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Linking National Fisheries Policy to Livelihoods on the Shores of Lake Kyoga, Uganda

by

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Linking national fisheries policy to livelihoods on the shores of Lake Kyoga, Uganda

By

Edward H. Allison*

Summary

Fisheries policy in Uganda emphasises both development of export-led fisheries for Nile Perch and the need to meet domestic demand for affordable sources of dietary protein. The principal policy objective is to provide for "sustainable exploitation of the fisheries resources at the highest possible level, while conserving the environment". It is envisaged that aiming for this goal will promote "replacement of individual and family fishing enterprises by larger and more commercial operators". Fisheries policy thus shares the PMA objectives of modernisation as a route of poverty, but while the PMA envisages small-scale farmers modernising without substantial restructuring, the implication is that modernisation in the fisheries sector cannot be achieved without structural change. Alongside the modernisation agenda, fisheries policy also emphasises the transfer of management responsibility away from central government and towards communities or community-local government partnerships (co-management).

This paper uses a micro-scale study of livelihoods in three villages on the shores of Lake Kyoga to contribute to a better understanding of the nature and level of poverty in small-scale or artisanal fishing households. The paper aims to understand whether existing and evolving policies are likely to facilitate or hinder peoples' attempts to improve their livelihoods.

Households engaged in fishing are found in all wealth groups, with ownership of fishing-related assets (boats, nets) differentiating wealth groups within the fishery. On average, fisherfolk are wealthier than non-fishing households in the same area. Among the three villages studied, the highest average incomes were found where availability of land allowed fishing and farming to be combined. Secure tenure of adequate land also seems to be associated with stronger community-based natural resource management institutions, better fisheries management and higher incomes from fishing. This suggests that promoting land access and security of tenure in lakeshore villages may benefit both fishing livelihoods and fisheries management.

Rather than pursuing the conventional fisheries modernisation goals of increasing income and efficiency of the catching sector, fisheries development in the region could be best served by addressing the institutional environment that currently makes fisheries-based livelihoods vulnerable and reduces the potential contribution of fishing income to meeting Uganda's poverty eradication goals. Specific areas for policy support are: support for community-based fisheries management that builds on existing institutions rather than replaces them; review of local taxation systems to reduce disincentives to diversification and increase overall revenue generating potential; and designing social support programmes to address specific factors in fishing communities (e.g. unsafe working conditions, high incidence of alcoholism and HIV/AIDS) that make fisherfolk vulnerable.

The evidence from Lake Kyoga suggests that 'family' fishing concerns can be productive elements of the rural economy, and deserve policy support. The small-scale, diversified family or household level enterprises of Lake Kyoga can provide an appropriate model on which to build a fisheries development strategy that will contribute to poverty eradication without radical sectoral restructuring.

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1. Introduction

Global fisheries policy reform takes place in the context of three major governance and policy trends: decentralisation, market liberalisation and sustainable development (WHAT, 2000; Allison, 2001). Uganda's national Poverty Reduction Strategy Plan (PRSP) is strongly grounded in these macro-policy trends (Balihuta and Sen, 2001) and provides the framework for on-going policy and legal reform in the fisheries sector (NFP, 2002).

This paper aims to use a livelihoods study carried out in 2001-2002 to inform the on-going process of policy reform and management implementation in Uganda's fisheries. Using a livelihoods framework for fisheries research has led to a better understanding of the role that fishing plays in the rural economy, which in turn is helping to ensure that fisheries-sector policies are grounded in a good understanding of inter-sectoral linkages (Allison & Ellis, 2001; Allison & Mvula, 2002).

This paper proceeds first by reviewing the role played by fisheries in the Ugandan economy and by outlining recent policy directions in the sector. Sectoral policies are then placed in the context of broader fisheries management theory, to provide a theoretical framework against which to test the assumptions upon which policy is based. This review is used to develop a number of research questions relevant to policy formulation. These are then evaluated with reference to the results of a study of fishing livelihoods carried out in three villages in Kamuli District, on the shores of Lake Kyoga. The paper ends with an overview of the implications of the research findings for Uganda's evolving fisheries policy and the contribution of fisheries to broader questions of poverty eradication strategies in Uganda's lakeshore regions.

1.1 The Role of the Fisheries Sector in Uganda's Development

Uganda's surface area is 22.3 % water and swamp. These 43, 921 Km^2 of wetland provide a valuable source of food and livelihood to the nation. The fisheries of Lakes Victoria, Kyoga, Albert, Edward and George, as well as around 160 minor lakes and the Nile river system, are integral to rural nutritional security, as well as providing sources of income to households, tax revenue to local authorities, and export revenues to central government.

Artisanal fishermen, estimated to number 136, 000 in 1997, wholly dominate Uganda's fisheries (NFP, 2002). Over 700,000 people are said to be involved in related activities – e.g. artisanal fish processing, fish trading and boat-building; industrial fish processing, fish net making, fisheries research, extension and administration. Thus, with a total labour force (males and females aged 15-54) of 8.8 million (1995 census), almost one in every ten Ugandan workers is involved in the fisheries sector.

There is a strong fish consumption tradition in most of Uganda (with the exception of people in the North and West). Annual average per capita consumption in recent years is estimated at 10 kg, which accounts for more than 50% of the animal protein intake of an average Ugandan diet (NFP, 2002).

Nile Perch exports netted US $ 78 million in 2001, excluding substantial unrecorded cross-border trade. The fisheries sector's share of the GDP was estimated at 2.2% in 1999 and has increased to **xx** in 2001 thanks to the lifting of a recent EU trade ban due to concerns about product quality. Recreational fishing for Nile Perch also contributes to the development of Uganda's tourism sector.

The current fishery is dominated by three species, or species groups, with distinct capture technologies and markets associated with them. There is a gillnet fishery for large Nile Perch, (*Lates niloticus*) most of which are destined for the export market. There is also a gillnet fishery for the smaller tilapia (*Oreochromis niloticus* and other *Oreochromis* sp), much of which is sold fresh in local and regional urban markets, and a national and regional market for *mukene* (*Rastrineobola argentea* - known as *dagaa* in Tanzania and *omena* in Kenya), which is fished with small-mesh seine nets (even using mosquito net mesh). *Mukene* is marketed mostly in dried form and supplies domestic demand from lower-income consumers. These fisheries interact both technologically and biologically: Nile perch feed on *mukene*, and small-mesh nets targeting *mukene* will catch juvenile Nile perch and undersize tilapia, thereby conflicting with management objectives for those species, where management for stock sustainability is dependent on setting minimum mesh sizes to allow the smaller, immature fish to escape. The distinct markets for each commodity mean that the sometimes conflicting needs of each fishery need to be balanced to deliver optimal benefits to the nation as a whole. While policy can specify relative priorities for each sub-sector of the fishery, implementing these priorities in practice is difficult and compromise inevitable.

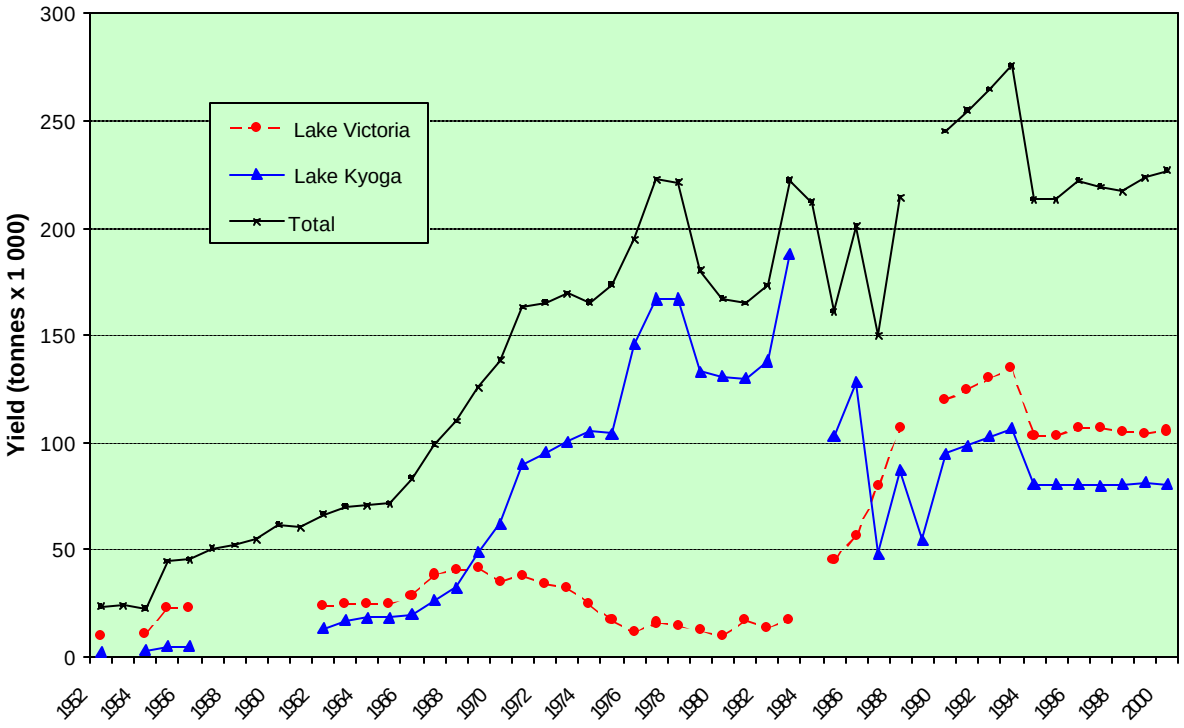


Figure 1. Fish yield statistics for Lakes Victoria (Ugandan portion) and Kyoga and total landings from all Ugandan waters, 1952-2000. (Sources: Twongo, 1992; Uganda Department of Fisheries Resources, Uganda Bureau of Statistics)

The flow of benefits from fishery resources is threatened by environmental degradation and indiscriminate or excessive fishing pressure. In recent years, the rapid increase in fisheries yields seen in earlier decades has halted (Figure 1). As yields level off, or even decline, the spectre of overfishing is raised (this is defined and discussed further in a later section). Lake Victoria's fisheries did not boom until the mid 1980s, when the Nile Perch, introduced to the lake over 20 years earlier, became the target of newly commercialising fisheries. By the mid 1990s, catches had levelled off, and have apparently been stable over the last 8 years.

Fish catches in Lake Kyoga had increased following establishment of two introduced or exotic species (Nile Perch and Nile Tilapia - *Oreochromis niloticus*) in the 1950s. By the 1960s, these two species comprised over 80% of the Kyoga commercial catch. Total fish yield increased from about 18,000 tonnes (25.5% of national total) in 1964 to 167,000 t (73.4% of national total) in 1978, and have since declined, with fluctuations, to their present levels. Catches declined dramatically by the mid 1980s, reportedly due to heavy beach seining of Nile Perch. Nile tilapia continued to be harvested at a high rate for some years thereafter, and supported extensive export traffic to Kenya, before the combined effects of civil unrest, fishing pressure and the spread of water hyacinth induced a severe curtailment of fishing operations (FAO, 1999; Odongkara and Okaronon, 1999). Civil unrest and water hyacinth have both receded, and the fishery staged a recovery to levels just over 100,000 tonnes in the early 1990s, to settle at around 80,000 tonnes for the last 8 years.

In 1994 (Ogutu-Ohwayo, 1999) the catches from Lake Kyoga were dominated by tilapiine cichlids (63% of total catches, mostly the introduced *Oreochromis niloticus)*, and Nile perch (29%), with lungfish (*Protopterus aethiopicus*, 5%) and various large and medium-sized catfish, mormyrids and cyprinids making up the rest. No catches of *mukene* were recorded, and the use of small-mesh seines (including mosquito netting) to catch this species apparently did not start until 1995, although this fishery had been operating for some time in Lake Victoria. It is possible that a fishery for small fish existed but did not get recorded. Recent information on catch compositions for Lake Kyoga are not readily available.

The noticeable reduction in inter-annual variability of catches since 1994 may be an artefact of the way statistics are calculated, rather than a real stabilisation of inputs and outputs from the fisheries sector:

> "The existing data on fish catches is deficient in coverage and reliability. The bulk of fish landing sites on the major lakes are not manned for data collection while the minor lakes and rivers are not covered at all. The data does not take into account fish caught and smuggled before landing for records and fish that originate outside Uganda's sector of the shared lakes"
>
> (Odongkara and Okaronon, 1999 p 19).

Although much of the attention of fisheries research and management is focused on the larger, high value species, it is *mukene* that is the most widespread fish commodity. Dried *mukene* has a comparatively long shelf life and can be divided easily into small portions, making it affordable to those otherwise unable to purchase fish. Since the early 1990s, *mukene* has also increasingly been utilized for the production of animal feed, a trend that may well result in an increase in prices for local consumers, a worrying development in the light of its importance as a food for low-income consumers (FAO, 1999). Similarly, by-products of the boom in Nile perch fillets for export include: increased pressure on undersize Nile perch for the domestic market; sale of inferior quality products (e.g. Nile perch 'frames' - the carcass after fillets have been removed - fried or smoked for resale) and increased prices for larger fish in the local market.

The vast majority of Uganda's fish production is from wild or capture fisheries. There was a period of popularisation of subsistence fish farming, promoted with the aim of enhancing rural family diets, which reached its peak in the 1960s, when some 11 000 ponds were reported to be in operation, yielding 800 or 900 tonnes. By the late 1980s, prolonged economic turmoil, civil unrest and a general collapse of infrastructure and public services had combined to reverse the development of small-scale aquaculture to insignificance, before once again beginning to rise, with donor project assistance, in the 1990s from 50 to 200 t between 1990 and 1997 (FAO, 1999).

1.2 Fisheries Policy Reform in Uganda

Given the importance and diversity of the fishery sector, sustaining the flow of benefits from fishery resources and directing the allocation of those benefits is a matter of some national priority. Uganda has a new fisheries policy to try to achieve sustainability and distributional equity goals. This policy, (NFP, final draft dated June 2002) is currently being reviewed prior to formal approval, so the synthesis of its content presented here must be considered preliminary.

Uganda's fisheries policy is a detailed and well-structured document that provides clear overviews of the issues that inform policy statements, and is especially clear on assigning roles and responsibilities to different actors and institutions. The overriding policy vision is of "sustainable exploitation of the fishery resources at the highest possible levels" (NFP, 2002; p6). In this respect, it has a much clearer goal than many other fisheries policies in the region, which simultaneously aim to maximise production, employment and revenue generation. These other policy targets are present in the policy, but it is recognised that they must be achieved within the stated production-maximisation goal, not as well as it. Indeed, it is implied that meeting production targets may involve reducing present levels of employment in fishing, although this is not explicitly stated, nor is a strategy for capacity reduction identified.

The projections for production targets may be a little optimistic: at no point has Uganda's (recorded) capture fishery yielded more than 275,000 tonnes a year (in 1992) and current production is around 220,000 t/yr, yet a production target of 380,000 tonnes is proposed. Producing the extra 160,000 tonnes required is considered feasible only if aquaculture production is dramatically increased in the next 15 years, coupled with improved management of capture fisheries. Some yield gains may be possible through improved management if current fishing effort is in excess of that required to produce the maximum sustainable yield (MSY – see Box 1) and improved post-harvest handling can be achieved to minimise losses through spoilage.

The Plan for the Modernisation of Agriculture (PMA) provides a strong supportive environment for the National Fisheries Policy's modernisation imperative, while the Public Sector Reform and Decentralisation policies are supportive of the devolution of management responsibilities to communities, allowing movement away from "the old style of central command and control" (NFP, 2002, p20). Various environmental legislation supports the sustainability of fish stocks (e.g. The National Environmental Management Policy (1994); The Wildlife Policy (1995) and the National Wetlands Policy (1995). PRSP and PEAP emphasis on poverty eradication is reflected throughout the document, as are commitments to gender and equity issues, with emphasis on empowering women and youth in devolved fisheries management structures. The policy also meets a clear institutional need to separate enforcement and extension – it proposes that the fisheries extension serviced shall operate under the proposed National Agricultural Advisory Service (NAADS). Linking fisheries and agriculture more closely makes sense from several perspectives, as the research findings will demonstrate.

The Fisheries policy espouses three key principles that reflect the FAO Code of Conduct for Responsible Fisheries (1995), a voluntary code which is having a big influence on shaping sovereign states' fisheries policies around the world (Allison, 2001). These principles are:

- Sustainable development – inter-generation equity and intra-generational equity
- The Precautionary Principle – scientific uncertainty should not be reason for delaying the introduction of necessary stock conservation measures
- The User Pays Principle – the introduction of new and sustainable funding mechanisms for resource management, including self-financing for Community based Organisations (CBOs) and their local government partners.

The specific policy objectives are:

- to ensure that fisheries resources contribute to sustainable rural livelihoods and poverty alleviation;
- that partnership between local government and community-based organisations is promoted and supported;
- that fisheries resources contribute more to local government and community revenues and household incomes;
- the involvement of women, youth and less advantaged members of society in fisheries resources management is advanced

(NFP, 2002, p24)

These objectives are backed up with a sanguine assessment of the difficulties to be confronted with implementation, including the complexity of 'community', and the current capacity limitations of local government institutions. A fisheries sector operation plan is currently being drafted to address identified needs (J.Scullion, ILM project, pers. Comm., March 2003).

Policy documents are of course the result of compromises and struggles for influence by different interested parties. These tensions, which are most significant in setting an overall vision for the sector's development, emerge in apparently contradictory statements about social inclusion and poverty targeting on the one hand, and a more aggressive modernization agenda on the other:

> "In general, the direction of change towards the industrialisation and modernisation of the fisheries sector promotes the replacement of individual and family fishing enterprises by larger and more commercial operators where this can be achieved in a sustainable manner"
>
> *(NFP, 2002, p9).*

Among the more radical modernisers are the Uganda Investment Authority (2002), which actively promotes foreign investment in the fisheries and fish farming sector, citing Uganda's vibrant, fully-liberalised economy, access to regional and international markets, abundance of natural resources and availability of a highly trained labour force as among the attractions to potential investors. The fisheries sector has been a remarkable success, with export earning increasing from less than US 1 million to over US$60 million in the last decade, constituting 8.5% of the country's export revenue in 1998. Although about 67% of fish caught are consumed locally as dry or smoked fish, the emphasis is on the export and industrial sectors with substantial tax relief incentives available to investors (UIA, 2002, Tables 4 to 6).

The tensions in development visions for the sector arise partly from contested understanding of the current contribution of fisheries to the wider rural economy and the paucity of information on the relative poverty-status of fishing households, particularly in lakes other than Victoria. It is this information gap that this paper begins to address.

The fisheries sector in many ways reflects the state of understanding about much of the non-farm rural economy (NFRE). In a policy review of the NFRE in Uganda, Marter (2002) notes the general tendency to under-report and under-research the rural non-farm economy. The diverse non-farm activities undertaken are often part-time or secondary sources of income, assumed to be mainly undertaken by the poor, often judged 'traditional and artisanal' so that the NFRE is seen as neither "modern" nor presently subject to significant growth and dynamism (Marter, 2002, p5).

The Fisheries Policy also shows evidence of resistance to complete devolution of power and responsibility to local government and community level. This is evident in some of the existing legislation that supports the policy. Until recently, the colonial Fish and Crocodile Act, revised in the early post independence period (1964 and 1967), provided the legal framework for fisheries governance in Uganda. It is typical of fisheries legislation of the period, emphasising

state control over all aspects of the fisheries sector, from controlling access to the resources, setting and enforcing technical regulations and controlling the distribution and marketing.

Tumushabe (1999 p 235-236) points out that Article 180 of the 1995 National Constitution, which set out Uganda's decentralisation policy, allows for retention of responsibility by central government for enacting national legislation and formulating national policies, and goes on to say: (p 236). "…the basic instrument for regulating the harvesting of the resource is licencing. It is our opinion that at no cost should it be delegated to local authorities unless appropriate monitoring, supervision and control mechanisms by central government are in place..". The question of the current competency and willingness of communities to regulate access to resources is also raised by Geheb and Crean (2003, p105): "It is unlikely that government efforts to stem the tide of inflowing [fishing] effort will succeed, and even less likely that communities will be willing to control this insofar as it represents a violation of livelihood claims ... the community-level administration and perceptions of the resource base [on Lake Victoria]…rarely, if ever, yielded conservation outputs relevant to the fishery".

Differences in opinions on policy emphasis between decision makers and advisors are only part of the story. At the implementation level, there is clearly some way to go in terms of reconciling oppositional attitudes between officials and fisherfolk. In an otherwise sympathetic account of the problems faced by the fisheries sector on Lake Kyoga, presented at a multi-stakeholder forum on the lake in 1998, a fishery officer's frustration surfaces when he describes fisherman as, among other things, "excessively greedy, myopic, conservative, and unpatriotic" (Kiiza, 1998). The feeling is mutual: "[Fisheries assistants] behave like policemen and in so doing the fisherfolk learn to avoid them and continue breaking the law" (S. Kamuturaki, chairman, UFFCA, 1998; p71).

These issues of institutional arrangements, effectiveness and attitudes are investigated further through this research, as they are important in understanding how decentralised fisheries governance might proceed.

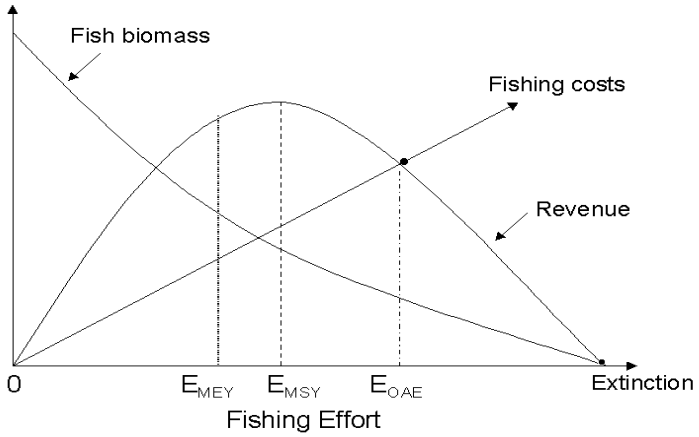
1.3 Fisheries management theory and narrative

In order to shed light on the debates around fisheries policy and governance reform in Uganda I introduce two of the major concepts informing management of small-scale or artisanal fisheries. These are the concepts of maximum sustainable yield and open-access equilibrium and the related 'tragedy of the commons'.

Uganda's fisheries production and modernisation goals are based on the concept of achieving maximum sustainable yield (MSY) with some consideration of the need to increase the efficiency of doing so (i.e. to aim to maximise profit). The basic requirement for sustainable capture-fisheries management is that at the end of each fishing year, sufficient spawning-stock of fish should remain in the water to sustain future harvests. The Gordon-Shaefer bioeconomic model and its derivatives quantify this principle (see Box 1). The model also provides target reference points for policy and management. These reference points have, in the past, been set by government, with 'command and control' style regulation through limited licensing and a host of other input, output and technical control measures. In recent times, it has been suggested that the responsibility for effort limitation to achieve MSY or other target reference points is best vested in those responsible for harvesting –the fisherfolk themselves. This has led to the current interest in community-based management.

Box 1 – Uganda's fisheries policy targets in relation to standard fisheries management theory – the Gordon-Shaefer bio-economic equilibrium model (e.g. Charles, 2001).

This model proposes an equilibrium between catch and fishing effort, so that fishing effort (E) can be regulated (e.g. through restricted licensing) to achieve a maximum sustainable yield (MSY), maximum economic yield (MEY) and related targets. Failure to regulate fishing effort is thought to lead to a situation where fishing effort tends towards the point where economic returns from the fishery equal the costs of exploiting the resource – the 'open access equilibrium' (OAE).



- Uganda's fisheries policy vision (NFP, 2002) implies that the primary target for fisheries management is to achieve MSY, with MSY from capture fisheries estimated at around 300,000 tonnes. The effort level required to achieve this is unknown, reducing effort regulation through licensing to guesswork.
- By setting a target catch of 300 000 t for capture fisheries and stating that it can be achieved by better management, it is being assumed that the fishing effort is currently too high and the fishery is currently positioned on the descending part of the yield curve (to the right of E_{MSY}). Reducing fishing effort until E_{MSY} is achieved will therefore increase total yield to the fishery.
- If modernisation or maximal efficiency goals are to be simultaneously realised, then this implies lowering fishing costs, or capping effort at lower levels to maximise profitability (E_{MEY})
- Reducing fishing effort to meet MSY or MEY targets implies reducing the number of people involved in fishing, or the amount of time they spend fishing. It is difficult to reconcile reduction of effort and promotion of efficiency and modernisation with the social goals of supporting the livelihoods of vulnerable (i.e. less efficient) groups in the fishery.
- The situation where fisheries can no longer generate an income (E_{OAE}) is thought to arise when there is a complete lack of regulation. It is this situation that is characterised by a fishery sector whose participants are 'the poorest of the poor' who fish for subsistence only.
- This study will make reference to these ideas when discussing the experiences of fisherfolk, as described in the livelihoods study.

Although the MSY model is often criticised (e.g. Allison & Ellis, 2001) because it assumes perfect and instantaneous feedbacks between catch and increased effort and a steady-state ecology, it persists as a useful qualitative descriptor of some basic principles, even if it is not so explicitly used in management as it once was. What the model does not include is the opportunity costs of other potential activities and the transaction costs of fisherfolk taking up those activities. It is these important considerations that livelihoods analysis addresses, at least qualitatively or conceptually.

Hardin's vision of a 'tragedy of the commons' (1968) forms part of the worldview of most fishery managers. Yet the belief that people will collectively overexploit common pool or open access resources, because it is individually rational to do so, co-exists happily with a naïve and idealised promotion of community-based management - the foundation of which lies in a complete refutation of Hardin ('The benefits of the commons', Berkes et al, 1989). The 'tragedy of the commons' view of common resources and the 'vicious cycle' of poverty, population growth and environmental degradation, come together in views of the problems inherent in small-scale fisheries in developing countries.

For the last 40 years, conventional narratives have suggested that fisherfolk are, on average, poorer than other rural dwellers. It is often stated that in areas with access to coasts, lakes, rivers and floodplains, the rural poor turn to fishing if they have no land to farm, no capital to invest in business, no skills to sell, and insufficient education to pursue urban-based or more lucrative rural non-farm livelihoods. Fisheries are thus often characterised as an 'occupation of last resort', and fisherfolk classed as 'the poorest of the poor' (Smith, 1979; Christy, 1986; Pauly, 1997). An image of small-scale fisherfolk in developing countries as being trapped in poverty has prevailed among fisheries development and management agencies, as this quote from an FAO report illustrates:

> *"Lack of occupational and geographical mobility may result from long isolation, low formal education, advanced age, preference for a particular way of life, cultural taboos, caste restrictions, inability to liquidate one's assets, indebtedness or just lack of knowledge and exposure to opportunities. The consequence of immobility is that fishermen may continue fishing even if they earn far less than their opportunity costs.*
>
> (Panayotou, 1982; p20)

A further dimension of poverty and vulnerability in fishing communities lies in the common perception of fisherfolk's dissolute lifestyles. Tales of habitual drunkenness and expenditure of substantial portions of their cash income on *waragi* and prostitutes (and consequent high risk of being infected with and spreading HIV/AIDS) abound both in the literature (e.g. Hemrich and Topouzis 2000) and in the discourses of fishery officials.

Fisherfolk are thought to be poor because their poverty causes them to overexploit their resources. The usual explanation for the overfishing of developing countries' coastal and inland fisheries has been thought to result from the irreversible flood of the rural poor into 'open-access' fisheries, resulting in increased fishing effort, declining resources and catch rates and the eventual dissipation of resource rents (see Box 1). Furthermore, the fact that this influx comprises 'non-traditional' entrants to the fishery (ie those with no intergenerational interest in the sector) is thought to have undermined traditional forms of aquatic resource management. This whole process has been termed 'Malthusian overfishing' (Pauly, 1997). Because it fits neatly with a number of preconceptions it has driven policy on fisheries development without, until recently, any empirical verification. This study provides empirical evidence to test these assumptions about the role of small-scale fisheries in developing countries like Uganda.

1.4 Policy Research Questions

The review in the previous section suggests the following key questions for policy research into fisheries livelihoods in Uganda:

1. What role does fishing play in livelihood strategies in areas where this is an option?
2. Does the current fisheries policy adequately reflect and recognise this role?
3. What is the relative poverty status of fisherfolk, and what are the factors that differentiate the poor and non-poor in fishing communities?
4. What are the effects (or likely effects) of reforms in fisheries governance, principally the shift towards co-management on lakeshore peoples' abilities to sustain and improve their livelihoods?

2. Study Area and Research Methods

2.1 Characteristics of the Study Area

2.1.1 Lake Kyoga

The Lake Kyoga complex opens off the Victoria Nile, north of Lake Victoria, between longitudes 32º 10' and 34º 20'E and 1º 00' and 2º 00' N as an extensive network of shallow open-water areas fringed by papyrus swamps. Open water varies between years and seasons, but is estimated to average 2,700 km^2, from an estimated further 2,000 km^2 of associated swamps and smaller lakes (FAO, 1999). The depth of the lake does not exceed 5.7 m and most is less than 4 m deep. In 1999 and 2000, Lake Kyoga accounted for 35% of Uganda's fish landings, second in importance to Lake Victoria, with catches being apparently remarkably steady at between 80,100 and 81,100 tonnes between 1996 and 2000 (Figure 1). As with all fishery statistics from remote areas with multiple small landing stations, these must be regarded as highly approximate at best.

In 1994, Water hyacinth covered 60% of the Kyoga shoreline to a width of 5-15 m (Twongo and Ochieng, 1998), this has subsequently been displaced, through ecological succession, with the native hippograss., and water hyacinth is no longer a significant issue in Lake Kyoga. Fringing areas are important as nursery and spawning grounds for fish and are threatened by conversion to agricultural land, drainage, brick-making, burning, deforestation and erosion caused by lake-level variation – including the El Nino event of 1997/8 (Ssemwanga Centre, 2001).

Lake Kyoga was selected for this study for several reasons. It has been much less studied than Lake Victoria; it is bordered by districts where levels of poverty are among the highest in southern and central Uganda; and it is the focus on on-going attempts[1] to introduce a fisheries co-management approach, thereby providing a direct link between macro-policy reform in this area and micro-scale management implementation. Finally, Lake Kyoga is broadly representative of the production systems from which the overall majority of small-scale fisherfolk in Africa operate. Africa abounds with shallow, productive lakes and wetlands in regions rather remote from infrastructure, sometimes neglected in development programmes due to inaccessibility. They include, in West Africa, areas like Lake Chad and the Niger inland delta, or, in eastern and southern Africa, Lake Bangweulu and the Kafue Flats (Zambia), Lakes Chilwa and Chiuta (Malawi), Lake Rukwa and the Kilombero floodplain in Tanzania. Barne (2001) identifies at least 56 areas in Africa that are physiograhically similar to lake Kyoga, having permanently-wet marsh-fringed lakes lying in shallow basins, moderate/high rainfall, used for both commercial and subsistence fishing and subsistence agriculture on the lake margins, cattle grazing on seasonally flooded land, and having relatively dense populations around the shore. While individually, these areas may lack the importance of the African Great Lakes, for example, in national and regional development and environmental protection priority, collectively they represent important sources of livelihoods for millions of the rural poor in

Africa. This paper thus contributes to furthering our understanding of these livelihoods as a pre-requisite for management and development interventions affecting these areas.

2.1.2 Kamuli District Profile

Kamuli District is bordered by Lake Kyoga in the North and covers 4,383 km^2, of which 1,016 km^2 (23%) is under water. The total population in 2001 was estimated (from projection of the 1991 census) at 645,800 people with a growth rate of 3% (1980-1991), which is above the national average (2.5%). The relatively high population density of 146 km^2 (1.7 times the national average) is found mainly in the south and central parts of the district, which have a more humid climate, better soils and better road links to the larger cities. Land available for cultivation represents about 76% of the District area, of which 77% is under subsistence farming. Dominant land tenure systems are customary family and leasehold, and agriculture is the main economic activity (82% of HH heads in the district census describe themselves as farmers). Agriculture is of the Banana/Finger-Millet/Cotton System, with beans, maize and sweet potatoes also featuring. Cattle, goats, poultry are the major livestock activities in this system. The district is also one of the main national suppliers of charcoal and timber (especially hardwood). Wetland livelihoods in northern Kamuli include cultivation (29% of wetland area is cultivated), grazing, fishing, hunting, and source of materials for crafts, medicinal plants, wild vegetables and fruits, fire wood, charcoal, timber, brick-making and water for domestic use and for livestock. (Ssemwanga Centre, 2001). There are an estimated 84,500 taxpayers, and local revenue on average accounts for 10% of total receipts. Key bottlenecks to development identified by the district government are the low tax base, geographical isolation (bounded by water to the north and east), high levels of illiteracy, land pressure and lack of infrastructure. Priority policy goals at district levels are to improve literacy levels, increase access to cost-effective health services and increase agricultural production through improved methods of production and improved marketing infrastructure. Major development initiatives in place in the region relate mostly to infrastructure (schools, hospitals, roads), but there is also support for decentralisation and local government support, and for HIV/AIDS/STD control programmes.

Although it is estimated that as many as 200 000 people depend on fishing for their livelihoods around Lake Kyoga, it is still portrayed as an 'occupation of last resort' for people who lost their agricultural capital during the political conflicts of the 1970s and 1980s (Ssemwanga Centre, 2001). Fishing communities are described as highly vulnerable due to declining catches, which forces them to use destructive fishing methods to ensure short-term survival, to the further detriment of long-term livelihood sustainability.

The fisheries sector on Lake Kyoga has received some development assistance. From 1983-1991 IFAD and the World Bank funded a project 'Support for the Rehabilitation of the Lake Kyoga Fisheries' which established a number of fish collection and processing centres in south-eastern Uganda. The infrastructure established by this project appears to be currently derelict, at least at Bukungu, one of the main landing stations. An artisanal Fisheries Rehabilitation Project (EU, 1987-1991) was not mentioned by respondents during the research. Most other project have been scientific studies or work to support institutional capacity building in the fisheries dept (FAO, 1999). Major on-going initiatives include the ILM Project, which is undertaking a range of activities in support of community based or co-management on Lakes Kyoga and George. These activities include capacity building, training, sensitisation, policy and legal reform and conducting policy and management studies (ILM, 2001a). There is also an ADB-funded programme to improve fish landing site infrastructure, currently on-going.

2.1.3 Study villages

Three study villages were selected following a preliminary site-selection visit in December 2000. These are located in the northern part of Kamuli District, in Budiope county (Figure 2). The lakeshore sub-counties have the lowest population density in the district (<100 persons per sq. km in Nkondo and Buyende, 100-149 in Kidera (PEAP, 2000), but the population (and therefore pressure on natural resources) is concentrated on the immediate lakeshore. A basic description of population, livelihood and production-systems data and market access and social service provision in each village is summarised in Table 1. More detail can be found in the individual village reports[2]

The three villages were selected partly on the basis of varying degrees of remoteness of infrastructure and services that might affect the viability of different types of fishing. The three villages selected also proved to have differing access to non-fishing livelihoods, principally as a result of differing quality and availability of land for cultivation and livestock grazing (Table 1). Land availability was also partly determined by village history: Kiribairya village was founded in 1986 by people fleeing conflict from across the lake, in Teso. The village was founded with support from the Red Cross, but the new immigrants lacked access to land, so fishing was one of the few livelihood options available, although some of the better-off were able to rent land.

Figure 2: Kamuli District, showing the location of the three study villages on the shores of Lake Kyoga. The major landing station at Bukungu is also indicated.

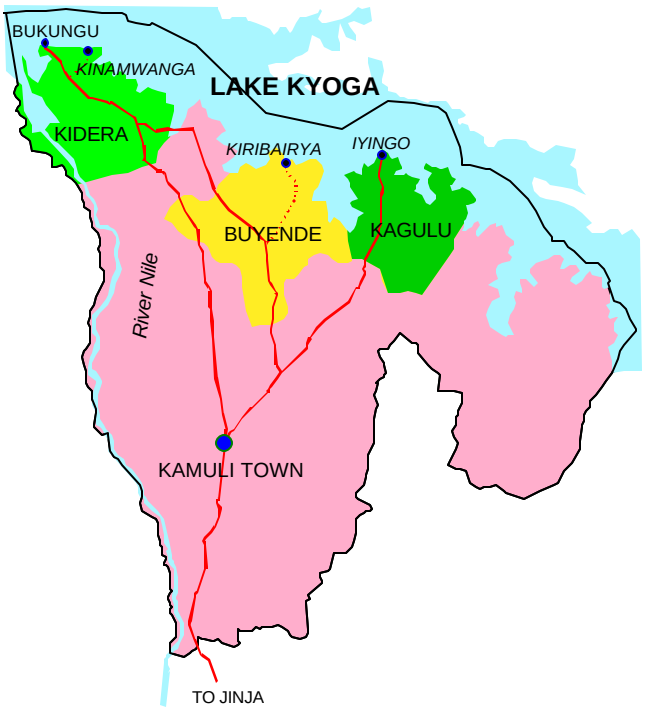


Table 1 – Characteristics of the three Sample villages on Lake Kyoga (Kamuli District, Budiope County). *Source:* LADDER fieldwork, January-April 2001.

Sub-County (LC3)	Kagulu	Buyende	Kidera
Parish (LC2)	Iyingo	Ikanda	Bukungu
Village (LC1)	**Iyingo (Kasozi B)**	**Kiribairya**	**Kinamwanga**
Population	1350	520	715
HHs	174	74	102
Ethno-linguistic groups	Bakenye (descendents of the Baganda) are dominant followed by Basoga and Iteso. Baruli, Basamya and Baganda minorities	Bakenye (44%); Basoga (27%); Banyoro (18%); Iteso (8%) and Jaluo (3%)	Baruli (Banyala) dominant. Other groups in order of population are: Basoga, Bukenye,Banyoro, Kumam, Iteso, Langi and Basamia
Crops	Maize, sweet potatoes, cassava, finger millet,	Maize, sweet potatoes, cassava, finger millet	Maize, sweet potatoes, cassava, finger millet
Livestock	Cattle (meat), goats, chickens and ducks	Cattle (meat), goats, chickens and ducks	Cattle (meat), goats, chickens and ducks
Fish and fishing	Nile Perch, *mukene*, Tilapia; gillnets (often undersize) and seines predominate; mukene is dried, other fish are usually sold fresh to traders	Nile Perch, *mukene*, Tilapia, lungfish; seines predominate, but gillnets (undersize) and traps are also used; mukene is sold dried, and other fish are often smoked	Nile Perch, Tilapia; large-mesh gillnets are the only gear used. The catch is almost all sold fresh to traders
Non-farm activities	Sale of labour, fish trading, transport (bicycles and boats) shop keeping, petty trading, restaurants, brewing	Sale of labour, fish trading, transport (bicycles and boats) petty trading, brick making, firewood, brewing	Sale of labour, fish trading, transport (bicycles and boats) petty trading, brick making, firewood
Road Infrastructure	At end of well graded Iyingo-Kamuli road. It is also a key landings tage for boat transport to Teso	An extremely badly maintained feeder road links the village to the main rural access roads	Located at the end of a reasonable feeder road
Schools	Primary: 1 km out of village	Primary: 2 km out of village, Secondary: 12 km	4 km out of village
Health Clinic	Several drug shops in village: one provides maternity services. Health clinic *km away	Drug shop in village, health clinic 12 km away	Drug shops in village: one owned by nurse who also gives treatment. Health clinic 15 km away
Water Supply	Borehole & lake	Borehole & lake	Borehole 1km away & lake
Shops, trading Centres and markets etc	Large trading centre and police post in village, large weekly market just outside village	Small trading centre	Small trading centre in village: large trading centre 4 km away
Common resources	The lake and fringing wetlands, pasture land, rocks for drying fish	The lake and fringing wetlands, no access to common grazing land	The lake and fringing wetlands, some pasture land, road and village paths
Land tenure	Men own land; women have access through their husbands; sons inherit their father's land; land can be rented by men or women.	Hiring of land for cultivation is the most common method of access as the population are immigrants with land ownership very uncommon	Most land is acquired through inheritance – by both sons and daughters; there is a growing land rental market; land may also be purchased; Although people say their land is private, they do not have land titles

2.2 Village-level research methods

The village-level field research took place between January and April 2001, and consisted of both qualitative PRA/RRA-type research, and a quantitative household survey. The qualitative research investigated how access to assets is modified by social relations, institutions and organisations. The methods used included wealth ranking, focus groups, key informant interviews, institutional mapping and ranking of organisations' effectiveness. Trends and shocks were analysed by documenting experiences described in focus group discussions.

The survey team did not include a fisheries specialist, but a number of questions related specifically to fishing were asked. These questions related primarily to the role of fishing in the village, and the areas and seasons fished and type of fishery pursued; regulations, access and management issues, particularly around compliance, enforcement and effectiveness of state-regulations and on any traditional or nascent community-based regulations and management systems. The initial research left some gaps in understanding of the history, and role of fishing in livelihoods; these were followed up through additional fieldwork conducted in January 2002.

Quantitative household income and expenditure surveys were also conducted. Because these were not specifically focused on fishing, the level of detail of fishing-related questions was sufficient for the purposes of this research – i.e. to elucidate the overall contribution of fisheries to lakeshore livelihoods - but not sufficient to enable detailed analysis of sustainability and economic profitability of individual fisheries (e.g. *mukene* versus Nile perch).

In each village, 35 HH were selected for interviewing in the sample survey. A community wealth-ranking exercise was first conducted, and village households subsequently divided between poor, middle and well-off categories. With a list of households in each income-wealth group, a sample was taken form each group, comprising 10 HH from each of the well-off and middle categories, and 15 HH from the poor category. While this sample was random in other villages, in Kamuli, it was stratified within each category to ensure that both fishing and non-fishing households were sampled in roughly equal proportion. This was to provide the basis for comparing incomes between fishing and non-fishing households.

In order to compare asset values across households, a specific fishing assets index was computed (see Box 2)

Box 2 – Method for calculating boat and fishing gear asset values and asset index used in comparative analyses of fishing household asset status

Boat or gear assets = No. owned (per type) x 5% trimmed mean current cost (per type) obtained from respondents (triangulated with fishery officials where possible)

Some adjustments made:

- Rented boats not included as assets on assumption that renting/labouring is similar to sharecropping land.
- For joint ownership of boats (1 case only), no further evidence of share proportions/basis on survey forms, so asset simply halved.
- If a boat owner did not specify the number of boats owned, then he/she was assumed to own one only.
- Gear asset value was calculated on a similar basis, except that missing gear nos. substituted with mean value (per type – e.g. gillnet)

Boat & gear asset index for comparative purposes calculated by standardizing as follows:

- (HH value/max value in sample) x 100

Within households, individuals were also interviewed and their summary life-history profiles recorded. This enabled a range of personal experiences of involvement in fishing in Uganda to be brought out, and proved particularly useful in understanding issues of access, motivation to enter the fishery sector, and the factors that led to successful or unsuccessful livelihood trajectories. These interviews were also conducted with migrant fisherfolk that would have been missed by the village-based household survey approach.

More details of the methodology can be found in the LADDER methods manual for Uganda.

3. Research Findings

The main conclusions of the village and district-level research are presented under sub-headings corresponding approximately to the main components of the livelihoods framework. We emphasise what people have, what they do, what mediates their activities and the resulting outcomes in terms of relative incomes, and potential income and livelihood trajectories.

3.1 Asset profiles of fishing and non-fishing households

Asset profiles can be used in several ways, but commonly, those capital assets that are relatively easy to quantify - physical and financial assets and some forms of natural capital (e.g. livestock, land) are used as wealth/poverty indicators, while measurable forms of human capital (e.g. health status, educational level) are sometimes used as proxy indicators of capabilities. The asset status of households have proved to be a powerful means of identifying key differences between the poor and better off in rural Uganda (Ellis and Bahiigwa, 2003).

In the livelihoods framework, assets also provide the platform upon which subsistence and income-generating strategies are built, so that identifying the range of assets available to households provides a partial indication of the range of options available to that household.

Table 2 summarises the overall mean and median of selected household assets in Kamuli, split into households that regard themselves as being engaged in fishing (through asset ownership or provision of labour) and those that do not[3]. The figures are derived from wealth-stratified sampling, so that they cannot be considered as village-level means (and they have larger standard deviations than would result from random sampling), but because the samples were stratified in the same way in each village, they do provide a comparison of relative asset holdings in the between the sample villages and between fishing and non-fishing households. The key observations are:

- Fishing households tend to be slightly larger than non-fishing households, although the difference is not significant
- Both fishing and non-fishing households in Kamuli own similar amounts of land, with mean land holdings being much lower than in other districts.
- The relative value of 'tools' (agricultural implements, bicycles etc) is low in both fishing and non-fishing households in Kamuli, relative to other districts.
- There are no significant differences in the level of education received in any of the sampled villages, although fishing households tend to have slightly higher total years of education than non-fishing households.
- Mean levels of livestock ownership are relatively high compared to the land-constrained Mbale District, but similar in fishing and non-fishing households in Kamuli and Mubende. However, median livestock ownership is low in all the samples, and is actually highest in

Mbale. This illustrates that ownership is highly skewed, with a few individuals in the samples for Kamuli and Mubende owning large quantities of livestock. This is not unexpected, as both Kamuli and Mubende are herding areas, while Mbale is not.

- Of the 32 households in the Kamuli sample of 108 HH, three that describe themselves as non-fishing HH actually own high levels of fishing assets. These three households are the only ones in the sample that owned fishing boats but had no member of the family involved in actual fishing.

Table 2: Mean and Median of selected Household Assets, with Kamuli District split into HH involved in fishing and those not.

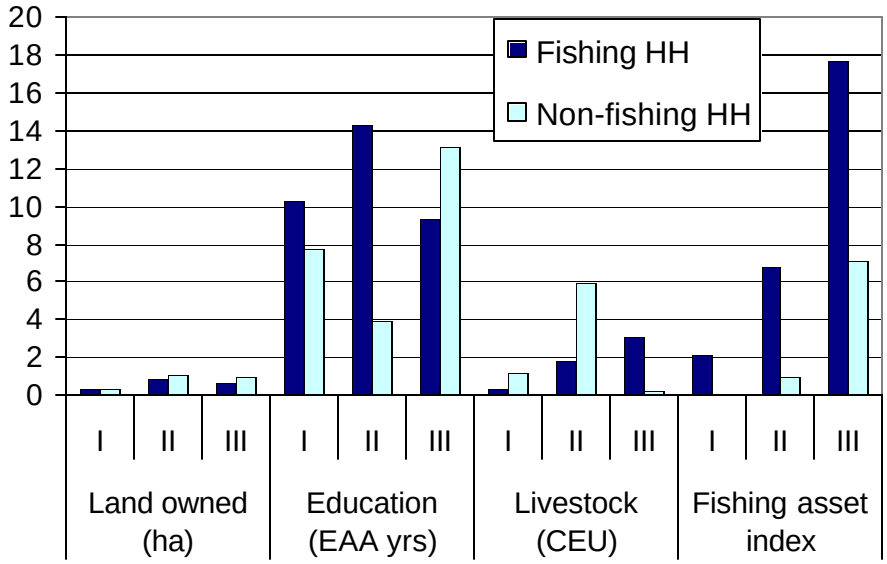
		District split by fishers				All
		Mbale	**Mubende**	**Kamuli fishing**	**Kamuli non-fishing**	
	N	*105*	*105*	*53*	*52*	*315*
HH SIze	Mean	5.62	5.34	6.15	4.90	5.50
	s.d.	*3.00*	*2.54*	*2.75*	*2.69*	*2.77*
	Median	5.0	5.0	6.0	4.5	5.0
Area owned (ha.)	Mean	1.55	2.09	.65	.69	1.43
	s.d.	*2.34*	*2.26*	*1.22*	*1.33*	*2.09*
	Median	.8	1.4	.0	.0	.8
Tools	Mean	13.95	14.22	2.51	3.04	10.31
	s.d.	*16.45*	*17.45*	*2.14*	*6.82*	*15.08*
	Median	8.9	10.2	2.3	1.4	8.1
Education	Mean	10.48	9.15	11.09	7.33	9.62
	s.d.	*8.60*	*7.73*	*7.79*	*6.54*	*7.93*
	Median	11.0	8.0	11.0	7.0	8.0
Livestock	Mean	1.30	2.17	2.16	2.66	1.96
	s.d.	*1.77*	*6.29*	*4.83*	*9.19*	*5.65*
	Median	.5	.4	.3	.1	.4
Boats and gear	*N*	*0*	*0*	*29*	*3*	*32*
	Mean	.	.	20.51	27.06	21.13
	s.d.	.	.	*20.62*	*32.66*	*21.37*
	Median	.	.	16.1	16.9	16.1

HH Size: No. of residents (all ages)
Tools: Value based index of tools owned
Education: Total no. of years in education (resident EAAs)
Livestock: Livestock holding in CEUs
Boats and gear: Value based index of boats & gear owned

The overall picture is thus one where fisherfolk are neither deficient in livestock or education compared to other rural dwellers in Uganda, but are land-poor and own few productive assets not connected with fishing.

If we further break down the Kamuli households by income tercile, we observe that the only factor that seems strongly associated with wealth is the ownership of fishing-related assets, with some evidence that livestock and land ownership are both associated with the wealthier groups (Figure 3), although less strongly so than in purely agricultural areas (Ellis & Bahiigwa, 2001).

Figure 3 Mean asset ownership levels (selected assets) by per capita income tercile (I = poorest, III = richest) for Kamuli village HHs.



3.1.1 Links between fishing assets, livestock and land ownership

The role of livestock in the rural economy is worthy of further comment. Ashley and Nanyeenya (2002) identify their importance in enabling saving, a function they perform better than land as they are more available and more easily liquidated. The value of livestock accumulates faster than bank interest and provides products (e.g. draught power, manure, milk, eggs) while being accumulated. Livestock provide both a means of reducing vulnerability (e.g. sale for emergency) or accumulating assets, either incrementally, or for financing planned expenditures (e.g. a fishing boat). They are also used in maintaining social capital; they are frequently shared, lent, borrowed, given as gifts and slaughtered for a range of ceremonies and occasions. Enabling livestock to fulfil these roles could be an important element in maintaining and improving fishing-based livelihoods, without the need to implement credit schemes, which have a poor record in fisheries.

The connection between land ownership and fishery sustainability could also be significant. Taking the three sample villages (Table 3) The great majority of households in the sample survey in Kirbairya do not own any land although some rent, or have untenured access to floodplain land). It is noticeable that lack of land ownership, insecurity of land tenure, poverty and weak institutions for fisheries governance appear to be linked. Kiribairya is the poorest village, has the least stable land tenure, lowest ownership of land, and the least effective fisheries governance, while Kinamwanga, a village that combines farming with fishing, has the highest degree of land ownership, the highest average incomes and the most effective community-level fishery management institutions (see the next section). Interviews indicate that village institutions regulating social behaviour (e.g. drunkenness) are also strongest. These connections seems to have arisen from historical context – Iyingo and Kiribairya have high populations of long-term displaced persons, fleeing the Teso insurgency.

While one must be cautious of reading too much into single exemplars of idealised village 'types', these associations are suggestive of the linkages between access to land, stability of land tenure, and potential strength of CBNRMs to regulate fishing.

Table 3. The percentage of households owning land in the Kamuli District sample

	Village			All
	Iyingo	Kinamwanga	Kiribairya	
	%	%	%	%
None	57.1	20.0	82.9	53.3
< 0.5 ha.	11.4	28.6	2.9	14.3
0.5 – 0.9 ha.	14.3	14.3	5.7	11.4
1-1.9 ha.	5.7	20.0	8.6	11.4
2-2.9 ha.	2.9	5.7	.	2.9
3-3.9 ha.	2.9	.	.	1.0
> 4 ha.	5.7	11.4	.	5.7

3.1.2 Pathways for accumulation of fishing assets

The households that are earning the highest income are earning that income through ownership of fishing-related assets. The interesting question for policy is how these assets were acquired. Qualitative research on life-histories reveal a diversity of detail (e.g. Box 3), but in all interviews, boat owners said they had accumulated most of their capital through working as fishing labour. This rather belies the picture of fishing labourers as being under-paid and exploited (e.g. Asowa-Okwe, 1996).

Box 3 – Asset accumulation pathways of fisherfolk in Kamuli District

Patrick, Joseph and Moses, all in their early 30s, from Soroti. Migrant fisherfolk interviewed in Kiribairya, January 2002

Patrick and Joseph specialise in Nile Perch and tilapia, while Moses catches mukene. All of them started as labourers in the fishery more than 10 years ago but each had accumulated enough capital to buy a boat, between March and October 2001. They came to Busoga determined to work and saved between 30 to 50% of their income. Patrick has land in Serere County, Joseph in Soroti and Moses in Kasiro, where they cultivate cassava, sweet potatoes and sorghum for domestic and cash purposes. Much of the income they get from their current fishing activities are now invested either in livestock or crop production in Soroti, where they normally pay a visit at intervals of three months. They are all of the view that fishing is more profitable than agriculture. In fishing they get money they use daily to meet basic needs, but for agriculture it only acts as a bank

Habib (40), resident boat owner interviewed in Kiribairya, February 2001

Formally a mechanic working in Teso, Habib came to Kiribairya in 1990, fleeing the insurgency. He joined fishing first by going on the lake, helping experienced fishermen and acquiring the skill to fish. Once he had these skills, he was able to sell his labour as a crew member. During the day, he would also work as a bicycle mechanic. Slowly, he accumulated money and in 1998 bought his own boat. Now he owns two boats and has stopped going on the lake himself but employs four people to do the fishing.

The continued viability of accumulative strategies that rely of wages and investment from fishing depend on the status of the fish stocks. In this respect, the measurement of natural capital is incomplete. Although we were able to measure household-level ownership of land and livestock, we were not able to include surveys of fish stocks or other directly used and

depletable common-pool resources (e.g. firewood, charcoal, wetland products). We therefore rely on broader fishery and environmental surveys (often themselves based on poor and limited data) and qualitative data on perceived changes in fisheries obtained through group interviews with resource users and one-to-one interviews with men and women in individual households. All of these point towards reduced fish catches in the last decade, and these are borne out by national-level statistics. One must therefore be very careful not to send the signal that fisheries is a potential route out of poverty for a greater number of people. The challenge for now must remain in allowing those currently engaged in fishing to build accumulative pathways. We next turn to policy and institutional issues to examine how their attempts to do so are being facilitated or blocked.

3.2 Policy and Institutional issues

Fisheries policy at macro-level has been introduced in the earlier sections of this paper and other macro-level policies have been extensively analysed in other papers in this series (e.g. Balihuta and Sen, 2001; Ellis & Bahiigwa, 2001; 2003; James et al., 2001; Francis & James 2003); national-level policy is considered further here only insofar as it relates to peoples' own accounts of their daily experiences. This account instead concentrates on how policy is delivered and mediated through local level institutions, where institutions are defined in the sense of both formal laws and informal rules or social norms.

The research generated a complex picture of village life on the shores of Lake Kyoga, in which the following key themes related to people's abilities to improve their livelihood can be discerned: institutions mediating access to fishing opportunities, access to livelihood support services and taxation.

3.2.1 Institutions mediating access to fishing opportunities

Both official narratives and interview data initially suggest that fishing is traditionally open-access, with ineffectively enforced government rules on mesh sizes and licensing being the only management constraints to utilising the lake resources. Further analysis reveals, however, that there also exist various *de facto* barriers to entry to the fishery. This section considers both barriers in accessing fishing opportunities at all, and the mediating institutions that constrain the activities of those who have already gained access to fishing as a livelihood option.

Gender barriers in the fisheries sector

Access to income-generating and subsistence opportunities in fishing are strongly gendered; going out onto the lake is men's work. As in many fishing cultures, it is taboo for women to go onto the water, so that no women can be found among fishing boat crews. In the strict sense, a fishery that excludes half the potential participants can hardly be termed open access! A few women do fish, for subsistence, in shallow waters from the shore, using baskets. There are, however, many women involved in fishing-related activities, from repairing fishing nets to trading and processing fish. Some women also own fishing boats (5% of boat owners in Kiribairya are women)

Trading *mukene* is the principal fisheries-related occupation for women on the shores of Lake Kyoga. Married women obtain the initial capital for engaging in *mukene* processing and trading from their husbands, who typically provide their wives with UGS 3,500/ (equivalent to 6 basins of *mukene*) at marriage to enter the trade in order to contribute to HH income. Among female-headed households, the capital to engage in fish processing and trading is typically acquired through the sale of local food crops or beer. There are also known, but unacknowledged (in this case) linkages between fish trading and prostitution.[4]

Women's capacity to realise more substantial gains from fishing is thus curtailed by social norms that proscribe female participation in fish harvesting itself. Trading leads to enhanced

status and economic independence by women, and is the most valued of their income-generating activities in Kamuli District (Dolan, 2002, p15). Female Headed Households, which comprised 20% of the sample in Kamuli District; averaged half the level of ownership of fishing related assets of male-headed households, while in the aggregated sample, 60.1% of income comes from fishing and fish trading for men, only 26.2% of women's income derives from the sector (Dolan, 2002). Women therefore still tend to be engaged in less profitable activities with lower entry barriers than men.

Both fisheries policy and the PRSP process are strongly supportive of empowerment of women, and village-level research confirmed that many women feel their position has improved over the last decade, but it is unlikely that fisheries policy alone will address a pattern of labour market segregation that persists in almost all fishing nations. Village-level activity profiles conducted during this research still suggest that while women perform a long list of tasks, from farming to child care, men basically spend their time fishing, drinking and sleeping.

Too many potential fisher(men)?

A key part of the open-access story is the notion that anyone can turn to fishing. While this may be true in theory, there are several factors that could militate against this. The most significant is that rural dwellers that are tied to an area where there is no tradition of fishing are unlikely to enter the sector. Fishing requires skills and experience that are typically taught to adolescent boys in fishing villages. This reduces the potential number of entrants to mostly those people who have some kinship connection either directly to fishing, or who live near or in a fishing village. Being introduced to fishing by their fathers at a young age is a common theme in the life histories of current boat owners and crew labourers, whether they are migrant or resident. (Box 4). Of 15 in-depth life-history interviews conducted with randomly-selected fisherfolk in the sample survey, ten had strong family connections to the fishery and were introduced to fishing mostly by crewing on their fathers' or uncles' boats (in only two of the remaining cases was no family connection with fishing specifically mentioned; the issues did not arise in the remaining three interviews). This suggests that fishing remains at least a partially 'closed' activity, in contrast to the concerns that small-scale fisheries in developing countries have recently been flooded by 'non-traditional' entrants to the fishery (Pauly, 1997).

This continuity of occupation across generations offers some hope that sustainability concerns will find a receptive audience among fisherfolk concerned for the future. However, this is unlikely to be a significant constraint on overall potential fishing effort – the number of men from lakeshore areas in Uganda able to turn to fishing is still likely to exceed the number that can be sustained by the productivity of the resources. The research also indicates that many ethnic groups are involved in fishing activities – the three fishing villages are very ethnically diverse - so that ethnic identity does not pose a significant barrier to engaging in fishing. It is access to capital that provides the most significant constraint on expansion of fishing effort. Entry as anything other than a wage labourer (crew member) requires significant capital outlay for nets and boats. Thus, although the potential labour pool is significant, the actual fishing effort (number of boats and nets deployed) will depend on the number of people with enough money to invest, and the willingness to invest it in fishing (as opposed to other rural enterprises). Barriers to entry in fisheries are thus dependent on the amount of capital in circulation and the profitability of fishing, both in absolute terms and in relation to alternative income generating schemes. We return to the importance of capital as a barrier in later sections of this paper.

Box 4 – Examples of routes to entry into fishing

Francis, 33 years old, Samya by tribe, born in Nakawa of Ntaala parish, Kidera sub-county, started fishing in 1983. His father had boats on which he would provide labour… (Kinamwanga Village Report, 2001).

Kitaka, aged 40, was introduced to fishing by his father at the age of 10… (Kinamwanga Village Report, 2001).

Richard, aged 16 and a primary six pupil was introduced to fishing by his father at the age of 9 years. Currently he engages in fishing during holidays, where he provides labour on this father's boat and is paid just like any other crew member. He uses the money from fishing to buy his school uniforms and other scholastic materials. He cultivates with his mother who controls all the produce from the fields (Kinamwanga Village Report, 2001)

Matia aged 58 is an Itesot His father was a fisherman and introduced him to fishing. He drropped out of school in J2 after failing to get school fees. His father who owned boats and nets left him to go on the lake while he turned to farming. (Kiribairya village Report, 2001)

Sande, 22, from Katakwi, first came to Kinamwanga in 1989 with what he terms the "Mugaga" (the rich one), a family member who owns fishing boats. He goes back home in the farming season and comes to fish for three months of the year (Kinamwanga Village Report, 2001)

It was easy for Onga, a migrant fisherman from Teso, to start fishing in Iyingo because he knows all the elders in the area…His maternal uncle who hails from Iyingo is the one who taught him how to fish at the age of 18 (Iyingo interview, January 2002)

Three of the current boat owners interviewed made no mention of a fishing tradition in their family:

John, 28 started going on the lake at age 8, when he would go with hooks to catch fish for home consumption. He dropped out of school in Primary six and opted for full-time fishing. He has been fishing since then and now owns a boat and seven nets. (Kiribairya)

Habib, 40, formally a mechanic working in Teso came to Kiribairya in 1990 running away from the insurgency. He started fishing by helping experienced fishermen to enable him to acquire the skill and learn how to fish, he was then able to sell his fishing labour. Now he owns two boats (Kiribairya)

Difa, 32, started fishing in 1986 when the death of his father forced him to abandon school in primary seven. His relatives game him some start up capital with which he bought gillnets. He is now a successful boat owner, fish trader and carpenter. (Iyingo).

And two crew labourers:

Kyangoga and Patrick, both men over 50, came from farming families and work as crew members to supplement seasonal farming income.

Government restrictions on entry to fisheries and the nature of fishing activities

> "We are negotiating for a loan from the Africa Development Bank to purchase high-speed boats and [fisheries] protection gear…They [the fishermen] shouldn't sleep. Recently, I was on Lake Kyoga. The whole lake had only one fisherman with the legal requirements for net size and a licensed boat. The rest had nets that could trap fish as little as one inch…"
>
> *Fisheries Minister Fabius Byaruhanga, quoted in "Fisheries Impounds Fish", The New Vision, Kampala, December 5th 2001*

Since the colonial period, fisheries in Uganda have nominally been managed by government. Some fisherfolk perceive the lake to belong to the government, and although government authority over fishing is thus recognised, it is widely ignored, misunderstood or deliberately flouted. This is typical of fishery regulations worldwide and is one of the reasons for the shift in fisheries governance towards a more participatory style. For the moment, however, the government retains centrally-imposed regulations, and continues to seek the means by which to impose them, as the above quote illustrates.

The details of current legislation can be found in the fisheries policy, but they basically include the need to have a licence (for which an annual fee is payable and for which there are no limits on the number that can be issued) and adherence to a number of regulations on the type and dimensions of fishing gear that are allowed. These gear regulations aim to ban destructive gear and to set mesh sizes to allow escapement of juvenile fish until they reach a size that allows them to breed or optimises the yield that can theoretically be taken from the fish population.

Illegal or destructive fishing gears and practices include use of seine nets (*kokota*) close to the shore, disrupting brooding areas, especially for nile perch and tilapia; cast nets (*ponyoka* or *tupa tupa*); basket nets (*migoni*), gill nets of < 5 inch mesh, mosquito nets for catching *mukene* and fish poisoning. In many cases, there is currently widespread compliance with some of these regulations (e.g. fish poisoning), part-compliance with others (e.g. the use of 4.5 inch gillnets in Kinamwanga) and total disregard for the rest.

A recurrent theme during village-based research was the arbitrary and confusing implementation of regulations enforced sporadically by extreme punitive action, often in the form of confiscation or destruction of fishing gear, including boats. Considering it may take a crew-member a decade or more to build up sufficient capital to invest in a boat, burning a boat because the licence is out of date or the net mesh size is too small is a disproportionately extreme measure. The continued existence of illegal fishing also shows that these actions do not act as a significant deterrent, perhaps because they are sporadic, unpredictable and can often be circumvented by knowing or bribing the right people.

Informal and 'traditional' regulation of access to fishing

Although there has been a tendency recently to over-romanticise traditional resource management methods, it is nevertheless important to try to identify any existing unofficial practices or norms that could form the basis of a functional management system. This is particularly important in the context of the current move to introduce new ways of managing fish stocks, in the form of co-management or community-based management.

In each fishing village on the shore of Lake Kyoga there is a head of the fishing community, known as the *Gabunga*, and a group known either as a landing site committee or task force.[5] The position of *Gabunga* was traditionally a hereditary one, held by descendents of the first fishers to settle in the area, though the election of *Gabunga* by all boat owners is becoming more common (as in Kiribayiria). *Gabunga* have to be male and boat owners. In two of the three villages visited, the *Gabunga* also owned the land on which the landing site were situated. In addition to ensuring security, the *Gabunga* was also responsible for settling disputes, advising on fishing places and methods, regulation of new entrants to fishing and liasing with other communities. The *Gabunga* also have ritual authority, being traditionally responsible for summoning the spirits of Lake Kyoga and enforcing the ritual prohibitions on fishing that appease its spiritual guardians and ensure the prospect of good catches and safety of fishermen.

Box 5. The Gabunga of Iyingo

Augustine Kallisa Magino was Gabunga of Iyingo from 1976 until his death in 2002, except for a brief period in 1988-89 when he owned no nets or boats. His father was Gabunga before him, and he claims descent from the first Bakenye settlers in the area. Mr Magino also owned the land next to the landing site. The Gabunga receives an informal tax of fishing to the value of Sh 500 per day per boat. The Gabunga was recognised as having assisted the settlement of migrants and their integration into the community. However, he has been criticised for his acquisitive attitude to revenue, his lack of technical advice, and most importantly his failure to regulate illegal fishing methods. In addition to being Gabunga, Mr. Magino was also the LC1 chairman, a post he had held since its inception.

The authority and example set by the Gabunga (Box 5) seems an important determinant of fishing practice in lakeshore villages. In Kinamwanga, the Gabunga 'leads by example' in not using small mesh nets, and mukene fishing is not practiced. Kinamwanga does not allow use of what it deems to be illegal gear: *kokota*, *ponyoka* and gill-nets less than 4.5 inches mesh size (slightly less than the government legal minimum of 5 inches). Most fishers are residents and own land in the village. They are therefore also directly subject to other forms of traditional authority. They also seem to be able to exercise some authority over the entry of fishers from other areas that are less well regulated. The net result of this informal management system is a fishery that yields high value fish in sufficient quantity to attract, in a small village well off the main road, the regular calling of a refrigerated truck to take the fish to processing factories.

In Kiribairya, communities were much more reluctant to enforce rules over fishing methods and illegal methods, such as mosquito netting for *mukene*, were common. In Iyingo, gillnet meshes of 2.5 or 3 inches were in use, and gillnet catches consisted largely of small tilapia. The leadership in these communities appeared much less strong. This could be due to the different histories of these settlements. Kiribairya is essentially an abandoned refugee camp whose residents have no title over the land where they are settled. Iyingo is a centre for cross-lake transport and trade and has a substantial itinerant population. These observations support a tentative link between settlement history, security of land tenure and the effectiveness of community-level institutions, including those for fisheries management.

Although there exists no formal territorial claim over fishing waters, there are waters named after landing sites and in case conflicts occur in these areas, it would be the concern of the relevant landing site where the boat is registered. This could provide a basis for developing more exclusive forms of tenure, although reciprocity of access and the importance of mobility when fishing more mobile species (e.g. *mukene*) need to be taken into account before a management model based on exclusive territorial rights is promoted.

Restraints to free access onto the lake and movement within it do exist; new entrants are required to produce a letter of introduction from the LC1 of origin or landing site, an operating licence and graduated tax tickets. These are presented to the Gabunga and the LC1 Chair in the area where the prospective entrant. The fish guard, who is an advisor to the landing committee, is also charged with ensuring the method of fishing used by the new entrant complies with government regulations. Again, these norms provide a potential means of monitoring and managing fishermen's movements around the lake.

Neither do fisherfolk exclusively pursue individual interests. Examples of collective responsibilities and actions in fishing communities do exist. For example, in the (not infrequent) case of a fisherman drowning, there is no fishing until the body is recovered, the search being undertaken under the command of the relevant *Gabunga*, with the costs associated with the search and burial of the body being the joint responsibility of all fishermen from that

landing site. Cleaning and maintenance of the landing site is also a collective responsibility of the community.

These existing informal institutions may not be directly associated with stock conservation measures or optimal resource use and they may be insufficient in their present form to protect the resources from collapse. However, their existence needs to be recognised as they can provide a basis for building local-level institutions that support the achievement of fishery policy targets.

Recent institutional changes and their impacts

The 'local' or 'traditional' rules described above do not exist in isolation from government attempts to manage fisheries, nor are they static. In 1990, the Fisheries Department introduced landing-site committees in Iyingo as a form of indirect rule, where formal arrangements are transmitted through existing local structures. The landing committee is chaired by the *Gabunga* and comprises fishermen who are boat owners. The duties of the landing committee are prescribed by government and include managing the landing site, ensuring security against theft, resolving conflict, receiving visitors and ensuring cleanliness and registration of boats by the Fisheries Department. Apart from the latter, this represents the formalisation of existing informal practice. This initiative set a style of interaction that appeared to promote participation of resource users in management, but did not in fact devolve key decision-making responsibility to local actors.

The most significant recent changes in fisheries management on the Lake are driven by the shift towards decentralised government, the new fisheries policy and by the activities of the ILM project in promoting co-management (government-community partnership) on the lake.

Participation in resource management is advanced as a primary objective of Uganda's National Environmental Management Policy and empowerment of resource users and their involvement at all levels of environmental decision-making is a specific objective of the National Environment Action Plan (NEAP, Government of Uganda, 1995, p66). There is also legislative provision for establishing institutions such as DECs and LECs (district and local environmental committees), and a mandate for participation of NGOs and CBOs in local natural resource management, through their representation on LECs and DECs. However, the way that district responsibilities regarding environmental management are specified under NEAP conceives participation under decentralization as limited to supporting a predetermined plan for managing natural resources that has been established at national level (Lind & Cappon, 2001, p22-23). These new, community-focused institutional arrangement for managing the environment are strongly supported by the international community. The ILM project is an example of this commitment[6]. The EU Lake Victoria Fisheries Project and GEF-funded Lake Victoria Environmental Management Project (LVEMP) also have a strong focus on promoting CBNRM or co-management.

One of the key national institutions involved in the move towards CBNRM is the Uganda Fisheries and Fish Conservation Association (UFFCA). In 1999, UFFCA had 4500 members, 500 of them from Lake Kyoga (Tumushabe, 1999, Table 12) and membership has continued to expand. UFFCA, like many national fisheries representative bodies, is perceived as having little linkage to grassroots, and having centralised governance and decision-making processes. On the positive side, it has high national visibility in the media and is now widely recognised by national government institutions and national and regional development programmes in the fishery sector (e.g. ILM, LVEMP, LVFRP) and has senior staff with good lobbying and advocacy skills (ILM, 2001b).

The transition to CBNRM is challenging and if it is to succeed then it requires careful attention to its underlying assumptions and to issues of how such programmes are introduced at all levels. Lind & Cappon (2001, p60) criticise the model of decentralised NRM in Uganda as being

driven by assumptions that "communities are willing and undivided wholes ready to assume a greater role in management of natural resources in accordance with policies and paradigms over which they have little influence or ownership" At the same time as 'community' is promoted as the idealized decentralized unit of management, there is a well-established literature that highlights the differences in livelihood strategies, objectives and ideologies that follow from differences within geographical or occupational communities in factors such as wealth, ethnicity and power (Agrawal & Gibson, 1999; Allison & Ellis, 2001).

Attempts by various high-level national and international policy actors to introduce externally-conceived and rather idealised models for community or co-management in fisheries have led to ownership and implementation problems; Hara et al (2002) present a particularly useful analysis based on a similar attempt to introduce co-management in Malawi. The tensions between achieving project goals and purposes and paying attention to process issues for longer-term institutional transformation are particularly acute in such projects (Allison, 2002).

As policy change towards decentralisation and CBNRM have impinged on fishing communities, the role of the Gabunga is changing. Increasingly, the position is a mediator between the community and the outside world in lake and fishing matters. Further, the introduction of landing site committees has diffused decision-making more widely across the fishing community, while the introduction of beach management units (BMUs), under the impetus of the ILM project, are further redefining the role of the Gabunga. BMUs aim to achieve representation from people traditionally excluded from most landing-site committees (women, youth, fishing labourers)[7] and to use more participatory styles of decision-making. These structures potentially pose a significant challenge to the traditionally hierarchical and authoritarian style of the traditional Gabunga.

Co-management also challenges the previous stance of the fisheries department. This paper has recorded several instances of the antipathy that exists between fisheries officials and fisherfolk. This state of mutual mistrust is perhaps the biggest barrier to effective management partnership, and it can only be overcome when the fisheries department is perceived to be operating in the interests of fisherfolk and can demonstrate its commitment to this new style of management. The difference between the fine rhetoric of partnership and stewardship and the current reality in community based fisheries management is starkly illustrated by a recent newspaper article:

> "40 boats were on Thursday burnt and 12 fishermen arrested over harvesting immature fish from Lake Kyoga during an operation mounted by the fisheries department and the Police. A total of 30 illegal fishing gears including beach seines were also burnt. The operation was headed by a fisheries officer'.
>
> *"The New Vision", Tuesday November 12th 2002, by Moses Nampala*

This operation included Iyingo, one of the fishing villages in this study. This is hardly participatory management as it is normally defined!

There are clearly considerable obstacles to be overcome in moving from the situation of conflict between manager and managed, illustrated above, towards one of co-operation between partners in management. Despite the problems outlined above, the devolution of management responsibility in some form to local level and the greater involvement of resource-users in both deciding on management objectives and implementing them on the lake remains the only feasible option for the fisheries sector. It is worthy of continued policy and project support. Changing institutional cultures, building trust and management capacity at all levels and allowing space for local actors to make decisions over management are all time-consuming and risky, however, and results cannot be expected within normal project time-frames.

3.2.2. Access to livelihoods support services

A consistent finding in LADDER fieldwork has been the lack of access to basic needs such as education and health service provision, livelihood support services such as financial markets, and practical and technical support provided by agricultural extension or small business advisory services. The fishing villages of Kamuli District are no exception. Government fishery officers and researchers and extension agents were, along with tax revenue collectors, consistently ranked among the least helpful institutions in terms of service provision in support of livelihoods, although subsequent interviews with District Fisheries Officers led them to dispute these views.

The fisheries departments are accused of failing to give any advice to the fisherman on better fishing practices, levying informal charges with the threat of boat destruction for those not willing to pay and turning a blind eye to the use of illegal fishing gear in return for a bribe. The fisheries research services (NARO-FIRRI) are observed to come to the lake without informing the locals of their intentions. Mistrust is such that fishermen attribute low catches to the presence of government researchers on the lake.

The Assistant Fisheries Officer (Fish Guard) for Kagulu sub-county admits to inadequate staff to police fishery regulations but denies the prevailing community view that the government has provided nothing of assistance to the fishing communities. He cites the elimination of water-hyacinth, regulations about illegal fishing gear and a system of fishery qualifications and registration as past efforts to improve the sustainability of fishing in the lake. The District Fisheries Officer regarded "over 70% of fisherfolk as failures and laggards who are apathetic to change, with a belief that the lake belonged to their forefathers and that no one should impose conditions and advice on fishing on them" (January 2002).

Also notable is the complete absence of financial markets. Credit schemes have a chequered history in fisheries development, the fundamental problem being that giving credit to fisherfolk to improve their catches in the context of an overexploited fishery merely speeds its demise by removing one of its most effective existing entry barriers – access to capital to purchase boats and nets - and makes it less likely that anyone will ever be able to repay the loans.

The central challenge of fisheries development is thus not to provide means by which more people gain access to finite fishing opportunities, but ways in which existing participants can best use their fishing income to reduce vulnerability, increase well-being and contribute to wider rural development goals. While fishery support services have their part to play, most of these challenges can be met only through wider rural development and policy support.

3.2.3 Taxation

That the tax collectors should be unpopular should not come as a complete surprise. However, a general background resentment at having to pay tax at all has to be separated from identified problems with the taxation system and its unintended consequences for the development of rural markets that lie at the heart of the PMA. Uganda has embarked on a radical course of fiscal decentralisation, whereby taxes are collected by private tender holders who pay the local government a monthly sum fixed by their bid for the tender in return for the right to collect specific taxes on behalf of the local government. Collection in excess of the value bid is the tender holder's profits; collection less than the bid is the loss of the tender holder. Tenders are allocated by sealed bid against a minimum reserve.

The rural tax issue has been extensively analysed by other papers in the LADDER series (e.g. Ellis & Bahiigwa, 2001; 2003), and in the fisheries sector by several studies conducted by the

ILM project (e.g. Wilson, 2002), and I will only summarise the issues briefly here. Concerns over taxation centre on four related issues:

1. The revenue collection system, designed to operate in a functional free market, is subject to manipulation by local elites. Both LADDER fieldwork and Wilson (2002) report a number of problems and abuses with the tendering system, centred around lack of transparency and barriers to the development of competition, such as collusion among bidders, political influences and other forms of corrupt practice.

There is on-going debate about whether CBOs such as landing site committees or beach management units (BMUs) should be involved in revenue collection. Wilson (2002) suggests there will be a clear conflict of interest between maximising revenue and conserving the resource. There is some apparent contradiction in statements that propose CBOs shouldn't be tender holders (section 7.2.1) while section 7.2.2. suggests how they might be encouraged to bid and a scoring system established to favour their bids.

Local government usually undervalues the tender. An analysis of the level of tax extracted from the Kinamwanga (Nagulu) tender indicates that the revenue collection function was tendered out for 30 000 UGS per month, and that monthly revenue from fishing and small-business activities in the landing site and associated villages amounted to around 570,000 UGS per month, of which 450, 000 came from fishing (LADDER fieldwork, January 2002).

2. The amount of tax revenue accruing to local governments is not sufficient for any investment in development initiatives. James et al., (2001) show that most local revenues are spent on district council members' sitting allowances, leaving little for investment in development activities or for funding fisheries management, for example.

Wilson (2002) conducted a study of 159 landing sites on Lake Kyoga 35% of which were subject to tenders for revenue collection (including the larger ones). He found that, of the revenue collected, only 20% accrues to local government, 25% is spent on operating costs, and 55% retained as net profit by tender-holders.

The value accruing to local government via tenders is equivalent to about Ush2,200 per tonne of fish landed, or around 0.2% of the value. The value charged to the fishery is in the region of Ush 13, 000 per tonne, or about 1.3% of landed value. The total value of the tender for the whole of Kamuli district was only 830 000 UGS (Wilson, 2002). 81% of revenue comes from fish in Kyoga landing stations and the average profit margin was 65% (Wilson 2002, Table 20) The ILM studies therefore suggest the overall level of taxation on fishing may, if anything, be too low. When that is taken together with the disparity between the value of the tender and the amount of revenue collected, it is clear that the potential of the fisheries sector to contribute to local government budgets is being underutilised.

3. Citizens are not seeing any gains from increasing tax burdens. Because the overall revenues generated for government are so low and they are spent mostly on government administration costs, the increased tax burden that has resulted from private-sector incentive to maximise revenue collection does not return in the form of improved service delivery at local level. This threatens to undermine the whole decentralisation initiative. In the fisheries sector, it means that a vision of the sector being able to finance its own management and generate tax revenues that can contribute to wider rural development has not been met.

4. Commodity-based taxes threaten to stifle enterprise and constrain income diversification strategies. The LADDER studies all point to taxation being somewhat arbitrary in nature, inimical to livelihood diversification and enterprise by individuals and households, and an additional burden on the poorest and most vulnerable members of rural society.

The remaining challenge for fiscal reform at local level, and in the fisheries sector in particular, is therefore to apply appropriate levels of tax in ways that maximise the revenue generating potential of the sector, fund its management and provision of services to support its sustained growth, and do not have disincentive effects on investment and diversification attempts, particularly by poorer households.

3.2.4 Summary

In summary, the institutional environment can be characterised as complex, dynamic and currently ineffective in supporting the efforts of both central policy makers and rural farmers and fisherfolk in their efforts to eradicate poverty. Key concerns for fisheries policy centre on three issues:

- Ensuring appropriate forms of support for groups that are currently disadvantaged in fisheries, including women, youth and fishing labourers
- Finding an appropriate balance between maintaining the occupational and geographical flexibility needed to engage successfully in the fishery, and shoring up the barriers to entry needed to conserve stocks for future generations of fisherfolk;
- Getting the local tax environment right, so that those who can afford it are taxed fairly and see a return on the taxes they pay in terms of improved service delivery, and so that the money earned in fishing contributes to the costs of managing the resources and to local and regional government revenue.

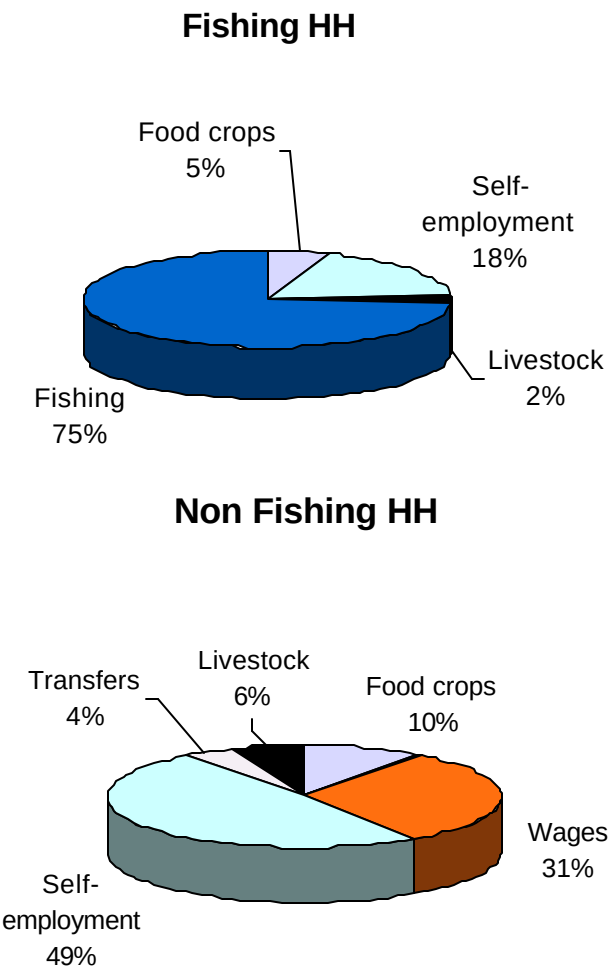
3.3 Livelihood activities and strategies: are fisherfolk occupationally immobile?

Part of the 'Malthusian overfishing' narrative is based on what is perceived as fisherfolk's occupational immobility. Livelihoods research quickly uncovers that this is not the case. In the Kamuli district household, contributions to household income in fishing households included both seasonal and regular wage employment, income from crops and livestock, small businesses like carpentry, bicycle repair, shops and restaurants and from brickmaking, brewing, charcoal making, preparing and selling food, selling firewood, and making handicrafts.

By synthesising this diversity of activity into categories, a snapshot of livelihoods obtained from the HH surveys reveals that fisherfolk's level of dependence on fishing for their overall HH income is quite high, averaging 75% at the time of the surveys (Figure 4). Other activities do provide important supplement or security, however, particularly the growing of food-crops and self-employment. Low livestock income is not an indicator that they are unimportant in broader livelihoods security terms (see Ashley and Nanyeena, 2002).

In the non-fishing HH, both wage labour and self-employment (small businesses) dominate income sources. In practice, these may both be quite closely related to fishing, and some ambiguities may have arisen in the way the questionnaires were applied. Self-employment in this case probably includes fish trading and processing businesses, as well as businesses like renting accommodation to visiting fishermen, or selling food, beer and other services to people with fishing income. Likewise, it is not clear whether the wage-labour may include selling labour as crew on fishing boats, whereas in the 'fishing HH', this wage labour and fish processing has all been classified under income from fishing.

Figure 4. Income sources of households from sample aggregated across all wealth groups



Notwithstanding the uncertainties in the way the data have been categorised, it is clear that, as in most other recent studies of rural households in sub-Saharan Africa (e.g. Ellis, 1999; Bryceson, 2000) it is observed that income comes from a variety of sources, with non-farm income being particularly important. From the fisheries management perspective, it is clear that many fishing households engage in activities other than fishing. Thus, it is incorrect to suggest they are occupationally immobile (e.g. Panayotou, 1982).

As a complement to the snapshot of the livelihood portfolios of fisherfolk, interviews also reveal that individuals of all ages have been mobile both geographically and occupationally over their lifetimes (Box 6). The life histories point to extensive geographical mobility in search of opportunity and to adaptive shifts between sectors to meet particular livelihood goals or to overcome problems with previously chosen options. Kamuli villages may appear to be backwaters, but their populations are well travelled and entrepreneurial. At the same time, mobility is sometimes forced (e.g. fleeing insurgency) and absences from the home (e.g. to engage in trading) may leave other sectors of the livelihood unsupervised. Lack of security emerges regularly as both a reason for, and barrier to, diversification.

Box 6 – Examples of Kamuli fishermen's mobility and diversification histories.

Francis (33), interviewed in Kinamwanga, April 2001	*Difa (32), interviewed in Iyingo, February 2001*
Francis is a Samya by tribe, born in Nakawa, Kidera sub-county. He started fishing in 1983, on his father's boats. When fish catch decreased in the late 1980s, he migrated to Buvuma on Lake Victoria, where he would catch tilapia, salt and sun-dry it. He returned to Nakawa in 1995, got married and began farming as well. He keeps cattle, pigs, goats and chickens as a form of savings. Crop farming is his most important source of income now, with fishing second, livestock third and his wife's handicrafts business fourth. He uses fishing income to hire labour to ensure timely crop planting over a larger area, which boosts crop yields.	Difa started fishing in 1986, following the death of his father. His relatives gave him some start-up capital, with which he bought a 4.5" gillnet. He hired a boat and went onto the lake himself. In 1988, after accumulating some money he began processing (smoking) fish which he later sold in Busia. He continued with this trade until 1996, when he stopped because he was not able to also monitor his crew back in Iyingo. To supplement his fishery income, he has diversified into carpentry, while his wife now dries and markets *mukene*.
Kyangoga (55), interviewed in Iyingo, February 2001	*Patrick (45), Iyingo, February 2001*
Born in Nkondo sub-county, Kamuli district, and worked on his fathers' farm until he began fishing, aged 18, in order to obtain a daily income. His goal was to accumulate cash from fishing and invest it in other business. Between 1964 and 1986 he moved six times, mostly in search of better catches. He now works as a crew member fishing Nile Perch, which is less hard work than mukene fishing and does not require staying on the lake at night. He does not yet appear to have succeeded in his initial goal.	Patrick is a farmer in Knondo sub-county, where his family lives and he goes back to farming during the rainy season. He joined fishing only in 1995, to get some cash on a more or less daily basis and to supplement low agricultural income. He migrates to areas like Bungigi and Bugalama in the Teso part of the lake, in search of better catches, but he remains based in Iyingo because it is close to his home. Crop farming is still the most important source of his livelihood, with livestock second and fishing third.

3.4 Livelihood outcomes: are fisherfolk 'the poorest of the poor'?

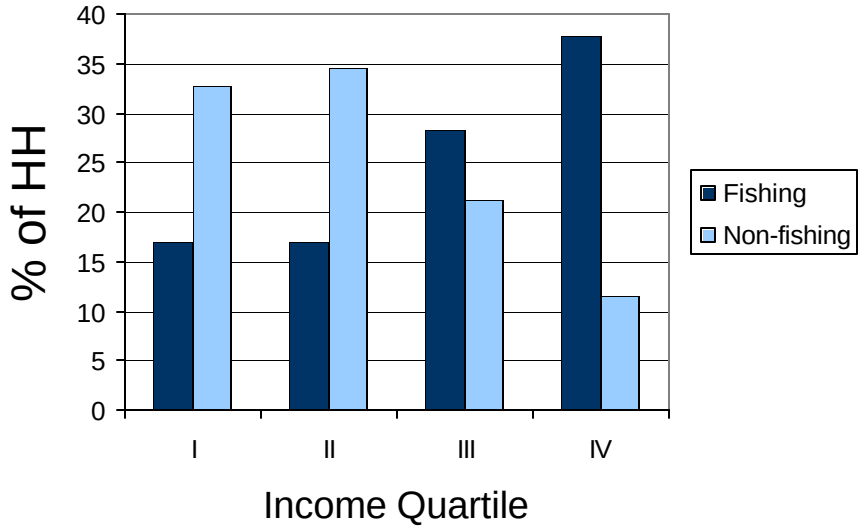
We have established that fisherfolk will pursue other livelihood options when those are available, and that the notion of artisanal fisherfolk as tradition-bound, unskilled, uneducated and occupationally immobile is an inaccurate one. The remaining questions are whether diversification improves overall livelihood security and income status, and whether specialization in fishing can be equated with poverty.

The division of the sample into income quartiles was done on the basis of the whole sample. If we look at how fishing and non-fishing households are located by income division (Figure 5), then it is clear that the greater proportion of households engaged in fishing appear in the upper income quartiles, while the greater proportion of HH not engaged in fishing appear in the lower quartiles.

		Per capita income quartile				All
		I	II	III	IV	
Kamuli fishing	*N*	*9*	*9*	*15*	*20*	*53*
	Mean	90,760	186,540	389,832	2,079,394	942,095
	s.d	27,744	36,390	85,159	2,960,682	2,003,698
	Median	95,439	174,500	402,486	1,011,479	422,989
Kamuli non-fishing	*N*	*17*	*18*	*11*	*6*	*52*
	Mean	73,309	175,435	398,276	1,368,539	326,853
	s.d	35,493	36,013	81,843	961,361	501,030
	Median	72,706	169,224	408,000	960,394	169,224
All Kamuli	*N*	*26*	*27*	*26*	*26*	*105*
	Mean	79,350	179,137	393,404	1,915,350	637,404
	s.d	33,529	35,831	82,211	2,634,391	1,491,991
	Median	85,047	174,500	405,243	960,394	250,435

Table 3. The mean per capita income (UGS) of fishing and non-fishing households in Kamuli District. Per capita income for each household is calculated from total household income divided by the number of people (adult male equivalent units, in terms of consumption). NB – US$1 = 1770.5 UGS at the time of the research.

Figure 5. Income distribution of fishing and non-fishing households in Kamuli District Villages. N = 53 HH f or fishing villages, 52 HH for non-fishing villages.



Another indicator that fishing is more than just a subsistence activity is that the total net value of household subsistence (based on surveys of expenditures in a typical two-week period) as a proportion of total net household income averages only 23% across the samples (Mims & Mathieu, 2002, Tables 27 & 28).

Wider comparisons with other districts (Mbale and Mubende) shows that while mean incomes are highest in Kamuli district, median incomes are lowest (Ellis and Bahiigwa, 2001). This suggests that income inequality is greatest in Kamuli, and that Kamuli is indeed among the poorer districts in Uganda. This research has shown, however, that this level of poverty is not closely associated with fishing. Indeed access to fishing income is associated with greater wealth. Bird and Shinyekwa (2003), working in the same villages, also conclude that manyu of the poorest households did not have access to fishing opportunities. Classifying artisanal fisherfolk as 'the poorest of the poor' would be incorrect in the case of Lake Kyoga.

This is not to say that fisherfolk are rich. Only in the top quartile do per capita incomes average more than 1 US$ per day. Their incomes are, however, higher than those of non-fishing households in the same village, and higher or similar to income distributions of farmers and other rural dwellers in other regions in Uganda (Ellis & Bahiigwa, 2001; 2003).

3.5 Vulnerability: is fishing 'the occupation of last resort'?

The recent literature on poverty is highly critical of analyses that consider only income and consumption profiles in the assessment of poverty (e.g. Craig & Porter, 2003). Although it has been established above that incomes from fishing can equal or better incomes from other rural sectors in Uganda, it is important to consider the remaining key dimensions of poverty: vulnerability to shocks and adverse trends and political and social marginalisation. These dimensions have been captured internationally in the 'voices of the poor' series of studies, but there has been no specific study of this nature on fishing communities[8].

In this section, I try to identify the particular factors that might make fisherfolk 'poorer' in this wider sense, than other rural dwellers, such that fishing and fish trading, despite its potential to generate income, might be an 'occupation of last resort'. Despite the potential for relatively good incomes from fishing, particularly from people who have been able to accumulate fishing-related assets, fishing is risky from both financial and safety perspectives.

It is important here to differentiate between income generated from ownership of fishing assets only, and between people who actually engage in fishing operations on the lake, or trading and processing on the shore. Those who go out onto the lake are in many cases also owners of fishing-related assets (either in whole or part), but their daily lives will be much different to shore based owners with no personal engagement in fishing operations.

The actual and potential sources of vulnerability identified through the research include depletion and variability in natural capital (fish stocks, wetlands and agricultural land), unsafe and exploitative working conditions for crew labour, theft and insecurity, neglect or misunderstanding of the fisheries sector in centralized macro-policies, misuse of devolved governance structures by local elites and the risks associated with high levels of HIV/AIDS in fishing communities.

3.5.1 Natural capital depletion, variability and seasonality

Without fishery stock assessments, it is not clear whether stocks are being overexploited relative to management targets. Focus-group research in villages says that catch rates are lower now than five or ten years ago. In Iyingo, for example, eight pick-ups would come in the early 1990s to transport fish, now they can not even fill one pick-up per day. This finding in itself is not diagnostic of current overfishing. In any growing fishery, individual catch rates go down as total catch and effort go up. When the fishery is based on newly introduced species, as in Kyoga, there is often a short-lived 'boom' period as the new species expands. When one adds climate-driven instability and the uncertainties in the statistical data base, it becomes very

difficult to state categorically that fish stocks are becoming depleted compared to their long-run average maximum yield.

As well as a perceived trend in decline of fish stocks, there is also a perception that the recent climate is becoming more variable, and seasons less predictable. Recent incidences of extreme events include the El Nino associated high rainfalls of 1997/8, when wetlands used for seasonal grazing and farming were inundated, leaving only the poorer quality soils further inland accessible for cultivation. Flooding in 2000 devastated Kiribairya village, destroying half the settlement and drowning many people (Bird and Shinyekwa, 2003).

Depletion of fish stocks to unprofitable levels would cut out a source of income and asset accumulation pathway for hundreds of thousands of people living around the shores of Lake Kyoga, and a source of nutritional security for even more. Precautionary approaches to fisheries management, while threatening livelihoods in the short-term, may be justifiable if a longer view is taken. Certainly, there is no basis for supporting an expansion in fishing capacity on the lake at present.

Although fishing takes place year-round, its importance varies seasonally. Strong winds constrain fishing in April/May and November, while most fish are scarce in June/July and mukene is scarce in November. This makes linking fishing livelihoods with other activities particularly important. Anything that discourages adaptive diversification (e.g. commodity taxes) will harm peoples' ability to build a viable livelihood.

3.5.2 Unsafe and/or exploitative working conditions

Fishing is regarded as one of the world's most dangerous occupations. The inequalities in fisheries also lead to concerns over exploitative working conditions, particularly for crew members, who are usually either casual labourers or subject to some form or indenture.

This research did not specifically investigate labour arrangement in fisheries but others have done so in Uganda. Wilson (1998) found 72 different catch-sharing arrangements among 131 boats on Lake Victoria, most of which were small variations on a few basic, regional patterns. The most common arrangement, and that mentioned by respondents in this research, was a catch-sharing arrangement that divides net profits 50:50 between crew and boat/gear owners. The owners pay all capital and recurrent costs, including taxes. Although this arrangement is common around the world, some perceive it as fundamentally exploitative and an exemplar of the worst of capitalist modes of production:

> The laborers in the course of production intensify their output and exhaust themselves throughout the night, making themselves more vulnerable to the extraction of more surplus value by the owners of the nets and canoes… Their lives are characterized by naked exploitation, frustration and dehumanization of labour"
>
> (Asowa-Okwe, 1996, p228-230 writing about Lake Kyoga)

While exploitation and abuse of power undoubtedly exist and crew members work hard for rewards that seem to outsiders to be pitifully low, they still generate incomes that are comparable, or better, than those of their fellow villagers. Households supplying crew labour do not feature among the 'poorest of the poor' and there is ample evidence of crew members subsequently becoming boat owners. Ensuring safe and fair working conditions for the more vulnerable sectors in the fisheries is clearly a critical area for policy intervention but it needs to be guided by more than an impression of poverty gained by site visits to busy and accessible landing sites, where marginalized people hoping to gain access to fishing do indeed congregate.

3.5.3 Theft and insecurity

Increasing levels of theft and decreasing personal safety have featured prominently in peoples' accounts of their lives in all countries participating in the LADDER study. In the case of Uganda, the current levels of insecurity have to be seen in the context of a devastating recent past. In the Kyoga area, the insurgency in Teso in the mid- 1980s to early 1990s was frequently mentioned as a traumatic event in peoples' lives, and many fisherfolk living on the southern shores originate from that district. While theft and insecurity are still problematic, in general, they have not got worse in the last decade. Village reports contain accounts of the need to modify fishing practices in order to minimize theft - those using gillnets are often obliged to stay with the nets overnight, in order to prevent theft of fish from the net, or of the net itself. Basket (migonyi) owners suffer much from theft, especially those who don't have boats, and it is observed that some youth steal their fisher-folk's nets and boats and escape to other areas of the lake where they can use the stolen gear without being known. These incidences are often dealt with by traditional authorities like the Gabunga or village elders, but if unresolved or very serious, the police are called to intervene.

3.5.4 Neglect or misunderstanding by central policy

The fisheries sector has been vulnerable to policy change because the role it plays in the rural economy it is not well understood and participation by stakeholders in policy-making has been limited. The analysis presented in the early sections of this paper suggests that not all fisheries policy-influencers in Uganda see artisanal fisherfolk as capable of delivering the new fishery policy objectives without radical modernization. The way fisherfolk are represented in policy discourses can have strong influence of policy prescriptions designed to solve identified problems with the sector.

Fisheries has not featured prominently in Sectoral planning (e.g. PMA) and has no profile in the current Uganda PRSP. This situation is changing, and the ILM project has played a prominent role in bringing the importance of fisheries issues to the attention of policy makers outside the fisheries sector.

3.5.5. Misuse of devolved governance structures by local elites

The research uncovered many instances of the misuse of new, devolved powers, such as the revenue collection and tendering system, arbitrary punitive treatment of illegal fishing by government officials, and 'elite capture' of key positions such as LC1 chair and the Gabunga. The sum effect of these is to stifle initiatives to improve livelihoods. The solutions to these problems lie in the gradual strengthening of civil society through increasing local government capacity and accountability and in transforming a patronage system of local governance into a clientalist one, in which subjects become citizens (Francis & James, 2003).

3.5.6 Moral Hazards: The Drunken Fisherman and HIV/AIDS

Fisherfolk are often assumed to have a drinking culture for reasons that are seldom adequately explained but are proposed to include the all-male environment, the high-risk nature of fishing and the almost daily cash income. Sympathetic analysts suggest that the nature of fishing at night on the lake, coupled with a sense of despair and exploitation explains drunkenness: "They drink 'cheap and hard' liquor like *waragi* and *kasese*, after work (ie in the morning) which contributes to dulling their senses to make it possible for them to sleep soundly" (Asowa-Okwe, 1996). Other accounts are more damning: "Women's income is mostly used to meet household necessities, to hire land and for clothes. The men's income is usually spent on alcohol, food, prostitutes and livestock" (LADDER village Report, Iyingo, May 2001). Sleep is apparently not always uppermost in the mind of the *waragi*-fuelled fisherman:

> "Vulnerability of fisheries livelihoods systems to HIV/AIDS … stems from the socio-economic dynamics of the fisheries trade and lifestyle, and in particular the fishermen's high mobilty, their long absences from home and their cash incomes which are then often spent in the trading centres on casual sex and alcohol. Vulnerability extends to their (fishermen's) casual or semi-casual sexual partners and to their wives at home."
>
> *Hemrich & Topouzis, 2000 (p90)*

The African HIV/AIDS pandemic was first identified in a Ugandan fishing village and rates of HIV/AIDS in fishing villages throughout the African Great Lakes region are thought to be consistently higher than in surrounding agricultural areas (e.g. Pickering et al., 1997). The problem of drink, however, is not necessarily closely associated with fishing communities. Bird & Shinyekwa (2003) find alcohol abuse to be one of the key correlates of chronic poverty in rural Uganda more generally.

3.5.7 Reduced vulnerability?

It has not all been bad. Better security from conflict, the empowerment of women, improved road infrastructure, provision of safe drinking water, progress towards universal primary education, school building, greater entrepreneurship and better markets are all identified as positive developments. In Kinamwanga, people's housing condition has improved. New income-generating activities, such as brick-making, have developed. There is a sense that community-level mobilization schemes are more effective in planning and implementing development programmes than they were in the recent past. These factors all contribute to the achievement of the elusive 'enabling environment' to sustain livelihoods.

3.5.8 Occupation of choice or last resort?

Overall, Kamuli villagers suggest that corruption, unsustainable fishing methods, declining crop yields and crop diseases, unreliable weather and increasing taxation have contributed to increasing livelihood insecurity within the last five years. Incidences of theft and murder are not as common as ten years ago, but are still sufficiently frequent to be a concern to people engaged in fishing. HIV/AIDS incidences are thought to be high, alcoholism is rife. These factors add up to a livelihood source that is still more profitable than many alternatives, but is of high risk. It is these risk and vulnerability factors, rather than low income, that may contrive to keep many fisherfolk in poverty, or to make the climb out of poverty a precarious one.

Despite these risks, fishing remains an occupation of choice for many. While limited opportunities for non-farm employment play their part in 'pushing' people into the fishing sector, there is little evidence to suggest that people enter the fishery because they are uneducated, unskilled, have no land, no capital, no friends and family to support them. Young men and women enter the fishery sector as crew members, processors and traders because, despite the risks, it is a viable way to improve their livelihoods. For many, the risks have paid off (e.g. Boxes 3 & 4). With nearly one in ten Ugandans of working age being involved in the fisheries sector in some capacity, any policy that leads to a substantial reduction in the number of people fishing, or in people's opportunity to fish, has to develop contingency measures to deal with the potential of tens of thousands of unemployed former fishermen.

In the long-term, the only way to substantially reduce the pressure on fisheries is the development of viable alternative income-generating opportunity. The Asian economic boom, for example, led to a marked reduction in the number of people fishing in SE Asia and to subsequent increases in income for those remaining (Teitze et al., 2000). If Uganda's PMA is successful and urban/industrial development also takes place then a similar outcome may be expected. While fishing remains profitable compared to other sectors of the economy, people will continue to be attracted into it and lack of access to capital to invest in boats and gear is likely to remain the major barrier to entry by the poor.

Overall, policies and programmes to help fishing households reduce their vulnerability appear to be more relevant than programmes aimed specifically at increasing fishing income. The latter are simply not possible in the context of an over-exploited stock (apart from in such areas as improved post-harvest technology), unless allied to a strong programme of overall capacity reduction - which effectively means fewer people with access to fishing. Some suggestions for interventions and policy directions that may assist with vulnerability reduction are given in the concluding section of this paper.

4. Synthesis of Policy Implications

The findings of this research are here related to the overall vision of Uganda's new fisheries policy and the wider themes from the PRSP and PMA that inform this policy. Broadly, these can be categorised as:

- A strategy to eradicate poverty through modernisation, market liberalisation and export-promotion that is compatible with maintaining domestic food needs and leads to increased production
- Improved service delivery and empowerment of rural communities through decentralisation and community-based natural resource management.

The paper has addressed these strategies through seeking answers to four policy research questions (section 1.4) that aim to identify the role and contribution of fishing to the wider rural economy and the relative poverty status of fishing households and use the information gained to assess whether this role is adequately recognised in existing policy and appropriately addressed by the on-going reforms in fisheries management.

It is clear that fishing plays multiple roles in lakeshore livelihoods. For young men, working as crew labourers can provide a wage that is sufficient to accumulate capital to invest further in the fishery as a boat or gear owner, or to invest in other sectors. For women involved in trading and processing, there is the possibility of some economic freedom for married women and economic survival for female-headed households. For the very poor, access to shore-based fishing related activities provides subsistence. For the wealthier, fishing is a profitable business that generates capital for investment in both farm and non-farm enterprises. For government, fisheries contribute significantly to both local tax revenues and to generating export revenue.

Protecting and enhancing these diverse and important functions of fisheries provides a considerable challenge to national policy. The PMA does not go into specific detail on sub-sectoral strategy, and the clear implication is that sub-sectors such as fisheries are expected to incorporate the principles of the PMA rulebook into their plans, by providing a sub-sectoral interpretation of the overall PMA guidelines (Ashley & Nanyeena, 2002). The National Fisheries policy has done this, mostly successfully. There remains some evidence that the multiple roles of the fisheries sector and its connections to other sectors of the rural economy are not always appreciated, and this paper has tried to highlight some of these. In particular, I have tried to show that emphasis on increasing fishing incomes by modernisation is based on the misapprehension that artisanal fisherfolk are poor and inefficient. The research findings and theoretical overview both suggest that these views cannot be supported. Fishing households are, on average, wealthier in terms of income and asset value holdings than non-fishing households in the same communities. This applies both to households supplying crew labour and to those who own fishing-related assets, although ownership of fishing assets clearly differentiates wealth groups within the fishery. A radical modernisation programme risks undermining what is, in relative terms, a successful sector of the rural economy.

The research findings suggest three major areas or strategies for policy support in fisheries. There are:

- Avoiding centralised or external prescription and giving local actors space to pursue locally relevant strategies that are compatible with overall policy goals
- Facilitating pathways to accumulation of fishing income and investment of that income in other sectors to reduce dependency on fishing
- Reducing vulnerability of households engaged in fishing by addressing social and institutional issues that appear to affect fishing communities disproportionately

4.1. Creating policy space for local actors

CBNRM projects in the fisheries sector have suffered from being overly prescriptive. Despite the best-intentioned application of apparently participatory methods, there has been a tendency for externally-conceived and rather idealised institutional designs to be aggressively promoted through donor-funded programmes and backed by externally-driven legal and policy reform. (see Allison & Ellis, 2001; Allison et al., 2002; and Hara et al., 2002). Although both the evangelical approach to CBNRM promotion (Agrawal & Gibson, 1999) and the abuse of the participatory approach (Kothari and Cooke, 2001) have been criticised in recent years, they persist in development programmes for understandable reasons. Projects and programmes have to demonstrate achievements within their lifetime. The issues they confront are important and urgent and strong external impetus is often required to effect positive change. However, what they leave behind is more important than what they achieve in the short term. Where local management committees have to be paid by donors to meet, for example, devolved management structures are unlikely to survive beyond a project period. For this reason, it is important to build on existing realities. This research has demonstrated that many of the building blocks for CBNRM are in place. There are existing structures of leadership and communal organisation, and some rules and norms governing movement on the lake, the recognition of territories and the regulation of certain types of fishing gear. These may be insufficient, ineffective and inconsistent between adjacent communities, but they have some legitimacy. The difficult task for CBNRM is to allow local-level actors more space in negotiating the structure and objectives of management.

On Lake Kyoga, CBNRM might need to allow individual landing sites to make choices about the extent to which they invest in *mukene* fishing (with small mesh nets) or fishing for larger, high value species with large mesh nets. Explicit statements of policy objectives for fisheries are needed, at scales appropriate to their translation into management plans. It is often assumed, for example, that 'overfishing' can be simply defined, whereas it can only be defined with respect to a particular set of social, economic and environmental objectives. The overfishing of Lake Kyoga's nile perch, with respect to the maximum revenue that can be generated from this species, may co-exist with the under-exploitation of *mukene*, in terms of the protein it could provide or the number of poorer households it could provide income for. Without guidance on the trade-offs to be made between these fisheries, centrally conceived policy and management plans are irrelevant.

In order to foster compatibility between the ongoing process of CBNRM and the livelihood strategies of fisherfolk found through this research, one way forward may be to strengthen the existing links between lakeshore farming and fishing activities. Granting lakeshore fishing communities secure access to land could encourage the concept of local stewardship that is central to most CBNRM designs. Without secure access to land and viable support for agricultural development, the most sensible livelihood strategy is to remain mobile, and extensive mobility presents problems for the development of strong community-based organisations to regulate fisheries at local level. I return to this theme in the next section, in the context of enabling accumulative strategies.

A positive aspect of fisheries policy is that it meets a clear institutional need to separate enforcement and extension – it proposes that the fisheries extension serviced shall operate under

the proposed National Agricultural Advisory Service (NAADS). This may help break down the adversarial relationship between fisheries department and fishing communities and provide the conditions where fisherfolk have a voice in policy making, and not just in implementation of pre-designed policy. There is clearly much more sensitisation work to be done with government fisheries personnel before the notion of partnership with fishing communities is institutionalised.

4.2. Facilitating pathways to accumulation

The second major area of potential support for the fisheries sector appears to lie in making sure that the identified pathways to accumulation are facilitated, so that fishing income and fishery products make the maximal contribution to broader rural development goals.

Key pathways for accumulation appear to be found in the linkages between fishing, livestock herding, agriculture and other businesses. Anything that inhibits diversification and cross-sectoral investment, such as a commodity-based taxation system, is therefore inimical to building successful accumulative strategies. Diversification and modernisation can have positive synergies for particular sectors of the rural economy. McDonagh & Bahiigwa (2002) show that farmers often diversify into non-farm activities in order to generate income to re-invest in farm inputs, which in turn improves farm productivity. The best way to sustain fisheries may be to provide fishermen with stable access to land, improved access to services and markets for agriculture and livestock.

While we have recommended elsewhere (e.g. Allison & Mvula, 2002) that maintaining mobility is an important strategy for sustaining livelihoods of artisanal fisherfolk confronted with fluctuating fisheries, this may not be the case here. In Malawi, where agricultural markets are weak compared to markets for fishery produce, encouraging fisherfolk to settle and increase their investment in agriculture would be counter-productive. In Uganda, on the other hand, linking access to land and to lake may have positive significant synergies by encouraging diversification, providing the means to generate capital to invest further in either farming or fishing, according to which one is more profitable.

4.3 Reducing vulnerability in fishing communities

The third major area for policy intervention is in addressing the vulnerability of households engaged in fishing. I have argued that this is more relevant than trying to increase fishing incomes, both because doing so in isolation from the wider rural economy will encourage more people into fishing in a context where fisheries are already thought to be overexploited, and because fisherfolk already have cash incomes that are higher than those of people in other sectors of the rural economy. This does not suggest that development support to the fisheries sector is irrelevant, or that there are no poor people in the fishery. It does suggest an emphasis on aspects of poverty other than income – vulnerability and various aspects of social and human capital.

There is a potential role for protecting the rights of the vulnerable – particularly the landless poor and youths hired as crew labour, and women involved in small-scale fish processing and trading. There is a case for examining both working conditions (share fishing arrangements, indenture) and safety at work issues and introducing protective labour laws. UFFCA is an appropriate institutional vehicle for pursuing these issues.

It is clear that fisherfolk, because they are often young, mobile and relatively cash-rich, are vulnerable to HIV/AIDS. Fish landing stations are associated with high levels of drinking and prostitution. There is a potential role for social support and educational programmes addressing

these issues and targeted at fishing communities but the wider issue of why so much fishing income is apparently spent unproductively needs to be understood.

Greater availability of savings and investment opportunities and social support services may contribute to ensuring that fishing income is spent on productive activities or on improving education and health status of lakeshore households and communities. The Lake Victoria Environmental Management Project (LVEMP) has designed a series of posters ('The good and bad fisherman') to highlight this issue but it is likely to take more than moral education. Until fisherfolk feel they exercise some control over their futures and can be assured that surplus cash will not be removed in the form of graft or arbitrary taxation, then the best option will continue to be to spend it immediately on having a good time.

4.4 Conclusion

The World Bank's rural development strategy has strongly influenced Uganda's PRSPs and related sub-sectoral policies. This strategy identifies three pillars of rural poverty reduction: improving agricultural productivity, enhancing non-farm rural employment, and sustainable use of natural resources. The fisheries sector spans all three and its successful and appropriate integration with the PRSP and PMA goals will be a key factor in securing support for the sector.

Policy making also includes implementation. It is in the successful delivery of policy at local level that the vision for Uganda's future will be decided. Improved technology and infrastructure and well-designed central policies all undoubtedly have potential benefits in contributing to sustaining fishing-based livelihoods. Ultimately, however, the delivery of an 'enabling environment' by accountable government and community-based institutions will have the greatest potential for positive benefit to the livelihoods of fisherfolk living on the shores of Uganda's lakes. This is a goal worth pursuing because, as this research has demonstrated, fishing is a successful rural enterprise that already contributes substantially to Uganda's development and has the potential to contribute even more.

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Notes

[1] The DFID-funded Integrated Lake Management (ILM) project, 1999-2004.

[2] LADDER Village Reports Nos, 4, 5 & 6.

[3] A few self-declared non-fishing households subsequently proved to have some involvement in fishing, mostly though fishing asset ownership.

[4] The relationships between fish-trading by vulnerable women and prostitution has been extensively documented for the shores of Lake Victoria, and will be discussed in a future paper that explores the high incidence of HIV/AIDS in fishing communities in the region.

[5] The task forces were initially introduced by the Fisheries Department in the late 1990s after incidents of deliberate fish poisoning. These task forces, comprising respected fisherfolk, were successful in suppressing this practice, though in once case they continued until recently to extract a levy despite their subsequent inactivity.

[6] The ILM project aims to support the government of Uganda to develop sustainable mechanisms by which lake resources can be managed. The project aims to improve livelihoods of poor people in lakeside communities by establishing a more integrated and participatory approach to the management of lake resources. The target areas are Lake George (SW Uganda) and Lake Kyoga (South Central Uganda). The project runs from November 1999 to November 2004. It is located within the Ministry of Local government and managed and implanted by a team of international and local staff from UK consultancy MRAG Ltd, CARE International and a range of national and district stakeholders in Uganda. (ILM Output to Purpose Review, ILM 2001b).

[7] Fishing labourers are eligible for membership of the landing site committee in Kiribairya.

[8] Several studies are on-going, including the ODI-led Chronic Poverty Research Programme that worked in one of the LADDER Kamuli villages in 2002 and the poverty profiles conducted as part of the DFID/FAO SFLP project in West Africa.