Chapter 6
Occupation of Last Resort? Small-Scale Fishing in Lake Victoria, Tanzania

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Abstract Small-scale fisheries have been conceptualized as a "safety valve" – the last reliable livelihood when no other exists for fishers, who are considered poor. This perception appears to be the grounds upon which poverty alleviation and resource management policies are defined. This chapter looks at this notion and questions whether small-scale fisheries are really an "occupation of last resort." Based on an ethnographic study on a Lake Victoria fishing community in Tanzania, data indicate that regardless of their poverty status, small-scale fisheries are perceived as offering a rich way of life that fishers join by choice. By discussing what fishers consider as the underlying issues in their choices, this chapter argues that fisheries management (in technical terms) should shift to governance that supports opportunities and processes for fishers to pursue the kind of life they want, and create an environment in which they can pursue that life, respectively. Such a shift would also benefit from a set of management-relevant social variables and indicators that focus on peoples' judgments of their well-being, capabilities, and satisfaction to aim toward sustainable fisheries management and poverty reduction. The chapter therefore emphasizes that if managers and policy makers/governors do not understand the full meaning and satisfaction that small-scale fishers attach to their occupation, policies instituted to curb overfishing risk not only misfire but also backfire.

6.1 Introduction

"There is considerable evidence that coastal fishing is an economic activity of last resort" (Panayotou 1982, p. 30). Fisheries are seen as the only viable livelihood option that poor people have, and not something they would otherwise prefer. Being

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an occupation of last resort implies that fishers are compelled to enter the fisheries, and adopt practices that enable them to earn their livelihood. They do not enjoy any bit of being in the fisheries but are mostly in it for survival.

This is a perception highly rooted in the debate on poverty in fisheries, especially small-scale fisheries, as well as the method of management of these fisheries (Bailey and Jentoft 1990; FAO 2000; Payne 2000; Smith et al. 2005). The whole idea here is that the open access, common pool nature of fisheries allows an increasing number of fishers to enter and overexploit the fish resource, thereby impoverishing themselves even further (Hardin 1968; World Bank 1992; Jalal 1993). Consequently, from a management perspective, this therefore requires a response which checks on such practices so as to avoid the collapse of fish stocks.

In this chapter, I argue that perceiving fishers exclusively from a dimension of survivors misusing the resources fails to fully recognize the human dimension of fisheries. Fisheries are generally a human phenomenon in which the changing fish stocks in the water are simply, to a large extent, a reflection of what happens in the society (Jentoft 1999; McGoodwin 2001).

This chapter examines whether small-scale fisheries are really an occupation of last resort for those who are poor. It explores this by focusing on the Nyakasenge fishing community located in Lake Victoria, Tanzania. Fishers here are poor and no strangers to hardships, risks, and suffering. However, fishing is much more than the methods and types of fishing used, the species targeted, the natural fish habitat, and/or monetary gains (how much is being fished and how it is being fished). Deviating from the sustainable livelihood concept (Allison and Ellis 2001), I argue in this chapter that fishing in this community is also a way of life that yields satisfaction, provides identity, and is a window through which fishers see the world. This chapter aims to demonstrate that fishing is not only a means of ensuring livelihood but it is also a desirable, rewarding, and meaningful way for people to live their lives (way of life).

The chapter argues that fishing is a valuable occupation to fishers (as an *opportunity*). It also points out that fishing provides an environment in which fishers choose to live the way they prefer (a condition best described as a *process*). The meaning and value they attribute to their occupation have great significance for understanding the implications of changes in the fisheries, including those that occur as a consequence of resource management measures. Therefore, any fisheries management and poverty reduction strategy commencing from the image of small-scale fishing as a last resort, and which focuses on effort reduction, risks violating peoples' perceptions of what constitutes a preferred life and the values they cherish (Carothers 2008; see also Kraan, Chap. 8). The chapter further proposes the need to develop management-relevant social variables and indicators focusing on people's judgments of their well-being, capabilities, and satisfaction that are essential to their understanding of fishing as their "way of life," so as to guide fisheries management to achieve sustainability and poverty reduction. The chapter begins with a discussion on the culture of small-scale fishing, followed by a brief background on the fisheries of the lake. The methods used are also briefly discussed before presenting fishing life and operations in this fishing village.

6.2 The Culture of Small-Scale Fishing

Fishing is among the world's oldest means of livelihood (Thompson et al. 1983; van Ginkel 2009). It was also among the ways in which life was lived in Africa. To a large extent, it defined migration patterns, manner of life, and above all the culture of those involved in it. Fishing also defined relationships both among and within community members, as well as shaping the world view of fishers (Thompson et al. 1983; Iliffe 2000).

In a seminal article, Acheson (1981) pointed out that despite the existence of anthropological studies of fishing communities, such studies have been seen to belong to archaeology, physical anthropology, or subareas of social anthropology. Consequently, what has been witnessed is a body of literature and sets of concepts focused on how fishers have adapted to earning a living from fisheries. This body of literature comprises studies that have highlighted the difficulties and risks fishers face in the natural environment (Graaf et al. 2006); the techniques through which fishers extract fish resources (Tzanatos et al. 2006); the uncertainty with which fishing markets and prices fluctuate; and the physical and psychological problems associated with fishers having to work away from home for long periods of time.

Fishing is seen as an activity and basically a means of support or subsistence (livelihood or occupation leading to a culture of fishing), and not so much as fishing peoples' behaviors habits, and customs that are typical of the way of life as lived in fishing communities – that is, their total way of life which is a fishing culture. These two perspectives are what have been referred to as "anthropology of fishing" (denoting the former – livelihoods or occupational perspective) and "maritime anthropology" (denoting the latter – total way of life perspective) (Andersen and Wadel 1972; Gatewood and McCay 1988). Acheson therefore argues that "those studying fishing societies have … made an important contribution by documenting the ways man has adapted to earning a living from a highly alien and dangerous environment" (Acheson 1981, p. 307). He further asserts, as can be implied from some later writers (Smith 1988; Hersoug 2004; Jentoft 2004; Johnsen et al. 2009; van Ginkel 2009), that the focus in managing fisheries has therefore been concentrated on how to spread risk awareness by use of norms, institutions, and networks.

The livelihood perspective has since then become very influential among those who write about small-scale fishers (Allison and Ellis 2001; Béné 2003; Neiland and Béné 2004). As livelihoods, fishing and fish resources are seen as assets, access to which is mediated by institutions, organizations, and social relations and is affected by trends and shocks that impact livelihood security and environmental stability. This idea of livelihoods originated from the need to understand different capabilities of rural households to withstand crises (Allison and Ellis 2001). The livelihood concept is thus well linked to concepts such as vulnerability, sustainability, resilience, social exclusion, and sensitivity, some of which are quite common in the context of poverty (Béné 2003; Du Toit 2004). It therefore appears that understanding of poverty in small-scale fisheries draws considerably from this perception of fishing as a livelihood (Béné 2003).

The livelihood argument has not only gained momentum among academics but has also shaped and driven development (Mathie and Cunningham 2003) and, by extension, management of fisheries in rural settings where small-scale fisheries are located. Macfadyen and Corcoran (2002) argue on how the livelihoods framework is pro-poor and people-centered. The framework therefore allows scientists and development agencies to see impoverished communities from the point of view of an observer or an *etic* (outsider) perspective. The framework enables objective identification of the livelihood platform, how access is modified, and the resulting outcomes. Consequently, this has resulted in a number of actors – researchers, donor agencies, government, and the media – to be focused on the deficiencies, problems, and needs of poor communities, such as small-scale fishers within a framework of problem-solving missions (Mathie and Cunningham 2003).

From a livelihood perspective, fishing is primarily an economic and subsistence activity (Schumann and Macinko 2007; Wartena 2006 – as cited in Kraan 2009). Smith et al. (2005) indicate that the livelihood notion as used in the context of resisting poverty by rural communities, such as those of small-scale fishers, largely depends on opportunities offered by the natural resource-based production system which is affected by the wider economic, institutional, and political environment. This economic dimension provides an exemplary explanation for perceiving fishing as an occupation, hence the argument of occupation of last resort (Cunningham 1993; Béné 2003; Smith et al. 2005). It has, however, been noted that non-economic considerations, in most cases, play an important role with regard to livelihood choices (World Bank 2000; Sievanen et al. 2005; Cinner et al. 2008; Wartena 2006 – as quoted in Kraan 2009). Bebbington (1999) also noted earlier that rural societies stuck to "nonviable" livelihood activities to maintain their cultural and social practices that accompany rural residence. Thus, small-scale fishing provides an avenue for people to practice and maintain their culture and social life. These observations, in a way, remind of what Sir Walter Scott observed way back in 1816: "It's no fish ye're buying – its men's lives" (Sir Walter Scott, *The Antiquary*, 1816 – cited in Thompson et al. 1983, p. 3). This, therefore, implies that reducing fishing to a livelihood narrows the understanding of it and may possibly explain, in part, the difficulty in managing this resource, as management would not only interfere with fishing activities but have a broader impact on people's lives as well.

6.2.1 Fishing as a Way of Life

Although distinguishing fishing as a livelihood, as opposed to a way of life, is quite challenging if not problematic, this chapter perceives the former to be part of the latter. There is much more to fishing than it being a career where income is the principle benefit (Gatewood and McCay 1988). Fishers would be reduced to

homo economicus: rational and broadly self-interested actors,[1] who have the ability to make judgments regarding their subjectively defined ends (Kraan 2009). The alternative perception is that human behaviors such as fishing is a social activity embedded in human communities. As Seligman (1993) argues, humans are not always led by their logic but by their emotions, which are often irrational from a means–end perspective. Neither are humans necessarily self-interested. They perform altruistic acts like charity, volunteerism, lending a helping hand, parenting, and even in some situations giving one's life for a higher cause. They also perform self-destructive acts like substance abuse, negative addiction, negative risk-taking, procrastination, inability to complete projects, masochism, and suicide (Elliot 2007). Factors that lead to satisfaction/happiness/pleasure are not only confined to economic values, but include non-materialistic and non-economic values (van Ginkel 2009).

Fishing, therefore, needs to be perceived not only as a means people resort to in order to address their impoverishment in a materialistic sense, but as an activity that provides satisfaction and meaning to life (Bebbington 1999; Gudeman 2001). This calls for an understanding of fishing from a cultural perspective – as a way of life (Williams 1981), not just a strategy for material survival (Béné 2003, 2004). Although it can be argued differently, behaviors and actions that go well with cultural values of the community would need to generate favourable approval by community members. Such approval, in most cases, becomes a source of happiness and/or joy for the one being appraised, but also for the community as a whole. Then a fisher's behavior is turned into habits that he wants to be identified with. These habits become deeply embedded in a fishing culture to the extent that fishers see them as their way of life, and the only way life is worth living. As Berger and Luckmann (1971) argue, such values are constructed into realities in which societies develop procedures for maintenance.

Thus a people's culture is a means through which one can understand a community and its members' behaviors. Keesing (1981) puts it more clearly when he argues that culture is an ideational design for how people live and behave. It is their shared knowledge about language, history, myths, religious beliefs, world view, values, normative behavior, means of subsistence, and customary modes of social, economic, and religious organization (McGoodwin 2001). This chapter, therefore, perceives fishing culture in line with Geertz's (2006) perspective on culture, which to him constitutes webs of significance that man is suspended in and spins – the set of shared attitudes, values, goals, and practices that characterizes an institution, organization, or group. Culture is a whole way of life which defines, and is manifested in social and cultural activities such as language, styles of art, and thinking (Williams 1981).

[1]The issue of rationality has been questioned. However, it is implicit in the livelihoods framework, especially in assuming that rationality of choice could lead to prediction of actual actions – the livelihood strategy (Sen 2009).

Culture is learned and internalized by its members and then passed from one generation to the next (McGoodwin 2001; Kroeber 2006). McGoodwin (2001) argues that a collapse in fish stocks may have a symbolic importance in community traditions, mythology, religion, and cultural identity by leaving these components severely impoverished and incapable of being quickly revitalized. This does not rule out less dramatic events such as a change in the fisheries from subsistence to commercial which can also affect community members' self-esteem, patterns of household consumption, modes of kinship, and gender roles. Culture is also adaptive and able to change with changing circumstances. Given this possibility to adapt and/or change, culture should not be contrasted with modernization (McGoodwin 2001).

Therefore, as a way of life, fishing becomes interwoven throughout the fabric of community and culture, and is central to the individual and collective identity of fishers, expressed through popular myths, folktales, and local history (McGoodwin 1990; Gudeman 2001). Fishers become proud of their identity as fishers (Apostle et al. 1985; Gatewood and McCay 1988; Pollnac and Poggie 1979 – as cited in McGoodwin 1990). It is the case, as McGoodwin (1990, 2001) argues, that people living in one place share the same heritage and identity, similar lifestyles, and similar feelings about the world and how it ought to be (Layder 1994).

Fishing as an activity requires certain adaptations and behaviors which necessitate the development of certain cultural characteristics. Thus, a fisher community's fishing activities, the gears and methods they use, and the organization of fisheries' activities all result from trials undertaken over a long period of time.

6.3 Methodology

The study involved 8 months of fieldwork in the Nyakasenge fishing community. This was in addition to the contact with this community for the better part of over 10 years of research on Lake Victoria fishing communities. Data were collected through participant observations, structured and unstructured interviews, as well as focus group discussions (FGDs). In total, 30 FGDs and 60 interviews were carried out through the duration of the fieldwork. The data collected focused on fishers' reasons for joining the fisheries, their daily activities, the type and use of their fishing equipment, and their behavior.

The research team consisted of the author and two research assistants. The team lived in this community during the fieldwork period. The research team adopted a program of daily discussions, which focused on issues that emerged from the field. From these initial interviews, topics were identified for more targeted questioning on the following days. Issues were discussed to a saturation point. The team also discussed with the fishers some of the preliminary analyses of data collected before moving to other topics. Respondents were sampled based on the category of fishing activity to which they belonged, thus the following categories of fishers were interviewed: crew members fishing Nile perch (*Lates niloticus*), Tilapia (*Oreochromis niloticus*), Dagaa (*Rastrineobola argentea*), and/or Haplochromines. Additional

Fig. 6.1 Lake Victoria is the world's second largest freshwater lake, with a surface area of 68,800 km^2 and an average depth of 40 m. It is located between latitudes 00 2′N and 30 0′S and longitudes 310 41′E and 340 52′E, and it lies at an altitude of 1,134 m above sea level in East Africa – Kenya, Tanzania, and Uganda. Its catchment area stretches further across Rwanda and Burundi and covers an area of about 194,000 km^2. Nyakasenge village is located in a remote area of the Magu district, in the Mwanza region. It is one of the six hamlets of Chabula village on the southern part of the lake some 40 km east of Mwanza city

categories were gear owners and fish factory agents. In addition, fisheries personnel at the division, district, and regional levels were interviewed. Other relevant government officers such as the Regional Cultural Officer and the Village Executive Officer were also interviewed. The data presented here draw from all these categories, but the focus is mainly on Nile perch fisheries.

6.3.1 Site Selection and Description

Nyakasenge was systematically and randomly selected from over 500 beaches/fishing communities in Lake Victoria, Tanzania. The selection process considered the following criteria: a fishing community where three types of fisheries were present (i.e. Nile perch, Tilapia, and Dagaa); a fishing community recognized by the fisheries authorities; a community having a functional beach management unit (BMU); a fishing beach where there are indigenous as well as migrant fishers; a beach with more than 100 fishing boats; and finally, a beach accessible by road. From over 200 beaches that fulfilled these conditions, Nyakasenge was randomly picked.

Located in a remote area of the Magu district in the Mwanza region, Nyakasenge is one of the six hamlets of Chabula village (Fig. 6.1). Although the exact period of

its establishment is not known, residents claim that the beach is older than the Nile perch fishery introduced sometime during the 1950s (Pringle 2005). The beach was a landing site for some of the indigenous species (see Verschuren et al. 2002 on indigenous species) fished from parts of the Speke Gulf. However, with the proliferation of Nile perch in Lake Victoria during the 1980s (Abila and Jansen 1997), the beach grew in terms of human population, the number and type of houses, and accessibility (Verschuren et al. 2002). The demand for Nile perch in the European countries and other places also led to a management system changing from a more traditional one in which local community chiefs were the de facto fisheries authorities to a central system in which riparian states and governments took responsibility in managing the fisheries (Owino 1999; URT 1997).

6.4 Fishing Life in Nyakasenge

To an outsider, Nyakasenge fishing village appears as a poor community. A first-time visit only leaves one touched by the deplorable conditions in which fishers and their families live. It feels even worse when one has to live in the village for an extended period. Indeed, one then has to come to terms with having to either bathe in the lake just as the fishers do or simply collect water from the lake (there is no piped water system) and take a bath in makeshift bathtubs that are smaller than those who use them. Additionally, one has to reconcile oneself to using unrefined water directly from the lake for all domestic purposes. There are no health facilities nearby, such as a hospital, dispensary, or clinic (including health personnel) in the village, so when people get sick, they must travel 5 km. Despite these conditions in Nyakasenge, fishers there do not perceive themselves as poor. They have access to basic needs such as water and food, which they get from the lake. Poverty as they understand is attributed to not being able to use one's hands, head, and legs to engage in an activity. In other words, to be poor, one must be disabled, and have no relatives who are morally obliged to feed, clothe, and house those who do not have these needs. Moreover, these relatives should also ensure accessibility to health facilities.

In October 2009, Nyakasenge fishing beach had 184 fishers (crew, boat, and gear owners). There were 87 small-scale traders including shopkeepers, tailors, and restaurants. There were 33 boat and gear makers as well as repairers, and 31 fish traders. These are among other unregistered fishers living on the beach. These people have come from different ethnic riparian communities surrounding Lake Victoria. However, since the beach (which is part of Nyakasenge) is located right in the midst of Sukumaland, the Sukuma people are the dominant ethnic group. The beach is simply part of the Nyakasenge hamlet, which includes the adjacent Shoka island and a 2 km radius from the beach. The portion of the hamlet outside the beach area is occupied by other people involved directly or indirectly in fishing and agricultural activities. Almost everybody in the hamlet has a relationship with fishing activities. There are farmers, livestock keepers, and government employees such as teachers in

the local primary and secondary schools who live in the hamlet and who are also fishing, in partnership with fishers, or in the fish trade. It is also at the beach where most activities and services – for instance shopping, posho meals, and selling food stuffs – happen.

A tour of the village revealed to us that each home had at least fishing gear or an item related to fisheries. We also observed that whatever they did was greatly influenced by fishing activity; for example those who go to the gardens would leave the gardens in good time to look for baits for their evening fishing. The daily life of fishers followed a strict routine, which involved preparation for fishing, fishing, recreation, eating, and sleeping. Community meetings were convened to mobilize community efforts toward issues such as preparing for visitors or contributions toward funeral expenses for a community member. These gatherings were occasional, and were not (in most cases) planned for in advance. Thus, fishers appeared to spend their time thinking and planning their fishing activity.

During our stay in Nyakasenge for the period of our fieldwork, we observed a pattern of various activities. We noted that life on the beach was oriented toward the lake. That is to say that people residing here had a tendency of moving from their houses to the area in which boats anchor. Moreover, in the mornings, there was a fish market between the edge of the lake waters and the houses – an open sandy space that cannot be used for building houses. It served the function of a public square and marketplace in town. Many activities such as community meetings, celebrations, football training, children playing, drying of fresh fish, drying of nets, and makeshift shades for selling fruits are undertaken in the open area between the water's edge and the houses. This area is cool due to cool winds/breezes blowing from the lake on the days that, for the most part, are sunny and very warm.

From our previous visits to this and other fishing communities at the lake,[2] our perception of Lake Victoria fishers was a group of poor people who entered the fisheries as an occupation of last resort, had no other opportunities in the place where they came from or in other sectors, and therefore moved to the lake to earn their livelihoods. To us, their life was still poor despite being in the fisheries. They also seemed to have a lifestyle of intensive fishing, without regard to stock status. They appeared as people who saw life as only important today and not tomorrow, and were therefore extravagant in expenditure, especially on entertainment (drinking), living lives void of savings. We saw them as morally uncontrolled and irresponsible, lacking a developmental mind, and insensitive about their own future. We were greatly influenced by our earlier observations during the Nile perch proliferation in Lake Victoria (the period between the 1980s and 1990s). Fishing during this time, in our understanding, was an occupation for making easy money for those who did not have anything else to do.

However, our attention was drawn to several issues that made us understand these fishers differently during our stay in this village in November 2009. Although

[2]The author has been doing research at this lake for over 10 years before doing fieldwork related to information collected for this chapter.

Fig. 6.2 A group of fishers from Shoka Island, Chabula village in Lake Victoria, Tanzania, out in the lake setting their long lines (Photo by Paul Onyango 2009)

our objective was to generate information regarding how poverty is understood and experienced among these fishers,[3] we could not avoid seeing how fishers were motivated in their fishing activities. We noted why they understood poverty differently from being in a state of low wages, labor exploitation, inequality, political disfranchisement, social exclusion, powerlessness, and lack of freedom. While they agreed that one could lack some basic needs, they believed that so long as a person has the ability (hands, head, and legs) to get what he/she lacks, that person is not poor.

Additionally, poverty in this community meant inability to respond to emergency. For instance, responding to a crocodile attack that is a frequent occurrence in this village.

6.4.1 Fishing Activities

Life in Nyakasenge is about fisheries from morning to evening, all year round (Fig. 6.2). We have gone back to this fishing village several times, and every time we visit, fishing activities have occupied the time of most fishers. As we observed,

[3]The meaning of poverty in this community is published elsewhere by the author (see Onyango 2010).

fishers of Nyakasenge include Nile perch (*Lates niloticus*), Tilapia (*Oreochromis niloticus*), and Dagaa (*Rastrineobola argentea*) fishers. Dagaa fishers also catch other species. Each type of fishery has got its special demands and time schedules.

6.4.1.1 Nile Perch Fishers

The Nile perch fishers were once in majority in the lake but they are now replaced by Dagaa fishers, which include those who fish with longlines and those who use gill nets. Gill nets are also slowly being phased out here, and fishers are increasingly using longlines. The longliners either fish during the day or the night. Fishing with longlines also requires baits. Fishers therefore set times to look for baits. We observed that, on average, fishers fish only three times a week, and this schedule depends on the availability of baits. Looking for baits can take as long as 2–3 days to be able to get enough for the average of 1,500 hooks per boat. Those who cannot fish the baits by themselves have no option but to buy from bait fishers – one live bait costs T.shs 100 (US$0.08).

Fishing during the day (locally known as *tega zibua*) involves leaving in the morning (6:00–7:00 a.m.) to set the nets. Fishers stay in the lake, haul the hooks, and come back in the evening (5:00–7:00 p.m.). We also noted that gill-netters prefer *tega zibua* because of gear theft. Gears are stolen when left in the lake when no one is seen attending to them. The other group of fishers prefer to fish during the night – *tega mlazo*. This group always sets off at 3:00–4:00 p.m. to the lake to set their hooks, and come back at 7:00–8:00 p.m. They spend the night, like everybody else, on the beach and then leave at 6:00 a.m. to haul their hooks (if their gears are not stolen), and then land the fish from 11:00 a.m. to 1:00 p.m. Gill-netters who fish during the night do not, however, come back to the beach after setting their nets; they stay by the lake. Some, at other beaches nowadays, stay for about 3–4 days before they come back. They chill their fish in containers.

6.4.1.2 Dagaa Fishers

The Dagaa fishers, on the other hand, follow the lunar cycle – fishing especially during the dark and half-moon periods. This makes them fish effectively for 2 weeks in a month, while fishing less for the remaining 2 weeks. The dark or half-moon implies that the night is either completely or partially dark for about 2 weeks. Such periods are very conducive for fishing Dagaa. During these periods, fishers set off between 5:00 and 8:00 p.m., only to come back in the morning between 5:00 and 7:00 a.m. Dagaa fishers try to fish every day during this period unless conditions such as weather, availability of crew and boat, and gear conditions require attention. These Dagaa fishers are mostly seen on the beach during the day. They enjoy sleeping in the shade close to the lake during the day as they wait to set off for fishing. They also like spending their time playing pool, cards, and checkers.

6.4.1.3 Tilapia Fishers

The Tilapia fishers are a different group from the Dagaa and Nile perch fishers. The latter two groups comprise mostly people who have migrated from different places and converged at Nyakasenge for the purpose of fishing. Tilapia fishers, on the other hand, are mainly people who are indigenous to the area; they live outside the beach area, but within a 2 km radius from the beach. This group comprises mainly young boys aged between 13 and 23 years. They are rarely seen on the beach in the morning because they have to go to school, or those who are married go to their gardens. This group combines fishing and farming as part of their daily activities. They fish with single hooks tied on a wetland reed. They could have as many as ten of these hooks. They are actually not registered with the local BMU as fishers. Their fishing is undertaken mostly in the evenings from 5:00 to 7:00 p.m. On average, each one lands about 5 kg, with the highest being 10 kg and lowest 0.5 kg or nothing. A tilapia fisher does not go fishing every day, but occasionally and depending on the availability of baits and the weather. They fish in rocky areas. When they return, they sell any catch which they think is over and above the family needs. As is typical of fishers, the money they get is used to purchase flour, paraffin, cooking oil, and other kitchen stuff depending on each one's needs.

6.4.2 Motivational Factors

After about 4 months' stay in the community, new issues started emerging. Although we had discussed several issues with fishers, we started looking at their responses with a new lens. For instance, their responses to the questions regarding why they were in fisheries and not other higher income-generating activities led us to perceive these as either pull or push factors, or both factors in many instances. Pull factors refer to attributes of fisheries that attract them to join, while push factors refer to those that drive them away from where they were before they decided to become fishers.

The reasons fishers gave and were attributable to push and pull factors were identified from the statements that they made.

> My father wanted me to tend to our livestock and do nothing else … I left home so that I could come to fish instead of looking after livestock.

His father had 40 cows, which is by all standards a sign of being rich in this community. In fact, ownership of only four cows is an indication of richness. He had to look for something else to do and not depend exclusively on his father's wealth.

Another fisher tells his story. He says that his home is located in another fishing community where his uncle fishes. In this community reaching class seven is considered as good enough for someone to start looking for a job.

> I completed class seven and decided to get involved in the fishing activity in my uncle's fishing crew as a means of engaging in an income-generating activity for myself.

Here is a story from another fisher who comes from an area where they grow rain-fed maize and rice.

> Back in my village, we are farmers depending on rain fed crops … conditions are not very good during the dry periods because incomes from farming are low.

This implies that they can only plant twice a year, with only one good harvest expected during the year. Indeed, we observed that there is extensive growing of rain-fed rice, which is a popular staple food in this area.

One fisher explained why he was attracted to the fisheries.

> My mother and father were living in extreme hardship. … We fished for about one week and I managed to save T.shs 6500 (USD 6 in June 2005). … I took the money home and on that day the whole family was able to get good food, which made me receive blessings from my parents. I returned to the lake and joined fishing forthwith. … I therefore joined fishing because I felt that I could get fish easily.

We learned that the parents were old and inactive, and they could not undertake agricultural activities effectively or involve in other activities. They had to be taken care of by their children. The blessings and joy he received inspired him to like fishing. He said that at times his parents did not have enough to eat. They lived in a grass-thatched house with a leaking roof and holes in the walls. He went to a friend of his who had a beach seine to ask for help to address his parents' situation. He was promised that the only help he could get was to take him to the lake to fish.

Another fisher said: "I grew up in a fishing community – not Nyakasenge – and therefore liked the activity." There were other fishers who also told us that they were born in fisher families and grew up seeing their parents and grandparents fish, so fishing became more admirable as they matured.

Another fisher explains:

> My father was a civil servant in addition to owning a fish boat and fishing gear. … He asked me to take charge of supervising the fishing activity, thus I decided to join fishing as a means of engaging in an income-generating activity.

Fishing to this person is a family activity. He decided to be engaged in it because of benefits it had brought to his family.

Another fisher had this to say: "I observed a neighbour fisher come home well dressed; he brought enough fish and was able to build a burnt brick house." He explained how he felt fishing was a means of improving his welfare and how he had seen his neighbor live from it for so long. To him, fishing seemed to be something that was enjoyable and fulfilling.

We did conduct a follow-up on these reasons given, by asking whether there are other income-generating activities that they could have chosen other than fishing. We learned during our discussions that most of them had not finished primary education, and so they could not get jobs or pursue income avenues that required schooling. Still, we learned that there are several income-generating activities in the areas that they come from, or they could access besides fisheries. They had opportunities of joining small-scale mining, which attracted young people with similar backgrounds and who were these fishers' neighbors in their home villages.

There was also the business of transporting people and/or luggage on bicycles (locally known as *bodaboda)*. This was an activity that had steadily gained momentum since the late 1990s, and some of those who started this activity had moved from bicycles to motorcycles, an indication that the transport business was developing fast as an attractive employment alternative. Then there was small-scale horticultural farming for items such as onions, tomatoes, and watermelon. We did observe that young people of fisher age have equally ventured into this activity. Thus, during an in-depth discussion, one of the fishers hit the point that was suggested by others in different ways by stating:

> The reality that our education cannot guarantee us a job like yours (he was referring to us) or a specialized training, we are able to do other things. … Anyone does what he likes according to his heart and mind.

The group discussion revealed that these fishers preferred fishing to other activities. Fishers were generally happy as long as they had the opportunity to fish and live in the fishing community.

6.4.3 Happiness and Satisfaction

Fishing is a risky activity. For instance, the winds and currents that erupt while out fishing can cause capsizing. This risky nature has made fishers adapt to these conditions while out fishing. Being able to maneuver the winds and currents is a delight to fishers because besides receiving a favorable appraisal from fellow fishers at the beach, as we noted, one fisher also told us: "I feel that I have some level of control." Indeed, for the first 6 months that we were in Nyakasenge, there were two occasions on which the local BMU office had to organize a search for fishers who went missing, and only their boat was spotted on the lake. There are also unexplained occurrences in the lake – which fishers refer to locally as *mashetani* (dangerous spirits). A number of fishers told us that when they are out fishing, at times they see things emerging from the water and then disappearing. They believe that such things can bring bad luck in fishing, make the boat capsize, and even lead to death. Fishers also tell of how they are often attacked on the lake by people who either want the fish they have caught or are simply in need of their fishing gears. We witnessed at least five conflicts that the BMU addressed of fishers who fought for fish while on the lake.

Fishers also agree that fishing provides an avenue for whoever is in it to feel that their contribution is useful and valued. They feel that "everybody has a responsibility when you go out fishing and every person gets equal pay."[4] One day, when we went out to fish with one of the fishing groups (we had hired our boat while the fisher group was in their usual boat), we observed that one boat using longlines had five fishers. The whole group was highly dependent on each other such that without

[4]Incomes differ depending on catch but on average each crew gets between 2,000 and 15,000 (US$1.5 and 11.5) per fishing trip. This is besides an income of over US$30 earned by fish agents.

even one of them, the whole fishing activity would be impaired. We noted that in the boat there is no specific leader, no one tells another what to do, or reprimands the others, or gives commands. There is a driver (the fisher who pilots the boat) who has to ensure that the boat goes in the correct direction. The driver ensures that the boat does not collide with other boats, and that longlines are set in a manner that they do not entangle with other fishers' longlines. There are two paddlers who ensure that the boat moves, while the remaining two are involved in the actual hook setting. These last two cannot set hooks if the boat is not directed and paddled to the fishing grounds, creating a very strong dependency among themselves. Such dependence has encouraged fishers to cooperate both during fishing and at the beach. For instance, when a boat lands, fishers will gather around the boat and together pull it onshore. We also observed how they cooperate during capsizing, and how they search for those who go missing.

We observed that when one fisher is bereaved, all fishers feel obliged to contribute some money to the relatives or loved ones as a means of assisting them to meet the funeral expenses. Fishers are happy that they are not alone during the bereavement period, and in facing the emotional and physical difficulties of life. There is also a by-law in the community according to which all adults contribute T.shs 1500 (US$1.15) whenever a death occurs. Fishers do not want to be seen going against this by-law. In fact, one fisher summarized this by stating: "We have to support one another when we live here because our relatives are far away." He was talking about a cultural practice where the relatives of a person who dies take full responsibility of ensuring that the family members of the deceased are taken care of during and after the funeral.

There was a general consensus among fishers that fishing provides easy food and water. The fish from the lake and the access to water (accessible to all in the village) are important things that fishers typically do not have easy access to in their home villages. Water, for instance, was a major concern for fishers. It was noted by fishers that during dry periods, access to water in their home villages was sometimes very difficult. One of the beach leaders told us that in his village, which is within the district, there are times when they have to wake up very early in the morning to go and line up for water coming from a spring. "You can line up only to miss water when you are just three people away from the water."

In other villages, people buy water from those who have dug wells. But when they come to the lake, he claims: "Water is there for free and in plenty, nobody refuses you from collecting and using water in the way you want." Indeed, we observed that people use water without any restrictions. With regard to fish, we actually observed a practice where fishers give fish for free to fellow fishers, especially if the one being given the fish did not go fishing on that day. We inquired of this practice from several fishers including those who received fish from others. The main reason we were given was that the fish was "the food for that day." However, fishers also claimed that "you cannot refuse fish to a fellow fisher." This is so, because by giving out fish, the fisher is actually saving for a day when he may also not go to fish. Additionally, fish given to non-fishers, who will not pay back, appeared to be based on generosity. Fishers are generally generous despite giving fish for other reasons.

Another day when we accompanied another fishing group on a fishing trip, we noted the joy with which fishers at times do their work. During this trip, the gear and boat owner who is respected for his knowledge in hook fishing accompanied us. He informed us of how they do the actual hook setting, and how it requires knowledge in calculating the depth to lower the hooks. What caught our attention during this trip was the manner in which this group was accommodating themselves on the lake. The gear owner was responsible for setting the hooks; he appeared to do this quickly and accurately. He set 1,500 hooks in a record of 1 h 25 min, whereas, if it were done by his other crew, they would have taken 3–4 h to set the same hooks. His accuracy was in hooking live baits, and throwing them in the lake. Dead baits do not attract Nile perch, so the baits must be able to swim when thrown in the water.

Besides such a level of accuracy and a sign of experience, the group was fishing with extreme enthusiasm, singing cheerfully and looking quite involved. They looked very relaxed like people who were doing something they were best at. Most of the times they would sing, tell stories to each other, and be cheerful. Although they also admitted that not all fishing days are the same, "going into the lake to fish is pleasurable," as one of them put it and others seemed to agree. It is something they said that they always longed for, were excited to do at anytime, uplifted their spirits, and was pleasing to do.

6.4.4 Identity and Meaning

When you meet Nyakasenge fishers you may be led to conclude that they are people who are withdrawn, and do not want to talk openly about what they do at the beach. They want to know what has brought you to their village, thinking more about you in terms of an investigator who is not interested in their fishing, but is only there to look for reasons to deter them from fishing. Or maybe you are looking for some fishers with the intention of arresting them.

But when we lived and interacted with them more often, we saw a totally different group of people. They are people who look at themselves as strong, independent, self-reliant, autonomous, and aggressive, which helps them to confront the risks while out fishing.

> You cannot go to the lake to fish if you are fearful or shy; otherwise you may end up not coming back. … When you are out on the lake, every person needs to make independent decisions.

He was explaining the idea that fishers should be as independent as possible, in as much as they depend upon one another in their fishing activity. One fisher noted: "Those people who some of you think are fishers are actually not fishers." He was referring to the group of gear and boat owners who have advanced loans to others to be able to fish. "We are the fishers!"

"A fisher must be able to confront difficulties, not just sit somewhere and wait for money," he said, gesturing with pride regarding what he had said about who he is.

He went ahead and compared himself to us in a manner suggesting that our physical looks do not show any signs of hardiness or brawn: "Look at how soft your bodies are. You cannot do physical work for a long time like a fisherman can." His fellow fishers responded in agreement by laughing and smiling at such a comparison. What these fishers seem to agree on is that fishing is more than the income that it gives; it is more than employment or taking up a job. Fishing has to do with the characteristics it produces, for which they are pleased to be identified.

One of the areas that we found challenging to discuss with fishers was what fishing means to them. It was challenging to us because fishers could not understand our question, given their assumption that the meaning of fishing should be obvious and not something to be asked about. One fisher said that "fishing is the only activity that I grew up thinking about." He actually stated how fishing is simply his life. "This is what I live from. Fishing gives me the things I need to live as everybody else." He was comparing his life with other fishers he interacts with. Another fisher stated: "It is through fishing that I was able to know what life really is about." He was referring to having matured as a person because he was in the fishery, an opinion that was shared by several fishers we interviewed. Fishing, as others agreed, made them understand what masculinity is all about; it made them realize that they were "real men." One fisher told us:

> When you go to fish and are able to control or subdue the forces in the water/lake to attain what you want, then you feel you are a real man.

They told us that to understand what life means, one only needed to go into fishing. We therefore took time to understand what they meant when they talked about life by going to sea with them and to observe for ourselves what they were referring to.

Life obviously also means being able to eat, have shelter, and dress. The fisher was referring to the guarantee of getting food, water, collaboration, and independence. One fisher explained: "When you are fishing, you are not worried about whether you will eat." He explained how fishing also had enabled him to buy 18 goats, which he exchanged for three cows. With the value that this community places on cows, this fisher feels that by owning cows, he is perceived as being somebody among the community members. He feels that he is highly valued, if not perceived as rich. Fishing has not only given him enjoyment, food on the table, and money in the pocket. It has also made him what he considers himself to be – that is, a person of respect.

6.4.4.1 Remuneration

We did note that the remuneration system in fishing (especially among the crew members and between the crew and boat and gear owners) also makes fishers perceive fishing as ensuring and/or providing equity. While remuneration differs from one fishing group to another, it is basically done through a share system in which boat and gear owners on one side equally share the proceeds for each sale with the crew. Other modes of payment are through allocating days for crew and for gear and

boat owners. For instance, 3 days could be allocated for the crew, and then the next two fishing days are allocated to the boat and gear owners. For those who divide each day's sales, although the share is equal, the boat and gear owners end up getting more than the crew. This is because the crew has to share among themselves 50% of the total income, while the boat and gear owners nest the other 50%.

This remuneration system has guaranteed fishers' equity. They see that each one gets paid according to the agreement, and there is no undercutting when it comes to payment. Thus they perceive fishing as an activity that they can participate in without much fear when it comes to modes of payment among themselves. At this level, they do not fear being cheated by their fellow crew. Moreover, they see each other as equals, sharing what they get, and perceiving themselves to be equally valued.

6.5 Discussion

To an outsider, Nyakasenge fishers could be seen as concentrating on activities that are necessary to meet their short-term, basic needs, and less focused on opportunities that could lift them up from their deprived/poor state characterized by vulnerability because of storms, drought, and robbery, dependency on middlemen, lack of basic facilities such as health care, and income poverty (Béné 2004; Thorpe 2004). These conditions are not unique to Nyakasenge fishers. Non-fishers also suffer from these conditions, as do people in adjacent lake communities (RAWG 2004).

Notably, poverty in small-scale fisheries, like in Nyakasenge, has been understood in different ways. A general perspective has been that poor fishers face conditions in which they lack certain facilities and services that enable them to meet their basic needs (Spicker 1999; Béné 2004; Thorpe 2004). This understanding of small-scale fishers' conditions creates a view about them as experiencing a number of problems and unfulfilled needs. This again raises questions as to how they are able to cope with such conditions (Allison and Ellis 2001). In addition, it creates a perception about small-scale fishers as people who are in need of problem solvers (Mathie and Cunningham 2003).

The needs perspective illustrates how people living in dire conditions, and who are no strangers to adversity and suffering, find their only hope in joining the fisheries – fishing being an occupation of last resort. It also explains how once they are in fisheries, they cannot leave because the available alternative opportunities are less attractive (in terms of incomes) – hence the argument that "they are fishermen because they are poor" (Béné 2004, p. 26; Brookfield et al. 2005).

Although the needs perspective has much to offer, I argue that needs and problems are not the only means through which we can see fishers who are poor. Amartya Sen puts it very explicitly when he says: "Seeing people only in terms of their needs may give a rather meagre view of humanity. … Human beings have needs, but they also have values and, in particular, cherish their ability to reason, appraise, choose, participate and act" (Sen 2009, p. 250).

Indeed, this study has shown that despite the needs of Nyakasenge fishers, the value and meaning of fishing to them both play an important role that defines how

they live their lives, interact with fish resources, and what they cherish in it. This is to say that fishing is more than just looking for a means of sustenance, or simply generating income, fulfilling basic material needs, or finding refuge for their poverty (Béné et al. 2010). Fishing is not even necessarily related to their survival needs. Fishing offers an opportunity for those with hands, head, and legs to explore their potential. Fishers are inspired by factors beyond their survival needs. They join fisheries out of choice rather than simple necessity (Cinner et al. 2008).

Also, the decision to join fisheries indicates that they are not essentially self-interested and short-term maximizers. On the contrary, they seek to achieve a sense of personal power, to act with a degree of freedom (opportunity and process) and autonomy, and to experience the joy and self-fulfillment that comes with it. They appreciate the fisheries for the income they bring. In addition, there are also other very important reasons: satisfaction, happiness, and above all identity and meaning. These reasons are important in shaping their perspective on fisheries, and how they interact with it. For instance, as Pollnac and Poggie argue: "If we expect to reduce fishing pressure by convincing fishers to shift to alternative occupations through provision of training programs, these jobs must provide some of the same non-monetary benefits as fishing" (2008, p. 198). This is also where management strategies and poverty reduction mechanisms should focus. Management strategies and poverty reduction mechanisms should create an opportunity and a process for fishers to do what generates value and meaning to them.

To be connected to others and to be part of a community are other elements that count. This also comes with obligations and responsibility (van Ginkel 2009). Fishing is embedded in the way a community has defined their life (McGoodwin 2001). It is therefore difficult to separate it from the community and its members. The members "are" the community, and the community comes alive in them. Although a fisher is objectively different from his fishing, his fishing also defines the fisher. Thus they cannot be easily separated. Fishing is part of the culture of the community to which the fisher belongs. This bondage between a fisher and fishing makes it hard for a fisher to abandon his activity, because he would have to leave something of himself.

The underlying difference between fishing as an occupation and fishing as culture lies in what the fisher gets from it. As an occupation, the fisher evaluates the advantages and disadvantages on the basis of costs and benefits: the idea of thinking rationally within a framework of a logic of consequence (Elster 1983; March and Olsen 1995; Sen 2002). As a rational thinker, a person is assumed to be thinking more about the outcome, what he expects to achieve, and guiding what he wants to pursue.

Thus, a poor person would evaluate his condition and realize that he would maximize benefits if he joint fishing. Rationality in this case is used as a predictor of actual choice[5] (see Sen 2002, 2009). But when fishing is the only option

[5] Amartya Sen (2009) questions whether rationality can actually be a determinant of actual choice. That rationality is the "disciple of subjecting one's choices to reasoned scrutiny." That reasoning is likely to favor rationality of choice, and consequently favor maximization of what people pursue. Choices are not made by rational, self-interested motives alone. Choices are also defined by fulfillment of social obligations, cultural conventions, and the enactment of routines (Jentoft et al. 1998).

available – sitting idle is not considered an option because the fisher has "capabilities" in terms of hands, legs, and head which he can use – then the issue of choice does not apply.

A fisher will do what is before him and what he has to do. He will do what is expected of him, and what he has committed himself to do and what is therefore his responsibility. He may not even be conscious of the consequences that will follow. He will not follow the logic of consequence. Instead, he will follow what March and Olsen (1995) is termed as the "logic of appropriateness." Fishing will not be an occupation chosen for some particular gain, but something that feels like a "natural" way of life, a life that, given the circumstances of being part of a community where he feels at home, represents the obvious thing to do and one that should be lived. If Nyakasenge fishers did follow the logic of consequence only, then they would have been inclined to join an occupation that has the highest returns, such as mining. Moreover, they would have followed a daily fish-catching strategy that is most profitable to them such as fishing longer hours and improving their gears to make them more effective, but they are not.

On the contrary, the fishers' strategic behavior is both tempered and inspired by cultural norms and values that are prevalent in the community and among peers, in which being a fisher is seen as a person who is able to handle risks, be independent, and maneuver his way while out on the lake fishing, and deciding whether should go fishing or not. A fisher is perceived to be self-reliant, selfless, courageous, and aggressive, and also cooperative, that is concerned about other community members, and is willing to work together with others and to look out for them (McCay 1989; Pollnac and Poggie 2008).

6.5.1 Freedom of Choice as a Central Issue in Assessing Human Life

Fishing as a way of life also demands an understanding of life's opportunities. As an occupation of last resort, fishing is simply an opportunity that a fisher would end up taking out of lack of not only better alternatives but also other alternatives. The poverty condition in which people find themselves, as in the case of Nyakasenge fishers who are considered poor due to their living conditions, compels them to join the fisheries because they cannot take any other decision; it is either fishing or not being able to survive.

This, however, is not the case in Nyakasenge. Despite their deprivation, they have several opportunities accessible to them such as mining, bicycle transport, horticulture, and even fishing. Out of these alternatives, fishing seems to have more attractive pull factors than all the rest. For instance, in fishers' conclusions about the various reasons for joining fishing, they indicated that joining was more related to doing what they like according to their heart and mind given that they have hands, head, and legs (implying that they do not see themselves as poor). In addition, because of those alternatives that are available to them, they also have the freedom

to choose what they want to do and how to live. This is why they have left those other accessible and equally good opportunities to join the fisheries.

The ability to choose "is a valued aspect of living that we have reason to treasure" (Sen 2009, p. 227). Being poor with no other alternative than fishing is a very different situation from being poor but with a variety of occupational opportunities within reach. This also relates to Sen's argument that "[i]n assessing our lives, we have reason to be interested not only in the kind of lives we manage to lead, but also in the freedom that we actually have to choose between different styles and ways of living" (2009, p. 227).

Sen's argument on the ability to make choices is more relevant here because the freedom to make choices is an important factor in explaining actions/behavior. If fishers have the freedom and ability/capability to make choices with regard to how they want to live, they could use this freedom to choose a sustainable fishing life. Sustainable fisheries management demands to be understood not only as involving managing people rather than the fish, as is often the point that social scientists make (Jentoft 1999; Berkes et al. 2001). The issue is also *how* people are managed, whether they are managed in a command and control fashion, or whether they are involved in an interactive process of participation and mutual learning (Jentoft et al. 1998; Kooiman et al. 2005).

Managing people is not as simple as a matter of effort control as argued by biologists and economists. Neither can one manage people as if they are objects and tools. Managing people involves the appreciation that people are also their own governors and stewards of their own lives, families, and communities. Therefore, there are ethical and moral issues involved which cannot be ignored but require a broader understanding of, and respect for, what fishing mean to fishers and the freedom they have in the way they relate to fish (Jentoft et al. 2010). Therefore, fisheries management and even development (Wilson 2003) in this perspective would require a broader governance perspective and approach that is also based on social and cultural variables and indicators beyond those of biology and economics.

Two aspects appear to be very important here in the discussion on choice: opportunity (i.e. those things that we value) and process (not being forced into some state because of imposed constraints). Nyakasenge fishers appear to have both opportunity and process with respect to their choosing how they would want to live their lives. Thus, we can see these fishers not merely from the point of view of their means of living and their livelihood strategies of fishing as an occupation, but through their lives, that is fishing as a preferred way of life. Choices influence behavior and actions (March and Olsen 1995). It is argued here that when choices are made, they are often based on the influence of the community to which the person making the decision belongs. The community sets the rules, duties, and mannerisms for its members. These rules, duties, and mannerisms are morally accepted and perceived as the means through which every community member should behave. Once internalized, the community members view them as good practice, something that individual community members should adhere to.

Second, the idea of decisions being influenced by consequences or appropriateness brings into discussion the issue of responsibility (Sen 2009). When a fisher

considers the consequences of a choice (consequence-sensitive reasoning), he acts according to that choice. When he makes a choice regardless of the consequences, then it can be argued that this fisher is essentially acting in a responsible manner: being able to make moral or rational decisions on one's own, and therefore being answerable for one's behavior.

As Sen argues: "Responsible choices are based on the chooser's evaluation of states of affairs, including consideration of all the relevant consequences viewed in the light of the choices and the comprehensive outcomes associated with what happens as a result" (2009, p. 218). But decisions that people reach and their actions take into considerations not only the good consequences but also what the person *has* to do, regardless of the consequences. That is: "A person not only has good reason to note the consequences that would follow from a particular choice, but also to take an adequately broad view of the realizations that would result, including the nature of the agencies involved, the processes used and the relationships of people" (Sen 2009, p. 219).

This is what we see with Nyakasenge fishers. Fishers feel obligated to the people they are related to, especially their parents, siblings, and significant others. It is not only good but also right to maintain these relationships, comply with what parents are saying, and not be simply idle. This aspect of responsibility is also evidenced in their interaction with the fish resources. To them, their fishing practices are simply the way fishing is supposed to be undertaken. Their choice of gears and fishing times reflects the standard norm for how fishing is supposed to be done and how it is actually performed among Nyakasenge fishers. They assess their fishing lives based on the choices they make, on how to fish but not on the fishing gears they use or fishing times and frequency.

Indeed, the means through which fishers assess their lives could explain why they do not consider themselves poor. They asses their lives, including their poverty status, not only on the basis of their material and/or tangible possessions, but also on the basis of their observations, expectations, and aspirations related to what they can possibly do.

6.6 Conclusions

Management of fisheries, whether economic or biological, has persistently remained an issue focusing on two main questions: (1) How much should be fished? (2) How should it be fished? (Kolding and van Zweiten 2010). The focus on these questions can only be beneficial to those who get involved in fisheries as an occupation or livelihood. Correspondingly, the management of Lake Victoria fisheries draws much from this "how and how much" perspective. Indeed, the management of Lake Victoria has been, and continues to be, focused on effort levels as an important driver for fisheries. Moreover, increasing fishing pressure has convinced fisheries authorities and researchers that overfishing is an important threat to the lake fisheries (Njiru et al. 2005; Matsuishi et al. 2006; LVFO 2008). The argument behind

these two questions – "how and how much" – rests on the concept of sustainable fisheries. This is generally understood to mean a level of fishing that does not result in the loss of a potential yield, or stock components erosion to a point where the stock structure loses diversity and resilience to environmental fluctuations.

This line of thinking follows Gordon (1954), Beverton and Holt (1957), and Hardin (1968), whose arguments in relation to fishing sustainably were built on the exploitation rate of fish resources. But judging from the story of Nyakasenge fishers, the ideas of Gordon, Beverton, and Holt, and even Hardin, are problematic in achieving an effective management of the lake fisheries. This is because the relationship between the fishers and the fish seems not to be driven by factors directly related to the "how and how much" questions (van Ginkel 2009). Rather, the relationship is driven by a desire to live lives that fishers prefer. Such lives are built on fishers' values, norms, and morals, not only concerning the "how and how much" questions, but most importantly the *why* question. Thus, the relationship between the fisher and the fish must be understood from a broader community perspective. This understanding has to relate to how fishers make choices (not to be poor or live in poverty) regarding the way they want to live their lives in the environment that they find themselves and what they aspire to.

Fisheries management should therefore not only focus on the stock status, species diversity, and exploitation pattern and rate but also on human life. For instance, if one would ask about the value of fish, then it would be reasonable to recognize not only the fish as a resource, a food item, and a commercial commodity but also the opportunities that it offers to fishers to build a life for themselves and their significant others in the community. The impact of fishing on fisher's lives should be among the principle considerations in assessing the value of fish and the way fisheries are managed. Fishing is valuable if it also enhances the quality of human life. In a way, this is what Sen argues when he states: "It is, therefore, not surprising that environmental sustainability has typically been defined in terms of the preservation and enhancement of the quality of human life" (see Sen 2009, p. 248). Human life, here, is understood in the context of Nyakasenge fishers, who view values of cooperation, risk taking, autonomy, and being responsible as most crucial in enabling them to live life the way it is supposed to be lived.

Poverty reduction strategies and fisheries management mechanisms therefore need to be re-examined (Berkes et al. 2001; Béné 2003; Béné et al. 2010). Such a re-examination should begin by focusing on the "why" question, rather than the "how and how much." There are other ways in which these strategies and mechanisms can be re-examined. The "why" question would primarily lead to two issues: opportunity and process (freedom) (Sen 2009). Formulation of poverty alleviation strategies and fisheries management mechanisms should be focused on whether poor fishers have an *opportunity* to pursue the kind of life they want, and whether they have the environment in which they can choose to live such a life (*process*) (Sen 2009). Poor, small-scale fishers should have opportunities, such as fishing, in which they can make decisions to be engaged in a manner that allows them to generate meaning, derive satisfaction, and be happy. It is not an occupation which comes with stigma, but also with a policy of making people free of the burden of

being a fisher. This is the policy of providing alternatives to fishing, which is a good thing because it gives people more choices.

Management and poverty reduction should, therefore, be viewed in the context of providing an environment (a process) in which human beings can live their lives. There should be a move from management (in its technical terms) to governance[6] (Bavinck et al. 2005; Kooiman et al. 2005; Jentoft et al. 2007; Jentoft and Chuenpagdee 2009). Such a movement to governance requires development of management-relevant social variables and indicators (Smith 1978) beyond employment, migration, age, and population (Hamilton and Butler 2001). Variables and indicators focus on people's judgments, perceptions, and meanings in relation to their well-being, capabilities, and satisfaction. Such social variables and indicators should capture fisher communities' sociocultural values and qualitative life aspects such as challenge, adventure, cooperation/collaboration, independence, and belonging. The indicators should complement the economic and biological indicators and should be able to guide the management of fishing activities and provide feedback on the extent to which management and poverty eradication objectives are being met.

It is important to recognize that the poor have various capabilities, including the capability to make choices. It is worth noting that it is one thing to choose what one wants to pursue in life, but it is another to be forced into doing something – not forced in the direct way (like by force) but because there is nothing else to do. When forced to pursue fishing, as is argued by the proponents of fishing as an occupation of last resort, fishers are seen to pursue material things of convenience such as incomes, possessions, and livelihoods. This dimension of thinking does not recognize the totality or fullness of human life, which is more focused not only on the means of living, such as fishing, mining, or agriculture, but more so on freedom or particularly opportunities of living. This would be what someone wants, values, and decides to choose. Human life is grounded on preservation and possibly expansion of human freedoms and capabilities, opportunity, and process, on which management mechanisms and poverty reduction strategies should be built.

Fisheries management and poverty reduction strategies should therefore be formulated within a broader framework where values and principles such as the meanings that fishers attach to their fishing, the satisfaction they generate, and the identity they receive are central. Policies should be formulated in a manner that will enable fishers to make sustainable decisions on their own and not force it on them. If management is not built on these fundamental issues about what fishing means to those who fish but on purely technical assumptions with regard to the "how and how much" question as is the case with most fisheries' management strategies, then such management mechanisms are likely to misfire and/or backfire. Fishers may adopt strategies directed at enabling them to live their lives the way they prefer. Such strategies may not be congruent with the management mechanisms at a macro level, therefore leading to misfiring or backfiring of management mechanisms.

[6]Governance is used here in its broader sense, beyond accountability, transparency, rule of law, and vibrant civil society, to include integrated processes of governing actors, and emphasizes on principles, values, and goals that underlie problem solving and building of institutions.

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