



Gleaner, fisher, trader, processor: understanding gendered employment in the fisheries and aquaculture sector

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Abstract

Much of the research on gender differences/inequities in capture fisheries and aquaculture in Africa and the Asia-Pacific remains descriptive of the gender division of labor within this sector. It is primarily intended to prove that women are engaged in fisheries and outlines the different ways in which they are. Based on an extensive literature review, we emphasize the need to move beyond this perspective by identifying emerging research on globalization, market changes, poverty and trends in gendered employment in the fisheries sector. If gleaning, trading, processing and fish farming were enumerated in addition to fishing, the fisheries/ aquaculture sector might well turn out to be a female sphere. We argue that a livelihoods approach (Long, 2000; Allison and Horemans, 2005) better enables an understanding of how employment in the fisheries/aquaculture sector is embedded in other social, cultural, economic, political and ecological structures/ processes that shape gender inequities and how these might be reduced. Four thematic areas – markets and migration, capabilities and well-being, networks and identities, governance and rights – reveal significant facets of this embeddedness. These are offered as useful analytical entry points to discuss research gaps and to generate a nuanced, comparative understanding of the impact of development processes and socio-ecological changes on gendered employment trends. Case studies of transactional sex for fish and gender disparities in community-based fisheries management are used to unravel the embeddedness of gendered employment in the fisheries sector. Three research priorities that would lead to effective, gender-equitable policies in sustainable capture fisheries and aquaculture are outlined: support for national-level, longitudinal statistics on the extent and nature of, and changes in women's and men's employment in the fisheries/aquaculture sector; meso- and micro-level analytical studies on how employment in the fisheries/aquaculture sector is gendered and embedded in wider social, cultural, economic, political and ecological structures and processes; global, regional and national-level reviews on current policies that maintain or exacerbate gender disparities in rural employment in the fisheries/aquaculture sector and policy reform needed to bring about gender equitable outcomes. These research priorities will also form the basis for addressing emerging critical issues related to the gendered impacts of climate change, such as resilience, adaptation and food security in small-scale fishing communities. The paper is based on a review of published literature, as well as insights gained from primary research in fishing and farming communities by the authors.

1. Introduction

This paper begins with an overview of the current knowledge on gender differences and inequities in small-scale capture fisheries and aquaculture in Africa and the Asia-Pacific regions. Much of this literature remains descriptive of the gender division of labor in fisheries; it is primarily intended to prove that women are engaged in fisheries and outlines the different ways in which they are. We emphasize the need to move beyond this perspective by identifying the substantive research contributions that have emerged on globalization, market changes, poverty and trends in gendered employment¹ in the fisheries sector. If gleaning, trading, processing and fish farming were enumerated in addition to fishing, the fisheries/aquaculture sector might well turn out to be a female sphere. We argue that a livelihoods approach (Long, 2000; Allison and Horemans, 2005) better enables an understanding of how employment in the fisheries/aquaculture sector is embedded in other social, cultural, economic, political and ecological structures/ processes that shape gender disparities and how these might be reduced. Lastly, we identify several research priorities that would lead to more effective policies to ensure gender equitable outcomes in sustainable capture fisheries and aquaculture. These research priorities will also form the basis for addressing emerging critical issues related to the gendered impacts of climate change, such as resilience, adaptation and food security in small-scale fishing communities. The paper is based on a review of published literature and insights gained from primary research in artisanal fishing and farming communities by the authors.

2. Why gender disparities in the fisheries/aquaculture sector matter

With an estimated 200 million people directly or indirectly dependent on fisheries and aquaculture by 2008, this sector contributes significantly to livelihoods around the world (FAO/IFAD/WB, 2009). Research indicates that employment in this sector is expanding. The current estimates from the Big Numbers Project (BNP) for employment in small-scale capture fisheries in developing countries alone reach 25-27 million, with an additional 68-70 million engaged in post-harvesting (FAO, World Bank and WorldFish, 2008). As women form the majority engaged in post-harvesting in many countries, revised estimates of employment in fisheries could indicate that the sector is predominantly a female one, challenging the long-held notion that fisheries is a male domain. Preliminary BNP data for nine significant fish producing countries, based on available national statistics and case studies, reveal that 47% of the labor force in the fisheries sector (including post-harvesting) is women (FAO, World Bank and WorldFish, 2008). If statistics for gleaning and aquaculture were included, these figures could be higher.

Table 1: Share of women in total capture fisheries workforce (full-time and part-time; fishing and post harvest activities) in selected BNP case study countries.

Country/case study	Total workforce	Percentage women
Bangladesh	3,250,000	5%
Brazil	430 ,000	13%
Cambodia	1,640,000	57%
China	12,080,000	22%
Ghana	370 ,000	40%
India	10,000,000	72%
Mozambique	260, 000	4%
Nigeria	6,500,000	73%
Senegal	130,000	9%
<i>Total/average</i>	<i>34,660,000</i>	<i>46%</i>

Source: FAO/WorldFish/World Bank, 2008: Small-scale capture fisheries: A global overview with emphasis on developing countries. WorldFish: Penang.

Gender disparities in fisheries and aquaculture can result in lower labor productivity within the sector and inefficient allocation of labor at household and national levels. Customary beliefs, norms and laws, and/or unfavorable regulatory structures of the state, reduce women’s access to fisheries resources and assets (FAO, 2006; Porter, 2006; Okali and Holvoet, 2007), confining them to the lower end of supply chains within the so-called “informal” sector in many developing countries. This implies that women are likely to constitute a larger proportion of the poor within this sector, as much as in agriculture, forestry and industry. Ecological degradation and depletion of aquatic resources have further constrained access to resources. These disparities are likely to be exacerbated by climate change (Brody et al., 2008). While women bear the brunt of the costs of gender inequities, these costs are distributed widely and are a cause of persistent poverty for all members of the society.

Addressing gender inequities by improving women’s incomes and educational levels, as well as their access to information and decision making processes, enhances human capabilities of the household, as well as society in general. Important for sustainable change are measures to improve governance, especially enhanced voice and accountability, and public sector capacity to be responsive to gender-specific needs. Cash earned by women contributes to the local economy, and in some areas is provided as capital to male producers to improve their productive assets. There is increasing evidence that those countries which have performed well towards achieving gender equity have also reached higher levels of economic growth and/or social well-being in general (World Economic Forum, 2006; 2007). There is a growing literature on how

nations with greater gender equity could exhibit greater competitiveness in trade (Belghazi and Baden, 2002; World Economic Forum, 2006; 2007; AccountAbility, 2007).

3. Moving beyond “women do fish”: An overview of the literature on gender and fisheries/aquaculture

A review of the literature on gender and small-scale fisheries/aquaculture reveals that most of the available research deals with the gender division of labor. This literature comes from the tradition of women’s studies and is centered on women’s economic activities in fishing communities. Much of it is descriptive and devoted to establishing the fact that women do fish or are active in fishing-related tasks, as fisheries has been considered a male domain by mainstream researchers for years. Apart from ethnographic monographs (for e.g. Firth, 1966; Acheson, 1981; Ram, 1993; Firth, 1984; Gulati, 1984; Pollnac, 1984) that came out of early research on fishing communities, many of the studies of the gender division of labor in fisheries/ aquaculture date after 1995.

There are extensive case studies that describe gender roles within fishing communities and their variation across geographical regions and countries (Vunisea, 1997; Lambeth, 1999; Williams et al., 2005; FAO 2006; Gurumayum et al., 2006; Halim and Ahmed, 2006; Kronen, 2008). In some societies women are perceived as “fisher wives” while men engage in all fisheries-related activities. In Ghana, income from “fisher wives” is vital for supporting the entire fishing industry as they also invest in canoes and other gear and give out loans to husbands and other fishers (Overa, 1993; Walker, 2001; 2002). In others (Benin, Cambodia, Congo, Mali, Nigeria, Papua New Guinea, Solomon Islands, Tanzania, Thailand and Uganda), some fishing tasks using gear, such as canoes/boats and nets (Williams et al., 2005; Porter, 2006; Okali and Holvoet, 2007), and diving for high value commodities (Kim 2003, for Korea) are performed by women, just as by men. Among these are communities where women own canoes/boats, which they might use themselves or rent out to men.

Women are often engaged in gleaning and near-shore fishing (Vunisea, 1997) while men fish near-shore and off-shore. Gleaning for mollusks as an activity is almost invisible in most fisheries studies and statistics. Women also perform many unpaid pre and post-harvesting tasks (mending nets, collecting bait, preparing food for fishers, keeping accounts), which are unacknowledged or undercounted as employment (Williams et al., 2005; FAO, 2006, Choo, 2005). However, women are outnumbering men in processing and trading fish across the world, although these “informal” activities might also not be enumerated and are invisible in the national statistics. In some societies they are considered to be more skilled at negotiating than men because they are subservient and refrain from engaging in conflict (Kusakabe et al., 2006). In others, women are perceived to be exploiting male fishers who are dependent on them for credit (Bennett et al., 2001). In many parts of Africa, women dominate local markets for fish and other agricultural commodities, and a relatively extensive literature has emerged on women fish traders (Overa, 1993; Walker, 2001; 2002; ICSF, 2002; Madanda, 2003; Nakato, 2005; Vales, 2005).

Women’s roles and extent of participation in aquaculture value chains (fish, shrimp and seaweed farming, crab fattening) seem even higher than in fisheries. This is especially true for

Southeast Asia, where women's engagement ranges from 42-80% in Indonesia and Vietnam (AIT, 2000; Kaing and Ouch, 2002; Williams et al., 2005; FAO, 2006). In the Tonle Sap Lake in Cambodia, women's participation ranges from around 50 percent in fish culture to 85 percent in buying and selling (ADB, 2007). The promotion of aquaculture as a development strategy for women has been partially based on the perception that it is an extension of women's domestic tasks (Kelkar, 2001), allowing coordination with housework and child care. However, in many countries, especially in South Asia and Africa, there is room for increasing the participation and incomes of women in aquaculture activities through better extension services, innovation policies and institutional practices directed at women (Rahman, 2005).

Since the 1970s, the invisibility and under-enumeration of women's work in agriculture have been discussed extensively. However concern with these issues in the fisheries/aquaculture sector came relatively late, as fisheries was perceived as a male domain (Davis and Gerrard, 2000; Williams et al., 2005; FAO, 2006; Samuel, 2007; Okali and Holvoet, 2007; Williams, 2008; Choo et al., 2008). The lack of gender disaggregated data on employment in fisheries and its negative impact on supporting gender sensitive policies and planning has been repeatedly stressed for the last 20 years but with little action taken (Sharma, 2003). The first significant cross-country attempt is the Big Numbers Project (FAO, WorldFish and World Bank, 2008). Only a few countries in the developing world, such as India, collect gender-disaggregated data for fisheries.

Thus although the research on women's activities in the fisheries and aquaculture sector are valuable as case studies, a truly gendered analysis is impossible when comparative data for men are often missing. A Malaysian case study (Yahaya, 1994), for example, points out that around 57 percent of women in two fishing communities were involved in non-fisheries livelihoods activities. However, without comparative data for men, it is difficult to arrive at the extent of disparity between female and male activities in these two communities.

A number of studies deal with globalization, market changes and impacts on women; these impacts are generally perceived as negative. There are also a number of case studies on women's struggles for resource access rights and fishworkers' rights; these are mostly descriptive as well. The literature is scant on gender issues in health and well-being (apart from recent work by WorldFish on HIV/AIDS), networks and identities (except in developed countries in North America and Europe) and governance (except for some studies on community-based resource management). In comparison to the conceptual approaches and analysis of gender relations conducted in the area of agricultural employment, gender research on employment in the fisheries/aquaculture sector remains at a pioneering stage.

4. Understanding the “embeddedness” of gendered employment

The sustainable livelihoods framework, that was originally proposed by Chambers and disseminated widely in the development field, came to inform the socio-economic analysis of fisheries communities only in the early 2000s (Allison and Ellis, 2001; Allison, 2003; Allison and Horemans, 2005). Chambers’ model emphasized the relationship between livelihoods and the asset base - the five “capitals”, natural, physical, financial, human, social - of households, in interaction with a vulnerability context, and with policies, institutions and processes. Chamber’s approach to livelihoods widened the economic concept of “capital” to encompass the social and environmental dimensions, and helped to move from a narrower focus on “rural employment” to a broader concept of “livelihood”. This is further elaborated in anthropological approaches to livelihoods, based on an understanding of the intrinsic embeddedness of rural economies in social, cultural and political structures and processes (Polanyi, 1944; Davis, 1997; Long, 2000).

Long (2000:196) argued that the notion of “livelihood” is central to the idea of networks and organizing practices.

“Livelihood best expresses the idea of individuals and groups striving to make a living, attempting to meet their various consumption and economic necessities, coping with uncertainties, responding to new opportunities, and choosing between different value positions.”

Studying the links between livelihoods and social relations/networks, implies moving beyond customary anchorage points for the analysis of economic life such as the “household”, “community”, “production sector” or “commodity chain” (Long, 2000). He emphasized that apart from access to material resources, labour and capital, the pursuit of livelihood is shaped by normative and cultural factors, such as lifestyle and identities. Households and interpersonal networks comprise “the social fabric upon which livelihoods and commodity flows are woven”. Livelihood strategies necessitate the building of relationships with others; thus, identity construction processes are intrinsically bound with the pursuit of livelihoods.

The livelihoods approach is particularly important to understanding gendered agricultural employment as the distinction between productive and reproductive activities is often blurred in rural societies. Thus, many of the gender disparities in employment (productive tasks) are linked to ideological underpinnings of gender roles linked to reproductive tasks, such as household chores and child care. Time management, an important feature of organizing work, is gendered in ways that result in different configurations for men and women. Productive tasks are often prioritized by men, whereas women are required to juggle the two types of tasks, shaping the differential benefits that each group derives from wage employment.

An understanding of the embeddedness of employment in the larger social, cultural and political landscape, as well as its gendered nature in fishing communities, remains at an incipient stage. Still lacking is a nuanced analysis of the differentiation within household livelihood portfolios of men and women, and male and female youth, the resources and options available for the different groups, the trade-offs between fisheries and non-fisheries related livelihoods,

and the gendered processes of decision-making on and distribution of benefits from livelihood activities.

Four thematic areas – markets and migration, capabilities and well-being, networks and identities, governance and rights – reveal significant facets of this embeddedness of gendered employment in wider social, cultural, economic, political and ecological structures and processes. They are identified as analytical entry points to discuss gaps in the literature on gendered employment in the fisheries/aquaculture sector and are proposed as priority areas of gender research within this sector.

Markets and migration

Globalization of supply chains and market changes, combined with the depletion of fish resources, has affected livelihoods in fisheries communities. Analysis is only beginning on the extent and contours of this change and how men and women are differentially placed and/or made vulnerable within labor markets in these supply chains (ICSF, 2002; Madanda, 2003; Thorpe and Bennett, 2004; Kusakabe et al., 2006; Tekanene, 2006; Ram-Bidesi, 2008; Tindall and Holvoet, 2008).

In contrast to the comprehensive and nuanced research carried out in fishing communities in Europe and North America (Davis and Nadel-Klein, 1992; Davis, 1993; Binkley, 2000), there is little analysis in developing countries of what differences in the gender division of labor in fisheries/aquaculture imply in comparative gains (income differentials) from employment to men relative to women, their social status and well-being or how these have changed over time.

The evidence from developed countries from artisanal and industrial fisheries reveal loss of social status and negotiating power (Davis, 2000, Power, 2005); yet the opposite trend towards increased status has also been found (Bennett et al., 2001; Grzetic, 2004). The positive impact of socio-economic changes on women fish traders has been recorded in several developing countries as well (Krabacher, 1988 for Sierra Leone; Rubinoff, 1999 for Goa, India). Even though fishing communities can be highly stratified, studies rarely analyze the complexities of other forms of social differentiation (such as wealth, age and ethnicity) that intersect with gender disparities within communities. In Ghana, for example, fishing villages have marked differences in wealth that cut across gender divisions. Indeed “fish mummies” can run small empires (Overa, 1993). In Vietnam various forms of stratification determine returns from aquaculture and gleaning, as well as inequitable distribution of benefits from development interventions (Le Hue, 2008).

Gender issues in the fisheries/aquaculture sector are often overlooked or misunderstood because of an analytical focus that looks at the sector in isolation and is concerned primarily with ecological and economic factors – i.e. maintaining fish stocks to ensure the long-term viability of the fishery as a production sector. Thus, interventions have more commonly been directed at fishers involved in the production process and the aquatic environment, rather than at women engaged in post-harvesting and marketing on-shore, or interconnections between the two sets of

actors and processes. Walker's (2001; 2002) work in Ghana indicates that female traders can in fact spur over-exploitation of fish resources by financing and promoting the gear types that contribute to harvesting smaller and more fish.

Dwindling aquatic resources, globalized fishing and trading patterns, volatile seafood markets, as well as migration of individuals and households all affect employment in the fisheries/ aquaculture sector. There are a number of studies indicating displacement of men and women from small-scale fisheries as a result of industrialized fishing (Medard, 2005a; Makussen, 2002; Porter, 2006; Okali and Holvoet, 2007; Guhathakurta, 2008; Porter et al., 2008).

Industrialized fishing can cause both smaller catches for fishers, a decrease in stock for processing and trading, as well as an increase in employment in processing factories. The increasingly globalized seafood trade also provides opportunities for small-scale fishers to supply high-value commodities in export markets, shifting them to new areas of employment, such as harvesting shellfish, sea cucumber, seaweed, octopus or jellyfish for cash incomes. There is an assumption that industrialized fishing and globalized markets are moving small-scale fishers and women engaged in fisheries-related employment into poverty. However, these processes also provide opportunities for new employment or higher profits. The majority of employees in seafood processing plants all over the world are female; however, much of this female workforce in developing countries are casual and have inadequate social protection (Nishchith, 2001; Silva and Yamao, 2006; Okali and Holvoet, 2007). In many countries, female workers will get paid less than men for the same jobs in processing plants (Nishchith, 2001; Chando, 2002). Yet, there is also evidence of innovation and success of women entrepreneurs engaged in processing enterprises (Chao et al., 2006).

The impact of large-scale interventions in micro-finance and micro-enterprise in developing countries on the fisheries/aquaculture sector has been explored only marginally (Medard, 2005b), although the need for micro-finance has been repeatedly stressed. Market expansion and increased production in some areas have been accompanied by the introduction of new technologies. In aquaculture, for example, interventions such as new high yield species and methods of fish rearing have tended to favor men over women (AIT, 2000; Barman, 2001; Brugere et al., 2001; Kusakabe and Kelkar, 2001; Kusakabe et al., 2003; Mowla and Kibria, 2006; Sullivan, 2006; Okali and Holvoet, 2007). However there are notable exceptions from gender sensitive projects (Kibria and Mowla, 2006; Bhujel et al., 2008; Kripa and Surendranathan, 2008). Ashaletha et al. (2002) provide evidence from Kerala (India) on emerging patterns of role transformation among fisher women as craft technology changes from canoes to multi-day boats – from involvement in income-earning activities such as trading to supportive roles in financial management and family welfare, as well as a move into increased processing.

Seasonal migration between regions to obtain a better catch, find better locations and conditions for trading or alternative employment, as well as international labor migration in search of both fisheries and non-fisheries employment for periods of time are common livelihood strategies. Males tend to engage in regional circular migration for better fishing grounds, while

both men and women engage in international migration. Female traders and youth in West Africa also engage in circular migrations to and from locations where fish is available.

In several countries such as the Philippines and Sri Lanka, the majority of international labor migrants are women (Kabeer, 2007), while large numbers from countries such as Indonesia and Vietnam are women, as well. A gendered analysis of this overall migration process and a discourse on the “feminization” of migration are only beginning to emerge (Kabeer, 2007, Piper, 2007). Around 26% of registered Cambodian labor migrants in Thailand are reported to be working in the fishery and fish processing (Maltoni, 2006). The proportions could be larger if illegal migrants and fish trading, in which both women and men in Cambodia are engaged, are taken into account. Gendered patterns of migration to and from fishing/aquaculture communities remain unknown. Migration has significant consequences for natural resource use and governance in fishing communities, and its gendered nature awaits analysis.

Box 1. Why embeddedness matters: The fish-for-sex issue

WorldFish together with FAO is currently implementing the “Fisheries and HIV/AIDS in Africa: Investing in sustainable solutions” project, supported by SIDA and NORAD. One of the core components of this project is reducing vulnerability of female fish traders through business-based innovations. Women processors and traders in Malawi, Mozambique, DR Congo, Uganda and Zambia travel to remote fishing camps to purchase fish. Some of them (up to a third, according to a case study in Zambia, (Bene and Merten, 2008) are known to engage in transactional sex to obtain fish. There are two explanations/narratives that emerge from Bene’s and Merten’s (2008) discussion of this phenomenon. One is that women traders/processors are poor and are compelled or coerced to offer sex in exchange for fish. The second is that they choose to engage in sex to reduce the transactional costs of trade. It is pointed out that they develop short or long-term liaisons with chosen boy-friends, who provide them with fish in exchange for sexual and other favors, such as cooking and housekeeping. There is evidence of the prevalence of transactional sex in a wide variety of contexts, in a number of African societies (Moore et al., 2007).

The fish-for-sex issue illustrates the gendered embeddedness of employment – i.e. how it is enmeshed in issues of markets, migration, capabilities, well-being, networks and rights. The gender division of labor in fisheries in several of these societies is that men fish, while women process, and both women and men trade. It is not clear whether exchanging sex for fish is a new coping strategy (Bennett et al., 2004), brought about by scarcity of fish and/or increased demand for fish in global markets, or is a long standing transactional arrangement in societies where sexual norms are relatively more fluid. Transactional sex is a livelihood strategy that both men and women can use to build and maintain personalized exchange networks. There is insufficient evidence to prove that women are necessarily made vulnerable within these relationships, although the current consensus appears to be that women are neither entirely victims nor in control of such relationships (Bene and Merton, 2008). However, the prevalence of HIV/AIDS makes both women engaged in trading and processing, as well as men engaged in fishing, vulnerable to disease, reducing their well-being. If afflicted with the disease, women especially face social stigma, marginalization and poverty, due to loss of employment and costs of health care. In addition, women are burdened by reproductive responsibilities, related to household and child care, that men do not necessarily face.

The project has developed a “Fish trader +” pilot model, based on the economic rationale of women’s engagement in the fish trade to secure their livelihoods through business-based innovations. This includes a fund for providing women traders loans to stabilize businesses, promotion of trader associations, identifying opportunities for providing additional services (such as health-related products and home-based care) in migrant camps and awareness-raising on HIV/AIDS within fishing communities at large. It will be implemented beginning this year. This type of model provides the opportunity to test the extent to which economic interventions need to incorporate culturally-sensitive social interventions to achieve gender equitable outcomes in addressing rural employment issues, such as those related to fish trading.

Capabilities and well-being

Employment and income remain an insufficient measure of the gendered nature of poverty in the agricultural sector in general, and in fisheries/aquaculture in particular. Sen's (1993, 1999) "capabilities approach" emphasizes access to food security/nutrition, health and education as capabilities that lead to "functionings", indicating human well-being. These dimensions of well-being also determine access to different types of employment, as well as the higher productivity of labor. Data on the disparities in access and outcomes among men and women, male and female children, male and female youth in nutrition, health, education, and social safety nets within this sector and how these translate into opportunities and constraints in employment are a lacuna. Fisheries and aquaculture projects often focus on increasing the availability of food, but access and intra-household utilization receives much less attention. As fisheries communities are often marginalized, mobile and residing in remote locations, education, access to information and participation in development processes, nutrition and health levels are relatively low - with women and girls often having even lower levels (Khader et al., 2006; Porter, 2006). Developing countries with higher rates of school enrolment for girls such as Thailand, Philippines, Sri Lanka and Maldives are an exception. In many African countries, on the other hand, illiteracy is prevalent among both male and female members of fishing communities (Medard et al., 2002). However, if one assesses functional dimensions of literacy such as the ability to use lists, records, informal bookkeeping, texts related to community-based resource management and mobile phone use, literacy in fishing communities might be higher relative to that of farming communities (Maddox, 2008).

Available national-level well-being studies (Camfield et al., 2006, Knight et al., 2007) indicate that people's motivation for choosing particular employment options are not based on economic (income) factors alone. In Zambia, farmers establish fish ponds for a host of reasons: to provide food to hire labor, to meet needs of funerals and weddings, to sell and buy school uniforms, to diversify incomes and food sources, to secure land tenure claims, to appear "modern", and even to evade witchcraft (Crewe and Harrison, 1998). However, project managers often did not assess these reasons as signs of project success as they did not meet the goals of income improvement in strict economic terms (Crewe and Harrison, 1998). To what extent women's and men's understanding of well-being in fishing communities are based on comparing their situation with their own past or the situation of neighbouring fishing, farming, herding or urban communities is unknown.

Well-being is linked to vulnerability of individuals and households to unexpected events and shocks that require expenditure and their ability to withstand or cope with these shocks. These include price shocks in fish or input (e.g. fuel) markets, climate change and natural disasters, war and conflict, sudden illness, and life cycle events such as birth, marriage and death, which can push households into transient or longer-term poverty. How women and men deal with such shocks in fishing communities is relatively under-researched.

The migration and the mobility of fishing communities increase their risks to sexually transmitted diseases such as HIV/AIDS. Seasonal migration of male fishers to more productive fishing grounds and/or a culture of polygamy is associated with an increase in HIV/AIDS, with

negative consequences for other family members, especially women and children (Allison and Seeley, 2004; Grellier et al., 2004; Huang, 2004; FAO, 2006; Williams et al., 2006; Westaway et al., 2007; Williams, 2008). Moreover, women involved in fish trading in some societies are reported to exchange sex for access to fish (Allison and Seeley, 2004; Okali and Holvoet, 2007; Bene and Merten, 2008) and/or possibly to obtain required permits for trading in South East Asia, thus also engaging in risky behavior and endangering their health. Indications from some studies (Tarimo et al., 2008) suggest that caring for HIV/AIDS affected adults causes great burdens of labor on women which contributes further to their economic marginalization.

Resource degradation in fishing communities affects livelihoods of men and women differently (Williams et al., 2005; Nowak, 2008). Women often have less access to natural resources to begin with, thus increasing their vulnerability in times of scarcity. Scarcer resources increase competition for access to fish which in turn may increase women's vulnerability to sexual transactions. (Allison and Seeley, 2004). Similar situations are observed with the increasing commercialization of community-based property resources (CPRs), with potential consequences on the nutritional security of the other household/community members (Merten, 2004).

Networks and identities

The patterns of linkages and relationships among people, i.e. their social networks, are important to understanding the resources available to households to pursue their livelihood activities. Social networks, as defined here, are related to the concept of “social capital”, as originally proposed by Bourdieu(1985) – i.e. social resources that enable individuals to navigate their position within a hierarchical social structure and provide potential benefits. Two types of social relations within networks were identified by Kapferer (1972) - convivial (related to kinship and friendship) and exchange (instrumental). In the development literature these are often termed as “horizontal” vs. “vertical” social capital. Although these two types might be analytically distinct, the boundaries are fuzzy in practice, as relationships often combine conviviality with instrumentality in many rural societies of developing countries.

Social networks influence and shape the endowment and entitlement to food, shelter, finance, labor, moral support, tacit “cultural knowledge”, education/training, information, participation in processes and systems, employment and migration opportunities, status and identity - all of which can have variable impacts on the poverty situation of women and men. Social networks also exact costs such as various obligations that need to be rendered to others, especially in times of celebration and misfortune. While these relationships of reciprocity offer security and help mitigate risk, they can also maintain poor women and men in social structures that perpetuate poverty (Wood, 2003). Networks are also a useful way to chart local to global linkages, whether in terms of understanding market relations, migration patterns or transmission of diseases.

Membership in formal organizations such as fisheries associations or cooperatives is more prevalent among men than women but poor men can be excluded as well. Women in some

areas do belong to fish trader associations (Overa, 1993; Walker, 2002) or diver associations (Kim, 2003). In parts of Ghana for example, access to and membership in networks in many ways determines one's success in the fishing industry and leads to considerable differentiation both among fishers and fish traders (Overa, 1993).

Apart from access to material resources, labour and capital, the pursuit of livelihood is shaped by lifestyle and identities. Livelihood strategies necessitate the building of relationships with others whose lifestyles and status may be similar or differ and thus involves a process of identity construction. Identities are shaped and reshaped by the interaction with others in the network. In some cases, the need to maintain identities and ties to particular networks (dubbed "economics of identity" by Akerlof, 1997) can prevent poor women and men from pursuing opportunities to escape poverty (Durlauf, 2002).

Even though fishing is often considered as a risky and dangerous occupation, men engaged in fishing have high levels of job satisfaction (Pollnac et al., 2001, Allison and Horemans, 2005), making the identity of being a fisher desirable. Similarly women might have strong identities as fisherwomen, fish traders or processors (Overa, 1993; Appleton, 2000). The pioneering work on gendered meanings and identities in fishing communities came from the collection edited by Nadel Klein and Davis (1988). While several scholars (for example, Neis et al., 2005) working on European and North American fisheries have pursued this approach, very little research in this area has come from the developing world, with some notable exceptions (Broch, 1988; Gulati, 1988; Nowak, 1988; Ram, 1993; Overa, 1993). Thus, in promoting gender equity in the fisheries sector, it cannot be assumed that all women want to become fishers. Issues of identity and women's freedom to choose not to be fishers have been mentioned (Mwaipopo, 2001, Porter, 2006). Indeed, much research focusing on fishers assumes it is the preferred identity failing to acknowledge that in some areas, being a fish trader carries more prestige and often greater economic status.

Women's concepts of organizational fairness and worker commitment in shrimp processing factories (de Silva and Yamao, 2006) would also be enriched by an understanding of networks and identities. There are several case studies of women's struggles for resource access rights and fishworkers' rights (Nayak, 2008, Sunde and Telela, 2008, Quist, 2008, Munoz, 2008). There is an assumption in the literature that if women act collectively, or join together to access credit or share ponds, the benefits are greater. The propensity for and benefits of collective action could be analyzed more carefully with a better understanding of the genderedness of networks and identities. Furthermore, there is evidence from Ghana that attempts to encourage cooperative women's groups have led rather to increased friction and tension among women fish traders (Walker, 2001). There is an underlying gendered assumption that women welcome participation in groups and cooperate well together. In analyzing the context of fish processing, the nuanced understanding of gendered impacts explored in other settings such as garment and electronics factories (Ong, 1987, Lynch, 2007), could lend valuable insights.

Networks are usually characterized by asymmetrical power relations. Of concern here is the power to access livelihood resources and opportunities, as well as the capability to negotiate with institutions and make decisions over livelihood choices that can enable women and men to

move out of poverty. The way gendered networks might be used in fishing communities to exit poverty is currently unknown.

Box 2. Why embeddedness matters: Gender disparities in community-based fisheries management (CBFM)

A study on “Gender implications in CBNRM: The roles, needs and aspirations of women in community fisheries”, conducted by the Fisheries Administration of the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Cambodia and the Community-Based Natural Resource Management Learning Institute (FA/MAFF and CBNRM Learning Institute 2008), supported by WorldFish provides insight on the embeddedness of employment in dimensions of governance, rights, capabilities and well-being.

The three main motivations for women to participate in community-based fisheries committees in 6 study sites in Cambodia were found to be improvements in livelihoods, enhancement of capabilities (skills, knowledge and self-confidence) and a belief in sustainability in fisheries resources for the next generation. While women were active in the savings and credit, and self-help groups, only a minority assumed leadership positions in the committees. The active engagement in savings and credits groups were based on traditional gender norms that associated women with financial management of the household, as well as patience and negotiation skills to collect dues from group members. Rarely did women did engage in patrolling illegal fishing, as this took place in the night and social norms discouraged female mobility after dark.

Women identified as their immediate needs capacity-building related to livelihood activities, improving capabilities (especially relating to overcoming illiteracy), issues of well-being (improved health care), as well as gender equity (support from men and sharing of tasks). Similarly, gender equity, better living standards, education for children and sustainable resource management emerged as future aspirations in fisheries-related livelihoods in all six communities.

The consistent constraint to improving livelihoods and participation in community-based management was identified as the difficulty in balancing productive (income generation) with reproductive (housework) tasks, based on gender restrictive social norms. Illiteracy or limited education and lack of confidence were other important constraints that were mentioned.

These findings are consistent with that of Resurreccion (2008b) who argues that gender mainstreaming in community fisheries (CF) in Tonle Sap in Cambodia is a myth. She questions the notion of “community” and points out that women engaged in fishing participate in CF, to the exclusion of other stakeholders who might be dependent on these natural resources, and women leaders are often the wives of male leaders, conforming to existing stratification within villages. More importantly she emphasizes gender norms that assign social reproduction obligations disproportionately to women, thus restricting their overall participation – a socio-cultural fact that is consistently overlooked in conceptualizing and planning for women’s participation in CF.

Governance and rights

Governance issues affect employment in small-scale fishing/aquaculture communities in activities such as fish production, processing and trading. Co-management or community-based fisheries management has emerged as an important shift in organizing practices. There is a vast literature on this topic within the fisheries sector since the mid 1980s (Pomeroy et al., 2001) mainly in relation to reconciling the different interests of stakeholders such as the government, farmers, fishers, traders and different social classes in the use of common aquatic and land resources. However, compared with the critiques that have emerged in the forestry literature (Saxena, 1997; Beck and Nesmith, 2001; Wunder, 2001; Kumar, 2002; Li, 2002; Nemarundwe, 2005; Sithole, 2005; Tiani et al., 2005; Agrawal et al., 2006), research on social exclusion in community-based fisheries management, especially of women and youth, is relatively low.

Exceptions are studies on the relationship between social exclusion and local patronage systems (Resurreccion, 2008a; Vunisea, 2008), and the extent of its impact on poverty reduction (Bene and Neiland, 2004). Globalization and project interventions are seen to have negatively affected local management practices, reducing women's roles and decision-making powers in several fishing communities (Harrison, 1997; AIT, 2000; Tarisesei and Novaczek, 2006; Okali and Holvoet, 2007). Indeed, some community-based fisheries initiatives have failed because they have come into conflict with local institutions and governance regimes. There are also cases of women's positive involvement in decision-making in fisheries (Than, 2005; Kafarowski, 2006; Okali and Holvoet, 2007).

Where programs have been designed to increase women's participation in fisheries management, evaluations of their success are often lacking. Women's producer groups and collective structures have succeeded in some aquaculture interventions to access greater benefits for women and address gender inequities (WorldFish Center, 2007). In other cases, the polarization between women and men due to a women-centered approach and the perceived threat by men have led to the failure of such projects (Naved, 2000).

A gendered analysis of differential access to land and conflicts over tenure in aquaculture needs to be made. While individual household pond construction might be a negotiated and collaborative effort by women and their husbands (Bhujel et al., 2008), use of existing water bodies without clear tenure and usufruct rights by different stakeholders can lead to complex conflicts, where gender can also play a role. How do pond tenure and land tenure conflict or complement one another? The wealth of literature on tree tenure versus land tenure might lend insights on how to explore this potentially complex issue.

Fish trading is subject to licensing and tariff regimes that can affect men and women differently. Research on the vulnerability of small-scale female traders to regulatory environments is only beginning to emerge. Kusakabe et al. (2006) highlight the regulatory constraints (for example, payment of arbitrary fees to customs officers) under which women traders have to move fish, a perishable commodity, in cross-border trade between Cambodia and Thailand, leading to unpredictable costs.

In processing, access to new high-value global markets is dependent on small-scale producers and processors being able to conform to quality and hygiene standards of developed countries. There is little research available on the gendered impacts of this process, although issues such as eco-labeling are much debated among fisheries associations and NGOs. Governance of value chains where quality and hygiene standards are the guarantee to export may affect small scale fisheries negatively. Displacement of women from micro and small-scale processing within their communities and seasonal labor migration to large processing factories have been observed in some contexts; this could be an increasing trend as a result of compliance with new hygiene and quality standards of developed countries (Sharma, 2003).

Governance issues in fisheries and aquaculture are closely linked with the aspiration and realization of economic, social and political rights of vulnerable and marginalized groups. While a literature exists on women's rights to land/fishing assets, as well as rights of women fishworkers (Munoz, 2008; Nayak, 2008; Quist, 2008; Ram-Bidesi, 2008; Sunde and Telela, 2008), a gendered analysis of marginalization/ causes of discrimination, and how rights might be defined and understood differently by women and men, is lacking.

5. Conclusion

The available literature on gender and fisheries/aquaculture provides a number of case studies from different parts of the world on the gender division of labor, and an incipient analysis relating to globalization and market changes. However, a nuanced, comparative understanding of the impact of development processes and socio-ecological changes on employment trends for women and men in the fisheries/aquaculture sector is still lacking. We propose the themes of markets and migration, capabilities and well-being, networks and identities, and governance and rights as four areas that need more substantive research to understand the embeddedness of gendered rural employment in other social, cultural, economic, political and ecological structures/processes.

Research needs to assess to what extent livelihood diversification benefits women and men differently and whether it undermines possible economic benefits from concentration in one sector, such as fisheries and/or aquaculture. Analysis is also needed on the gendered nature of productive and reproductive work, how these are managed by women and men differently and the extent to which gender roles and ideologies related to reproductive work persist in shaping employment options.

In terms of markets and migration, a gendered analysis of changing seafood and labor markets in Africa, Asia and the Pacific - who is moving in and out of fisheries-related livelihoods, how livelihood portfolios are changing, and who the winners and losers might be - is conspicuous by its absence. Adequate empirical evidence is missing on whether the overall impact of market changes has been an increase or decrease in poverty in small-scale fishing/aquaculture communities, and for women and men in the last decades. Differential access to credit (Goetz and Gupta, 1996), differing scales of enterprise between men and women, female and male youth, and gender disparities in investment in technologies and their potential

for increased income (Herrold-Menzies, 2008) need to be better understood as well. Research also needs to be done to determine whether gendered migration patterns from fishing communities, replicate national trends. The differences between male and female migration patterns to and from fishing communities and the extent to which migrant remittances offer alternatives to or subsidize fishing-related activities in home communities need to be better understood.

In the area of capabilities and well-being, there is very little understanding of how well-being is perceived in fisheries/aquaculture communities or how these perceptions are gendered. How men and women might differ in defining a good or bad life, and how this might influence the livelihood choices they make remains under-researched. A gendered understanding of vulnerability and capabilities to withstand shocks linked to illness, death and disasters, is lacking. This would also contribute to the emerging research area of resilience in fisheries, especially in relation to climate change. Little is currently known of the gendered response to HIV/AIDs - access to health services, coping with loss of labor and productivity, as well as social stigma, generating income to meet medical expenses – or its impact on perceptions of well-being.

The gendered analysis of networks and identities in the fisheries/aquaculture sector is quite underdeveloped. More work is needed to understand the manner in which formal networks such as membership in associations interact with more informal networks, what exactly the benefits or costs of such membership are in the long-term, and how being part of a network of linkages might enable or disable men and women in fishing communities differently from overcoming poverty. Female and male choices on where they want to optimize their participation and benefits needs to be better explored. Future research could examine how identities are gendered, notions of complementarity and difference, and how masculinities and femininities are perceived by women and men, female and male youth in relation to changing work roles in fishing/aquaculture. An analysis of how power relations are gendered within households, as well as among members of networks, would contribute to a better understanding of why specific livelihood choices are made, and the costs and benefits to women and men, thus improving the efforts to address such power disparities.

Research in governance and rights needs to focus on the historical participation of women (or lack thereof) in local, regional and national fisheries structures and the structures that are conducive to women's participation. We need a better understanding of the relative importance of rights to land, water, food, shelter and education, the responsiveness of governance structures, the extent to which states can be held responsible and accountable, and the contexts that shape gendered notions of rights and obligations in the fisheries/aquaculture sector. A gendered analysis of rights would include the identification of obstacles and mechanisms towards empowerment of marginalized groups, including the right to employment.

Our analytical approach would be to study gender, rather than women (as was often the case in the past), and analyze gender disparities in rural employment, irrespective of whether these negatively affect women or men. Even though many of the case studies highlight disadvantages faced by women, it is important to take cognizance of those studies which point to advantages for women, such as control of fishing assets and financial resources (in several west African

countries) or higher levels of education among girls, relative to boys (in several Asian countries), factors which can translate into better opportunities in fisheries or non-fisheries employment in the future. Research in the four thematic areas will lead to better policy formulation in the sector, and form the basis for addressing emerging, critical issues such as the impact of climate change, and the capacity for resilience and adaptation in relation to rural employment in small-scale fishing/aquaculture communities.

6. Policy directions for gender equity and poverty reduction in the fisheries/aquaculture sector: Priority areas for gender research

In our review and analysis of the gender and fisheries/aquaculture literature, we identified a number of noteworthy research priorities that need to be addressed for more effective policy formulation. These can be categorized into three main areas:

1. ***The need for national-level, longitudinal statistics on the extent and nature of women's and men's employment in the fisheries/aquaculture sector and how these might have changed, at least over the last 20 years.*** If such statistics were available this would form the foundation for analytical studies (macro, meso and micro-level) on how these changes in employment have come about and what significant factors have driven these changes. Currently national fisheries statistics relating to employment are generally subsumed under agriculture and forestry and are often not gender-disaggregated. We recommend that census and other statistics on fisheries not be subsumed under agriculture and forestry, that they are gender-disaggregated and that fisheries statistics include processing and trading. We also need to support national governments and international organizations to invest in the collection of gender disaggregated data at macro and meso levels, a need that has been expressed for decades. Donors could support collaborative efforts that link countries which collect gender disaggregated data with other countries that might need assistance to replicate this process. We need also to seek support for dissemination of results from initiatives such as the FAO/WorldFish/World Bank Big Numbers Project.
2. ***The need for meso- and micro-level analytical studies on how employment in the fisheries/aquaculture sector is gendered and embedded in wider social, cultural, economic, political and ecological structures and processes.*** The four thematic areas discussed above – markets and migration, capabilities and well-being, networks and identities, and governance and rights – are proposed as useful entry points for an analytical approach that moves beyond descriptions of the gender division of labor. Such analytical studies will help to understand trends in rural employment such as: the role of gender in the relationship between fisheries and non-fisheries livelihoods in household portfolios, including the impact of migration; how gender differentials in education and health affect employment; how employment choices are related to gendered perceptions of well-being or the support of networks; how rights to land and water, as well as resource management regimes can affect employment opportunities for women and men

differently. These studies will also form the basis for gendered analysis of how climate change and issues of resilience and adaptation will affect rural employment in the fisheries/aquaculture sector in the future.

3. ***The need for global, regional and national-level reviews on current policies that maintain or exacerbate gender disparities in rural employment in the fisheries/aquaculture sector and policy reform that is needed to bring about gender equitable outcomes.*** Attention will need to be paid to how policy reform in this sector has to be linked to those of agriculture, land and water tenure, education, health and food security for effective results. The availability of statistics and analytical studies on the embeddedness of employment in other structures and processes, as outlined above, will support this reform process.

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¹ Employment in this paper is conceptualized in the same way as defined in the outline provided for the technical expert workshop – i.e. “Rural employment is defined as any activity, occupation, work, business or service performed by rural people by force or for remuneration, profit, social or family gain, in cash or kind, including under a contract of hire, written or oral, expressed or implied, and without regard to whether the service is performed on a self-directed, part-time, full-time or casual basis”.