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Review of social science literature on risk and vulnerability to HIV/AIDS among fishing communities in Sub-Saharan Africa

A literature review

Aparna Kher

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University of East Anglia

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Review of social science literature on risk and vulnerability to HIV/AIDS among fishing communities in Sub-Saharan Africa

Aparna Kher

A literature review undertaken for the WorldFish Centre/FAO regional project 'Fisheries and HIV/AIDS: Investing in sustainable solutions'

2008

Overseas Development Group & School of Development Studies, University of East Anglia, Norwich, NR4 7TJ, United Kingdom

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Preface

The WorldFish Centre and FAO are implementing a regional project entitled “Fisheries and HIV/AIDS; investing in sustainable solutions”, funded by the Swedish International Development Cooperation Agency (SIDA) and the Norwegian Ministry of Foreign Affairs. As part of this project, the Overseas Development Group/School of Development Studies was asked to produce a literature review on ‘Fisheries and HIV/AIDS in Africa: evidence from social science, medical and policy research’. The task was to collate available data from socio-economic and medical research to identify trends in fishing communities in Sub-Saharan Africa.

This paper is the second of three parts of the literature review, which covers:

- Review of research on health service delivery and other HIV/AIDS related interventions in the fisheries sector in Sub-Saharan Africa;
- Review of social science research on risk and vulnerability to HIV/AIDS in the fisheries sector in Sub-Saharan Africa;
- Review of research on the relationship between food and nutrition security and HIV/AIDS, and how this applies to the fisheries sector in Sub-Saharan Africa.

In each area, the Review describes the main research directions and summarizes key findings, identifying key knowledge gaps as well as areas of potential linkages with promising research in related sectors.

Acronyms

AIDS	Acquired Immune Deficiency Syndrome
BMU	Beach Management Unit
CSW	Commercial Sex Workers
DFID	Department for International Development
FAO	Food and Agriculture Organisation
FASI	Family Support Institute (a local NGO)
FFS	Fish-for-Sex deals
FSW	Female Sex Worker
GTZ	Deuche Gesellschaft fur Technisce Zusammenarbeit (A German agency for international development)
HIV	Human Immunodeficiency Virus
IDU	Injection Drug Users
MRAG	Marine Resources Assessment Group
NGO	Non-Governmental Organisation
PLWHA	People Living with HIV/AIDS
STI	Sexually Transmitted Infection
UFFCA	Uganda Fisheries and Fish Conservation Association

Introduction

Fishing communities in developing countries have been identified in the past decade as a sub-population at significant risk of contracting HIV. Especially in countries with high overall rates of HIV prevalence such as South-East Asian and Sub-Saharan African countries, fishing communities are considered extremely vulnerable to HIV (2004: 953). In estimating HIV prevalence and absolute numbers of people infected among fisherfolk, Kissling et al. (2005: 1944) argue that HIV prevalence is higher in many cases among people of fishing communities as compared to other sub-populations at known risk of HIV/AIDS, such as Injection Drug Users (IDUs), truck drivers, military men and miners. They also estimate HIV prevalence among fishing communities to be between four to 14 times higher than the national average prevalence rate for adults in the ten low to middle-income countries in Asia, Africa and Latin America, that the data was gathered from (*ibid.*: 1942). With a majority of the world's fishermen concentrated in these countries, the implications of the AIDS epidemic for the fishing community are very serious, both in terms of the livelihood security of fisherfolk and in terms of the global supply of fish (*ibid.*).

Although reports and scholarly articles have attested to the growing incidence of HIV among fisherfolk, policies to address HIV have not been mentioned in fisheries' documents, and targeted interventions focussed on fisherfolk have been absent until the past few years (Gordon 2005; Kissling et al. 2005; Tanzarn and Bishop-Sambrook 2003). Recent policy briefs by the Food and Agriculture Organisation (FAO) of the United Nations and the WorldFish Centre serve to draw policy attention to the issue by highlighting the vulnerability of fishing communities to HIV/AIDS. While these steps are encouraging, there continues to be a dearth of scholarly literature on the vulnerability of fishing communities to HIV/AIDS in developing countries, particularly Sub-Saharan African countries.

In order to work around these gaps in literature, the following review surveys the vast work around the subjects of vulnerability to HIV/AIDS and the socio-cultural and structural contexts that give rise to this vulnerability, focussing on Sub-Saharan Africa but wherever necessary to draw parallels, also drawing from literature on other developing countries. Most of the discussion on the factors causing susceptibility among fishing communities to HIV infection is drawn from a combination of sources. Reports by funding bodies and non-governmental organisations (NGOs) describe the dynamics of fishing as an occupation, much of the evidence coming from the Lake Victoria Basin in Uganda. Insights provided by journal articles on the differential susceptibility of individuals to HIV/AIDS are used as entry points for discussion surrounding susceptibility. However, only a few of these articles directly focus on fishing communities.

Clarification of some terminology is needed at the outset. The term 'vulnerability' needs some explanation because of its wide usage across disciplines and contexts. Vulnerability refers to the capacity of individuals (or any social group) to anticipate, cope with and recover from a risk event. Vulnerability has two dimensions: exposure to the risk event and the ability to cope with the impacts of the risk event (Chambers and Conway 1991: 10). The likelihood of a risk event affecting a given individual or household is called 'susceptibility' (Barnett and Whiteside 1999; Devereux 2002) .

For example, a sub-population like sex workers is susceptible to HIV infection because of unprotected sexual practices that they might engage in. Certain environments, sexual practices and behaviour are more likely to predispose individuals to the risk of HIV infection, thus increasing their susceptibility to infection.

Vulnerability, on the other hand, reflects the ability to cope with the impacts of a risk event without damaging existing means of survival and jeopardising future well-being (Chambers 2006: 33; Kabeer 2002: 593). The inability of fisherfolk to cope with the negative effects of HIV infection makes them more vulnerable to its consequences. Such a distinction between terms is used in some precise academic HIV/AIDS literature, although in a generalised sense, the term 'vulnerability' is largely used to denote the meanings encompassed within susceptibility and vulnerability. This review will use both these terms with their distinct meanings.

In using the term 'fisherfolk', the discussion refers not just to fishermen involved in fish-catching operations but also to the hired boat crew, boat owners and men and women involved in allied activities such fish processing, trading and the making and repairing of boats and fish nets. The term 'fishing community', on the other hand, is used to refer more broadly to men and women whose livelihoods are fisheries-dependent, such as women who run bars along the lakeshore to provide food and drink to fisherfolk, or men and women in the general village population who may be partners of fisherfolk and who are all within the sexual networks of fisherfolk, and thus susceptible to HIV/AIDS. The use of the term 'community' is in no way intended to imply that fishing communities are a homogenous unit lacking internal socio-economic differentiation, but is used to define their affiliation to or practice of a certain occupation (Barratt 2007).

The following discussion will review the various approaches that inform the identification of groups at high-risk of HIV/AIDS. The section after that focuses on understanding the various factors that cause susceptibility to HIV among the fishing community. This section will also tease out the gaps in knowledge pertaining to these factors. After this, the vulnerability of the fishing community to the impacts of HIV/AIDS is briefly discussed and followed by a discussion of the various gaps in literature.

Brief Review of Approaches to Studying HIV/AIDS

'Vulnerability' has increasingly become a central concept in the discussion of prevention of HIV/AIDS. However, there have been other approaches that have dominated the study of risk-factors causing HIV, which continue to be influential even today. The first half of the following section reviews briefly the approaches used in HIV/AIDS studies and prevention programmes. The other half of the section discusses the significance of using a framework of vulnerability and how vulnerability can be identified.

Three distinct stages can be identified in relation to the various approaches that have predominated HIV/AIDS prevention strategies. The first stage in the early 1980s was influenced by a predominantly technical, biomedical approach as public health

scientists were trying to find out what was causing the disease and were identifying ways to stop its transmission (Delor and Hubert 2000: 1558; Gillespie et al. 2007: 2). Groups such as Men having Sex with Men (MSMs), IDUs and sex workers were identified as 'high-risk' in the spread of HIV. The second stage was dominated by a need to understand why certain individuals or groups were more exposed to the risk of HIV. Surveys measuring knowledge, attitudes and practices (KAP) relating to sexual behaviour were administered and social science approaches gained more credence (Gillespie et al. 2007: 2; Parker 2001: 164). Prevention strategies focussed at this stage on individual behaviour as the spread of HIV was linked to specific practices such as repeated use of infected needles and risky sexual behaviour such as non-usage of condoms. The belief underlying these strategies was the ability to influence individual rational thought and thus the goal was complete eradication of HIV/AIDS (Delor and Hubert 2000: 1558).

These approaches have been criticised for different reasons. There is concern that the labelling of certain groups and their behaviour as 'high-risk' factors in driving the HIV/AIDS epidemic will lead to their blame and stigmatisation and contrary to the aim of such approaches, prevent much required prevention and treatment efforts from reaching them (Allison and Seeley 2004: 9; Seeley and Allison 2005; Westaway et al. 2007: 4). Although studies do point out that the sexual norms and practices of certain groups are more likely to render them at risk of HIV and that these are fairly widespread among individuals in those groups, the point to be noted is that approaches to HIV research and prevention need to inquire into the various contexts that cause such behaviour so that appropriate action can be taken (Westaway et al. 2007: 3).

The limitation of these biomedical approaches became particularly apparent in the 1990s, when HIV research conducted across different cultural settings showed that the meanings attached to sexual expression and notions of sexual risk-behaviour were mediated by the socio-cultural context. There has also been increasing recognition from practitioners and academics that structural, economic and political factors also shaped sexual interactions, the circumstances that gave rise to them, the types of partners and sexual practices used, and the power relations that defined the interactions (*ibid.*: 169; Gillespie et al. 2007: 2). This is what Delor and Hubert (2000: 1558) refer to as the third stage of HIV research, where examining the different 'vulnerability' contexts of individuals at risk of HIV/AIDS has become important. This will be discussed in detail in the following section. The stages of HIV/AIDS research discussed above have not progressed in a linear trajectory; despite the increasing currency of using a framework of 'vulnerability', different approaches still co-exist today.

Understanding Vulnerability: Reflections for Measurement

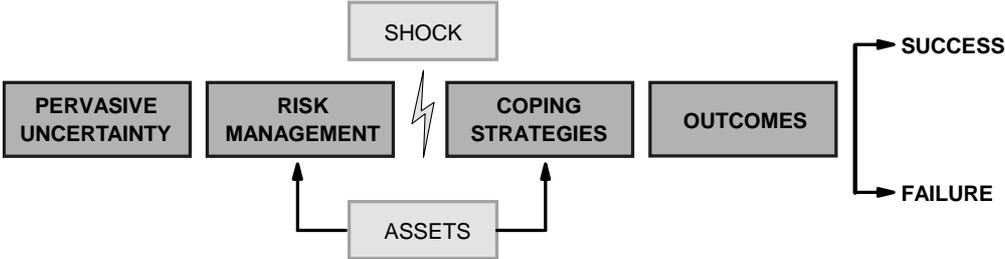
'Vulnerability' is used across social science disciplines with reference to issues as diverse as climate change, natural disasters, food security, poverty and HIV/AIDS and thus in a generalised sense used to refer variously to insecurity, fragility, dependency and so on. Although the study of vulnerability is characterised by different approaches, each of these has the same core concepts and elements.

Vulnerability has been comprehensively explained in relation to livelihood insecurity and poverty and this discussion will primarily draw from such a ‘basic livelihoods’ approach. Vulnerability is difficult to define because it is multi-dimensional, dynamic and caused by complex interacting factors. Thus static indicators cannot by themselves sum up the vulnerability of individuals. A conceptual understanding of vulnerability will however provide an understanding of the different components that can contribute to and influence vulnerability.

Vulnerability is not synonymous with poverty, although the two concepts are closely linked. A framework of vulnerability is better able to capture dynamic and multidimensional processes that provide the subjective experience of being poor rather than static poverty line conceptions that measure poverty on income and consumption indicators (Chambers 2006: 35). Thus, although the poor are usually amongst the most vulnerable to adverse events, not all those who are vulnerable are necessarily poor, nor do all individuals of a similar socio-economic status face the same degree of impact after a negative event (Prowse 2003: 3).

As discussed earlier, vulnerability refers to an inability to cope with the negative effects of a shock and manage its consequences. Within the livelihoods literature, the capacity of a household to mitigate the negative impacts of an adverse event and achieve a positive livelihood outcome is attributed to the combination of assets¹ that a household has command over (Ellis 2003: 6; Moser 1998: 16). As Figure 1 illustrates, vulnerability can best be depicted as a ‘risk sequence’ whereby the assets that a household has serves as a buffer against shocks and is also deployed in order to cope with crisis (Ellis 2003: 6).

Figure 1: Depiction of Vulnerability as a ‘Risk Sequence’



Understanding the composition of assets that individuals may own or have the ability to access and use is a helpful starting point for assessing vulnerability. These assets may also comprise access to common property resources such as a water body for fishing, a common trading area, credit and saving schemes, land etc.

¹ Sustainable Livelihoods literature mentions five different types of assets: physical (buildings, tools, canals), human (e.g. labour, skills, education), natural (e.g. land, water), financial (e.g. savings, credit) and social (e.g. kinship networks) (Ellis, 2003). Assets are acknowledged to be in different forms such as ‘investments’ (in human capital and productive assets), ‘stores’ of value (food, cash), claims of assistance (from other households, village chiefs or patrons, government and so on) (Swift, 2006) or flows (of income, wages, remittances etc)

Different factors influence the ability to access these assets. Identities of individuals based on age, sex, membership of a caste/clan/tribe and occupation are some of the differentials that influence individuals' rights of access to resources/assets. For example, in certain cultures, restrictions against women working outside the home may prevent the widow of a male-earning member from providing the household income, rendering such a household more vulnerable to the death of a male earner. Such an understanding offers a nuanced view of vulnerability which helps explain why individuals in a known high-risk group are not all exposed to the same level of risk of contracting HIV/AIDS, or are likely to suffer its consequences to the same degree. Individuals often manipulate these identities to reduce their vulnerability and achieve positive livelihood outcomes (DEV/ODG 2008). Thus female fish traders have used fish-for-sex deals to secure access to fish among intense competition. They have also in some cases, legitimised these sexual partnerships through a traditional form of extra-marital relationships in order to avoid being labelled as prostitutes (Merten and Haller 2007). Social relations of production also influence people's access to resources, the terms on which they get this access, who defines these terms and whether these terms are favourable to them or not (DEV/ODG 2008). The settings or places where interaction of individuals takes place is important for understanding situations of vulnerability because different places often circumscribe the rules of engagement and the type of behaviour that is considered appropriate (*ibid.*). For example, cultural norms in certain African contexts impute different meanings to the presence of men and women in public drinking places and thus lead to expectations of behaviour from them. A woman's presence in a bar could be taken as evidence of her sexual availability while male presence in bars could be regarded as an assertion of their masculine freedom and independence and a place where they could compete for sexually available women (van den Borne 2003; Wolff et al. 2006).

At the intra-household level, differential access to resources such as education, health care, food and productive assets like boats or cash for example, is determined by socio-cultural norms and unequal bargaining power of household members. In many cultures, the importance of a male heir leads to unequal resource allocations in favour of a boy, making it difficult for girls to manage their own vulnerability. At a meso-level of community or village, kin networks or community-based organisations often determine the allocation of resources such as employment, gifts, loans or access to occupation-related information based on different factors such as mutual reciprocity, fulfilment of obligation or the status and socio-economic position of households (Vatsa and Krimgold 2000). In times of crises, these organisations and networks could be sources of support. However, it is the very lack of organisation and social cohesion within fishing communities that is considered to reduce their opportunities to manage their vulnerability. At the macro level, laws, policies and informal rules, customs and norms, summarised as the policy and institutional context in a livelihoods framework, directly and indirectly inform the ability of households and social groups to access resources. In the case of fishing communities, rules against illegal fishing and policies promoting commercialisation of fishing has directly eroded the access of artisanal fishing communities to fishing livelihoods and fish stocks. On the other hand, the poor infrastructural development of ports and landing sites and its weak links to other urban centres has, amongst other factors, made it difficult for small-scale fisherfolk to access credit, transport and other resources required to enhance their trade.

The asset threshold of households determines the coping strategies that are likely to be employed in event of a shock. Coping strategies are short-term measures to deal with a crisis whereby the assets of households are used to ensure present survival. Although the types of coping strategies likely to be adopted in a crisis will vary widely across households based on many factors, a household with a greater number and diversity of assets is likely to adopt reversible coping strategies with lower long-term cost as opposed to poor households who do not have the ability to do so (Kabeer 2002: 594). Negative coping strategies on the other hand may make households more vulnerable to crisis. Fishermen who may respond to the stress and dangers of their occupation by drinking heavily and, perhaps, engaging in risky sexual behaviour are an example of a coping strategy that makes them even more vulnerable to HIV. The patterns of coping strategies adopted by fisherfolk could, therefore, provide information on how it is likely to shape their vulnerability to other adverse events. Coping strategies are complex and influenced by gender, age, place, time of year and group membership. Because of the precarious nature of their livelihoods, many poor groups try to diversify their portfolio of livelihood activities in order to protect themselves from food and livelihood insecurity. Fishing groups in Tanzania were found to engage in a combination of fishing and farming (Appleton 2000) while all households irrespective of wealth levels in the Lake Chad Basin area were found to be live off a combination of fishing, farming and herding (Béné et al. 2003).

The importance of understanding vulnerability within specific contexts cannot be overemphasised. The vulnerability context, as depicted in the basic livelihoods framework (Ellis 2003), refers not only to the policy and institutional context of laws and policies but also to shocks, either seasonal or recurrent (e.g. floods, famine) and trends (a longer-term direction of change at a macro-level). The frequency of floods, cyclones and other environmental hazards and economic and political crises all affect access to assets and shape coping strategies. The frequency, intensity, nature and duration of these disasters on a macro-level are likely to change over time and understanding the direction of these trends and the risk posed by them to a population is important for gauging vulnerability. As these contexts are likely to keep changing, so are people's vulnerabilities to risk events. Further disasters or shocks often disrupt individual and group access to resources. Vulnerabilities are thus dynamic and subject to different spatial and temporal dimensions at various times.

Establishing the vulnerability of individuals or groups is not an objective process, and any examination of vulnerability must necessarily take into account people's own perceptions of the kind of risks they are subject to, the type and extent of impact it will have on their lives and their ability to cope with it (Barratt 2007: 13; Delor and Hubert 2000: 1560). This does not imply that risks do not exist if people do not think so. This understanding urges us to recognise that the comprehension of vulnerability is itself subject to social and cultural influences (Barratt 2007: 11). Cultural meanings also influence the importance accorded to different assets, investment and coping strategies and indeed broadly to meanings of well-being and deprivation. Diverse examples attest to the fact that besides income and consumption, the poor are variously concerned with security, self-respect and mobility (Chambers 2006: 35). Heyer's study in a village in south India, for example, showed that the Chakkiliyans did not consider investment in education as a good strategy because of the high opportunity cost of wages foregone. The poorest in the same village did not buy land

because they believed that it would curtail their mobility (cited in Chambers 2006: 35). The importance of understanding local perceptions of vulnerability is highlighted by a Ugandan study which found that risk behaviour did not decrease as local knowledge about modes of HIV/AIDS transmission increased. In that study's location, an increased knowledge about HIV transmission created a sense of fatalism which actually discouraged condom use (Pickering et al. 1997a: 19).

In summary, vulnerability is dynamic and multi-dimensional. An understanding of vulnerability can be drawn from factors such as:

- Access to assets – at micro, meso and macro levels
- Identities and Agency
- Relationships
- Coping strategies

In addition, vulnerability must always be grounded in specific contexts and informed by local perceptions of risk, vulnerability and well-being.

Reviewing Susceptibility and Vulnerability of fishing communities to HIV/AIDS: Implications for further research

Having laid out a framework of vulnerability in the previous section, this section will attempt to answer the question: how and what makes fisherfolk more susceptible to HIV/AIDS? Fishing communities are considered to be particularly susceptible to the risk of HIV/AIDS on account of various risk factors associated with fishing and its related lifestyles. However, not all fishing communities are subject to the same risks; and fisherfolk within them are subject to different risks depending upon the role they perform, whether they are men or women, whether they are long-term or seasonal migrants, their extent of livelihood diversification and so on. A number of dominant themes in the available literature that make fishing communities susceptible to HIV/AIDS and vulnerable to its impacts will be summarised, followed by a discussion of the various nuances of susceptibility of individuals and groups to HIV infection.

Mobility is a dominant theme in much of HIV/AIDS literature, because the circumstances associated with mobility have been shown to cause susceptibility to HIV/AIDS. This rests primarily on the assumption that migrants are more likely than non-migrants to engage in risk-behaviour, such as having unprotected sex with multiple sexual partners. Studies in different parts of Sub-Saharan Africa have found strong correlations between HIV and migration status (Lurie et al. 1997). Fisherfolk are seen to share lifestyle factors with other mobile occupational groups, such as truck drivers, military personnel, mine workers and street traders, groups identified at high-risk of HIV/AIDS. The dynamics of the fish trade require that fishermen be mobile and stay away from their families for several days together. Those who depend on fishing as a seasonal occupation often migrate from their permanent homes away from the lakeshore to temporary landing sites (IAVI/CRC 2008: 17). According to Appleton (2000), a key factor contributing to the high prevalence of HIV is the temporary migration of male fishermen to temporary camps by the lakeshore. This migration increased in Uganda, Kenya and Tanzania after the introduction of the

Nile-perch fish, which opened up large export-oriented markets. The absence of social structures that govern fishermen and other fisherfolk behaviour, the absence of their regular sexual partners and the ready cash income acquired through fishing, along with the availability of women providing sexual services, are some of the reasons cited for the high prevalence of HIV/AIDS among fishing communities (Allison and Seeley 2004; Seeley and Allison 2005; Westaway et al. 2007).

Fish landing sites are hubs of trading activity and thus attract other mobile groups such as vendors, casual labourers, traders, transport workers, commercial sex workers (Tanzarn and Bishop-Sambrook 2003), and women from nearby villages who migrate to landing sites to run bars, restaurants and offer sexual services. A high intensity of internal migration offers high potential for the spread of HIV (FASI 2006). Kasenyi, one of the larger fish landing sites near Entebbe in Uganda, has traders coming in from places as far as Kampala, Kenya, Kabarole and even Tanzania (IAVI/CRC 2008: 23). Fishermen from many of the 85 islands in Lake Victoria come to sell their fish and also purchase items for use/trade on the island. Moreover, the fishing community is adjacent to a military training facility and also a flower market employing 1,500 people, some from the local community (*ibid.*: viii – ix). This snapshot of the diversity and number of people moving in and out of fishing community areas shows the potential for the spread of HIV.

In order to understand the extent of vulnerability of different fisherfolk, there is evidence required on their mobility and migration patterns. The number of times fisherfolk migrate in a year, the duration of their stay at the landing sites, whether they migrate alone or with their families, whether migration is in response to seasonal trends or not, and the different risks that fisherfolk face both in their home village and their destination as well as during the migration journey all provide clues about susceptibility to HIV. While there has been some evidence of risks faced by fishermen at landing sites and ports, there is a gap in evidence relating to the risks faced by migrating fishermen in their home village. Further, where the fishermen migrate to for fishing and the types of water bodies they fish in differently structure the risks they are exposed to. Béné's (2003: 23-24) research shows that fishing communities exploit eight different types of water bodies in the Lake Chad basin, with seasonal ponds and receding channels most commonly used, followed by rivers, the lake, and permanent ponds and oxbows. The variable duration of the monsoon in the area rendered fishermen fishing along the western shores of the Lake Chad basin at more risk to severe climatic changes than the others (*ibid.*). Further, the common use of seasonal ponds and receding channels shows that fishing was only a seasonal activity for fisherfolk in this area. Migration for fishing was thus in some cases only one among a range of different livelihood activities carried out as protection against food insecurity or in order to make the most of available opportunities. In the context of subsistence livelihoods, Bené (2003: 20) points out that "local populations are alternatively or simultaneously fishers, herders, and farmers and each piece of land is potentially a fishing ground, a grazing area and a cultured field, depending on the period in the flood cycle". Thus the extent of risk that migration poses to fisherfolk in the context of HIV transmission needs to be seen within a broader matrix of livelihood activities.

The risky nature of the fishing occupation and the uncertainty surrounding their lives and livelihood is another theme strongly associated with causing susceptibility to

HIV/AIDS. Fishing is considered a high-risk occupation, both in terms of the livelihood insecurity that it offers and its potential for physical injury and death. The despair of poverty and the high-levels of physical risk are believed to encourage a culture of risk-taking with respect to sexual behaviour, alcohol and drug consumption (Allison and Seeley 2004). There is evidence to show a strong culture of heavy drinking of alcohol and drug consumption among fishermen in order to deal with the stress of long working hours and exposure to danger while at sea (Allison and Seeley 2004: 8; Barratt 2007: 20-21; Seeley and Allison 2005: 691-692). Further, heavy alcohol consumption is linked to lowered inhibition levels, fostering sexual risk behaviour such as multiple sexual contacts and a reduced likelihood of using condoms (*ibid.*; Grellier et al. 2004; Wolff et al. 2006). Another explanation put forward for such a culture of risk-taking among fishermen is a masculine culture or 'hypermasculinity' associated with multiple casual sex partners and heavy alcohol consumption as a way of proving one's power and dominance (Allison and Seeley 2004; Barratt 2007). It has been suggested that these attitudes may apply not just to sea faring but also affect attitudes towards protected sex (Allison and Seeley 2004). Peer pressure, availability of cash income and an occupation which brings them in easy, close contact with sex workers are other factors that facilitate sexual contacts with visiting sex workers (Voeten et al. 2002).

Some authors contend that risk-taking among fishing communities reflects a low risk perception, a denial of risk and fatalism (Allison and Seeley 2004; Poggie et al. 1995; cited in Béné and Merten 2008). The hypotheses attributing sexual risk behaviour to a strong masculine culture and a culture of fatalism and risk denial need further investigation. Understanding these linkages is important not only to understand why fishermen engage in sexually risky behaviour but also to understand the likelihood of them attempting to reduce their susceptibility to HIV with adequate knowledge about its modes of transmission. In an environment of high occupational and health risks posed by the dangers of the sea and the impact of HIV/AIDS, authors state that it is common for death to be dealt with through superstition or denial. Thus discounting² when understood in relation to fishermen may be a 'normal, adaptive reaction' (Wilson and Daly 1997, cited in Barratt 2007: 6). Risk and uncertainty of lives and livelihoods has been shown to influence discounting in other groups, and better understanding of its role in fisherfolk's perception of risk would be a critical area for research, helping plan more effective HIV/AIDS mitigation and prevention efforts.

Poverty and economic and social marginalisation of fishing communities is seen to have significantly increased the risk of HIV/AIDS. The livelihoods of fishing communities are highly uncertain and subject to seasonal fluctuations in the size of the fish-catch (Grellier et al. 2004: 1). In addition, indiscriminate fishing and illegal fishing methods have led to widespread exploitation of fish stocks in Uganda's main lakes (Barratt 2007: 2), threatening the sustainability of fishing as an occupation. Appleton (Appleton 2000: 19) states that evidence of declining perch population in Lake Victoria poses a significant threat to many livelihoods – such as to seasonal fishermen like the Haya people who are traditionally pastoralists, or to those involved in fish processing and trading who are largely women. As Béné (2003) notes, "overexploitation can indeed be a major – if not *the* major – cause of impoverishment for fisheries – dependent communities".

² Discounting involves placing a lower value on future rewards, benefits or consumption, giving primacy to rewards and consumption that is possible in the present (Barratt, 2007: 3-4).

In large part, increased fishing effort in Lake Victoria can be attributed to the discovery of the Nile Perch fish. The economic viability of trading in the Nile Perch opened up export-oriented markets and attracted several seasonal fishermen to temporary landing sites around Lake Victoria (Appleton 2000: 19) in the 1980s and 1990s (although has recently been in decline). The scale of the export trade can be gauged by its contribution to the economies of countries in the region. Fish exports are among Uganda's top three foreign-exchange earners and fourth among Kenya's exports - had provided fishing communities in these countries with an economically viable livelihood. On the other hand, local enforcement measures to curtail the problems of indiscriminate and illegal fishing led to declining fishing activity in some areas leading to the loss of livelihood and reduced earnings for some. Restrictions on the type of boat and fish-net size that need to be used in fishing were inaccessible for fishermen, both financially and due to lack of its easy availability in local and distant markets (Tanzarn and Bishop-Sambrook 2003: 23). To work around the problem, fishermen in Busabala and Walumbe fished in shallow waters using bait only eaten by the Nile perch, a practice which substantially reduced the size of their fish catch from a few hundred fish to as low as ten or even two (*ibid.*). Some fishermen continued fishing illegally, facing the risk of punitive action or paying bribes to escape prosecution. The paying of bribes further decreased fishermen's earnings, compounding their livelihood vulnerability (*ibid.*). Given that "for every job on the water, there are five full or part-time jobs for both women and men in associated sectors such as processing, transport, trade, boat and net building and repair, and provision of other services to the fishing communities" (Allison 2005: 259), declining fishing activity has critical implications for fisheries-dependent livelihoods as well.

Profound changes in the fisheries sector has led to the economic and social marginalisation of small-scale fishing communities. Large-scale commercialisation of the fisheries sector led to the growing influence of powerful players and has prompted state intervention and regulation of the sector. The geographical isolation, lack of access to financial resources and lack of access to or influence over political power has socially and economically excluded the fishing community from benefiting from a resource they have traditionally managed. The liberalisation of the fishing sector has changed the way that fish is sold. Tanzarn and Bishop-Sambrook (2003: 22) in their study of different landing sites in Uganda, state that fish is sold through an auctioning process to the highest bidder. These are generally the large exporters who have their trucks with refrigerated storage facilities ready to transport the fish. The small-scale traders who lack the capital to purchase such storage facilities or buy the fish at the highest price find it difficult to secure fish for trade. The presence of large exporters and their trucks have also deprived women of their livelihood derived from processing fish by smoking it in the *kavas* (kilns) (Busabala fishing community, Uganda cited in *ibid.*). The commercialisation of the traditional fishing sector has thus changed the rules of the game, making it difficult for the small-scale artisanal fishing communities who dominate fish-catching in Kenya, Malawi, Tanzania and Uganda (Allison 2005: 250) to take advantage of its profit potential. Given that 90 percent of the production in these four countries comes from small-scale fishers (*ibid.*), commercialisation has affected the vast majority of the fishermen. Béné (2003: 960) refers to these as 'direct' (financial e.g. bribes, lack of capital) and 'indirect' (technical, e.g. restrictions on fishing) constraints that overlap to exclude the poorest from entering or making a viable livelihood from fisheries.

Evidence of declining fishing activity comes from reports of fish landing sites such as Busabala on the shore of Lake Victoria, Uganda. Within five years, the number of fishing boats in operation had nearly halved and the kilns used for smoking fish disappeared (Tanzarn and Bishop-Sambrook 2003: 15). The disappearance of kilns also provides evidence to the increased vulnerability of women who are primarily engaged in fish processing (by smoking the fish in the kilns) and trading. A sign of livelihood stress among women, Appleton (2000: 25) notes, is intense competition for the collection of fuel grass, a common property resource used as fuel to smoke and dry fish. In the absence of securing fish stocks for sale, women turned to the sale of this fuel grass to supplement their incomes.

Other indications of livelihood stress come from evidence of decreasing livelihood diversification among fishing communities. Changes in the agriculture sector such as a decreasing availability of land and a decline of livestock-rearing due to theft and poor availability of veterinary services have led several farmers to turn to fishing as a full-time occupation, abandoning the 'fishing-farming' combination that many migratory fishermen followed (Allison 2005: 266). This narrowing of livelihood diversification strategies is not desirable, as it makes such households more vulnerable to shocks or negative trends within the fisheries sector. In the context of the macro changes taking place in the fisheries sector, discussed above, the vulnerability of fisherfolk to poverty may be acute among some groups and fishing communities. A study of fishing communities in Uganda has shown that migrant workers in particular found it difficult to access land and other inputs for practising subsistence agriculture at the destination areas; and jobs in the industrial fish processing factories around Lake Victoria were not considered suitable by women because they were insecure (Grellier et al. 2004: 30). The despair of poverty accompanied by feelings of powerlessness and frustration at being unable to change the situation are also said to foster reckless behaviour such as hard-drinking, having multiple sexual partners including sex workers, and casual sex, not all of which acts may be protected (Allison and Seeley 2004).

Poverty is central to the vulnerability of fisherfolk to shocks, and in turn this exacerbates their vulnerability to HIV/AIDS. It is important to understand livelihood activities within specific contexts and examine if there are any changes in the nature of gender-specific livelihoods, or changes in the composition and contribution of different livelihood activities within a livelihood portfolio. The nature of coping strategies in reaction to livelihood stresses such as disease among livestock, the failure of crops or decreasing fish catches are important indicators of vulnerability. The overall policy climate within the fisheries sector including liberalisation of the trade and regulatory changes, are seen to have far-reaching effects on the livelihoods of fisherfolk. Neglect of these contextual factors would not present a complete picture of any situation of vulnerability.

Geographical isolation and poor development of the ports and fishing villages compound the social, economic and political marginalisation of fishing communities. Weak murrum (mud) roads connecting the landing sites to cities, lack of electricity, absence of hygiene and sanitation conditions, limited access to educational facilities and poor availability and accessibility to health services, have been observed in varying degrees in different ports around the Lake Victoria Basin. Inadequate and

ineffective health programmes for treating sexually transmitted infections (STIs) that target fishing communities and especially the mobile population, and limited access to HIV/AIDS prevention, care and treatment facilities are some factors causing susceptibility of the fishing communities to HIV/AIDS and also rendering them vulnerable to its impacts (FASI 2006; Karukuza and Bob 2005; Tanzarn and Bishop-Sambrook 2003). The extent of neglect of fishing communities by the government is illustrated through Busabala on Lake Victoria, only 22 kilometres from Kampala. It has no electricity or potable water, two shops selling medicines and a poor road connecting the village to the nearest government-run health facility, 3 kilometres away (Tanzarn and Bishop-Sambrook 2003: 15). There is evidence of some development interventions in the larger landing sites such as the Hamukungu on Lake George, but infrastructural development continues to be poor (*ibid.*:16).

Weak social cohesion among fishing communities attributed to ethnic diversity, mobility and independence is considered to be the cause of a lack of organisation among these groups. According to Tanzarn and Bishop-Sambrook (2003: 24), the lack of social cohesion explains the absence of NGO activity working among fisherfolk in Ugandan landing sites.

A related impact of both neglect by the Government in developing fish landing areas and the absence of social cohesion is the lack of access to information and support services for fishing communities (Tanzarn and Bishop-Sambrook 2003: 23-24). The absence of occupation-based networks or relationships of mutual reciprocity and trust leaves fishing communities without a significant source of information and support. Such networks ensure perpetuation of local knowledge and experience through generations and helps ease new entrants into the occupation. The absence of fisheries-based networks may deprive fishing communities of valuable opportunities for enhancing their human capital through education and skills, while the lack of access to financial institutions may deprive them of important information on new fishing techniques, tools and methods of trade.

There is inadequate information on the nature and effects of weak social cohesion among fishing communities. A potential area for further research could be investigating what forms of organisations or networks, if any, exist among fishing communities, the criteria for membership to these networks and whom it effectively includes and excludes.

Women are considered particularly susceptible to HIV because of systemic gender discrimination and inequality that permeates much of Sub-Saharan African and other developing countries (Kaye 2004; Zhihong and Larsen 2008). The transmission of HIV/AIDS in Sub-Saharan Africa takes place primarily through unprotected sex in heterosexual relationships. Women's subordinate position in relation to men, culturally, socially and economically, makes them more susceptible to the infection in different ways.

Cultural and social norms play a crucial role in establishing women's subordinate position by legitimising a gendered division of labour and women's unequal entitlements to education, employment, healthcare and other resources. In much of African society, women's role often lies in fulfilling domestic and reproductive duties and performing subsistence agriculture and other productive work that is often not

directly remunerated. Men are considered to be the primary income earners for the household. Such ideologies, along with norms of domestic seclusion in some cases, restrict women's much-needed access to education, paid work, independence and the ability to develop skills, rendering them completely dependent on men (Gupta 2000; Gysels et al. 2002). Gilbert and Walker's (2002) study which shows a strong link between low income, high unemployment and poor education with rates of HIV infection, confirms that women are the worst off in all these indicators. They argue that "young African women are the poorest, most economically marginalised and least educated sector of the South African population....rendering them particularly vulnerable to HIV/AIDS, in terms of their race, gender and class position" (*ibid.*: 1097).

Early marriage, early pregnancies, physical violence against women and women's economic dependency on men all directly and indirectly increase women's susceptibility to HIV (Kaye 2004; Gupta 2000). A literature review on the links between violence, risk behaviour and reproductive health by Heise et al (1999, cited in Gupta 2000: 3) shows that individuals who have been sexually abused are more likely to have unprotected sex with multiple sexual partners and trade sex for money or drugs. Women who are economically dependent on men are seen to be less likely to challenge male sexual risk behaviour or leave the relationship because of it, are less likely to negotiate condom usage, and more likely to exchange sex for money or material benefits of any kind (Gupta 2000). In the event of male abandonment, separation or death, female partners often lack the social, cultural or material resources to fend for themselves, therefore becoming more vulnerable to exploitation, violence and impoverishment. Lower awareness about modes of HIV transmission and safer sexual practices, lack of access to condoms and an inability to negotiate condom usage due to their poorer bargaining power (Booyesen and Summerton 2002; Williams et al. 2002) heightens their susceptibility to HIV infection.

The perspective of gender inequality is essential for understanding the vulnerability of female fisherfolk in Sub-Saharan African countries. Evidence of women engaging in transactional 'fish-for-sex' (FFS) deals where women traders engage in sexual relationships with male fishermen in order to secure fish stocks, which they can then sell to subsist on comes from the Kafue flats in Zambia (Béné and Merten 2008; Merten and Haller 2007). Such deals are often made in an overall environment of power imbalance against women, because fishermen with the 'prized' fish catch are able to dictate the terms of such "no sex – no fish" deals. Female traders are not always able to negotiate the terms of these transactions and have often been known to agree to sexual arrangements that they would otherwise not have accepted³. In an environment of intense competition to secure scarce fish stocks, where traders may need to wait long hours or even days to get fish, female traders involved in such deals are able to secure assured, regular and much cheaper access to fish stocks (Béné and Merten 2008: 878). Not all these female fish traders are necessarily 'victims' of economic marginalisation. In an overall context of women's unequal access to resources, female traders have realised the benefits of FFS deals as a way of securing access to fish, amidst intense competition with other female traders. By

³ Women negotiating FFS deals are known to prefer a steady, longer-term relationship or a 'marriage', where they would live with the fishermen and perform domestic chores in return for a portion of their fish catch and commitment from the man that he would not deal with other traders (Merten and Haller, 2007)

recognising the lucrative nature of FFS deals, female fish traders are also seen to have exercised their agency as productive agents in the fishing economy (*ibid.*).

Certain cultural practices and beliefs encourage gender inequality Sub-Saharan Africa. These beliefs also help socialise women into accepting their subordinate position and establishing the primacy of men. Among the Baganda, an ethnic group in Masaka district in Uganda, it is culturally accepted that men have voracious sexual appetites that will 'need' to be satisfied through extramarital relationships. It is the *senga's* (father's sister) duty to train her brother's daughters on how to be good wives and be chaste and faithful while accepting their husbands infidelities. They are also taught to do their best to satisfy their husbands sexually so that husbands are less inclined to seek sexual satisfaction from extramarital partners and sex workers (Muyinda et al. 2000; cited in Gysels et al. 2002: 182). Cultural beliefs have also played some role in preventing women from denying sexual relations with men who demanded it. Among the Bagado group in Uganda traditional beliefs state that fishermen whose sexual advances are turned down will have a poor fish catch while those who do engage in sexual activity before fishing will be successful (Grellier et al. 2004). Béné and Merten (2008) confirm the evidence of cultural norms underlying FFS deals. Their review of literature showing evidence of FFS deals show that overall 97 percent of the cases are reported in Africa; 84 percent of cases coming from Eastern and Southern Africa and another 13 percent from West and Central Africa (*ibid.*: 877). Other cultural practices that consent to multiple sexual partners are observed among the Haya community in the Kagera district of Tanzania. Practices of wife-sharing with male relatives were socially accepted according to rules of hospitality, and fathers-in-law had rights to sexual relations with their son's wives on the first night after marriage (Appleton 2000: 21). Polygamy and female genital mutilation are considered to be critical factors in the spread of HIV/AIDS in Africa (Kalipeni 1997; Rushing 1995; cited in Oppong 1998; Williams et al. 2002: 54-55).

The above discussion on women's susceptibility to HIV/AIDS shows how gender inequality structures the differential access of women and men to resources. A strong gendered division of labour is observed in fishing communities, where the women are largely involved in the running of bars and restaurants, fish trading and processing whereas men are predominantly involved in fish-catching operations, either as boat owners or as hired crew (Allison and Seeley 2004). Certain ethnic groups placed additional restrictions on women. Women in the Haya community could only participate in selective aspects of fish processing because of the gendered division of labour in the community which relegated to them the fish cleaning for smoking, with the smoking of fish itself being men's work (Appleton 2000: 25). Cultural norms also dictated fish-catching as a predominantly male activity and in fact, prohibited women from practising it. As a woman in the Busabala fishing community states, "We do not own boats and culture dictates that we do not go out to the water" (Tanzarn and Bishop-Sambrook 2003: 22). In the Walumbe community in Eastern Uganda, there were no boat owners who were women. Kasenyi and Busabala did have a few women boat owners, but most of these women inherited the boats after their husband's death (Appleton 2000; Tanzarn and Bishop-Sambrook 2003). We see how cultural and social norms constrain women's access to a wider set of resources and thus their livelihood choices. However, women's vulnerability emerges not just from the lack of access to certain resources but also, where they do have access to the

resource, from an inability to productively use the assets that cultural norms dictate they are not entitled to use. Anecdotal evidence from Kagera district in Uganda shows that even where a widow inherited her husband's boat, the existence of all-male networks made it difficult for her to hire crew or negotiate their wages (Appleton 2000: 25).

The above discussion shows how formal and informal rules, norms and practices governing state and market logic and embedded at different levels (e.g. household, village, regional and national levels) cause unequal access of different groups to different types of resources based on their differential entitlements. As such norms vary across different cultures and societies, the forms and degree of discrimination vary between countries. Poor, single women, without the support of male family members are usually among the most vulnerable to risk events due to constraints in accessing resources. Understanding the susceptibility and vulnerability of fisherfolk to HIV must consider the identities of fisherfolk based on sex, age, marital status, level of education and membership of a community, and thus their differential resource entitlements. HIV prevention interventions cannot be successful if they violate local cultural norms that structure access to resources. Such an understanding of poverty and gender inequality is not specific to fishing communities. However, for the purpose of this review, understanding the issues of power that define relationships is important for gaining insights into women's susceptibility to HIV.

Unsafe sex with multiple casual and regular partners significantly increases the risk of fisherfolk to HIV. A few studies testify to the multiple transient relationships that fisherfolk have (Appleton 2000: 21; Karukuza and Bob 2005: 4; Tanzarn and Bishop-Sambrook 2003). Studies among the fishing communities in Uganda show that although 98 percent of the fisherfolk are aware that HIV can be sexually transmitted, 30 percent have 2-3 'wives' concurrently (UFFCA 2003, cited in Tanzarn and Bishop-Sambrook 2003: 3). Karukuza and Bob's study (2005: 4) among fishing communities at Lake Kioga, Uganda showed that 68 percent of the married respondents claimed to have had separated in the last one year and had three different marital partners in the past five years. Women's sexual contact with multiple partners through 'marriages', is explained in part by varying definitions of the term 'marriage'. A study of sexual behaviour in a fishing village in south-west Uganda found that women considered themselves married if they shared a house with a man, had children with him or had a long-standing economic relationship with a male. It also referred to relationships that were a few weeks old (Pickering et al. 1997a: 15). Providing insight on women's multiple sexual relationships, Swidler and Watkins (2006), argue that in an environment of pervasive gender inequality and women's dependence on men, transactional ties, and the material benefits that they bring, are a form of patron-client relationship that women rely on to negotiate their survival. They state that stable, monogamous sexual partnerships may be difficult to maintain in some societies because these 'ties of dependence' provide social insurance and protection to women in times of crisis, and in contexts of poverty and the impacts of the AIDS epidemic, the importance of these ties is even more enhanced. Viewing these relationships as a form of prostitution or the exploitation of women by powerful men may fit well within Western narratives or constructs, but it tends to miss the motivations that sustain these sexual partnerships. A transactional element is a feature of some sexual relationships in many different places, giving rise to multiple

concurrent rather than serial relationships according to them. Although this is dangerous in the context of the spread of HIV, Swidler and Watkins urge that rather than rooting for the removal of transactional sexual relationships, HIV prevention interventions would do better to address the unequal norms and practices that cause these relationships to occur.

Unprotected sex heightens the susceptibility of fisherfolk with multiple sexual partners, to HIV/AIDS. A vast majority of fisherfolk are known to not use condoms in their sexual encounters (Karukuza and Bob 2005) especially with regular partners as it signified a lack of trust (Gysels et al. 2002: 182; Voeten et al. 2002). There was inconsistency in the usage of the term 'regular', since such relationships ranged from a time period of a few months or years to even 2-3 sexual encounters. Voeten et al. (2002) found that clients who had steady relationships with female sex workers (FSWs) in Nyanza province in Kenya found that clients differently understood 'trust' to mean that the sex worker did not have an STI; that they were the only client with whom the FSW did not use condoms because they were regular 'boyfriends'; that FSWs were faithful to them because they maintained them financially; or that they were the only client (*ibid.*). It was clear however that the 'trusted' FSWs had unprotected sex with other men, because they had recently infected some clients with an STI (*ibid.*). Given that the usage of condoms is a critical factor in the prevention of HIV/AIDS, non use with regular partners was perhaps a greater risk-factor in the spread of HIV/AIDS than one-off sexual contacts with sex workers. As a mobile group, fishermen's sexual encounters with a wide range of women serves to connect diverse groups of women who might otherwise be socially or spatially isolated, putting a large number of people at risk (Huang 2002; Voeten et al. 2002).

A low risk perception of their behaviour is a common thread that is observed across fishermen who have unprotected sexual encounters with multiple partners, women who engage in FFS deals and sex workers. The above discussion on reasons for risky sexual behaviour in parts of Sub-Saharan Africa points to the importance of understanding local cultural meanings attached to sexuality and sexual expression, rather than using 'objective' constructs to evaluate risk behaviour. The existence of concurrent multiple sexual partners and transactional sexual ties affect risk of infection and may not be easily changed if the social context in which relationships form is not transformed.. A cohort study over nearly a decade among a rural population in Tanzania, for example, has shown that despite modest increases in knowledge about the spread of HIV, there was no accompanying change in sexual behaviour except for a marginal increase in condom usage (Mwaluko et al. 2003). Further, the authors suggest that although striking, these trends were indicative of the entire region. This clearly indicates that standard HIV prevention messages that label such behaviour as immoral may not have much effect on the target population. In another example, in a fishing village in Uganda (Pickering et al. 1997a: 19) the success of HIV education messages which spread warnings about infection actually contributed to fatalism among respondents as they believed that they had already been infected with HIV, which thus discouraged their condom use.

Although there have been different hypotheses to explain low risk perception and denial of risk, cultural analyses of risk perception among fishing communities need to be more thorough in order for HIV interventions to be appropriate and successful.

Ignorance about the causes of the spread of HIV/AIDS, taboos against discussion of issues involving sexual behaviour, and stigma against people living with HIV/AIDS (PLWHAs) are all contributing factors to spread. Taboos against the discussion of sexual issues have hindered much-needed dissemination about the importance of practising safe sex in the prevention of HIV and may continue to fuel ignorance (Williams et al. 2002: 55). A lack of awareness about how HIV/AIDS spreads has contributed in turn to people stigmatising PLWHAs, further preventing others from getting tested for it (ibid.; Mwaluko et al. 2003). Neglect by the Governments and others in providing fishing communities with access to information and services, geographical isolation of fishing villages and weak internal cohesion among fishing communities contribute to this lack of knowledge.

Understanding differential susceptibility and vulnerability to HIV/AIDS among the fishing community

The above overview of the various factors that are likely to cause susceptibility to HIV among fisherfolk provides the basis for the ensuing discussion exploring how different types of interaction among these factors may cause varying degrees of susceptibility to HIV among fishing communities.

According to Allison (2005: 265) there are two types of fisherfolk in eastern and southern Africa. The first group are 'specialist' fisherfolk who are migratory and live temporarily in landing sites in make-shift shelters. They may migrate with their families, but usually migrate alone, working alongside other male fishermen. The second group are residents of the lakeshore fishing communities who own fishing-related assets and may fish part-time or rely on hired crew to fish for them, depending also on subsistence farming or other occupations for their livelihood. The Haya people from Kagera district in Tanzania belong to the second group of fishermen. They were primarily cash-croppers and regarded farming as their main occupation which the women took responsibility for. The economic viability of Nile-perch fishing led the Haya men to fish when they were not required on their farms. The cash income they got was useful for investing in agricultural activities and equipment (Appleton 2000: 20). Although there is no conclusive evidence, it may be assumed that such migratory fishermen who spent a longer time away from their families were more susceptible to HIV infection than the residents of lakeshore villages who returned to their families at the end of short fishing trips (Allison and Seeley, 2004). The fact that some fishermen in Uganda, for example, spend between a week to a month away from their homes at a time is believed to make them more susceptible to engaging in casual sex at landing sites (UFFCA 2003, cited in Tanzarn and Bishop-Sanbrook 2003: 3). Differentiating between internal and external (sex drive versus external circumstances) reasons cited by clients for visiting FSWs in villages close to truck-stops and fishing villages in Kenya, a study revealed that 38 percent thought that making long frequent journeys away from home was primarily responsible for their desire to visit sex workers (Voeten et al. 2002: 449).

It is too simplistic to allocate differential risk levels to different types of resident and migratory fishermen because the dynamics of fishing change between coastal and inland fishing and from place to place but also because of the complexity of several

other factors that influence the situation. Yet, this review aims to provide a brief understanding of the dynamics of fisheries-dependent livelihoods with a view to realising the immense diversity that needs to be taken account of while planning responses to target fishing communities.

Allison (2005: 265) notes that at Lake Chilwa in Malawi, the different range of combinations of migratory and resident fishermen include: residents who mostly farm but have some involvement in fishing part-time or fish-trading; residents who exclusively engage in fish or fish-trading; migrants living with their families who also farm; and migrant fishermen and mobile male and female traders without their families. The men involved in fish catching can further be differentiated as boat owners who fish, and hired crew. The diversity in the occupational sub-types of fisherfolk is made more complex by the livelihood diversification strategies of the fisherfolk and their dynamic entry and exit from fishing as their livelihood circumstances change (Allison, 2005: 265-266). Many fishermen have started out as hired crew or as casual labour on farms, hotels and restaurants, before accumulating enough capital to buy their own boats (*ibid.*). Others enter fishing because of the poor economic viability of other occupations or as a chance (they hope) to make some quick money.

Allison (2005: 266) states that although fisherfolk in East and Southern Africa may not be well-off, a comparison of average incomes showed that their income was higher than those with no involvement in fishing at all. In a context of general low incomes, fishing offers daily cash incomes to smaller fish traders, processors and casual labour and irregular though much higher cash sums to fishermen. The availability of cash made it economically possible for fishermen to visit sex workers. A study (Tanzarn and Bishop-Sambrook 2003: 25) among the fishing communities in Uganda found that the community members perceived boat owners to be the most at risk of HIV/AIDS not only due to their ability to afford multiple sexual partners simultaneously but also because they had plenty of leisure time since they depended on hired crew to fish for them.

The prospect of disposable income along with opportunities for mobility and escape from the social strictures of their village, makes fishing an attractive option for young men (Allison 2005: 267; Allison and Seeley 2004: 7). The study by Karukuza and Bob (2005) among the fishing communities on Lake Kioga, Uganda, showed that 62.8 percent of the respondents were between the ages of 18 to 30 years. Thirty five percent of the population at Busabala landing site on Lake Victoria are youth under the age of 30 (Tanzarn and Bishop-Sambrook 2003: 15). The absence of familial obligations for young, single men meant that this money was more easily spent on 'recreational activities' such as drinking alcohol and availing sexual services (Grellier et al. 2004; Karukuza and Bob 2005). According to Grellier et al. (2004), the fishermen, who go out to fish in the evenings, have plenty of idle time in the day, increasing the possibility of sexual encounters. The demographic factor that heightens susceptibility is the age-group of majority of the fishermen who are between 15-35 years, which is when they are likely to be sexually most active and therefore also most vulnerable to contracting sexually-transmitted infections (Allison and Seeley 2004). A study of clients visiting FSWs in Kenya showed that more than half the respondents were between the ages of 25-36 years (Voeten et al. 2002). Bondo, one of the districts where that study was done, bordered Lake Victoria, and

with all three districts being contiguous to each other, it was no surprise that in Bondo and Siaya, truck drivers and fishermen, were two among the four occupational groups identified as visiting sex workers. The other large group comprised bartenders, cooks and cashiers working at bars and restaurants and traders selling various wares who found their clientele among these mobile groups and who 'picked up' sex workers at the bars and hotels (*ibid.*: 447). Thus, based on evidence from different but similar contexts, it may be suggested that young and single and/or a migratory fisherfolk are likely to be more predisposed to engaging in sexual risk behaviour.

Although there is scant evidence on the expenditure and investment habits of fisherfolk, it is possible to surmise from the available literature the various factors that influence how money is spent by fisherfolk and the impact this has on their susceptibility and vulnerability to HIV/AIDS. Some of these variables have been discussed earlier but will be summarised here to address this issue.

Firstly, although we know that fisherfolk may have access to ready income, their incomes may not be much higher than those involved in other occupations in the same region. However, this general information is not adequate to ascertain how much disposable income fisherfolk really have, particularly given the great variations among different types of fisherfolk. Where an economy is predominantly subsistence-based, fisherfolk may not have access to much cash themselves. In any case, the relative wealth of fisherfolk in such cases would not be enough to make fruitful investments. Thus, it is important to know which fishing communities we are talking about, and which people within those communities. Moreover, given the vagaries of fishing due to changes in weather, availability of fish catches and so on, fisherfolk's income is highly irregular which would make it difficult for them to plan investments, especially those that require a regular, steady contribution such as education for instance. Small-scale fishermen, who dominate the sector in many sub-Saharan African countries, may in some cases be unable to meet the technical regulations required to fish legally, and thus go about fishing with the risk of getting caught or fined. Thus in a context of precarious access to resources, the uncertainty of knowing when and how much cash they are going to receive precludes planned investments. Evidence from rural development literature shows that credit constraints prevent a household from investing in longer term investments with higher returns (Zimmerman and Carter 2001, cited in Barrett and Swallow 2005: 22). Contextual factors in fishing communities such as the absence of financial institutions, credit and savings groups and other schemes that promote investment and provide access to capital does not provide fishing communities with the opportunities and incentives to save and invest.

Youth form an important group of fishermen. They are drawn to the fish-catching sector to enjoy freedom from social strictures, independence and savour the absence of familial obligations and responsibilities, in cases where these men are single, as well as to try to make some money. Given these motivations, young fishermen may be subject to peer pressure to indulge in a culture of risk-taking characterised by having multiple sexual partners, hard drinking and drugs. The easy availability of sex workers and the periodic availability of disposable cash then provide the means that make such behaviour possible.

The concept of discounting, which values current over future consumption, may have a role to play in the spending and saving habits of fisherfolk and their perception of the future, although there is not much evidence to support this. In a context of high mortality rates due to the dangers of fishing and the impact of AIDS, fisherfolk may simply value current consumption because they do not know if they will be able to enjoy future consumption. Moreover, fisherfolk's perception of what the 'future' means may be different from people from other places or with different ways of life.

Cultural understandings of 'wealth' and priorities of investment may also be very different from rational expectations of the same. Béné's (2003: 28) research in the Lake Chad basin found that across the study villages, fisherfolk's idea of wealth consistently referred to 'number and/or type of fishing gears', 'farmland ownership' and 'herd size' rather than to income. This would have a number of implications for their investment behaviour. Chiefly, any surplus income from fishing, farming and livestock-rearing might then be systematically re-invested in such activities, which would help boost their wealth and secure their livelihood. Further, it might also imply that investment in activities typically considered by outsiders to reduce fisherfolk's susceptibility to HIV such as education, may not have adequate returns to investment in that particular local economy. It is thus important to first ask *what* different fisherfolk should be investing in to reduce their vulnerability and whether this fits in with their overall outlook. This issue points once again to the larger need to understand local priorities and perceptions of well-being, investment and wealth as well as heterogeneity among 'fisherfolk'.

Returning to the discussion on the factors that cause susceptibility to HIV, the easy availability of opportunities for sexual contacts in ports and landing sites (Hugo 2001; Trang 2002, cited in Allison and Seeley 2004: 8) is another reason that is known to facilitate casual sexual contacts (Voeten et al. 2002: 449). These opportunities were provided by: commercial sex workers (CSWs) who were either resident or who migrated to landing sites during the peak fishing season when fishermen had ready cash; by the women who ran bars, restaurants and teashops along the landing sites, on which migratory fisherfolk relied on for their food and drink (Allison and Seeley 2004; Appleton 2000; Grellier et al. 2004: 48); and also by female fish traders who engaged in transactional fish-for-sex deals (Béné and Merten 2008; Merten and Haller 2007). Several reasons have been put forward to explain what leads women into providing sexual services and different authors have given priority to different causes. A disadvantaged economic and social background characterised by poor or no education, poor marketable skills, scarcity of economically viable livelihoods that are accessible to women and personal characteristics have explained women's entry into sex work. Whatever the main reason for entry into sex work, the material support that sex workers receive through gifts of cash and kind from clients was a significant part of the sexual exchange for the women in some places (Pickering et al. 1997b; Voeten et al. 2002). In the case of women who enter FFS deals, authors contend that it is not a complete lack of economic alternatives that lead female traders to enter such arrangements but that it is certainly a more lucrative option that they prefer to capitalise on (Béné and Merten 2008; Merten and Haller 2007). The existence of different combinations of factors that have caused women to provide sexual services gives the indication that not all sex workers are equally susceptible to HIV/AIDS. Understanding CSWs as a homogenous group leads to ignoring the different categories of women providing sexual services based on characteristics such as their

socio-economic background, income level, type of clientele, location of soliciting/meeting clients, where they have their sexual encounters and the nature of sexual interaction as a whole. Labelling all women who have multiple sexual partners in exchange for material benefit, as 'commercial sex workers', might itself lead to the exclusion of women who provide sexual services (through local bars or those who enter transactional sex deals, for example) but who do not consider themselves as 'sex workers' and resist being called 'prostitutes' (van den Borne 2003). HIV interventions that address women who provide sexual services thus need to take into account the various factors that make these women differently susceptible to HIV infection (Gysels et al. 2002).

In a context of constraints in practising subsistence agriculture, livestock-rearing and fishing, women, who are not educated, have few skills and little or no access to capital, do not have many options of economically viable income-earning opportunities. Thus, the possibility for catering to the food, drink and sexual needs of fishermen provides an opportunity for women in need of an independent source of cash. A study among the landing sites in Uganda showed that, besides fish processing and trading, women's livelihoods were highly dependent on men spending daily cash on food, alcohol and sex (Grellier et al. 2004: 30). Petty trade in food items and local liquor was a popular source of income, particularly for single women in fishing communities (Grellier et al. 2004; Gysels et al. 2002: 183; Karukuza and Bob 2005) because it required very little capital and had no entry restrictions. However, because the income from this was minimal, these women were heavily dependent on selling sex for their livelihood on a regular basis. These women charged very little for sex and could not be discerning about who their clients were (Gysels et al. 2002).

Gysels *et al.* (2002) in their study of CSWs in a trading town between Kampala and Masaka in Uganda identified these women as one among three groups of CSWs. Their study found that although CSWs came from similar socio-economic backgrounds, they had differing levels of success and independence in their occupation and consequently different levels of exposure to the risk of HIV. This first group of sex workers often operated from back-street bars and had clients who were primarily poorer, local men. They charged very little or took whatever they got paid from sexual encounters. On an average they got paid from 700 to 1500 shillings (approx \$ 0.4 - \$0.9)⁴ for a casual sexual encounter. On the whole, these sex workers found it impossible to negotiate safe sex with the client because they lived entirely from the money they got from commercial sex and thus could not afford to turn the client away in case he refused to use a condom. This group of women was the most susceptible to HIV and STIs.

The second group of sex workers were waitresses who worked in bars along the main road serving alcohol and food by day and supplementing their income in the evening by engaging in a more institutionalised form of commercial sex mediated by middle men. They were mostly young, some divorced. These women did not see their work merely as something they did for a living but also seemed to enjoy the independent life and gifts from clients. Their clients were primarily truck drivers or travelling men passing through the town. Sex without condoms was acceptable if the

⁴ Conversion based on current market rates

client paid well. These women were also fairly dependent on sex work for their living but the mediation of middle men strengthened their bargaining position and often got them a good deal.

The third group of the bar-owners were well-off. They earned money from the bars and also through sex work. They usually hired employees to work in the bars, freeing their time to do other businesses on the side. Their clients were better-off, mostly travellers, willing to pay up to 15,000 shillings (approx. \$9) for a sexual encounter. This clientele might have insisted on condom usage themselves but the bar owners were also able to negotiate condom use and well as monetarily good deals for themselves, both due to their financial independence and ability to be discerning with regard their clients. The bar owners were most in command of their sexual relationships and thus possibly the least exposed to HIV/AIDS compared to the others. The presence of distinct sexual networks, with respect to the different profiles of clients that visited these three groups of sex workers shows the potential for the spread of HIV. Pickering *et al.*'s study (1997b) in the same fishing village showed similar distinct sexual networks among sex workers.

Women who worked in bars were particularly sexually vulnerable and subject to stigma because of gender constructions of sexuality that associated a woman's presence without male supervision in public drinking places as defiance of their gender roles and feminine ideals of chastity, and thus a sign of their sexual availability (van den Borne, 2003; Wolff *et al.*, 2006). For men drinking in public was a social event signifying their independence and masculinity and also a place where they could compete for sexually available women (*ibid.*).

The depth and detail of such information about sex workers, considered a core group in the transmission of HIV/AIDS is critical in order to understand their different risk profiles. However, not much is known about the different livelihood profiles of women from the fishing communities who engage in sexual exchange. Many women who had regular and casual sexual partners did not associate themselves as being 'sex workers' because not all such relationships were considered as purely commercial exchange. Pickering *et al.* (1997a: 17) showed that, while men provided gifts of food and cash as gifts, women often looked after the domestic chores of regular partners including caring for children, doing the laundry and cooking. Besides it was accepted by the community, a Uganda fishing village, for a woman to have casual extramarital partners if their partners were away for a few days. Sexual networking among female fisherfolk or even the partners of fishermen may not be tolerated in all fishing communities and thus the extent of these practices is likely to be hidden. It is thus perhaps more crucial to understand the risk that these women pose to migrating fisherfolk in terms of STI or HIV infection. Conducting research to understand the relevance of sex work in the lives of women within fishing communities, and also to understand the risk profiles of sex workers operating near landing sites or fishing villages in countries besides Uganda, will also be critical in order to know more about how the different dynamics of fishing in other ports contribute to a differential type of risk for women and men engaging in high-risk sexual behaviour.

The demographic profile of women who enter transactional fish-for-sex deals does to an extent reflect the possible presence of constraints in accessing wider resources and livelihood choices. According to Béné and Merten (2008: 898), there is a

likelihood that predominantly older, single women may engage in such deals. Their research in the Kafue flats shows that 36 percent of women engaged in the fish trade are single or widowed and that 57 percent of the single women in the fish trade claim to have a 'boyfriend' in the fishing camp, and are thus likely to be involved in fish-for-sex deals. Additional evidence comes from case studies by Westaway *et al.* (2007: 9-10) which show that single, particularly young women who find it difficult to subsist on sales from declining *mukene* (a small fish commonly traded by women) fish catches, have multiple sexual partners through whom they receive financial support. Single women either unmarried, separated or divorced and especially those with responsibilities for children, may thus be particularly susceptible to HIV/AIDS, due to their financial dependence on men through sexual liaisons. Such women find it difficult to negotiate the terms of sexual exchange to their benefit due to their lower bargaining power in the relationship. Different patterns of sexual activity are observed among women engaging in FFS deals. Poor, single women are possibly more vulnerable during the dry season, when fish catches are small and it is particularly difficult for them to make a living, and this period is thus associated with an increase in sexual activity among local women providing sexual services or engaging in transactional sex. On the other hand, CSWs migrate to landing sites during the peak season when fishermen are flush with money due to high fish catches and have money to spend on sexual activity, and migrate to landing sites with better fish catches during the dry season (Grellier *et al.*, 2004: 48). Understanding such variation in the patterns of sexual activity between different groups of women who provide sexual services is particularly helpful in devising HIV interventions targeted at specific groups.

As discussed, there are differences between the women who provide sexual services at bars, commercial sex workers and women who engage in transactional fish-for-sex deals, although all these women are sexually susceptible to HIV/AIDS. These differences arise from their different pathways into sex work, their different levels of economic and social disadvantage, their divergent experiences and differential levels of success. Furthermore, as we have seen, even among each of these groups of women, certain women are more disadvantaged than others and thus more at risk of HIV/AIDS. Whether sex workers migrate or not, where they migrate to, the location and type of places where they meet their clients, the type of clients they get and the type of strategies they use to protect themselves, if at all, may vary geographically according to prevalent gender ideologies and constructions of sexuality, the extent of financial independence that sex workers enjoy and thus their ability to bargain with men. Understanding in-depth the various livelihood strategies that these women use, and thus identifying the different causal factors of susceptibility, are critical if HIV prevention programmes are effectively to address susceptibilities.

Discussion of differential vulnerability to the impacts of HIV/AIDS

The impact of the HIV/AIDS epidemic on the lives and livelihoods of fisherfolk is in itself another cause of further susceptibility and vulnerability to HIV. There have been studies to document the impact of HIV/AIDS in sub-Saharan Africa (Seeley *et al.*, 2004) and, in addition, Allison and Seeley (2004) have reviewed the impacts of HIV/AIDS on fishing communities at the individual, household level and community level and its overall impact on the fisheries sector. However, individuals and households are also differentially vulnerable to the impacts of HIV/AIDS. Social inequalities that fuel the transmission of HIV/AIDS also influence the coping

strategies available to individuals and households, and thus their differential vulnerability to the impacts of HIV/AIDS. The following discussion will delve directly into the impacts of HIV/AIDS on households in the fishing communities with a focus on its different implications for different groups of people.

The loss of labour in households due to death or the incapacity of HIV-afflicted individuals to contribute productively is acutely felt in fishing households. This has contributed to a loss of income, causing decreasing investments in either farming or fishing and leading in turn to further declines in income. The impact on livelihoods due to the loss of productive members was felt more acutely among some occupational sub-groups of fisherfolk. Tanzarn and Bishop-Sambrook's (2003: 29) study among fishing communities in Uganda shows that when men who were boat-owners fell sick, their earning capacity was not hampered as long as they could hire crew to fish for them. The productive capacity of such households was mainly hampered if the boat owner did not have a male surviving heir or if the male surviving heir was too young and inexperienced. The group most vulnerable to HIV/AIDS were the casual labourers and the hired crew on boats, who had no capital and depended solely on their physical ability to work. In the event of the slightest illness due to HIV/AIDS, they were forced to drop out of work. In general, the impact of HIV/AIDS on households depended on their ability to reallocate labour within the household (*ibid.*). Expenditure on medical treatment and transport to access it compounded monetary strain caused by a loss of income causing a vicious cycle of ill-health, loss of income and depletion of savings and for poor households, a further descent into poverty and consequently, heightened susceptibility to HIV/AIDS.

Declines in household income in the face of higher dependency ratios have increased the risk of food insecurity and malnutrition (Appleton 2000). Households without male members found it difficult to access fish stocks due to cultural restrictions that deemed fishing as men's work. The quality of diet in such households was poorer than those who managed to get fish for consumption (Appleton 2000: 25).

The reproductive capacity of households has also been affected because household members now have to care for the sick in addition to other household chores (Seeley et al. 2004). Socio-economic status was an important determinant of the vulnerability of households to the impact of labour loss due to HIV/AIDS. Boat owners, especially those who depended entirely on hired crew to fish for them, were considered the wealthiest among the fisherfolk and thus able to bear the impact of HIV/AIDS within the household. Poor households, especially female-headed households among them, were undoubtedly the most vulnerable because of their inability to survive in the face of loss of income and inability to afford the costs of treatment (Tanzarn and Bishop-Sambrook 2003: 29).

The decline in the productive and reproductive capacities of households has had long-lasting impacts on the social structure, social organisation of communities and also on fisheries production. Strategies to cope with the impacts of HIV/AIDS were based on the options available to households and varied according to their level of wealth and support from extended families, relatives and neighbours. These were usually negative in the case of resource-poor households, and the well-being of children, the elderly and women was often most compromised. The death of adults in

aged 25-45 years meant that young children were either sent away to stay with extended family or that their grandparents moved into their house as carers (Allison and Seeley 2004; Appleton 2000). Support with food and money also sometimes came from near or distant relatives (Appleton 2000). However where such support was not forthcoming, the household often struggled to survive. Children were forced to drop out of school because of the inability of the household to pay for education and also to contribute to household duties or labour on farms (Tanzarn and Bishop-Sambrook 2003: 31). Studies have shown that young orphan girls who took up domestic work or orphan boys who migrated for work to towns and cities were vulnerable to sexual abuse, violence or even child prostitution (Seeley et al. 2004). The desperation of young boys to take on their deceased father's role in fishing, given that fish-catching was an activity not accessible to women, has led to a buyer's market, Appleton (2000: 26) notes, creating a downward pressure on fishing wages as a whole.

Shifts in the gendered division of labour within a household, necessitated by the death of members of either sex within the household, had serious consequences for women in general. A study in Uganda (Allison and Seeley 2004: 11), found that men living with HIV/AIDS who could not physically withstand the rigours of deep-water fishing were forced to take on shore-based work such as fish processing and/or fish trading, which were traditionally female activities, thus displacing women from these activities. The consequences of this displacement for women were serious, given that women in fishing communities were able to access far fewer opportunities as compared to men. In other cases, women were forced to take on men's activities due to their husband's ill-health.

Women and in particular female-headed households were vulnerable to the impacts of HIV/AIDS because of the various gendered constraints in accessing their deceased husband's land or livelihood. Instances of in-laws grabbing land and property from their daughters-in-law after their son's death, has been widely noted in the literature on the impacts of HIV/AIDS and also in a sub-Saharan African context (Appleton 2000; Seeley et al. 2004). This is further complicated in African countries due to the overlapping of customary laws for ownership and inheritance with Western statutory laws. In patrilineal and patriarchal structures in East and Southern Africa, the access to land is dependent on the presence of an able-bodied male and thus in the event of death of a male household head, his widow's access to land becomes uncertain (Seeley et al. 2004).

Cultural notions of a division of labour, culturally prescribed norms of seclusion for women, prevalent in different degrees in many parts of Africa, have also restricted women's ability to move freely, making it difficult for them to take over their deceased husband's occupation or trade. Even the means of movement were restricted in south-west Uganda, where women with HIV/AIDS have been discouraged from riding bicycles! (Seeley et al. 2004: 90). Thus, as the discussion shows, not all the negative impacts on women were due to the impacts of the HIV/AIDS epidemic alone. Social inequalities that have fuelled the transmission of HIV have also prevented the mitigation of its consequences (*ibid.*). Restrictions on the ability to move freely have also impacted women's ability to access health and medical care further exacerbating existing gender inequalities in access to health (*ibid.*: 90).

The impact of HIV/AIDS has deepened and altered the experience of poverty among poor fishing households and made non-poor households more vulnerable to adverse impacts. By destroying the social safety nets that communities depend on during times of crises, the HIV/AIDS epidemic has rendered vulnerable groups of people more vulnerable to HIV infection and the impacts of HIV/AIDS. Increasing mortality rates and decreasing life expectancy is impacting the demographic and social structure of fishing communities and the organisation of the fisheries sector as a whole. The impacts of HIV/AIDS at the level of fishing communities and the fisheries sector needs to be more finely etched, as changes at these levels will create new vulnerability contexts and different susceptibilities for fisherfolk that research must continuously keep track of.

Further research is also needed on identifying key sub-groups within fishing communities who are more acutely vulnerable due to HIV/AIDS and on understanding the various types of impacts that they face. While the impacts of HIV/AIDS has been widely documented in the general literature, a finer understanding of its impacts on access to resources, livelihood activities and choices, coping strategies and relationships and processes within fishing communities is needed through robust empirical evidence.

Conclusion: Overview of Gaps in knowledge

It has perhaps been a bit simplistic to allocate or hypothesise the differential risks that different groups of fisherfolk or people in a fishing community are exposed to and their differences in vulnerability to the impacts of HIV/AIDS. The picture is complex. There is diverse literature from different parts of Sub-Saharan Africa, some academic and some not, some providing exclusively quantitative or qualitative evidence, and some a combination of both types of data, using different sample sizes, different study objectives, and different types of study locations and contexts. This literature has provided various pieces of evidence on the nuances of susceptibility to HIV/AIDS among different profiles of fisherfolk. This discussion has also helped to draw attention to the gaps in the literature concerning the susceptibility of fisherfolk to HIV/AIDS.

As recent attention to the issue reflects, there is a dearth of scholarly literature on HIV/AIDS and its impact among fishing communities. Besides a few critical articles that provide an estimate of the extent of HIV/AIDS within fishing communities, an overview of the risk factors that cause susceptibility of fisherfolk to HIV/AIDS and its impacts on fishing communities and households, there is scarce academic discussion on the subject especially in a sub-Saharan African context. There have been an increasing number of reports published over the past few years, by the FAO of the United Nations, GTZ (a German agency for international development) and the Department for International Development (DFID) in conjunction with each other. These reports have taken the form of policy briefs emphasising the importance of the issue, reviews on poverty within fishing communities, and knowledge, attitude and behaviour surveys among fisherfolk conducted primarily among fishing communities in Uganda. Some of this literature has been helpful in shedding light on the patterns in fishing-related activities and on the susceptibility of vulnerable sub-groups among the fisherfolk to HIV/AIDS. It also provides descriptive detail of the infrastructural

facilities and services at the landing sites. However, the evidence in these reports is not robust and the evidence is drawn from Uganda alone. There is poor representation of the diversity of practices and challenges faced by fishing communities in different parts of Africa. Thus, although the availability of empirical evidence provided by these reports is an encouraging sign, it also points to the extent of information that is not known.

Little is actually known about the risk and vulnerability of fisherfolk in sub-Saharan Africa. At a broader level, there is little known about the kinds of environmental hazards and shocks they face, for example, cyclones or floods, the frequency of these in certain areas vis-à-vis others, and the impacts of these on their lives and livelihoods. Risks posed to the practice of fishing due to declining fish stocks, for example, or the changes in the macro policies that are displacing artisanal fishers, needs to be studied for its far-reaching implications for the livelihoods of fisherfolk. Vulnerability to risk events is also not thoroughly understood among fisherfolk. For instance, it is essential to know how vulnerability changes across coastal and inland fishing, how it is impacted by the policy and institutional context in different countries, and how the vulnerability of fisherfolk compares with those who are engaged in other occupations in the same region. At a macro-level, it is also important to continually understand whether the vulnerability of fisherfolk has been increasing or decreasing in response to economic and social policies and HIV interventions. Culturally-specific knowledge on different parts of sub-Saharan Africa is critical for a range of interventions. This knowledge is necessary to understand the outlook of fisherfolk and their perceptions of risk, differential risks to livelihood and options for diversification, the nature of social inequalities, and to understand the different ways in which they make people more susceptible to HIV and also hamper the mitigation of its impact.

Not enough is known about the different occupational sub-groups of fisherfolk, whether boat-owners or hired crew, seasonal migrant fishers and resident ones and other groups of transport workers and traders whose livelihood is fisheries-dependent. The diversity of coping mechanisms, livelihood strategies, migration and mobility patterns, and the lifestyles associated with them, is important to acquire not just across the occupational sub-groups but also within them on sex and age. Poverty is a dynamic process and some households frequently move in and out of poverty depending on their ability to cope with risk events. Understanding the diverse coping mechanisms utilised by different groups will help towards a more comprehensive planning of responses. Understanding the viability of other occupations – whether farming or livestock rearing – in the region would provide insights on the fall-back options or avenues for livelihood diversification that fisherfolk do or might follow.

The frequency or intensity and pattern of migration has a bearing on the type of risk that fisherfolk are exposed to. Given the dynamic changes in the livelihoods of fisherfolk, the migration status of fisherfolk itself might be fluid, changing at different stages during the course of their lifetime. Further there are also short and long-term migrants and some migrate with their entire family and some without. Different migration patterns carry different types of risk attached to them. In addition, it is important to capture the exposure to risk not only at the destination areas but also at the origin or their home village. According to Lurie *et al.* (1997), although it is

commonly assumed that migrants infect their partners with STIs/HIV while visiting home, there has not been much research done on the likelihood of partners infecting returning migrants. The different livelihood options and resources available to different groups of fisherfolk are likely to predispose them to different risks, and thus an understanding of the types and extent of risk will be incomplete without additional empirical evidence on this. Similar evidence is required on the livelihood strategies and mobility patterns of different groups of petty traders, transport workers and sex workers in order to understand the type of risks they are subject to.

A lot of the literature on vulnerability of women to HIV/AIDS is focussed on sex workers and women who enter transactional sex deals. Literature on the role of women traders has begun to help to correct a gender bias in the fisheries and HIV/AIDS literature, which has largely focussed on the role of men in the fish catching sector. Viewed historically as a male-dominated occupation, fisheries literature has portrayed women largely as sexual partners of fishermen and commercial sex workers ignoring the important role that women play in fisheries (Béné and Merten 2008: 881; Williams et al. 2002). Béné and Merten (2008: 881) argue that such a gender bias is being replicated within HIV/AIDS literature, with very few emerging articles focussing on the vulnerability of women as economic agents, rather than just sexual partners. Detailed evidence on transactional sex deals has only come from Zambia. The extent of risk posed to women through these deals will be better understood once the extent of prevalence of transactional sex across fishing communities in Sub-Saharan Africa is understood. It is also essential to understand the cultural meanings attached to 'marriage' and 'long-term regular' relationships among fisherfolk and to better understand the transactional element that is purported to exist across the continuum of relationships from casual to regular (Swidler and Watkins 2006). Understanding what motivates and sustains these relationships would help provide an alternative perspective to the one that economic desperation forces women to enter sexual exchange. It would also help HIV prevention messages better target these women who do not see themselves as sex workers and are thus not likely to respond to interventions meant for prostitutes, but who nevertheless are at risk of infecting themselves and their multiple sexual partners (van den Borne 2003).

For a start, it would be necessary to have some approximate figures for the number of people involved in fisheries in different activities, and also some estimation of HIV prevalence among them. Although there are problems involved in this exercise due to problems of illegal fishing and intense migration, even approximate figures would be helpful to understand the extent of impact of HIV/AIDS on fishing communities in the decades to come. This would help plan responses to the epidemic, not just in terms of behaviour change, but also strategies that secure the access of vulnerable groups to critical resources such as education, credit and health care and which also address the social and gender inequalities among the community that are likely to hinder access to these. Such broad-based strategies will be able better to address both susceptibility to HIV/AIDS and vulnerability to its impact.

References to HIV prevention interventions among fisherfolk indicate that such broad-based strategies are in existence in certain countries. There is mention of savings schemes for women and girls in the Republic of Congo, training of fishermen in alternative occupations to encourage livelihood diversification, training of people

living with HIV/AIDS in Malawi to engage in aquaculture, community-initiated safety nets such as Beach Management Units (BMUs) supporting orphans' education and community-based initiatives such as strengthening organisations of small-scale fishers (FAO 2006). In Uganda, the Uganda Fisheries and Fish Conservation Association (UFFCA), a nationwide NGO, has undertaken a range of activities to raise awareness about HIV/AIDS amongst fisherfolk (Grellier et al. 2004). However, largely it is believed that historically the lack of attention to the issue of HIV/AIDS among fishing communities has led to its neglect among policy makers. A situation analysis by Grellier *et al.* (2004) states that the HIV/AIDS support services in Uganda, which number around 700, have failed to focus attention on fishing communities, while the Fisheries Policy and Beach Management Units do not mention HIV/AIDS in their documents. The visibility of the issue of HIV/AIDS among fisherfolk in academic literature, policy documents and NGO-speak would thus be only a first step, although a very critical one, in the much larger commitment towards addressing this issue.

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