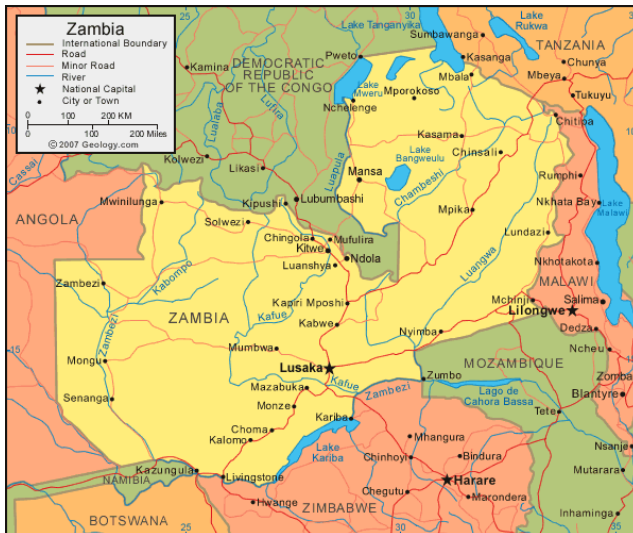
The residents of Siavonga district (see map 2 below) are mainly involved in fishery related activities, but, many are also involved in activities related to farming and petty trade. In addition a few people work in the service sector in particular in Siavonga town. The artisanal inshore fishery is and has been significant for the livelihoods of both women and men in the area. Fishing, fish processing and marketing of fish constitutes the main activities, but the fisheries employment multiplier effects are also important (see Allison *et al.* 2007), such as transport services for fish, ice and traders, as well as mending of fishing gear and canoe constructing.

Siavonga town is the district capital and the main centre for administration, post and banking, as well as public services like the hospital. The small town on the lakeshore includes a few shops with groceries and baker's products, two vegetable markets as well as two fish markets: Firstly, the so-called government harbour, where the fish from nearby fishing camps are landed and most of the fish trading take place. The government harbour got its name because employees from the local Council get to the harbour in the morning to weigh catch and collect levies from the fishermen. Secondly, the "top fish market", where traders sell fresh fish brought from nearby fishing camps every day. The top market makes up the centre, which is situated on the top of a hill with steep roads in all directions.

As well as the Siavonga district Council, the local government departments in the area are represented by the Ministry of Agriculture and Co-Operatives as well as the Department of Fisheries. Lake Kariba is divided into four fisheries management zones at the Zambian side and for administrative purposes sub-divided into Village Management Committees (VMC), a result of the co-management plan for fisheries in 1994 by the Zambian Department of Fisheries. The functions of the VMCs, which are based in major fishing camps, are for example: Recommend fishermen to pay inshore fishing licences, collect trade levies on behalf of the council, collect statistical data, ensure good sanitation practises in fishing camps, as well as assist in selecting landing points. Power structure at community levels are

further managed by traditional Chiefs, headmen, as well as the VMCs. Every village has a headman, an inherited position, whose role is to lead the households in the village as well as the VMC, where the members are elected.

Figure 1 : Zambia²



The distance between Lusaka and Siavonga town is approximately 160 kilometres.

Interviews were conducted in the Munyama, Kamimbi and Namooomba fishing camps as well as in Siavonga town.

Figure 2 : Lake Kariba³



² Source: Geology and Earth Science (2007)

³ Source: Adapted from Overâ (2003)

2.1.1 The development of the Lake Kariba fisheries

To understand fishery's role and its impact on people and livelihoods, it is important to look into the development of the Lake Kariba fisheries. Before the construction of the Kariba Dam, the Tonga people were settled on both banks of the Gwembe Valley, and the main livelihoods consisted of upland and riverside farming, livestock and hunting (WCD 2000). After the resettlement, the Tonga people had to find new livelihoods. In the early 1960s the number of fishermen in the lake had already reached 2500. In 1963, when the lake reached its maximum level, and the catch rates started to decline, many of the fishermen left fishery activities in search of other livelihoods. Most of the young Tonga men who had been involved in fishery returned to agro-pastoralism or to diverse forms of work migration (Jul-Larsen 2003).

At the end of the 1960s the number of fishermen increased further, due to the many migrants from the northern parts of Zambia who gradually came to dominate the fisheries in Lake Kariba (ibid). At the same time a few Tonga men who had remained fishermen, started processing and marketing the fish themselves and some of the women started trading (Overå 2003). Nevertheless, within the Tonga households, the wives often had to account for the profit made on trading trips, and had generally little control over the money (ibid).

In the late 1970s the Zambian authorities closed down the fishery because of the complicated situation in the area that arose due to the Zimbabwean liberation war, which started in 1974. The combination of a deteriorating infrastructure and the macro-economic context at the time with the falling copper prices on the world market, made fish trading very difficult. Due to this the number of traders travelling to Lake Kariba was drastically reduced (Overå 2003). Some fishermen continued fishing, but the households did processing themselves and brought dried fish to urban markets when possible (ibid).

In the mid 1980s the number of fishermen increased again and reached 2500 by the early 1990s as a consequence of macro-economic events (like the Structural Adjustment Programme) that had led to a general deterioration of living conditions and unemployment (see Overå 2003). Most of the fishermen, as many as 60-70 percent, were people who had been employed in urban areas such as the Copperbelt migrating to the Lake Kariba fisheries in search of new livelihoods (Walters 1988 in Jul-Larsen 2003).

The first Kapenta fishery was established on the Zambian side of the lake in 1980, and there were mainly white entrepreneurs from Zambia, Zimbabwe and South Africa invested in the Kapenta rigs⁴ (Overå 2003). This type of fishery is more mechanized and capital-intensive than the inshore gillnet fishery that until now had dominated the lake. “The artisanal fishermen were thus unable to utilize this resource [the Kapenta] from their small canoes” (ibid: 216). The Kapenta was primarily dried and distributed to the poor segment of the urban markets, mainly in Lusaka and in the Copperbelt region. Consequently the Kapenta operators relied on traders to allocate the fish and as a result the Kapenta trade became a new employment opportunity (ibid).

The number of fulltime fishermen on the lake was in 2006 estimated to be about 1290 (Wamulume 2006). However, in addition there are part-time fishermen who go in and out of the fishery according to for instance season. The number of canoes and boats on the lake are perhaps a better indication of the activities on the lake, although some households have more than one boat or canoe hence it is difficult to estimate the accurate number of fishermen:

- Number of canoes 1960
- Number of fibre boats 246
- Number of metal boats 225 (ibid)

2.2 The role of small-scale fisheries in poverty research

In literature concerning small-scale fisheries in low-income countries, fisherfolks are often closely linked to poverty and have been characterised as “the poorest of the poor” (Béné 2003:951) Previous studies have often focused on fisherfolks’ resource dependence and the open-access nature of fisheries as explanations for resource degradation, poverty and marginalisation (see Allison *et al.* 2001). However, reasons for poverty are increasingly seen to be caused by multiple factors and dimensions in fishery communities as in other rural communities, and not purely related to resource depletion. Extreme poverty has been observed in fishing communities where the fishers catch and trade reasonable volumes of fish, and where poverty is rather related to socio-institutional constraints (see Béné 2004:13). These new approaches to poverty in fisheries also attempt to develop new methods of

⁴ A particular type of vessel that is used to fish Kapenta in the dark: With strong light bulbs to attract the Kapenta into dip nets (Overå 2003).

understanding the varied dimensions of poverty in fish-dependent communities, such as the rural sustainable livelihoods approach (ibid) that is applied in this study.

Although there is a similar level of income and the same access to public services as in other rural households, fishery households are prone to a very high level of vulnerability, due to the nature of fishing as a more risky occupation than most other occupations in rural communities (Béné 2004:14). However, although small-scale fishery households are considered particularly vulnerable, they can also be *less vulnerable* than other rural households because the fishery resources are usually open to everyone, and can thus function as a safety net for the poorest as well as for the more wealthy who experience a sudden decrease in income due to various reasons (Béné 2004, Allison et al. 2007).

The role of small-scale fisheries related to an improvement of livelihood security can be explained through the concept of *poverty alleviation*, which comprises the two welfare mechanisms *poverty prevention* and *poverty reduction* (Béné 2004):

Poverty prevention mechanisms contribute to maintain a minimum standard of living among people, reduce risks and function as a safety-net. This prevents poor people from falling deeper into poverty in periods where individual or collective crisis occur (Béné 2004:15). An example of this are the activities related to small-scale fisheries that are open to anyone in need. Through welfare mechanisms, marginalized households rely on fishery based activities as a safety-net when lack of access to other resources and livelihoods occur (ibid). The Lake Kariba fishery has been seen to fulfil this role in periods where macro-economic trends have led to unemployment in urban locations (see Jul-Larsen 2003, Overå 2003, Allison *et al.* 2007).

On the other hand, *poverty reduction* refers to wealth generation and capital accumulation made by investments in for instance fisheries that contributes to lifting people out of poverty. The concept is more explicitly described as “a situation where people are becoming measurably better off over time due to their involvement/investment in economic activities” (Béné 2004:15). The two welfare mechanisms are problematic to combine as improved production in fisheries is generally linked to more capital intensive gear. This easily excludes or reduces the participation of people with limited resources (ibid). Although there has been a substantial increase in number of nets per fisherman in the inshore fishery of Lake Kariba, the technology has remained basically the same during the last few decades (Jul-Larsen 2003,

see Overå 2003). Hence the inshore fishery of Lake Kariba has continued to function as a safety-net (Allison *et al.* 2007).

The artisanal fishery in Lake Kariba has been of great importance because it functions as, what Bènè (2003), describes as a poverty prevention mechanism for the poorest and the most vulnerable, both within the district as well as for migrants. The focus of this study is mainly household livelihood strategies and institutions at the local level as well as how fishery households utilize the resources. But it is equally important to investigate the degree to which the fishery contributes to livelihood security for the households. These questions will be further discussed in chapter five.



The pictures show:

Picture 1: The vegetation from before the damming is still visible on the surface of Lake Kariba.

Picture 2: Artisanal fisherman with a typical canoe

Picture 3: Netting

Picture 4: The fish market at the government harbour in Siavonga

3. THEORY AND ANALYTICAL FRAMEWORKS

3.1 The Livelihoods Approach

One way to achieve an understanding of the often complex livelihood strategies of households involved in small-scale fisheries is to apply the perspective known as *the livelihoods approach*. The approach has rarely been applied to fishery communities earlier, although it has been suggested to be particularly appropriate to understand small-scale fishery production systems and for developing interventions for poverty reduction (Allison *et al.* 2001).

The livelihoods approach is centred on people's strengths and what they *have* rather than what they *do not have*, as well as focusing on a dynamic analysis of livelihoods and the context in which they are found. As mentioned earlier, studies conducted in small-scale fisheries have tended to ignore the diversification of livelihoods and only concentrated on activities related to the fisheries. This emphasises the importance of a holistic analysis.

Firstly, this chapter includes the key elements of the livelihoods approach as well as a brief presentation of how it came into being. Secondly, an explanation of the analytical framework as well as concepts important for the framework, such as capital assets and institutions will be given. Thirdly, there is a discussion of the concepts *gender*, *livelihood diversification*, *migration* and *the household* in relation to the study.

Chambers & Conway (1992) are acknowledged for the prominent position 'sustainable livelihoods' has had since the early 1990s. Chambers and Conway were inspired by the 1987 Brundtland Report (WCED 1987), the 1987 Greening of Aid Conference at the IIED⁵, as well as the Human Development Report in 1990 (UNDP 1990) (Haan *et al.* 2005:30). Chambers' (1985) central issue in the development debate was originally not sustainability, but security and income. However, the important role of environmental issues at the time made Chambers focus the discussion towards sustainability, poverty and vulnerability (Haan *et al.* 2005). During the 1990s the livelihoods approach emerged as a new way of thinking in debates regarding poverty reduction, and was adopted by governments, NGO's and multi-lateral organisations (Cahn 2002). Several researchers and institutions have tried to adapt the

⁵ International Institute for Environment and Development

theoretical approach to an analytical framework for practical use, for instance the framework developed by Scoones (1998) or Ellis (2000).

The concept of livelihood represents more than the material and economic well-being of an individual or a household, it also includes the “non-material aspects of well-being” (Haan *et al.* 2005:32). Chambers (1985), who was the first to adopt the term, explained livelihood as: “Levels of wealth and of stocks and flows of food and cash which provide for physical and social well-being and security against impoverishment” (ibid: 85). A broader definition of the concept is needed when applying the analytical micro policy framework of the livelihoods approach. For the purpose of this study I apply the definition by Ellis (2000), drawing on Chambers & Conway (1992):

“A livelihood comprises the assets (natural, physical, human, financial and social capital), the activities and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household” (Ellis 2000:10).

The approach also borrows the concept of sustainability that has been adopted from the ecological literature. Allison *et al.* (2001) point out that sustainability is of major importance as it implies that the choice of livelihood strategies lead to enduring poverty reduction. The livelihood concept linked to sustainability is defined as:

“A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base” (Scoones 1998:5).

These issues can also be related to the concept of vulnerability, which is essential to understand the livelihoods approach. In the livelihood context vulnerability is both related to internal and external threats that may affect the livelihood security (see Allison *et al.* 2001: 378). As mentioned in chapter two, the concept of vulnerability is particularly relevant in relation to fishery households. This is further discussed in chapter five. Blaikie *et al.* (1994) explain vulnerability as:

“the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard. It involves a combination of factors

which determine [. . .] the degree to which someone's life and livelihood is put at risk by a discrete and identifiable event in nature or in society" (ibid: 9).

Due to the vulnerability of fishery itself all fishery households are highly vulnerable to risks and shocks (Béné 2003, Allison *et al.* 2007). Shocks occur unexpectedly, and include loss of fishing gear and boats as well as storms, floods and drowning. These are often essential for the livelihoods. Risks may be possible to predict such as migration patterns (Allison *et al.* 2001) or fluctuating resources. Seasonal changes are also of importance in the vulnerability context. Seasonality is for example fluctuating catches as well as problems that might occur in pre-harvest season. These are to a large extent predictable and easier to circumvent. Seasonal adaptation or several sources of income can reduce the households' vulnerability (Ellis 1998). In addition there are other factors that can contribute to the vulnerability including:

"high exposure to changes in macro-economic factors (e.g. fuel and other input prices, fish prices), powerlessness and social, economic and political marginalization, increasingly high exposure to conflicts with other users (including industrial fishing fleets, but also other coastal zone land and sea users) due to increased competition for resources, and most recently to HIV/AIDS" (Allison *et al.* 2007:26).

These make up the key concepts of the livelihoods approach that constitutes the foundation for the analytical framework. Below is an explanation of how to use the framework, as well as a comprehensive explanation of the most important elements and parts of it.

3.1.1 Explaining the analytical framework

This study applies the analytical framework developed by Allison *et al.* (2001). In contrast to many other published frameworks, it includes *gender* as one of the main social relations that modifies access to livelihood strategies. I will argue that gender relations are one of the most significant institutions that need to be assessed when analysing livelihood strategies. This is not only true for fishery based communities, but for other communities as well. For this reason the framework by Allison *et al.* (2001) is the most suitable for this study. The importance of a gender focus in the analysis of livelihoods has also been suggested and further elaborated by Whitehead *et al.* (2001) who argue that contributions from women are particularly important for the livelihood security of a household (see chapter 3.3.1).

The framework links micro and macro level, and is based on capital assets (also known as livelihood resources) as described in section 3.1.2.

Figure 3 : The analytical framework for investigating sustainable rural livelihoods

<i>A</i> <i>Capital assets</i>	<i>B</i> <i>Access modified by</i>	<i>C</i> <i>In context of</i>	<i>D</i> <i>Resulting in</i>	<i>E</i> <i>Composed Of</i>	<i>F</i> <i>With effects on</i>
Types of capital Natural Physical Human Financial Social	Social relations Gender Class Age Ethnicity Institutions Rules and customs Land and sea tenure Markets in practise Organizations Associations NGOs Local admin State Agencies	Trends Population Migration Technological change Relative prices Macro policy National-economic trends Shocks Storms Recruitment-failures Diseases Civil war	Livelihood strategies	NR-based activities Fishing Cultivation (food) Cultivation (non-food) Livestock Non-farm NR Non-NR based Rural trade Other services Rural manufacture Remittances Others transfers	Livelihood security Income level Income stability Seasonality Degrees of risk Environmental Sustainability Soils & land quality Water Fish stocks Forests Biodiversity

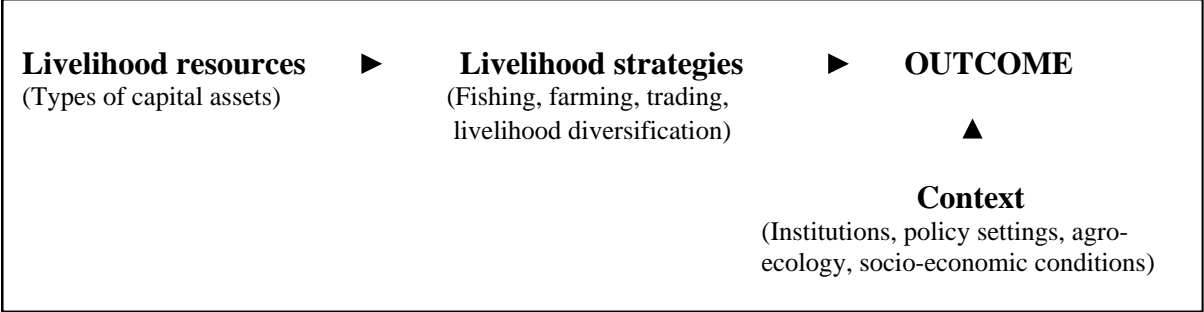
Source: Allison *et al.* 2001:379 (adapted from Scoones 1998, Carney 1998).

Carney (1998) points out that it is firstly essential to understand the “vulnerability context” (p:8) in which assets exist, such as trends, shocks and local cultural practices (column C). Secondly, access to assets and activities are modified in positive or negative directions in the context of social relations, institutions and organisations (column B). Thirdly, livelihood strategies are constantly developed based on the livelihood resources available within the household and includes natural resource based activities or non-natural resource based activities (column E). The outcome of the livelihood strategies affects to what extent the individual or the household experience livelihood security now and in the future (column F) (Allison *et al.* 2001).

As illustrated in figure 4 below, this can be put down to a single question that should be the centre and starting point in any analysis of sustainable rural livelihoods (Scoones 1998: 3).

What types of livelihood resources leads to the ability to use what kind of *livelihood strategies*, with what *outcome* given a particular *context*?

Figure 4 : Outcome



In the micro policy framework (figure 3) there are five kinds of capital assets, also known as livelihood resources (column A). The variety of assets is the basis for how and in what combinations they can be translated into sustainable livelihoods. A description of the assets is presented below.

3.1.2 Livelihood resources – the basis for building livelihood strategies

The variety of livelihood assets is the starting point for how and to what extent people are able to build sustainable livelihoods. Bebbington (1999) explains capital assets as:

“Assets are not simply resources that people use in building livelihoods: they are assets that give them capability to be and to act. Assets should not be understood only as things that allow survival, adaptation and poverty alleviation: they are also the basis of agents’ power to act and to reproduce, challenge or change the rules that govern the control, use and transformation of resources” (Bebbington 1999 in de Haan *et al.* 2005:32).

The different capital assets are defined below, illustrated with examples from the fishery context. Carney (1998, adapted from Scoones 1998) describes the five livelihood resources as follows:

Firstly, natural capital includes “the natural resource stocks from which resource flows useful for livelihoods are derived (e.g. land, water, wildlife, biodiversity, environmental resources)” (Carney 1998: 7). In the fishery context the most important natural resources are access to the fishery resources and access to arable land. Secondly, physical capital is “the basic

infrastructure (transport, shelter, water, energy and communications) and the production equipment and means which enable people to pursue their livelihoods” (p: 7). With regard to fishery households, besides proper shelter the ability to invest in and replace fishing gear is vital. Transport is also of major importance, both for transporting fish to the markets and for the traders that apply mobility as a strategy in fish trading. Human capital includes “the skills, knowledge, ability to labour and good health important to the ability to pursue different livelihood strategies” (p:7). Thirdly, the financial capital comprises of “the financial resources which are available to people (whether savings, supplies of credit or regular remittances or pensions) and which provide them with different livelihood options” (p:7). In the fishery context, savings can be good for investment in physical capital, like nets or livestock. Access to micro-credit opportunities can help to maintain livelihoods or pursue new ones. Social capital is also important, and includes “the social resources (networks, memberships of groups, relationships of trust, access to wider institutions of society) upon which people can draw in pursuit of livelihoods” (ibid:7). Social resources such as support from neighbours can benefit a household in times of need or during shocks.

The different livelihood resources described above are unequally distributed amongst people. The availability and access to assets can be modified by local institutions and social relations (column B in figure 1), like ethnicity and gender. Some may have access to human capital such as education or skills like crop growing, and at the same time lack access to natural resources such as arable land. This illustrates why it is important to consider institutions when assessing livelihood strategies in a certain location.

3.1.3 The livelihoods framework adapted to the Lake Kariba inshore fishery

The livelihoods framework by Allison *et al.* (2001) has been a useful guide both when collecting empirical material as well as during the data analysis. The framework includes many elements that affect the outcome of different livelihood strategies. Due to the time constraints of this study, I found it necessary to modify the framework to make it more suitable for the fishery context (figure 5 below). Furthermore, I put emphasise on a few elements in the framework, which I considered to be the most important ones for investigating livelihoods in Siavonga. This was done both to make the framework more relevant for the research questions, and as a way to limit the analysis. For example, I emphasise the local institutions and organisations, whilst the macro policy and national-

economic trends are only given a cursory look to understand the role the Lake Kariba fisheries has had (see chapter 2). Four factors have been added to the framework (figure 5) for the purpose of this particular study. These are,

- *Fluctuating fish resources* (trends)
- *Loss of nets, boats, floods and drowning* (shocks)
- *Mobility: urban trade* (non-NR based activities)
- *Seasonality, including the elements:*
good catches, bad catches, dry season, rain season

The highlighted factors are shown in the new framework (figure 5) below:

Figure 5 : The livelihoods framework adapted to the Lake Kariba inshore fishery

<i>A</i> <i>Capital assets</i>	<i>B</i> <i>Access modified by</i>	<i>C</i> <i>In context of</i>	<i>D</i> <i>Resulting in</i>	<i>E</i> <i>Composed Of</i>	<i>F</i> <i>With effects On</i>
Types of capital Natural Physical Human Financial Social	Social relations Gender Ethnicity Institutions Rules and customs Land and sea tenure Markets in practise Organizations NGOs Local admin	Trends Migration Fluctuating fish resources Shocks Storms Floods Loss of nets or boats Drowning Seasonality Good catches Bad catches Dry season Rain season	Livelihood strategies	NR-based activities Fishing Cultivation (food) Livestock Non-NR based activities Mobility: Rural trade Urban trade	Livelihood security Income level Income stability Degrees of risk Seasonality Environmental Sustainability Soils & land quality Fish stocks

Source: Adapted from Allison & Ellis (2001:379), modified by the author of this paper.

3.1.4 Institutions and social relations that modify access to livelihood resources

An actor-oriented approach is necessary in order to understand how different practices are made up of formal and informal institutions. These modify the access to livelihood assets and have an impact on the outcome of people's livelihood strategies (Cagatay 1998). Cagatay

suggests that to understand all the factors affecting the outcome of a household's livelihood strategies a focus on different levels of the society is necessary. Firstly, "at the microeconomic level, there is a need to understand the gender and age-based power relations within the households", the level of cooperation and "the dynamics of bargaining" that affects the distribution of work, resources, income and livelihood strategies (ibid: 4). Secondly, these factors are also affected by processes outside the household, for example interactions between households or household members as well as social and economic institutions at a local level. Thirdly, "the economic, social, political and ecological environments in which households maintain themselves or fall into destitution are shaped by the macroeconomic policies" (ibid: 4). Though recognizing the important context, this study focuses on the household and local institutions in a regional context, thus the macro context falls outside the scope of the study.

There are always inequalities between people with regards to access to resources, entitlements and power (Allison *et al.* 2001). Every person has a particular social status in the household and in the society based on gender, age, class and ethnicity. According to Leach *et al.* (1999), the position, status and power a person holds, in the household as well as in the local society, usually has an impact on ones opportunities and limitations, like unequal access to and control over resources and unequal capacities to negotiate. The informal rules that regulate these relations, processes and the behaviour of different people are known as *institutions* (Mearns 1995:103). As for example Allison *et al.* (2001) experienced through studying Lake Malawi, ethnicity is often a major issue in fishing villages due to the different interests between the migrants from other areas who are involved in fishing and the long-term residents who are more interested in farming (p: 385).

When applying an institutional approach to understand the context of relationship and control over resources, the mapping of power relations is one of the most important issues. The institutional approach is recognized as complex and dynamic as takes into account both time scale and interactions between different levels (Leach *et al.* 1999). Entitlement analysis, which was first developed by Amartya Sen, is related to the people-environment relationship. According to Leach *et al.* (1999), *endowments* can be defined as "the rights and resources that social actors have" (p: 233), while the concept of *entitlements* refers to people's rights and all the possibilities they *can* have, rather than what people *should* have. Entitlements enhance people's *capabilities*, and can be defined as "what people can be or do with their

entitlements” (ibid: 233). Leach & Mearns (1991) suggest that entitlement analysis is well suited to explain how “the consequences of environmental change in general, and access to and control over natural resources in particular, are also socially differentiated” (Leach & Mearns 1991 in Leach *et al.* 1999:232).

Appadurai (1984) points out that an examination of to which extent different people can have an impact on decisions regarding endowments and entitlements are needed (Appadurai 1984 in Leach *et al.* 1999:235). It has been pointed out that entitlements should be seen as the outcome of negotiations among the individuals or groups and their power relationships (Gore 1993 in Leach *et al.* 1999:235). Leach *et al.* (1999) emphasise this by suggesting that whether a woman can keep control over and use the income, depends on bargaining between husbands and perhaps co-wives in the intra-household. If women have less power within the household, this might be compensated by investment in other resource-sharing networks, for instance with neighbours (ibid: 238).

As well as the importance of considering power relations in a society, it is significant to consider the spatial focus in an analysis of livelihoods. Based on the livelihoods approach the specific rural area studied is seen as part of a larger system, where processes are connected to a variety of places and social relations. This study see places as dynamic spaces “constituted through interactions” through time and space as well as being constantly under construction, as said by Massey (2005:9).

3.1.5 Critique of the livelihoods approach

There has been directed critique to the livelihoods approach that has to be mentioned. Cahn (2002) points out that an important concern is that the approach is too complex and over ambitious, and that how the relationships between the factors are presented has not been considered thoroughly. It has also been claimed that the approach, which was designed to work across sectors, in reality is difficult to apply, as “most government institutions and organisations are operated and funded on a sector basis” (Carney 1999a and Singh & Gilman 1999 in Cahn 2002:4).

Regarding the framework, Cahn (2002) points out that by “representing the reality and complexity of a livelihood system in a simple and logical way” (p: 4) the importance of some

factors and the relationship between them may disappear. But, the framework is not meant to be seen as a static means with a direct one-way line between the assets people hold and the achievement of sustainable livelihood strategies (Carney 1998). Although, “it is intuitive that there is a close correlation” between people’s capital assets status, the capability to utilize them and the degree of livelihood security (ibid: 7).

Most of the published frameworks are criticised for lacking the perspectives of gender and power relations. This is absent in all the frameworks except for the ones of Ellis (2000) and Allison and Ellis (2001) (Cahn 2002). This is clearly a weakness because gender relations within a household are of importance for its livelihood options as well as strategies, and therefore this study applies the framework that involves gender as an important dimension of social relations. The importance of including gender relations when assessing livelihood strategies are further emphasised in chapter 3.2 and 3.2.1 below.

3.2 Gender relations

The concept of *gender* includes how the categories of ‘men’ and ‘women’ are socially and culturally constructed in a society, contrary to *sex*, which is the biological term. Furthermore, *gender relations* refer to the power that exists between women and men. *Gender roles* refer to the behavioural norms associated with the social status males and females have in a particular cultural group (Moore 1988).

Moser (1993) points out that the concept of gender has been increasingly seen as suitable to express the power relations and the socially constructed relations between women and men. In earlier research of gender relations, a pure focus on women was common. The term ‘women in development’ was adopted in the early 1970s by a network of female development professionals who were influenced by, among others, Ester Boserup. The ‘Women in Development’ approach emerged to identify how women has been left out of development planning, and thus been ignored as a potentially large economic contribution (ibid). Now this is recognized as a limiting perspective and Howell *et al.* (1993) emphasize this by arguing that “there appears to be a lack of willingness to accept the fact that males and females are constituted in relation to each other, and that, in and of itself, gender is relational” (p: 39). A new approach thus emerged, mainly in the academic research, towards a focus on gender relations instead of women, thus ‘Gender and Development’.

It is important to consider the different roles of men and women in a society, even if “the way they are socially constructed is always temporally and spatially specific” (Moser 1993:3). For example, inequality is particularly related to women and men’s different positions and the disproportionate control over resources that exists both in a society and within the household (ibid). This demonstrates the importance of assessing how institutions affect the livelihoods of men and women differently in fishery households, as it to a large extent has an effect on men and women’s livelihood options.

The perceptions of women’s role in the households’ livelihood activities vary with different views of authority structures in African households (O’ Laughlin 1995). Women’s and often children’s role are often connected to agriculture, and men often leave the inferior land to women. Some argue that “because men determine what women do, development has meant more work and less control for women” (p: 68). But on the other hand, the importance of women’s work in farming and trade and their role as “lead managers” within the household, as well as the weak conjugal bond, may implicate that African women have more power and control over resources than in other developing countries (ibid: 68). The informal labour, the most common economic contribution from women in developing countries, is often disregarded and not included in official statistics. More specifically, research on fisheries is often focused on men’s activities, while women’s role in the household and participation in fishery related activities is often neglected. This makes women’s activities in the household less distinguished and invisible in an economic sense and highlights the significance of studying livelihoods in connection with norms and rules for gender relations.

3.2.1 Historical considerations of institutions and gender relations in Zambia

According to Touwen (1996) the economic duties for men and women in Zambia were based on equality and reciprocity prior to the development of a cash-economy in the rural areas, which led to male labour-migration to urban areas such as the Copperbelt and struck women with the loss of labour (ibid: 84). The colonial administration advised the wives to remain in the villages to provide food, however many women still migrated to urban areas despite the regulations. On the other hand, mining companies allowed wives to accompany their workers in the towns. The female informal labour in the mine townships forced many women to rely on their husbands (ibid).

According to Chanock (1982), the surplus of men in the mine townships led to an increase in women who left their husbands. This stimulated the colonial and traditional authorities to try to control women (Chanock 1982 in Touwen 1996: 84). Consequently the Native Authorities was established to enforce law and order in the rural areas. Laws regarding 'traditional' marriage, divorce, inheritance and child custody were created (Hay and Wright 1982 in Touwen 1996:84). In addition the tradition of paying bride price was initiated by the Native Authorities, as a prerequisite to become legally married. This led to the husbands 'right' to claim compensation if their wife was considered unfaithful (ibid). "The traditional balance between the sexes now became disturbed" (ibid: 84), as some men begun to see women as 'bought' and in that way had a right to demand her obedience (ibid, see Cliggett 2000).

This perception is still today an influence on the mobility patterns of women (Cliggett 2000). Women in Monze district in the Southern Province do not move as freely as men, and seldom without company of husband or father. In addition women are less likely to be identified as migrants by village leaders and elders when they relocate on their own (ibid: 128). Cliggett points out that it may be difficult to gather information about women's mobility patterns due to this (ibid). It is likely that these views are also present in Siavonga district, which is close to Monze, and that this should be taken into consideration when investigating mobility patterns and livelihoods.

Ethnic identity is also of major importance when investigating mobility among fish traders, due to the often contradictory role expectations of women within different ethnic groups. The public opinion is that Bemba women are often more free and independent than Tonga women. The majority of the ethnic groups in Zambia have a matrilineal descent system (including the Tonga and the Bemba). This has had an impact on the livelihood opportunities of women in fishery communities. The matrilineal system often represents a system where women have a more independent status than in the patrilineal system: However there are exceptions (Touwen 1996). Women still are subjected to the control of a man, by a brother or mother's brother. The matrilineal system also entails that the brother-sister bond is stronger than the husband-wife relation, and that the children belong to the wife's family (ibid). According to Touwen, a wife has to obey her husband, although she has the right to leave him if he fails to fulfil his duties, such as clearing her fields (ibid).

3.3 Livelihood diversification

3.3.1 Occupational diversification as a livelihood strategy

For many rural poor and marginalized households the most important concern is to sustain and improve activities that can secure their living conditions throughout the year. Therefore “their concern appears to be less with employment than with livelihood [but] with sustaining and improving a repertoire of activities which will provide them with an adequate and secure level of living around the year”, argues Chambers (1985:85). Ellis (1998) argues that diversification “give individuals and households more options to improve livelihood security and to raise their own living standard” (ibid: 61). Furthermore, diversification is a common strategy (ibid, Allison *et al.* 2001) and hence the purpose is not to map degree of diversification in itself, but *how* people diversify their livelihoods as well as *why*, and in what kind of *context* (Carney 1998).

One way to diversify livelihoods is to alternate between different occupations, either successively or by combining occupations at the same time. There can both be positive and negative effects derived from diversification on livelihoods, but the positive effects generally outweigh the negative from a poverty reduction perspective (Ellis 1998). Income is not the only factor measuring a household’s strength and security, degree of vulnerability is also significant. If the livelihoods of an individual or a household are more secure and less vulnerable for deprivation due to diversification and hence several income sources, it is obvious that diversification has had a positive impact on livelihoods (ibid, Whitehead *et al.* 2001). “A family with a lower income but with more assets to meet contingencies may be better off than a family with a higher income but fewer assets” (Chambers (1985:86). For example, households with access to land may be less vulnerable than those who lack access to land. Although land is not synonymous with occupational diversification, as the capabilities to utilize the land vary between landowners. But diversification can have negative effects on livelihoods if it increases the vulnerability (Ellis 1998).

Several positive effects derived from diversification can be mentioned. The more diversification involves activities that comprise of all seasonal cycles, synchronised with the households’ main source of income, the greater the potential for improving the livelihood security. Livelihood diversification can also reduce risks, if the factors that create risk for one

income source (for example bad catch when fishing), is another than the factors that create risks for another income source (for example animal diseases when keeping livestock) (Ellis 1998).

Furthermore, it is claimed that diversification can lead to asset improvement and consequently improvement of the vulnerability context (Ellis 1998). A definition of poverty is necessary. Poverty has been defined in many ways, but this study applies the definition of poverty which is to be found in OECD's 'Development Action Committee's Guidelines on Poverty Reduction': "Poverty encompasses different dimensions of deprivation that relate to human capabilities including consumption and food security, health, education, rights, voice, security, dignity and decent work" (OECD 2001 in Allison *et al.* 2007:8). "Poverty is strongly associated with a lack of assets, or the inability to put assets to productive use" (Moser 1998 in Ellis 1998:59). The cash resources obtained from diversification may be used to invest in fishing gear or improve nets and boats, or for example by sending children to school (Ellis 1998:59). In addition, diversification may improve the "independent income-generating capabilities" of women (see Whitehead *et al.* 2001:19), which has a positive effect on for example the nutritional status of children, as cash income in the control of women tends to be spent more on family welfare than cash income in the hands of men (*ibid.*, Ellis: 60) In addition it indicates that contributions from women in fishery households are particularly important for the livelihood security, since the so-called informal economy often contribute to diversify the total sum of livelihoods and hence reduce the households' dependency on fishing.

There are often two different motivations for household diversification. The two extreme ends of the spectrum has been conceptualised as "diversification for survival" and as "diversification for accumulation" (Béné *et al.* 2003b:199). However, Ellis (1998) argues that diversification as a livelihood strategy is more complex and rather found in the middle of this curve. Field observations from Lake Chad basin also support this view: A comparative field survey in Mali confirms that diversification "follows a U-shaped curve with poorer households diversifying to ensure survival while richer households diversify to accumulate" (Toulmin *et al.* 2000 in Béné *et al.* 2003b:199). Even though this study comprises a small research sample, it may support findings from earlier studies like the one by Béné *et al.* (*ibid.*).

3.3.2 Geographical mobility as a livelihood strategy

Geographical mobility can be applied as a livelihood strategy, for example by fishermen who move after the resources in the lake, or traders who do business at different locations according to supply and demand. Migration is often necessary in fishing communities, to keep up with the catches on mobile or fluctuating fish stocks. Mobility can also be beneficial to stock conservation, if it enables fisherfolk to temporarily move away from locally depleted resources (Jul-Larsen *et al.* 2002). Ellis (1998) claims that “migration is one of the most important methods of diversifying rural livelihoods” (p: 55).

Migration or geographical mobility implies not only people who migrate from the South to the western world, which is the most common idea, there is also an extensive migration within countries in the South, with gender and ethnic relations as a part of the mobility. Most of the movements within countries are permanent or irregular with a long-lasting change of residence, but there are also shorter daily, periodic or seasonal circulations. Ellis (1998) suggests that migration should be defined as “when one or more family members leave the resident household for varying periods of time, and in so doing are able to make new and different contributions to its wellbeing (although such contributions are not guaranteed by the mere fact of migration)” (p: 55).

Different types of migration are briefly explained as the following (Ellis 1998): Seasonal migration refers to temporary migration with movements depending on slack and peak seasons in for instance fisheries or agricultural activities. Circular migration is also temporary migration, but not affected by seasons. Migrants are away for varying durations and frequently return to their resident household, without setting “up permanent living arrangements in the places they go for temporary work” (p: 56). For example, fish traders who stay at the markets for business during one, two, three weeks or more. Permanent migration implies that a person goes to another area for “a long-duration move” (p: 56), as rural-urban, urban-rural or rural-rural. Depending on the type and security of the livelihood of the migrant in the new environment, he or she might send remittances back home either regularly or intermittently.

To understand the mobility patterns within Zambia and across the border, it is equally important to look into the social, economic and ecological conditions at a local and regional

level. The regional context is particularly important to mobility patterns, as there might be regional factors that have an impact of people's movements, such as different policies regarding fish or trade levies.

Reasons for migration might be few farming opportunities or landlessness, lack of fishing gear or other resources as well as periods of bad catches. The level of mobility can depend on for instance the amount of capital invested in fishing gear. However, since most people in artisanal fisheries in low-income countries have few assets tied up in fishing, the mobility is often relatively high (Allison and Ellis 2001:383, Jul-Larsen *et al.* 2002). Cliggett (2000) points out that even though improved economic opportunities and hence improved "quality of life" are seen as the main motive for migration decisions (p:125), it may as well be an opportunity to escape from the social influences that constraints livelihoods. For example, "social organization and social conflicts over access to resources" (p:125). This may be equally important for migration decisions as do economic and ecological factors. Therefore it is important to consider the variety of potential relationships between migrants and their kin at home, and not assume that the links between them are always "harmonious or altruistic" (Cliggett *ibid*: 125).

3.4 The household as the study unit

The main study unit in this research is the household. The composition of African households is diverse and often consists of relatives, dependants, orphans and others. It is important to have in mind that there are several alternatives to the nuclear family consisting of a husband, wife and children. The conjugal family is weak compared to larger kinship units like the lineage (O'Laughlin 1995). The composition of a household is often dynamic, with members coming and going depending on for instance life stage and mobility in the work-situation (Rakodi 1991). Firstly, this aspect is especially relevant to household livelihood studies, as members who are temporarily away from the household might be particularly important for the household as they are often responsible for a large part of the income by sending remittances or by bringing home assets. Secondly, for this particular reason it is difficult to define the household. A common definition often includes those who share food from the same pot. However, due to the diverse African households this definition is rarely sufficient. In this study I apply the following definition of the household: A household includes all

persons (including dependants) who reside together at the present, as well as members who are temporarily away from the household due to seasonal - or circular migration.

The composition of the households in the sample will be presented in the following chapter, as well as methods for data collection and issues concerning reliability and validity.

4. METHODOLOGY

4.1 Methodological approach

To understand the way of living at a specific site, several methods can be used. This study principally applies qualitative method, which is one approach suitable for answering the research questions. In addition it applies quantitative method to systematize comparable data. The actual fieldwork in Siavonga town as well as in the Munyama, Namoomba and Kamimbi fishing camps was conducted during the months of June and July 2006.

Cook (2005) suggests that qualitative method can be described as a process of three stages: Firstly, get access to the particular community of study. Secondly, live and/or work there to learn their way of living. Thirdly, go back to the university and through writing make a reconstruction and understanding of the community's culture.

Qualitative method is relevant for this study due to many reasons. One possible way to gain insight into the local practises and the livelihood strategies of fishers and fish traders in Siavonga district is to apply a local and actor-oriented perspective. The key advantage of qualitative research is explicitly the potential to get close to people and the practices of a community (Flyvbjerg 2004). To answer the research questions as precisely as possible it is also necessary to apply what Geertz (1973) describes as *thick description*: The complex representation or description of a social reality that comprises the significance of both the context and the local knowledge (Eyles *et al.* 1988:3). Qualitative method and especially the case-study approach are particularly suitable as “the aim is to draw large conclusions from small, but very densely textured facts” (Geertz 1973:4)

The data are seen as *my* representations and constructions of the informants' representations and constructions of their social world (Eyles *et al.* 1988), as a researcher's knowledge is “always partial” due to her positionality (the unique mix of e.g. race, class, gender, nationality and sexuality) as well as location in time and space (Mullings 1999:337). Further, it has been claimed that interviews do not produce direct facts about people's experiences, but by interviewing, a particular representation of those experiences are obtained (Byrne 2004 in Silverman 2006).

It has also been pointed out that qualitative research is primarily descriptive (Silverman 2006), and that “general, theoretical (context-independent) knowledge” is more valuable than case study research based on “concrete, practical (context-dependent) knowledge” (Flyvbjerg 2004:421). Yet I believe qualitative research methods are most suitable for this study, as many qualitative research studies based on one specific case have become some of the most important theoretically productive contributions to research of society (Gobo 2004 in Silverman 2006:306).

To systematize the data obtained from the questionnaire, quantitative method was applied. SPSS⁶, a software program for systematizing and analyzing data, has been used to map the asset portfolios and the composition of the households. This was done by making frequencies of the comparable data for a general overview, but not to do statistical comparisons.

The following will outline the different aspects of the data collection, the reliability and validity of the data, and present the composition and attributes of the households in the sample.

4.2 The Collection of data

To do the empirical fieldwork I had to travel to the fishing camps along the shore of the lake, as only a few fishermen stay in Siavonga town. I also wanted to assess how the location and proximity to Siavonga town affect the livelihood strategies of the fishery households in the different fishing camps.

Contact was established with the Department of Fisheries (DOF) by the researchers in the WELFARE project who did research in the area in the 1990s. As I arrived in Siavonga the staff at DOF was immediately helpful. As soon as I was ready to start the data collection they provided me with a car or a boat as well as a driver, except when conducting interviews in Siavonga, where I was primarily located. This was essential to carry out this study, as some fishing villages were remote and difficult to get to. The Department of Fisheries also contributed with knowledge about the area of study as well as an assistant who helped with the data collection.

⁶ Statistical Package for Social Sciences 14.0



Picture 5: The Department of Fisheries, Siavonga Picture 6: Trip to the fishing camps

Participant Observation

“The participant observer gathers data by participating in the daily life of the group or organisation he studies. He watches the people he is studying to see what situations they ordinarily meet and how they behave in them. He enters into conversation with some or all of the participants in these situations and discovers their interpretations of the events he has discovered” (Eyles *et.al* 1988:8).

During the fieldwork there was always something interesting to observe, just by walking around in Siavonga town from the government harbour with the dried fish market, through the areas with small shops and the vegetables market, up the hill to the top market with fresh fish trading. While I attempted to participate in the daily life, I could speak to many traders, children and others I met in town. In addition to them, there was always much to observe outside town. Either while we were travelling to the fishing camps to conduct interviews, or when I went on trips. For example at the grounds of a Kapenta company, where the fish traders usually wait in line to buy bags of dried Kapenta for resale, as well as on the lake and along the shore, where the fishermen prepare fishing gear and fish. I also observed the fishers on a Kapenta rig throughout the night, which was important to understand the work of the Kapenta fishermen, an occupation important for the livelihoods of many people in the Lake Kariba fishery communities.

I could never be integrated totally as a participant in the local society, but by being the only white person walking in the streets my presence must have seemed odd, and this led to many

interesting conversations. Also when doing interviews I was sometimes more of an observer than a participant, due to the language barrier. However now and then some informants spoke English and I could converse personally without the help of an interpreter.

These experiences and observations were all valuable in order to better understand the daily life of fisherfolk. Although more detailed knowledge about the communities and the livelihoods of the people was obtained by interviews.

Choice of the sample

The informants in this study were chosen by purposive sampling strategies. This strategy allows the researcher to choose “a case because it illustrates some feature or process in which we are interested” (Silverman 2006: 306). Furthermore it is flexible and allows the researcher to manipulate the “analysis, theory, and sampling activities *interactively* during the research process” (Mason 1996 in Silverman 2006:309). In collaboration with my assistant, who was employed at the Department of Fisheries, we located certain groups and individuals we knew represented the attributes of small-scale fisherfolk. During the study, a specific number of people were chosen to represent respectively the fish trader and fisher. We also discussed the geographical locations and characteristics of potential fishing camps to research, and based on this I decided which communities to study. It is also possible to expand the approach with snowball sampling techniques. Although snowballing “is not a systemized method for identifying research participants, it can, nonetheless, be very productive” (Pitt 1997 in Davies 2002:283). The strategy of snowballing was mainly applied when it came to the fishers with residence within or nearby Siavonga town.

Every village has a headman, whose role is to be the leader of the village and of the Village Management Committee. This position is inherited. The headmen of the fishing camps can function as “gatekeepers”, who control the access to the villagers (Silverman 2006: 81), and it was essential to first inform them to get access to the potential research subjects when visiting a camp. Likewise, the chair lady of the fish traders at the government harbour in Siavonga was informed about the aim of the study. The role of the chair lady was among other things to decide who that was allowed to sell fish at the harbour. However, the fish traders in Siavonga were randomly selected, both at the government harbour and at the top market: We asked amongst those who were present at the time, and those who were willing to speak to us were interviewed.

The informants interviewed in the fishing camps were asked to participate in the study by the headmen. This can be ethically difficult: Firstly, did the informants have any choice, considering the status of the headman in relation to the status of the villagers? Some informants can have felt forced into participation. But as a few individuals claimed that they had to work or to go somewhere, it is probable that those who did participate did it voluntarily. Secondly, did the headmen consciously select people who represent certain characteristics, for example, 'poor', 'wealthy' or 'successful'? Considering the manifold of attributes and the diverse livelihood portfolios, as well as the scattered income levels among the units in the sample, it seems unlikely.

The interviews and the questionnaire

The interviews were to a certain extent structured. The questionnaire (appendix 1) includes essential questions concerning demographics, livelihood assets and activities within and outside the household. In addition it has many open-ended questions that allowed for more informal conversations. The interviewees were encouraged to ask questions and contribute with other points of view than those mentioned by the interviewer. This combination of a formal and informal structure is characteristic of the semi-standardized interview, which allows the interviewer to digress, focus on particular interesting topics and make follow-up questions (Berg 1998:61).

The interviews were usually conducted in an open space in the middle of a fishing camp or just next to the fish markets. The process of interviewing was usually highly time-consuming, especially when we wanted to do several interviews in one fishing camp. We sometimes had limited time as we had to leave before dark, and the traders were often busy. When interviewing in town, the process was time-consuming as we had to walk to the markets, and ask the traders if anyone had time at the moment. Some days we were not able to find anyone to interview.

We were always met with friendliness, although a few people were sceptical to the aim of the study. However, after carefully explaining the study very carefully, they were willing to be interviewed.

Other sources of information

Relevant information for the study was also obtained through key informants. My most important key informant was Mr. Wamulume from the Department of Fisheries, who assisted me throughout the fieldwork. And as well as being the research assistant and the interpreter, he was a valuable source of knowledge with reference to the fisheries, the people, the practises, and the locations we visited. In addition to the valuable knowledge he shared with me during the fieldwork, he advised me about the “do’s and don’ts” before visiting the fishing camps, which was very useful in order to build good relations to the informants. Mr. Wamulume assisted when explaining the aim and nature of the study to potential interview subjects and informants, as well as with the presentation of the interviewer. His views’ will have an impact on the study, although he was highly professional and distinguished between his role as an associate at the Department of Fisheries and his role as my assistant.

Other key informants were also important for the study: Especially one man who was working in the management of a Kapenta company. In addition to his knowledge about the local communities and the fishery, which was discussed during many conversations, he also gave me many opportunities to observe the daily life in Siavonga, through expeditions both overland and on the lake. He helped me with finding contact information to potential informants in NGOs, as well as with transport to a few interviews in town.

4.3 The reliability and validity of the data

“Reliability is the degree to which the finding is independent of accidental circumstances of the research, and validity is the degree to which the finding is interpreted in a correct way” (Kirk *et al.* 1986:20).

The language barrier and the necessity of having an interpreter is probably the most important problem in the study that relate both to the reliability and the validity of the data collection. It has probably affected both the way the data has been collected as well as how it is interpreted and analyzed. Research in another culture with an interpreter can easily lead to misunderstandings related to the translation and the denotation of the questions (Eyles *et al.* 1988). To avoid this we discussed the questionnaire ahead of the fieldwork, and conferred about how the informants responded to the questions subsequent to the interviews. This way

the questions were also tested by someone with the same nationality as the informants, to avoid potential misunderstanding when interpreting the questions.

However, it is still possible that the translations have led to misunderstandings. Follow-up questions can have been reformulated by the interpreter. In particular, misunderstandings may have occurred at the times when Mr. Wamulume did not do the translations because of his relation to the informants. In addition, it is of course possible that the information received from the interpreter or the informants has been misinterpreted by me, which affects the validity. This is a challenge particularly when the data collection is done in a different culture.

Data collection in another culture may also have positive aspects. Mullings (1999) argues that by being considered as an “outsider” and consequently being perceived as a neutral person, one is likely to obtain more information than if considered an “insider” (p: 340). Outsiders also may have the ability to observe behaviour and situations without distorting the denotations, as they possibly have a greater degree of objectivity than those who are familiar with the culture and practices (ibid). However, no one is fully an outsider or insider: Mullings suggests that to acquire information researchers must seek “positional spaces”, which she describes as “areas where the situated knowledges of both parties in the interview encounter, engender a level of trust and co-operation” (ibid: 340).

4.3.1 Role and status during fieldwork

Status refers to an individual’s position within a society, associated with certain rights and obligations that go with it. *Role* refers to the social behaviour of an individual that derives from the status position. The role expectations to a person are often expected to correlate with the status. If the behaviour, or the role, does not correlate with the person’s status, he or she will be given a new status and position in a society (Aase 2005).

As well as the limitations with regards to language barriers, the questions of reliability and validity are also affected by the status the researchers obtain when doing fieldwork. For example, if the researcher is fully considered as a guest when doing research, the informants may want to hide harmful information concerning the community (Aase 2005). On the other hand, the researcher may be seen as a ‘guardian angel’ and for that reason the informants may want to overstate their needs and lack of resources. Being a female, white, young student from another culture is certainly of relevance for the interviewee’s role expectations.

Throughout the fieldwork I had to call attention to my status as a student, who wanted to learn about the daily life and livelihoods of the informants. However, although this was the role I presented, the informants may have ascribed me a different status, in particular since I travelled together with a representative from the Department of Fisheries. This might have given the impression that I was a researcher with the ability to change the difficulties some informants expressed. I tried to overcome these challenges by informing about the aim of the study. Though the short time I was staying at one place, often one day in a fishing camp, did not give them much time to evaluate my status and role.

It is necessary to assess the complexity which exist between the researcher and the interviewees, as informants are often more concerned with who the interviewer is, than with the nature of the project (Silverman 2006). The status of the interviewer can affect how the interviewees communicate during the interviews and also how they interpret the questions. Furthermore, it is important to keep in mind that the outcome of interviews is always affected by those involved: The interviewer and the interviewees are “actively engaged in constructing meaning” (ibid: 118). The roles and the statuses of the interviewer, the interviewees and the interpreter, as well as the context and the expressions that arise during the interview have an impact on the outcome (ibid).

As well as the significance of being aware of the role and status of the interviewer, this research implies that it is particularly important to consider the status and influence of the interpreter. Many fisherfolks know Mr.Wamulume through his position at the Department of Fisheries, and in some situations it seemed like the informants and the interpreter were familiar, either through private relations or through his role as an associate at the Department of Fisheries. As this could influence how the informant replied to the questions, another person was sometimes asked to do the translations. Usually the driver or a member of the VMC was asked. When obtaining the participants consent I also made it particularly clear that the data was only applied for research purposes, and not for use to the Department of Fisheries.

In addition to the issues concerning data collection, it is important to consider the gender of the researcher in relation to the gender of the informant, which is likely to influence the results and information provided (Silverman 2006, Mullings 1999). Gender sensitive questions are perhaps more likely to be answered honestly by one woman to another, than by a male to a female researcher. One example is the following question, which was asked all

the informants in order to show the distribution and control over resources in the household: ‘*Who decides how the money earned from the different members of the household is being spent?*’ The question may be viewed as a private matter and there may be a larger risk that the answers were biased, compared to other questions in the study. In addition, the question creates a problem for the analysis, as it was only directed at one member of the household, namely either the husband or the wife. The answers may be more valid if both spouses were asked separately.

As suggested by Silverman (2006) to improve the reliability of the data, I made detailed notes at the time of interviewing or observing, as well as expanded notes as soon as possible. Because I had an interpreter during most of the interviews I had time to take notes and hence I chose not to tape them. The reason for this is mainly because I considered that use of tape-recorder during the interviews could make the situation tenses for the informants. However, although I had time to write correct citations during the interviews, the lack of recording can weaken the reliability of the data. A way to increase the reliability of the data though, is to present long extracts of data including the question when writing the report, as I have done in the result section (Silverman 2006:287).

The data collection was done in order to write this thesis. Based on the duration of a Master’s degree and the resources I received through scholarships, the fieldwork only allowed for two months of data collection. Additional time for data collection would have enhanced the in-depth studies and extended the number of informants and consequently increased the reliability of the data.

Before the analysis of the data, a presentation of the households in the sample is necessary. Below is a description of the occupations and ethnic origins of the informants, as well as the household compositions.

4.4 The sample

44 interviews were conducted in households where the informant and/or the spouse are involved in fish-trading and/or fishing. 22 men and 22 women were interviewed, each respondent representing themselves as well as the other members of their household. In addition, interviews were conducted with staff from the Department of Fisheries in Siavonga, with representatives from VMCs in two fishing camps, with Siavonga Nutrition Group, as well as with the NGOs Harvest Help Zambia and the Italian organisation Ce.L.I.M..

Interviews were conducted in four different locations: Siavonga town, the fishing villages Kamimbi and Munyama along Lake Kariba as well as in Namoomba along the Zambezi River (see figure 2).

The occupations of the informants (table 1) reflect their main livelihoods at the time of interviewing. Five interviewees considered themselves as farmers at the time being, as fishery-based activities often are seasonal or part-time. Table 1 below presents the informants' residences and occupations at the moment.

Table 1. The informants' main occupations and residences at the moment

Residence at the moment	Trader	Fisher	Farmer	Frequency
Siavonga town	9	6	0	15
Kamimbi fishing village	3	4	0	7
Namoomba fishing village	2	0	2	4
Munyama fishing village	4	8	3	15
Other fishing village	1	2	0	3
N	19	20	5	44

Three informants who were from a fishing village nearby Siavonga were interviewed while selling fish in the town.

The 44 household units in the fishery communities are composed as follows:

- 30 married couples with children (and often with dependants)
- 4 cases consisting of husband with two wives and children (and often dependants)
- 1 case of a person living alone (widower, children grown-up)
- 1 case of a single person living with his brother
- 8 female-headed households with children (and often relatives, orphans and dependants)

Table 2. No of Households members

Number of household members	Total no. of households
One to three people	7
Four to six people	13
Seven to ten people	20
Eleven or more	4
N	44

Table 3. Number of children in the households

Number of children	Total no. of households
One to four child/ren	20
Five or six children	13
Seven children or more	9
No children	2
N	44

Table 3 includes all the children in a household including orphans and dependants. As shown in table 3 there are nine households that comprise of more than seven children.

Table 2 and 3 above present the household composition of the 44 units. The household composition in Zambia is diverse and often consists of orphans, dependants and relatives (see chapter three). The households in Siavonga are usually large and include many children. The large number of children is often due to death in the closest family or because the households are taking care of orphans.

4.5 The presentation of the data

Case studies are applied to illustrate the key points of the empirical findings and highlight the theory in relation to this. The informants are presented with pseudonyms.

In the case studies I analyse some of the households’ capital assets, activities, institutions and livelihood strategies in more detail. The cases comprise the extracts of interviews, observations and participant-observations and are used to explain the empirical material as well as to highlight the research questions. Eyles *et al.* (1988) points out that: “In concentrating on a small place or a few individuals or households, participant observation is a case-study approach, allowing theoretical generalizations to emerge from its detailed investigation of a selected dimension of reality” (ibid: 9).

An overview with regards to the households’ assets status and for example degree of diversification is presented in frequency tables.



Pictures 7 – 10: The processes of fish trading

Firstly: Queue to buy fish. Secondly: Transport the fish. Thirdly: Smoke or dry the fish, and in the end sell at markets or to fish centres (to the right: Dried Breams⁷).

⁷ (*Oreochromis mortimerii*)

5. LIVELIHOOD STRATEGIES AND FACTORS

THAT HAVE IMPACT ON LIVELIHOOD SECURITY

The aim of this study is to assess the factors that affect the livelihood options and strategies of fishery households in Siavonga. In particular, this study focuses on institutions and gender relations that can modify or restrict access to the livelihood resources and strategies. It also attempts to research how livelihood strategies can be applied in order to achieve livelihood security. More specifically how the mechanisms of occupational diversification and geographical mobility are used to achieve this.

Fishery households are complex and difficult to define, as the combinations of livelihoods are diverse and members often are dispersed. There are households whose livelihood focus on either fishing or fish trading, and some are involved in both activities. In addition to the fishery based activities, the households rely on farming, petty trade or other farm- and non-farm based activities (Ellis 1998). But fishery households have in common that they may be highly vulnerable to risks and shocks, due to the uncertainty of fishing itself (see chapter 3.1).

This chapter will present the empirical results of the study as well as the data analysis. Firstly, a presentation of the asset status of the households will be given. Secondly, profit and variation in income amongst the households will be presented. Thirdly, different livelihood strategies and how they influence the livelihood security of the households will be discussed, and fourthly, a discussion concerning certain institutions and how they either function as limitations or as opportunities for building livelihood strategies will be given. The key points will be illustrated by case studies.

5.1 Livelihood assets - the basis for building livelihoods

The livelihood resources available are the basis for how and in what combinations livelihood strategies are formed (see chapter 3.1.2). To understand the further analysis of the livelihood strategies of fishery households, this is important to look into. Although it is difficult to measure degree of livelihood security by looking at the asset status of a household, there has been pointed out that lack of assets are strongly related to poverty. And that the more assets available, the more diversification of activities and hence the more income are possible to generate (see chapter 3.3.1). Table 4 below presents the livelihood asset status of the households in the sample, by female-headed and male headed households.

Table 4. Overview of the most important livelihood assets within the households in the sample

Livelihood resources within the households		Head of household		No. of House-Holds
		Female headed	Male headed	
Ownership house N	Own	5	30	35
	Rent	3	6	9
				44
Ownership land N	Have no land	3	7	10
	Own land unsuitable for cultivat.	1	3	4
	Own arable land	3	24	27
	Rent arable land	1	2	3
				44
Number of boats N	One	0	20	20
	Two	0	6	6
	Three	0	1	1
	Four	0	1	1
	None	8	8	16
				44
Kind of boat N (3 missing)	Canoe	0	16	16
	Boat with engine	0	5	5
	Both boat with engine and canoe	0	4	4
	No boat	8	8	16
				41
Other vehicle for Transport N	No other vehicle	6	19	25
	Bicycle	0	5	5
	Car	0	2	2
	Use public transport	2	10	12
				44
Mobile phone N (3 missing)	No	8	24	32
	Yes	0	9	9
				41
Animals N	Cattle	2	6	8
	Cattle, goats and poultry	0	3	3
	Goats and poultry	2	6	8
	Only poultry	0	15	15
	No animals	4	6	10
				44
Fishing nets N	No nets	7	8	15
	Had earlier but are worn out	1	3	4
	Have nets	0	25	25
				44
Savings or credit loan N	None	5	31	36
	Savings in the bank	1	3	4
	Micro credit loan at the moment	1	0	1
	Keep money at home	1	2	3
				44

Source: Fieldwork (2006)

The natural asset that the fishery resource represents is vital for the households and it is generally accessible for everyone who has the capability to utilise it. Fishing is mainly done

throughout the year, however, there are certain areas prohibited from fishing due to fish breeding or where the local co-management has implemented restrictions. For example, the fish ban between December and March, which is implemented for the cause of environmental sustainability, and practiced in certain areas of the Zambezi River. Fluctuating fish stocks have also had an impact on the availability of the resource.

Access to arable land varies a lot amongst the households. Because farming is often applied as a complementary activity in the fishery households, arable land can be significant for the livelihood strategies. Most of the households own land, though the size vary (table 4). There has been pressure on the arable land along the shore of Lake Kariba, which have led to conflicts in the area. The conflict is mainly based on inequalities within different ethnic groups regarding access to arable land (Overå 2003). A discussion of these issues will be given in chapter 5.5.3 below. The agro-biodiversity in the area mainly includes cultivation of maize and sorghum.

Also essential for the livelihood options are different kinds of physical capital. In particular, access to proper shelter, infrastructure, fishing gear and the capability to maintain it. The majority of the households in the sample own a house, though of varying category and quality. The traditional grass thatched houses are common in the fishing camps and iron sheets are more common in town. According to the informants, iron sheets are generally considered better and resources are often used to invest in proper iron sheets for roofing in times of affluence. The fish traders, who regularly reside in longer periods at camps or markets, are most of the time in lack of proper shelter.

Although mobile phones are common to observe in the markets in Siavonga, only a few of the households own mobile phones. In particular fish traders can benefit from mobile phones since they can be contacted by the headman when it is close to their turn in the so called line system. The “line system” refers to the system that is meant to prevent unfair competition and avoid that some traders are stuck with melting ice, while others for example benefit from their relations to the fishers (see Overå 2003:222-224). Some fish traders can also benefit from mobile phones as it is essential to keep in touch with regular customers. The quality of GSM coverage is high in Siavonga town and fairly variable in Kamimbi and Munyama fishing camps. Access to mobile phones is relatively easy in Zambia, with many inexpensive phones both in Siavonga and Lusaka, though on the illegal market. The nine households that have mobile phones are relatively wealthier than the other households in the sample. They

also have in common that both husbands and wives are well educated in proportion to the other households. Firstly, in two of the households there is at least one wage labourer with higher education. Secondly, two households have income from a grocery - while one household has income from canoe constructing, in addition to the fishery based activities. Thirdly, in one household there is chairman of a Village Management Committee and finally, the three remaining households experience good profit on the fishing.

Transport options for delivering fish to markets or to customers are often essential for both fishermen and traders. However, the state of infrastructure is generally poor in the region. Except from the main road to Siavonga, the dirt road to Kamimbi, which is the nearest fishing camp, is the only road accessible throughout the year. For the households who own a boat with engine or for those who possess sufficient capital for transport, the lake-way is both faster and more comfortable. Contrary, the informal transport sector with the so called banana boats is the only option for those who not own a boat. Since the transport is in very high demand by the traders, fares are relatively high (Losse 1998). However, transport options between Siavonga and Lusaka are adequate and whenever there are enough passengers, minibuses are leaving Siavonga between 4 am and noon, returning from Lusaka during the morning and afternoon. The passengers are mostly migrant fish traders who travel to Siavonga to do business, as well as traders from Lake Kariba and nearby who sell the fish at the urban markets.

Furthermore human capital like certain skills in different occupations is necessary. The Tonga people are considered as good farmers, while the Lozi and the Bemba are considered as superior fishermen. Skills that can pursue different livelihoods are equally important as the ability to achieve education. In Zambia education is initiated at three levels: Primary, junior secondary and senior secondary (Losse 1998). Access to education is mainly adequate, except from some isolated fishing villages where access is still poor. The majority of the children in the households attend school, only a few dependants lack access to education. Government schools in the district have no school fees, but some households still find it difficult to send their children to school due to the additional expenses for school uniforms and shoes.

Access to health facilities can be significant for the ability to practice different livelihoods. This is adequate nearby Siavonga town where the government district hospital is located. Another district hospital is located in Sinazongwe, also along the shore of Lake Kariba (see

figure 2). A rural health centre as well as health posts are located in some of the fishing camps, but it is uncertain if these are served regularly. The health posts are operating as medical outlets, though often served by non-medical workers, so there is a risk of incorrect medicating. Although access to health service may be adequate, the health conditions among the fisherfolks are necessarily not. The nutrition status in the fishing villages is generally poor, as the fishery households feed themselves with the bad quality fish and sell the good fish. Further, studies have shown that the women's nutritional statuses are the most likely to be affected by fluctuations in household income (see Whitehead *et al.* 2001). Although, questions concerning health are not included in the questionnaire, therefore only general information is presented.

According to Losse (1998), Siavonga district hospital estimates that 50 percent of their patients are HIV-positive and about 80-90 percent of the Siavonga town population have suffered from malaria infections. The critical increase in spread of HIV/AIDS in Zambia is due to various and complex reasons, but more important for this study are the effects from HIV/AIDS on livelihoods: HIV/AIDS is not only affecting the ones who are HIV-positive, but also other members of the households in terms of labour shortages and increase in time and resources spent on caring for the sick (Havnevik 2006). This burden very often falls on women, and consequently reduces their ability to engage in income generating livelihoods (Whitehead *et al.* 2001).

Financial capital is important although most often stored in form of physical capital. Animals often constitute a large part of the financial resources within a fishery household. Many of the households keep livestock and/or poultry as seen in table 4. Animal husbandry and marketing of produce (mostly maize) can function as safety nets and risk reducing strategies, because they are easy to dispose of if cash is needed.

Accesses to micro-credit possibilities that can help to maintain livelihoods or pursue new ones are also important. The ability to achieve micro-credit is of course uneven among the fisherfolk. An application as well as a business plan is necessary to be considered. However, there was not enough time to assess which factors that modify access to micro-credit loans, although it would have been interesting to research why there are mainly women that apply for, as well as achieve micro-credit loans in the Siavonga district.

Finally, the social capital represents resources which people can draw in pursuit of livelihoods. Social relations can be used strategically in order to get access to resources. There is for example relatively common that traders engage in lover relationships with fishermen to get access to the fish. In the fishery communities, social resources can be support from neighbours, relatives and friends in times of need or during shocks.

The livelihood assets presented in table 4 above entail the basis for building livelihoods amongst the households in the sample, and in addition a more general context was presented. Nevertheless is there important to remember that the fishery households can not be seen as a homogenous group with sharing characteristics and similar capabilities. This is related to the discussion concerning institutions in chapter 5.5. First a discussion concerning lack of assets and strategies of how to obtain new assets will be given.

5.2 Barriers for livelihoods: Lack of assets

Institutions are not the only mechanisms that affect the outcome of livelihoods and livelihood security, several other factors add to the complex context. A general lack of assets caused by different reasons and a certain context such as low income generating livelihoods, shocks, seasonality or trends, may also limit the choice of livelihood strategies.

A man with a boat and a net but no knowledge of how to use it or how to act as a fisherman will not have the capability to utilise the livelihood resources. Lack of livelihood resources or lack of skills to use it may be related to different local institutions in practise (see chapter 3.1.2). Sometimes it is difficult to recognize the reasons that have led to the inadequate assets status. If a household is short of livelihood assets and is unable to invest in assets that can replace them, it indicates that the household's livelihood security is inadequate.

Degree of affluence is another factor that can say something about the livelihood security of a household. In order to assess this within the households, the informants were asked: '*In times of affluence, how are the money/resources used?*'. Only four households replied that they saved money for the future, while 14 households replied that they spend the money on food. Moreover the informants were asked: '*What is the biggest expense of the household?*'. To this question 21 of 44 households replied that food and clothes are the biggest expense of the household. This results indicate that relatively many households in the sample are deprived and in need of improved livelihood security.

The challenge is to apply a strategy that can improve the asset status and consequently also the households' livelihood security. The most deprived are often those who rely on fishing as the only source of income. Above all they are vulnerable to shocks like a sudden loss of nets. This emphasises the importance of relying on an additional source of income to be able to invest in for example new nets and hence decrease the vulnerability of the households (see chapter 3.1 for the discussion of vulnerability).

Some households lack access to both physical and financial capital. The two households below are presented to illustrate the key points of this chapter.

Case 1

Martino is a 54-year-old Tonga fisherman who was married with two Tonga wives, but one has now died. In total he has 14 children, but only three young ones who live in his household. They settled in Munyama fishing camp already in 1970. His wife works as a housewife and in addition she cultivates maize and sorghum. Martino was earlier an artisanal fisherman, and owns one canoe. However, due to problems with fishing gear, he had to go into wage earning and started to work with a Kapenta company. Now he tries to save up money from the employment, so he can invest in fishing gear and go back to fishing and fish trading by himself.

Mary is a 40-year-old Bemba woman who settled in Munyama fishing camp in 1987. She and her husband came from Luapula Province to make a livelihood in the fishery. She works as a housewife and additionally she cultivate maize and groundnuts during rain season. There are nine children in the household and all of them attend school, except the youngest child. They pay K 800 000 per year in school fees. Her husband was earlier an artisanal fisherman, but worn out nets have created problems for the household: "The major problem now is lack of nets, living was good earlier, before the nets were broken". The husband now does assistance work, such as carpentry and brick building, and occasionally fish for home consumption. When the husband manages to accumulate money and invest in new nets, Mary is planning to start fish trading business somewhere in Zambia.

The two households presented above illustrate that the Kapenta fishery like the artisanal fishery can function as a safety net for both the poorest and the most vulnerable (see chapter 2.2). If the ones that lack fishing gear manage to be employed as Kapenta fishers, they can be able to accumulate money for investments in assets and further new livelihood strategies. It

was found that some households temporarily diversify their livelihoods or even change their occupations as a strategy to yield extra money, to further invest in fishing gear. This agrees with what Ellis (1998) points out, that cash resources obtained from diversification can be used to improve the asset status and further enhance the income-generating opportunities (see chapter 3.3.1).

The case studies presented above illustrate how the role of diversification can be applied, through change of occupations as a temporary mechanism to secure the livelihood and enhance the households' income, for further investments in the main livelihood activities, which in these cases were artisanal fishing. Livelihood diversification as a strategy to improve the livelihood security is further discussed in section 5.4.1 below.

5.3 Livelihoods and variation in income

The communities surrounding Lake Kariba and the Zambezi River are mainly concentrated on the artisanal fishery, which constitute the main livelihood strategies in the area: Fishing, fish processing and marketing of fish, as well as livelihoods that derive from these activities, such as transport of fish and ice as well as for the mobile traders.

Alternative livelihoods nearby are employment in the service sector, as waiters/waitresses, cooks, cleaners, gardeners, watchmen or as receptionists. Siavonga district has a few large lodges, where conference groups from government departments, as well as from different organisations based in Lusaka amount to the most important visitors. As well as being lucrative for the lodges, the fish traders also benefit from this business, as many conference participants bring fish back to Lusaka.

There are a few permanent outlets in Siavonga based on clothing, second-hand clothing and groceries. Many traders are selling vegetables like okra, beans, groundnuts and maize, as well as bananas and baker's products. These petty traders are generally not involved in the fisheries, although, there are wives of fishermen who occasionally sell scones at the markets. I will come back to this later.

The commercial Kapenta fishery also creates alternative livelihoods in the area. As well as the numerous fishermen, many are employed as mechanics. Some are also employed as domestic servants at the Kapenta enterprises.

Only seven people in the sample have other occupations than artisanal fishermen, traders or farmers. Of the seven, two are employed in Kapenta companies, four are highly educated and wage earners (one of these combine the occupation with fish trading) and one household have a hairdresser's.

To map the profit from all income generating livelihoods, the households were asked to give an account of the total profit derived from all activities within the household. The profit per month per household presented in figure 5 below represent the peak season of the year when catches are good, and this needs to be taken into consideration. The households are divided into female headed and male headed households, because there are often two or three people who contribute to the livelihood in male headed households, while in female headed there is commonly only one. The eight female-headed households are likely to have less income than the households that consist of for example one fisherman and one fish trader.

Table 5. Profit per month per household, including all members and all activities

Profit per month per household (when catches are good)	Head of the household		Total
	Female headed	Male headed	
"I see no profit"	1	2	3
K 200 - 400 000 60 – 120 USD	4	12	16
K 450 - 800 000 135 – 240 USD	1	10	11
K 850 - 1 100 000 256 – 331 USD	1	5	6
K 1.5 million or more 451 USD	0	3	3
"Hard to tell"	1	5	6
N	8	36	44

The currency 1st of July 2006: *Zambian Kwacha 10 000 = US Dollars 3, NOK 18.8.*

The total profit from all activities within each household is altering from no profit in one end up to more than K 1.5 million. As the figure illustrate, the majority of the households make a profit that is less than K 400 000 per month. To put this into a context, a canoe for example costs K 250 – 300 000 and a fresh Bream (fish) on the fish market costs depending on size, K 3000 for a small, K 5000 for medium sized (1 kg) and K 6000 for a large one.

Furthermore there are a few households that to a large extent are wealthier than the others and who make a profit of K 1.5 million or more per month. These households are especially interesting to assess. What are the reasons for the high level of income in these households? Two case studies that describe these wealthy households are presented below (case 3 and case 7).

Some livelihoods are more income-generating than others and variation in income does not necessarily mean variation in consumption. Cultivation for home consumption and rearing of cattle, goats and poultry are common amongst the majority of the households, and this is important for the total sum of factors that affect the livelihood security. Moreover many factors can have an impact on the total income, like different sizes of the households and that some livelihoods are more related to season than others. Also to which extent the households' utilize the fishery resources, which vary both with regard to seasons and between the different households are significant. For this reason there are probable that some households are better-off than the data presented in table 5 above.

The minimum wages for a wage-earner, for example in manual labour, are approximately K 300 000⁸ per month. The income derived from Kapenta fishing depends on the catch, and hence it varies a lot. Fishing is done every day except during full moon and is paid according to the level of catch (K 1000 per crate of Kapenta per person) besides a certain amount per night (K 1000). Nevertheless, when catches are good (15-20 crates a night per rig) the salary is also good. For example, if one rig catches 20 crates, the fishers earn K 21 000 per person during one night. However, when the catches are bad they can earn as little as K 4000.

Taking into account one month of very good catches, the fishermen may be able to earn K 500 000 per month. However, considering the monthly profits of the most successful artisanal fishermen and fish traders in the sample (see table 6 above), the Kapenta fishermen's income are far less, even when the catches are very good. Those who are involved in the artisanal fishery, in contrary to the Kapenta fishery, have to a larger extent the opportunity to build up the business and accumulate money, *given that they have* the necessary capabilities.

⁸ The currency 1st of July 2006: Zambian Kwacha 10 000 = US Dollars 3, NOK 18.8

5.4 Livelihood Diversification

This chapter presents how livelihood diversification and geographical mobility are used as strategies to gain livelihood security. A household can reduce its vulnerability if based on different activities that generate cash income or food for consumption. Diversification can also function as a risk reducing strategy, if the different activities within the household are exposed for different kinds of risks (see chapter 3.3.1).

Very few households rely solely on one source of income. Livelihood diversification is a common strategy, either as a survival strategy for the poorest or as a way to increase the income for the wealthier (Béné *et al.* 2003b). The fishery related activities are commonly the major source of income, while additional activities such as farming and petty trade are mainly second sources of income, which functions as a strategy to increase the income and reduce the vulnerability.

5.4.1 Occupational diversification as a livelihood strategy

The majority of the households use occupational diversification as a livelihood strategy. The most common way to diversify livelihoods are to combine activities related to cultivation for home consumption, animal husbandry, fishing, fish trading and mobility. Table 6 below presents the degree of occupational diversification within the households in the sample. The 44 households entail different combinations of livelihoods.

Table 6. Occupational diversification within the households

Activities within the households	No. of h.h
Fishery related activities	8
Fishery related activities and poultry	3
Fishery related activities, cultivation and poultry	2
Fishery related activities, cultivation and animal husbandry	26
Fish trading and wage earning	4
Fish trading, wage earning, cultivation, animal husbandry	1
N	44

The table above shows that it is more common to combine fishery related activities with other kinds of activities than it is to only rely on the fishery resource. Only a few households rely on fishery related activities solely, which here imply that the livelihoods of the household are based on only fishing, only fish trading or a combination of both. The fishery dependent households are more vulnerable than those with a manifold livelihood portfolio. This will be further discussed in chapter 5.4.2 below. First a few households that apply strategies for occupational diversification are presented.

Case study 2 below represents a household whose livelihood strategies to a large extent are based on occupational diversification. This household is typical for the majority of the households in the sample, which apply occupational diversification as livelihood strategies (table 7 above). The livelihood portfolio consists of fishery related activities, cultivation as well as animal husbandry. The following cases show how diversification can have positive effect on the livelihood security and how it can be applied to reduce vulnerability (case 2) and accumulate capital (case 3).

Case 2

Peter is a 35-year-old Tonga who is married with two Tonga wives. Together they have nine children, six are below school age, and three attend school. He has no education at all. Peter moved to the fishing camp in 2001 to follow regulations as a result of the co-management policies (see chapter two). He chose Munyama fishing camp specifically because of its proximity to agricultural fields. He explains why he started fishing: *“I joined fishing because then I can earn money all year round. I also like it because I can work on my own with no supervision”*.

Peter is fishing throughout the year and sells both fresh and dried fish in Siavonga, however, dried fish is more profitable. When catches are good he also goes to Lusaka about once a month. His wives are responsible for fish processing during dry season, and when it comes to rain season between November and May, they mainly concentrate on the agricultural fields. The children also assist in cultivation during rain season, mainly maize, millet and sorghum for home consumption. During rain season the husband takes care of both fishing and fish marketing. In addition to these activities, they keep cattle and chickens.

The profit on the fishery related activities is approximately K 5-700 000⁹ per month, and is no doubt the major source of income in this household. The manifold livelihood portfolio with farming, poultry and cattle in addition to the fishery activities probably reduce the vulnerability and improve the livelihood security of the household. Both occupational diversification and geographical mobility are important strategies to achieve this. In addition, the livelihood strategies of this household highlight the importance of women's roles and contributions to the households' livelihood security.

The activities of the households involve activities and divisions on labour that are adapted to the seasonal cycle (see chapter 5.5.6 below for a further discussion on gender relations and division of labour). Fishing, fish processing and fish trading are done throughout the year, while cultivation is done during the rain season which last from May until November. The physical capital in form of cattle and poultry are kept as financial resources in case there is need of cash or investments. The cash resources obtained from diversification can be used to invest in fishing gear or to improve the human capital, like sending children to school (Ellis 1998:59). Diversification can also reduce risks, if the factors that create risk for one income source, is another than the factors that create risks for another income source (Ellis 1998). The different risks of this household are based on the different income sources (bad catches, bad markets, animal diseases, crop failure) and consequently, the diversification function as a way to reduce the risks and the vulnerability of the household.

The next case study three represents a successful woman who applies fish trading as a complementary activity in seasons. This household distinguishes from all the other households, particularly because the role of the fishery related activities functions as poverty reduction mechanisms contrary to the majority of the households in the sample (see chapter 2.2).

Case 3

Miriam is a 53-year-old Lozi woman (Western Province) that lives in Lusaka. She is employed as a midwife at a hospital in Lusaka and also educates people about HIV/AIDS and nutrition. She takes care of two orphans and two grandchildren who all attend school. When she "is on leave" from the job as midwife she goes to Siavonga to do fish trading. She has employed a girl to look after the children, whose salary is K 100 000 per month. She stays in

⁹ The currency 1st of July 2006: Zambian Kwacha 10 000 = US Dollars 3, NOK 18.8

Siavonga for two or three days to buy fish, which she freezes in a freezer at one of her relatives' workplace in Siavonga. Furthermore she brings the fish to Lusaka to sell it at fish centres. If she does it weekly, she is able to make a profit of approximately K 1 million per month, which is

The hospital where she works pays for her house as well as for water and electricity, so she uses the income from her job and the fish trading to build a new house at her farm. The plan is to move there when she retires. Moreover she keeps five cows and cultivates maize that she sells. According to Miriam, the biggest expenses of the household are assets for the house as well as expenses connected to uninvited relatives. This indicates that the household is wealthy compared to the majority in the sample.

This household is particularly interesting because it illustrates how occupational diversification as well as geographical mobility can function as a way to increase the income. It also shows how social resources can be used to their advantage. Her social capital in terms of her hospitable relative in Siavonga makes it possible to store and freeze the fish she buys when in Siavonga, which is essential for the business. This is probably a major reason for why she decided to start fish trading as a complementary activity. Unfortunately this woman was in such a hurry that the interview did not allow for comprehensive information. Nevertheless it is found that the mobility she applies as well as the change of occupation function successfully as a strategy to increase the household's income, as Béné *et al.* (2003b:199), Ellis (1998) and Whitehead *et al.* (2001) points out in chapter 3.3.1.

5.4.2 Fishery dependent households

Degree of vulnerability is significant when measuring a household's viability. Households whose assets are mainly in fisheries may be especially vulnerable, both because of the limitation of assets and the vulnerability of fishing itself as a livelihood (see chapter 3.1). There are eleven households in the sample whose livelihood portfolios consist of fishery related activities solely, though in some cases combined with a few chickens (table 7 above). Of the eleven households there are four female headed households whose livelihoods are based on fish trading and four male headed households whose livelihoods are based on both fishing and fish trading. The three remaining households keep some chickens in addition to the fishery related activities. Contrary to the households whose livelihood portfolios often consist of fishing, fish trading, cultivation and animal husbandry, the fishery dependent

households are particularly vulnerable. Important questions in regards to this are for example: How dependent are the fishery activities on natural resources? Do the households fall into deep poverty if the fishing fails?

The few sources of income do not necessarily mean that the households are disadvantaged. The fishery related activities can potentially yield higher income than other livelihoods, especially because all investments are made in the same activity. A closer look into the asset status of the eleven households will be presented.

If the fishery dependent households lack access to financial and physical assets, they may struggle to maintain an adequate degree of livelihood security if nets are worn out or lost. Risks such as fluctuating resources and seasonal changes are additional reasons for why it can be difficult to rely on the fishery resource solely. Moreover local policies can modify access to livelihood resources such as the fish ban, which makes it particularly hard for households along the river to secure their livelihoods and maintain until next period of fishing and harvesting (see chapter 5.5.1). Common characterizations for the eleven households that rely solely on the fishery based activities are:

- They lack land for cultivation.
- They are migrants from other provinces (nine households) or other districts (two).
- Nine of the households state that food is the biggest expense of the household - which indicate little affluence.
- Half of the households lack social capital as they have no one to turn to in times of need, which also add to the degree of vulnerability.

The factors listed above describe the external factors that can have an impact on the households' livelihood security. Lack of financial resources as well as their migrant status is possible reasons for restrictions regarding access to land. The overview and frequency of the households' total profit per month in table 5 above can indicate the degree of livelihood security and especially if compared with the asset status. It is found that six fishery dependent households also lack access to arable land, keep no animals and make a profit of less than K 400 000 per month. These households are particularly vulnerable both due to the occupation itself and all the risks related to it, the few sources of income as well as lack of physical and financial capital. These findings agree with Chambers (1985), Béné (2003), Allison *et al.* (2007) (see chapter 3.1) and Moser (1998) (see chapter 3.3.1). But at least one household

who has the same characteristic as the others illustrates that the fishery based activities also can yield good profit. This particular household makes a profit of K 2 millions when catches are good, mainly due to social and human capital that compensate for the lack of arable land. This household is further assessed in chapter 5.5.3 below.

5.4.3 Geographical mobility as a livelihood strategy

Migration is one of the most important methods of diversifying rural livelihoods and reasons for migration might be poor wages, landlessness, few farming opportunities or fluctuating fish resources (Ellis 1998). Geographical mobility is often necessary in fishing communities to keep up with the catches on mobile or fluctuating fish stocks. Degree of mobility depends on for instance the amount of capital invested in fishing equipment, however, most people in artisanal fisheries in low-income countries have few assets tied up in fishing, thus the mobility is relatively high (Allison & Ellis 2001:383-386, Jul-Larsen 2003).

There are many fisherfolk that apply mobility as part of their livelihood strategies. Table 7 below outlines the mobility patterns of the households in the sample. The table shows the households' residence at the moment and how the households within each community move in order to perform economic activities.

Table 7. Mobility patterns. Residence at the moment related to location of economic activities

Location of economic activities	Residence at the moment					N
	Siavonga town	Kamimbi	Na-moomba	Munyama	Other fishing camp	
Only Siavonga town	6	2	0	0	1	7
Only fishing camp of residence	0	0	2	5	0	7
Lusaka, Siavonga (and fishing camp of residence)	9	3	0	7	0	19
Siavonga and fishing camp of residence	0	2	1	3	3	9
Total number of households	16	7	3	15	3	44

Economic activities can be carried out only in the community of living, or by moving between the fishing camp and Siavonga, and even to Kafue or Lusaka, which is common

amongst the fish traders (see figure 2). Table 8 shows that geographical mobility as a strategy is common, and most common is to move between three places: The majority of the households move between their residence, Siavonga town and Lusaka.

Even though Munyama and Namoomba fishing camp are more remote than Siavonga and Kamimbi, which are close the main road, about the same proportion of households apply geographical mobility as a strategy and move to Lusaka to do business. I was often told by the informants that the market in Lusaka is better because of all the people, and thus it is easier and faster to sell the fish. The public transport is cheap so for those who sell dried fish it is more lucrative to go to Lusaka now and then than to sell in fishing camps or in Siavonga, where the competition is hard and customers fewer than in the urban markets.

The fish traders have different strategies when it comes to locations of marketing and sale. Some traders both buy and sell the fish at the government harbour in Siavonga. For example, itinerant traders from Lusaka stay at the harbour for about three weeks before they travel back to Lusaka with the money and spend one week with the family. Further, there are some traders who travel from the fishing camps to the fish markets in Kafue or Lusaka once or twice a month, while the wealthier traders sell directly to fish centres in Lusaka. The fish traders decide where to sell depending on the amount of fish, resources available for transportation and a continuous evaluation of the different markets and transportation costs. Geographical mobility can also be used as a strategy to invest in other livelihoods. When visiting fish markets in Siavonga, Kafue or Lusaka, it is convenient to buy assets for resale in the fishing camps. Many households apply this strategy and have a permanent grocery in close proximity to their residence.

The next case represents the household of a fulltime fisher who in a large degree apply mobility as a livelihood strategy.

Case 4

Kent is a 34-year-old Tonga fisherman who is originally from a fishing camp close to Siavonga. He is married and has four children below school age. His younger brother also lives in the household. Even though he is a Tonga he prefers to be married to only one wife, who is also Tonga. *“I only want to have one wife because I’m afraid of hunger, I can’t feed more than one”*. The husband and wife have no education at all.

During rain season they do agricultural business and cultivate for own consumption. In addition they keep six cows. They have also invested in solar panel for electricity. Kent has a boat with engine, which he uses when he sets the nets. He and his young brother go out on the lake and set the nets at 5 pm and take them in at 6 am. In two weeks he sells the catch to fish traders who stay in a shelter just next to his house within the fishing camp. During the next two weeks he dries the fish and travel to Kafue to sell it there. This way he always has money to buy things when he is in Kafue. In Kafue he buys groceries, clothes and other things for the household. The profit is about K 1.2 million per month when catches are good and K 600 000 per month when catches are bad.

In times of affluence they buy cattle and help other family members, which indicate that the business is going very well and that the mobility patterns are strategically clever in order to achieve livelihood security in this particular household. Moreover, the diversification of the livelihoods also adds to the livelihood security, and the cultivation for home consumption as well as the animal husbandry reduces the vulnerability of the household. The home consumption allows the household to save the money that otherwise must have been spent on food. This allows the households to invest in other assets, like the solar panel. The clever strategy that allows the household to combine fish trading in Kafue with purchase of assets seem to be lucrative and very well adapted to the households' livelihood resources and capabilities. Moreover this household demonstrates that skills in different livelihoods can be equally important as, and compensate for formal education.

The following case represents a fulltime fish trader and demonstrates how a fish trader strategically uses mobility as a livelihood strategy.

Case 5

Mary is a 38-year-old widow from Lusaka who started fish trading in 1999. Her household in Lusaka consists of herself, her mother, two younger sisters as well as her four children. Mary stays at the government harbour in Siavonga and trade for about one month before she goes back to Lusaka for about three days - to share the profit of K 200 000 per month with the family. Once in a while she also sells fish in Lusaka if there is anything left when she goes back: *"I wanted to start business, so I just took my chance. I sold fish in Lusaka earlier, but it's easier to sell from Siavonga, because then I don't have to pay for transport. If there's enough fish I bring fish to Lusaka to sell when I go back. My mum, sisters and children live in*

Lusaka, when business is not good it's difficult to manage". Her mother and her sisters stay at home and take care of the children who all attend school. They rent a house in Lusaka with two rooms which costs K 60 000 a month.

This female headed household is particularly vulnerable as it lacks access to land, financial capital and a social network in which they can inquire in times of need. She stays in Siavonga for long periods at a time, instead of travelling to Lusaka to sell fish in order to save the money for transport. These factors, in addition to the lack of capital assets, emphasises that livelihood diversification in terms of mobility is applied as a survival strategy, which agree with Béné *et al.* (2003b). The household rely solely on the income from the fish trading and consequently the risks are great.

Livelihood strategies are formed and modified by institutions, and there are always inequalities between people regarding access to livelihood resources and the capability to utilize the entitlements. For this reason there is need for a discussion concerning the most important institutions that have an impact on livelihoods. Chapter 5.5 outlines this.

5.5 Institutions - barriers or opportunities for building livelihood strategies?

5.5.1 Local institutions and the ability to adapt to changes

As Leach *et al.* (1999) points out, the status a person holds in the household as well as in the local society, has usually impact on livelihood options and limitations. The mapping of power relations is one of the most important issues when assessing livelihood strategies, as people have unequal access to and control over resources and unequal capacities to negotiate. Many complex factors can modify and form livelihood strategies, but in this study I chose to focus on access to livelihood resources connected to norms and rules for gender relations, ethnicity or migrant status and local policies and tenure.

Local institutions affect livelihood strategies and can function both as barriers and opportunities. In the example below (case 1), it is found that local institutions like sea tenure is a barrier for livelihood strategies, whilst social capital can be favourable for the households livelihood security.

Case 6

This fishing village is situated along the Zambezi River and consist of 150 households that mainly make a living from fishery related activities and cultivation. The headman of the village is a 60-year-old Zimbabwean fisherman who came there after the resettlement in 1959. Joseph considers himself as Tonga because he has lived in the area for so long. He is married to two Tonga women and is the father of seven children who all attend school.

Because Joseph is the headman of the village, a title which he inherited from his father, the household has a big arable land. Because of poor health Joseph recently had to stop fishing. The wives work in the fields, where they cultivate sorghum and maize for home consumption and for their grocery. Moreover they keep five cows and three chickens. However, there is problem with drought as well as with animals that destroy the harvest, especially elephants. Earlier they cultivated close to the river, but they had to move inland to avoid the hippos that destroyed the crops. The profit from the grocery is about K 400 000 per month, a profit that is decreasing, as Joseph no longer manage to go somewhere to buy things for resale and the wives also lack financial capital to invest in assets. During times of need they cut grass for resale and pick fruits from the baobab trees (*tamarindas indica*).

The main problem in this village is the fish ban that is implemented by the Department of Fisheries from December to March combined with shocks like drought as well as animals that destroy the crops it often leads to hunger amongst the households. Most crops are harvested in May and June, and there is no harvest in the period during the fish ban. Joseph's household lack human capital in terms of low state of health, and in addition they are in need for new strategies that are adapted to local trends. The combination of local policies that function as a barrier for livelihoods and the shocks that often occur make the households in this village particularly vulnerable. This is especially caused by the institution that prevents the households from engaging in fishery related livelihoods during the fish ban.

Some households try to adapt the livelihood strategies so that they circumvent possible risks and shocks. For example Sarah, a 40-year-old widow whose household consist of herself, four children, one dependant and one grand child. Although she is Tonga she does not own arable land, but borrows land from someone else that can come and take it back anytime. To avoid that the crops are destructed by elephants, she has strategically started to harvest earlier, and to avoid uncontrolled fires that commonly occur she has started to cut grass

earlier than before. The grass is cut for resale to people who thatch their houses. The strategy has been successful and the profit from sale of grass and crop are used to invest in trips to Siavonga where she can buy fish, do fish trading business and thus increase the income.

These examples demonstrate that the capability to adapt livelihoods to seasonal changes and avoid possible trends and risks are seen to be important for the livelihood security, though that not everyone has the same capability to adapt for this context. However, there are other institutions in the village that function as poverty prevention mechanisms (see chapter 2.2). The norms and rules for food distribution are favourable for the most vulnerable, as the poorest households get support from the wealthier households in times of need. Whenever a household is out of food, they can ask the headman for assistance. The headman inquires households who still have food to share with those who are short of food. However, if all the households in the village are short of food, the headman and the VMC inquire the Council for assistance. In times of drought or when harvest is especially bad, the Council usually makes plans for distribution of food in this area.

Contrary to the fishery on Lake Kariba that is open to anyone in need and hence functions as safety nets for the most vulnerable, the local sea tenure in this area prevents the marginalized households from relying on fishery based activities when other livelihood fails. But to compensate for this the local institutions regarding norms and rules for food distribution can be said to benefit the vulnerable households and function as a safety net.

5.5.2 How ethnicity and migrant status affect livelihood options and capabilities

The Tonga people are the ethnic group originally located in the Southern Province. However, multiple other ethnic groups are present due to migration into the area since the creation of Lake Kariba (Jul-Larsen 2003). The majority of the informants in the sample, who have migrated to Lake Kariba and Southern Province from other regions, indicate that the main reason for settling near Lake Kariba is because relatives already were involved in the fishery.

Table 8 and 9 below present the informants' ethnic origin as well as region of origin. In most units, the wife and the husband are from the same province and have the same ethnic origin. Although, in some households, the husband and the wife are from different regions, but unfortunately, data regarding the ethnicity of the spouses are missing in relatively many units. Due to this I chose to only present the data concerning the informants that were interviewed.

Table 8. The informants' ethnic origin

	Number of informants	Percentage s
Tonga	23	52.3
Bemba	17	38.6
Other	5	9.1
N	44	100.0

Table 9. The informants' region of origin (where they are born and grown up)

Region	Frequency	Percent
Southern Province	20	45.5
Lusaka Province	11	25.0
Western/ Copperbelt Province	2	4.5
Luapula / Northern Province	8	18.2
Outside Zambia	3	6.8
N	44	100.0

The tables above show that many migrants are involved in the fishery. The Tonga people, who originally are farmers, are well represented in the fishery based activities. Amongst the 20 informants in the sample that are fishermen, eleven are Tonga and nine are migrants from other provinces. Amongst the 18 female fish traders, nine are Tonga while the other nine are either migrants settled in Siavonga, or circular or permanent migrants travelling to Siavonga.

There are often inequalities between particularly Bemba and Tonga women, who are the two most dominating ethnic groups in Siavonga. Earlier, Bemba women could often move more freely and engage in for example fish trading, while Tonga women's activities to a large degree were limited to farming and domestic work. However, the data from this study shows that many female Tonga informants also are fish traders: Of the 18 female fish traders who were interviewed, eight are of Tonga origin. This is relatively many, considering that Tonga women often have less power and independency within the conjugal context. For this reason it was necessary to take a closer look into the eight households. Not surprisingly, I found that

five of the households are female-headed and thus in charge of their own activities and livelihoods.

The three other Tonga women represent households that differ from the others in the sample. These households are different because the husbands are wage-earners and not artisanal fishermen as the majority. Firstly, one husband is employed in a Kapenta enterprise. He is also Tonga and the wife tells that the husband is in control of the household's resources and income, including decisions about the cash income from the fish trading. This household represents a typical Tonga household: Although the wife is relatively independent and has her own business she has little power within the household and her husband decides how to spend all the cash-income. Secondly, in the two remaining households the husbands are Bemba and highly educated with well-paid jobs. Not surprisingly, the power and gender relations in these households are completely different. The Tonga women are independent and successful fish traders, and the household's resources and income are managed by both spouses. This can be related to the husbands' ethnic origin, as well as the high education and financial resources in the household. Because the husbands' jobs are well paid, the women probably have good starting points for developing their businesses.

5.5.3 Migrant status and access to land

There has been increasing pressure on arable land along the shoreline of Lake Kariba, and many fishery households lack access to land. According to studies by Jul-Larsen (2003), there are mainly migrants from other regions who have difficulties with attaining arable land. Earlier there have often been conflicts between migrants and Tonga farmers, when the migrants have required land for cultivation (Overå 2003). For newcomers to get access to land around the fishing camps, they need to ask for permission from the Chief of the area. If they settle in a council area such as Siavonga town, it would go through the Council.

Table 10 below shows land ownership of the households in the sample in relation to ethnicity. The households in the sample are relatively differentiated pursuant to access to arable land. Most of the households who lack land for cultivation live in Siavonga town. The majority of the households own arable land and a few gain accesses through leasing of land (table 10 below).

Table 10. Land ownership in relation to ethnicity - households

Land ownership	Tonga	Bemba	Other	Total no. of households
Have no land	3	6	1	10 22.7 %
Own land: not big enough for cultivation	3	0	1	4 9.1 %
Own arable land	15	10	2	27 61.4 %
Rent / borrow arable land	2	1	0	3 6.8 %
Total	23	17	4	44 100.0 %

The data do not reveal any large distinction between the Tonga people and the migrants regarding access to arable land, table 10 shows that also many Bemba households own arable land. These results are very interesting as it indicates that access to land is negotiable despite the barriers that often prevent migrants from getting land. By using different strategies it is possible to negotiate, and one strategy can be access to land through marriage between migrant men and Tonga women. This means that a households' viability can depend on 'choosing the right wife' to obtain access to certain livelihood resources. But, what kind of strategies that are used to negotiate access to land in Siavonga can unfortunately not be answered with the data material of this study, as these questions were not included in the questionnaire.

The case presented below illustrates how ethnicity or migrant status may modify particularly access to land:

Case 7

Kennedy is a 38-year-old Bemba fisherman, who came from Kafue as a child and settled in a fishing camp close to Siavonga town in 1980. His father was a fisherman, and he is the oldest of 15 siblings. He is married and has four children aged 1 to 10 years. Kennedy inherited a boat from his father because he is the first born son and through hard work he has managed to buy a second boat. Together with his seven brothers they fish from his two motor boats. They fish close to Kamimbi fishing camp and sell the fish at the government harbour. Kennedy has completed 12th grade and his wife has completed 4th grade. One of his children attends school

in Siavonga, while two stay with relatives in Kafue. The mother stays at home and takes care of the youngest child.

Fishing, which is the only source of income, allows for K 2 millions per month when catches are good. However, this amount is used to support himself and many others in his family, and the profit are often inadequate if catches are bad. However, as mentioned above, even though all activities are based on fishing the profit is very good compared to other similar households. The fishing camp is located in a rocky hill with traditional houses, in which Kennedy's brothers and their wives also are staying. The households in the camp have struggled with the land management ever since they came to the place in 1980. This conflict refers to the many similar conflicts between Tonga and migrants in the area (Overå 2003). As the rocky grounds are not suitable for cultivation, the major problem is not the lack of arable land, but that the conflict prevents the fishery households from building proper shelter. Because they do not own the land they can not build any permanent structures, although they have been settled at the same place for several years. The high degrees of social and human capital are probably the main reason for the successful business, which can compensate for the barriers caused by the migrant status.

The following section presents how relations of gender relations may modify the livelihood options and strategies (Column B in the livelihoods framework, chapter 3.2). As discussed in chapter three, the power relations within the household and particularly the conjugal bond are significant to assess in order to understand the outcome of livelihood options and strategies.

5.5.4 How gender relations affect women and men's livelihood options

Generally it seems like few women have any political power within the local administration in Siavonga. The Village Management Committees for example, usually consists of only men. However, a few women are employed and have a great deal influence in for example key positions at the Council and the Department of Fisheries. Women in the Lake Kariba fishery communities are to a large extent present and prominent in the atmosphere of the daily life. Women dominate the fish markets as well as the vegetable markets and can often be seen carrying provisions, goods and children. In addition, women are often responsible for cultivation, domestic work and for taking care of young children.

Fishing is regarded as male labour, and it is generally considered inappropriate that women fish. On the other hand, fish trading is considered as a proper occupation for both men and

women, although there are predominantly female fish traders. In the sample there is only one man who considers himself as a fish trader and not as a fisherman. However, a few women do fish from the shore with fishing rods or fishing traps, but this is mostly occasional fishing essentially for subsistence purposes, as is commonly a complementary activity in developing countries (see Béné *et al.* 2003b). There was unfortunately not enough time to assess the issues of women and inshore fishing more closely.

There are many institutions that control the behaviour and practises of the fish trading system. For example, fish traders need to get access to the fish through the “line system” (Overå 2003). The female fish traders are often involved in several social relations and networks. Social relations can be used strategically in order to get access to the resource. For example, to engage in lover relationships with fishers to get access to fish, often without using financial means. These women intermittently stay in fishing camps as temporary wives, where they take care of the household and interrelate sexually with the fishers. In return they get access to fish through the fishermen. In the same way, fishermen are observed to periodically stay in the government harbour in Siavonga with the traders. To decrease the number of fishermen and fish traders who engage sexually, shelters have been built in some fishing camps for the female fish traders to stay while they queue for fish.

5.5.4.1 Distribution and control over resources and income in the household

The position, status and power a person holds, in the household as well as in the local society, has usually an impact on ones opportunities and limitations, for instance unequal access to and control over resources and unequal capacities to negotiate (Leach *et al.* 1999). The fact that women and men have different positions in the society and within the household, leads us to recognize that women and men have different control over resources and also different needs. Due to this complexity of power relations it is important to consider the positions within the household, as well as the structures and power relations within the society, to find out how different elements affect the livelihoods of the men and women in fisheries households.

Leach *et al.* (1999) points out that women’s control over the income and resources, depend on bargaining between husbands and perhaps co-wives within households (see chapter 3.1.4). To assess distribution and control over resources in the households in the sample, the

informants were asked: *'Who decides how the money earned from the different members of the household is being spent?'*

34 of the 44 households that consist of husband and wife (all male-headed) replied that the decisions were made together. One household, which consist of husband and wife, have separate economy. Three households, represented by female respondents, replied that the husband decides how to spend the money. The unequal control over resources in these three households, where the husband takes all the decisions, share the characterizations of: Firstly, being Tonga people. Secondly, the husbands work in Kapenta Companies or for another fisher. Thirdly, the wives are farmers and only cultivate for own consumption. One of the wives says about her husband: *"He doesn't tell me how much he earns. I can't know how much money he has, because he might have K 20 000, but only shows me K 5000 and drinks for the rest of it."* She believes that her husband gives her some money to spend on food and soap, but that he uses most of it on alcohol.

Because the men in these households are wage labourers, the wives have less or no control over the cash income. As long as they lack access to income generating livelihoods and financial resources they rely on their husbands. However, in times of need they may ask neighbours and family for assistance and that way compensate for the lack of power within the household (see Leach *et al.* 1999 chapter 3.1.4). This can for example be illustrated through one of the women, who explain: *"My elder sister and mother can help as they have always done. Actually there are also other people who can help, but in a very small way"*.

To map the social resources amongst the fisherfolk, the households in the sample were asked the following question: *'In times of need, do you have anyone to turn to?'* 19 of the 44 households replied that they can turn to neighbours (5 households), family or relatives (13 households) or church group (1 household). Four households said that others turn to them for help, whilst as many as 19 households said they have no one to turn to. Five of the latter are female-headed households (of eight female headed households in total), which represents a larger part of the units in proportion to the male headed. It is likely that female-headed households have less social resources also because the fish traders have a particularly independent occupation with lots of competition between the traders. As one of the traders in Siavonga said: *"There is no one to turn to in times of need, each one is for themselves"*.

Cultural aspects also have an impact on power relations within a household, particularly the challenges of the extended family structure. People who obtain cash resources usually have to distribute it amongst household members or extended family members. For example, a female fish trader who manages to build up profit from the business, but has less control within the household, or a wealthier fisherman with a large extended family. When the money is earned they often go directly to other family members. This may be one important reason for why it is difficult for many households to save money. However, as mentioned above, to avoid that the money are distributed, they are invested in assets as soon as possible, often goats or chickens, and kept until cash is needed. This way the investments in assets can function as a risk reducing strategy.

5.5.5 Gender division of labour

The relationships between the husbands and wives in the households are important to assess as the gender relations have to a large extent effect on men and women's livelihood strategies. The livelihoods of the households represent a varying combination of activities and degree of involvement from women and men. The division of labour and type of activities vary a lot within the households.

Below is the frequency of all activities within the 44 households presented. Table 11 includes not only the 44 main informants, but also information provided by the main informants on other members of the households. Everybody in the 44 households that are involved in one or more activity is included, in total 92 people. The total number of activities (197) exceeds the number of people, as many are involved in several activities. The activities are divided by men and women to outline who that is responsible for the different activities.

Briefly the division of labour by gender in the households is as follows: Fishing is men's work throughout the year, while cultivation is mainly women's work, although in some households, men are also involved in cultivation. Fish processing and fish trading are the shared responsibilities of men and women, although there are mostly women who do this work. Women are responsible for housework and petty trade like baking scones and cutting grass for sale as well as mainly responsible for the grocery. Rearing of cattle is women's domain. Rearing of poultry and goats are probably also women's work, however, the questions concerning animals were asked the household as a unit and thus I lack some of information with regard to responsibilities.

Table 11. Frequency of all activities within the households with gender division

All activities within the households	Who do the work?			Not specified
	Women	Men	Total	
Fishing	0	29	29	
Fishing - working for other fishermen	0	3	3	
Kapenta fishing	0	2	2	
Fish processing	10	6	16	
Fish trading	24	13	37	
Cultivation	27	9	36	
Rearing poultry and goats	6	2	29	21
Rearing cattle	9	-	12	3
Housework	5	1	6	
Small grocery	8	3	11	
Cutting grass for sale	3	0	3	
Baking for sale	3	0	3	
Netting for sale	1	0	1	
Canoe constructing	0	1	1	
Hairdresser	1	0	1	
Wage earning	1	3	4	
Frequency of activities within the h.h.	96	71	197	
Number of people in the households	49	43	92	

Many husbands and wives collaborate directly with each other with regards to livelihoods derived from fishing and fish trading, and it works like this: The husband gives his catch to the wife, who processes and sells the fish. Women are usually involved in fish processing and trading during dry season, and when it comes to rain season they mainly concentrate on

cultivation whilst the husband concentrate on fish processing and trading. A few men also do fish trading throughout the year.

The study reveals that relatively many couples collaborate this way. Of the 34 households in the study which consists of a husband and wife, thirteen of the households handle their livelihoods this way. As discussed in chapter three, inequality is particularly related to women and men's different positions and disproportionate control over resources in the society and within the household (Moser 1993). In these households, the women are equally involved in the activities that form the households' livelihood strategies, and consequently they possess to a larger extent power and control over resources within the households.

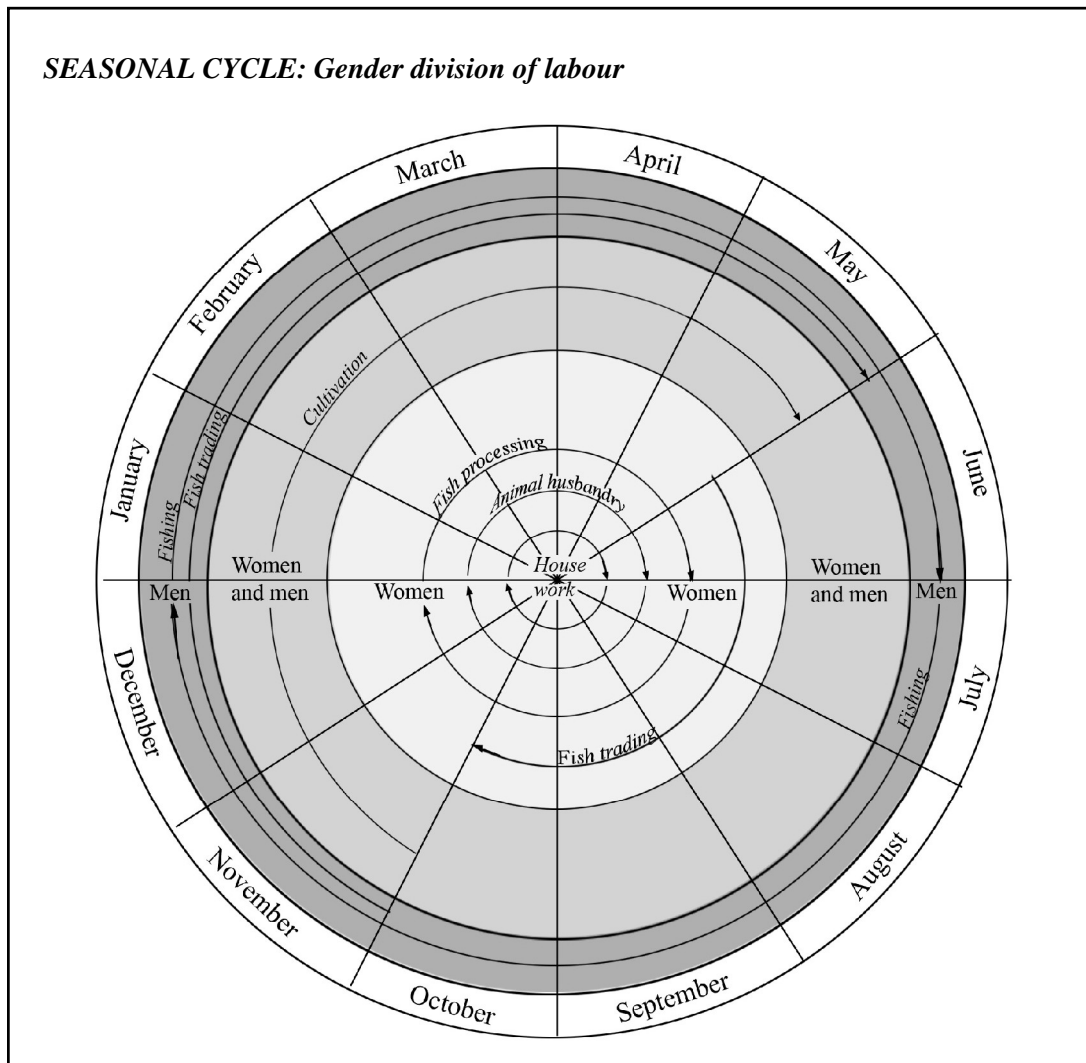
According to studies by Overå (2003) in Sinazongwe district, which is more remote than Siavonga, fishermen increasingly sell their fish directly to traders instead of giving it to their wives. The results from this study (see chapter 5.5.2) emphasise that particularly Bemba women are increasingly involved in all the processes and activities within the household and consequently have more access to and control over the income derived from the livelihoods. However, the factors the lead to this is often related to the unequal roles of the Tonga and the Bemba women due to the different practices within the ethnic groups, so the unequal gender relations are mainly related to ethnicity.

The following case study highlights how gender relations and division of labour are important for the outcome of livelihoods strategies within a household. The case represents a typical household where the husband and wife collaborate and combine fishery related activities with other activities, and is illustrated with an overview of the activities in a seasonal cycle below.

Case 8

The household consist of Paolo (33-years-old), his wife at the same age, two young children as well as a 16-year-old sister that attend school. They are of Bemba origin and came from Luapula Province in 2001, where they worked in the fishery together with Paolo's parents. His parents moved later to the Lake Kariba fishery and Paolo decided to settle there as well. His wife who was still in Luapula at the time received a proposal on his behalf through relatives and agreed to marry him and join him in the Lake Kariba fishing camp. The household lack access to arable land, probably due to their migration status, however they

have been able to lease some land where the wife and the girl cultivate maize for own consumption. They also keep some goats and chickens.



Source: Adapted from Wollan (1983) and modified by the author of this thesis.

The seasonal cycle comprises gender division of labour and occupational diversification combined in both time and place. The inner circle shows that women are responsible for house work, animal husbandry and fish processing throughout the year. Fish trading and cultivation are done by both, but the factors that lead the households to delegate fish trading to the wife or the husband are often related to seasonal variations. The wife mainly takes care of fish trading during dry season when she is not busy with cultivation. The husband is also involved in cultivation although this is mainly the responsibility of the wife. The outer circle shows that the husband is fishing throughout the year and mainly do fish trading during rain season when the wife is busy with agriculture.

The livelihood strategies of this household, and many other households involved in fishery related activities who apply the same kind of strategies, emphasises that gender division of labour are important for the households livelihood security. The conjugal relations seem to improve the viability, as the occupational diversification throughout the year with changes of occupations within the households related to time and place, are important strategies. This highlights the importance of looking at all the livelihood strategies within a household, which is essential in order to see how a household make a living, also with regards to other livelihoods than the fishery related. It also indicates that single headed households are more vulnerable, with fewer opportunities to combine livelihoods.

6. CONCLUSIONS

6.1 Livelihood strategies and household viability in Lake Kariba fishing communities

The purpose of this study was to assess livelihood strategies in fishing communities of Lake Kariba. The aim was further to generate knowledge that can contribute to the research and debate about small-scale fisheries' role in poverty alleviation. Three research questions were addressed: to research the main livelihood strategies of women and men in small-scale fishery households, to assess to what extent institutions, in particular norms and rules concerning gender roles and relations, affect these strategies and to investigate to which degree occupational diversification and geographical mobility are used as mechanisms to achieve livelihood security in fishery households. The study was conducted in four Lake Kariba fishing communities. The intention was not to make generalizations but to assess the situation in the certain context with a study of household livelihood strategies. The following will outline the most important results from this study.

Livelihood strategies are based on livelihood assets available in the households. Access to natural capital, both fishery resources and arable land are essential for building livelihood strategies. The fishery related activities are most important as a way of reducing the households' vulnerability. Most households are more or less involved in fishery related activities, and the factors that lead to degree of diversification are mainly based on access to natural capital and physical capital. The fishery resource is generally open to anyone that has the physical and human capital needed: Canoe and nets as well as skills to use it and ability to maintain it. Due to this open-access the fishery functions as a poverty prevention mechanism for the poorest and the most vulnerable, in particular the fishery dependent households (this agree with earlier findings by Béné 2003, Jul-Larsen *et al.* 2003b and Allison *et al.* 2007). But although the capital investments are low, they can function as barriers for livelihoods related to the artisanal fishery. Many households who lack fishing gear or who face sudden shocks and are unable to replace it, temporary diversify their livelihoods by switching occupations as a strategy to accumulate money that can be invested in new capital assets. Occupations that require no physical capital like employment in the Kapenta fishing or assistant jobs like carpentry are commonly temporary occupations for the artisanal fishermen who are in need of financial capital that can be used to improve or invest in fishing gear.

Natural capital in forms of access to arable land is modified by ethnicity or migrant status, but is negotiable, as it is found in this study that many migrants also own land. This study can not answer which strategies that are used to negotiate access, although I was often told during the fieldwork that marriages between Tonga people and migrants have functioned as one strategy. Further studies of this would have been useful to map different strategies that can be applied in order to circumvent the barriers migrants experience with reference to access to land.

Both occupational diversification and geographical mobility are to a large extent applied as strategies to achieve livelihood security in the fishing communities. It is found that geographical mobility between several locations is an important livelihood strategy. For the fish traders it is most common to move between several places: the urban markets in Lusaka, Siavonga town and their residence. Mobility as a strategy is often combined with occupational diversification amongst the members within a household, and used strategically to invest in other livelihoods. The study shows that many households combine fish trading in urban locations with bringing back assets for resale in the fishing camps where they have a grocery.

The majority of the households combine fishery related activities with cultivation and animal husbandry. The physical capital in form of livestock or poultry is often stored as financial resources that can be kept until cash is needed. The households that diversify their livelihoods are commonly the wealthiest. Fishery related activities are often the major source of income, while cultivation often for home consumption. Related to this it is found that more money can be accumulated from the fishery related activities and invested in capital assets if the household cultivate for home consumption. In households that consist of a husband and wife, it is found that both the occupational diversification throughout the year and the gender division of labour within the households related to time and place, are important as strategies to achieve livelihood security. It also indicates that single headed households are more vulnerable as they lack hands for labour.

These results are very interesting and a further investigation with focus on how seasonal fluctuations affect the livelihoods of the household, can contribute to more specified knowledge. For example, by assessing how longer periods with bad catches affect the viability and livelihood strategies of the households.

Occupational diversification is more common than only relying on fishery related activities. Only a few households base their livelihoods solely on fishery related activities, but these often lack physical and financial capital, like access to arable land and resources to invest in animals. The findings agree with earlier studies that points out that diversification can reduce a households' vulnerability (Chambers 1985, Ellis 1998, Allison *et al.* 2001). Contrary the fishery dependent households have mainly one source of income and are more vulnerable than those who have a manifold livelihood portfolio and consequently a spread of risks. However, fishery dependent households can also be wealthy and social and human capital can often compensate for lack of other capital assets.

The gender division of labour and the gender roles and relations within households are highly important for the outcome of household livelihood strategies. The way men and women delegate responsibilities based on gender roles, seasonal livelihoods, strategies for occupational diversification and mobility throughout the year, emphasises the importance of looking at all activities derived from all members within a household when assessing livelihood security. Women and men are equally important for a households' viability and particularly related to occupational diversification. Many women and men collaborate as fishermen and fish traders, in a way that the husband gives the catch to the wife to sell. As both are involved in the same activities, the inequalities regarding control over income and resources within the household are less than in households where only the husband has an income-generating occupation. Gender roles within different ethnic groups are found to be important for the distribution of control within a household. Although Tonga women also are fish traders, they are more often tied to the husbands' control than Bemba women.

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¹⁰ WELFARE 'Wellbeing among Fisherfolks in Africa Research'

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APPENDIX 1

Questionnaire Siavonga, Zambia 2006

Date:

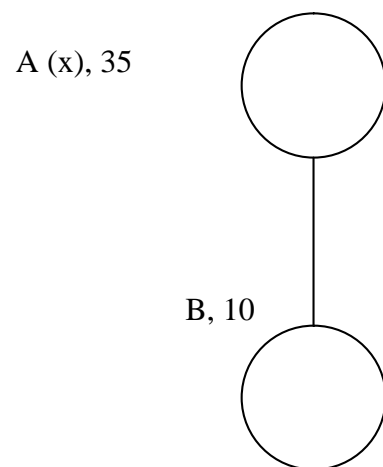
Household No:

Interviewer:

When settled: _____ From where: _____ Ethnic identity: _____

Member/s of household interviewed (x) Head of household: _____

Household composition:



3. Assets

Kind of house/ownership

Land owned.....

Boat.....

Vehicle for transport.....

Net/fishing gear.....

Animals.....

Remittances.....

Savings/credit.....

Mobile phone.....

Other.....

4. What is the biggest expense of the household?

5. Who decides *how* the money earned from the different members of the household is being spent?

6. In times of need (lack of money / food due to sickness, loss of job, fish stock/ crop failure etc) -who can the household turn to for assistance?

7. In times of affluence, how is the money/resources used?

8. Does anyone in the household pay tax? If yes, how much, and do you get any public services in return?

9. Are you (or another member of the household) involved in any kind of association, organisation or social group?

10. Anything else....

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