

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

Nireka Weeratunge<sup>1</sup>, Katherine A Snyder<sup>2</sup> & Choo Poh Sze<sup>1</sup>

<sup>1</sup>The WorldFish Center, PO BOX 500 GPO, 10670 Penang, Malaysia; <sup>2</sup>The WorldFish Center, Zomba, Malawi

### Abstract

Most research on gender difference or inequities in capture fisheries and aquaculture in Africa and the Asia-Pacific focuses on the gender division of labour. Emerging research on globalization, market changes, poverty and trends in gendered employment within this sector reveals the need to move beyond this narrow perspective. If gleaning and post-harvesting activities were enumerated, the fisheries and aquaculture sector might well turn out to be female sphere. A livelihoods approach better enables an understanding of how employment in this sector is embedded in other social, cultural, economic, political and ecological structures and processes that shape gender inequities and how these might be reduced. We focus on four thematic areas – markets and migration, capabilities and well-being, networks and identities, governance and rights – as analytical entry points. These also provide a framework to identify research gaps and generate a comparative understanding of the impact of development processes and socioecological changes, including issues of climate change, adaptation and resilience, on gendered employment. Without an adequate analysis of gender, fisheries management and development policies may have negative effects on people's livelihoods, well-being and the environment they depend on, or fail altogether to achieve intended outcomes.

**Keywords** Africa, aquaculture, Asia-Pacific, employment, fisheries, gender

### Correspondence:

Nireka Weeratunge,  
The WorldFish  
Center, PO BOX 500  
GPO, 1067 Penang,  
Malaysia  
Tel.: +604 6202191  
GMT +8  
Fax: +604 6265530  
E-mail: n.weeratunge@  
cgiar.org

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## Introduction

This study reviews the current knowledge on gender differences and inequities within small-scale capture fisheries and aquaculture in Africa and the Asia-Pacific regions. This review establishes a foundation for proposing a research and policy agenda to improve development impact in fisheries for men and women. To date, most of the literature has focused on the gender division of labour in fisheries, illustrating the many ways in which women are engaged in the sector. However, we argue that, if gender analysis is to contribute to improving the outcomes of fisheries management and development, a more comprehensive approach to gender and fisheries needs to be taken. We suggest achieving this by incorporating insights that have emerged in research on globalization, livelihoods, markets and poverty.

Fisheries employment itself begins to look like a female sphere if you account for the roles of gleaning, trading, processing and fish farming. We define employment as any activity, occupation, work, business or service performed by force or for remuneration, profit, social or family gain, in cash or kind, including a contract of hire, written or oral, expressed or implied, regardless of whether the activity is performed on a self-directed, part-time, full-time or casual basis (FAO-ILO-IFAD 2009). To more fully understand employment in this sector, a livelihoods approach (Long 2000; Allison and Ellis 2001) enables an analysis of how work is embedded in other social, cultural, economic, political and ecological structures and processes which shape gender disparities. Although some researchers have adopted a livelihoods approach in fisheries, there is still a great deal of work to be performed to answer salient questions in a sector that is fast undergoing change and is under threat, in particular from climate change. This study will explore some of the lessons learned from research that has incorporated an analysis of gender within fisheries and aquaculture, and show how such lessons can usefully inform fishery and aquaculture management planning and development activities. Building on this foundation, we will point to areas where critical research remains to be carried out.

### Why gender disparities in fisheries/aquaculture matter

Customary beliefs, norms and laws, and unfavourable regulatory structures of the state reduce

women's access to fisheries resources and assets and confine them to the lower end of supply chains within the so-called informal sector (FAO 2006; Porter 2006; Okali and Holvoet 2007). The constraints on their participation in fish value chains results in disparities between men and women's incomes and often in women being relegated to positions of poverty. Ecological degradation and depletion of aquatic resources further limit their access to resources. The effects of climate change threaten to exacerbate these constraints (Brody *et al.* 2008). Gender disparities affect not only the livelihoods of women in particular but also the entire household and community. Improving women's incomes, educational levels, access to information and their ability to participate in decision-making processes enhances the capabilities of the entire household and of society in general. Furthermore, 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. Improving participation and accountability in governance and increasing the capacity of institutions to respond to gender-specific needs are therefore important measures to improve both sustainable natural resource management and gender equity. Evidence suggests that countries, which have improved gender equity have reached higher levels of economic growth and social well-being (World Economic Forum 2006, 2007).

It is estimated that 200 million people directly or indirectly depend on fisheries and aquaculture

**Table 1** Share of women in total capture fisheries workforce (full-time and part-time; fishing and postharvest 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
Total/average	34 660 000	46

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

(FAO/IFAD/WB 2009). According to the Big Numbers Project (BNP) employment is expanding; small-scale fisheries in developing countries alone total 25–27 million with an additional 68–70 million engaged in post-harvest activities (FAO, WorldFish Center and World Bank 2008). The fact that women are the majority in post-harvest activities in many countries and also participate in some fishing activities challenges the long-held notion that fisheries are mostly a male domain. Based on national statistics and case-studies, preliminary BNP data for nine countries reveal that 47% of the labour force in the entire fisheries sector comprised women (Table 1). If statistics for gleaning and aquaculture were included, these figures could well be higher.

### **Moving beyond ‘women *do* fish’: an overview of the literature on gender, fisheries and aquaculture**

Fisheries has long been perceived as a male sphere as focus has been primarily on fishing itself, rather than the wider array of activities on which it is dependent. The literature on gender and small-scale fisheries and aquaculture in Africa, Asia and the Pacific focuses primarily on the gender division of labour (Firth 1984; Pollnac 1984; Nowak 1988; Yahaya 1994; Dela Pena and Marte 2001; Siason 2001; Sotto *et al.* 2001; Browne 2002; Lambeth *et al.* 2002; Demmke 2006; Halim and Ahmed 2006; Novaczek and Mitchell 2006). It reveals that women do indeed fish or are active in fishing-related work and so expands our understanding of the role of women in what was previously perceived to be a male dominated sphere. Work on the division of labour in fishing communities reveals considerable variation across geographical regions (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’ with men engaging in all the fishing-related activities. In Ghana, income from ‘fisher wives’ is vital for supporting the entire fishing industry as they invest in canoes and other gear and give out loans to husbands and other fishers (Overa 1993; Walker 2001, 2002). In other areas (for example, Benin, Congo, Mali, Nigeria, Tanzania and Uganda in Africa; Cambodia and Thailand in Asia; Papua New Guinea and Solomon Islands in the Pacific), some fishing tasks requiring gear such as canoes, boats and nets (Williams *et al.* 2005; Porter 2006; Okali and Holvoet 2007) and diving for high-

value commodities are performed by women (Kim 2003), as well as by men. Women might own boats which they use themselves or rent out to men.

Women’s work gleaning and nearshore fishing (Vunisea 1997) often goes unnoticed in fisheries studies and statistics which are dominated by attention to men’s nearshore and off-shore fishing. Gleaning for molluscs for example, which women do in different parts of the world, is almost invisible. Women’s unpaid pre- and post-harvesting work (mending nets, collecting bait, preparing food for fishers, keeping accounts) is either not acknowledged or underestimated as a source of employment (Bennett 2005; Williams *et al.* 2005; FAO 2006; Choo 2005). Women outnumber men in processing and trading fish around the world. In some societies, women are viewed as more skilled in negotiating because they are thought to naturally avoid conflict (Kusakabe *et al.* 2006). In others, women are seen as exploitative when male fishers have come to depend on them for credit (Bennett *et al.* 2001). In much of Africa, women dominate markets both for fish and other commodities (Overa 1993; Walker 2001, 2002; ICSF 2002; Madanda 2003; Nakato 2005; Vales 2005).

Women’s participation in aquaculture value chains (fish, shrimp and seaweed farming, crab fattening) appears to be even higher than in capture fisheries. In Indonesia and Vietnam, women make up between 42% and 80% of the fishery-sector labour force (AIT 2000; Williams *et al.* 2005; FAO 2006). In Tonle Sap Lake in Cambodia, women participate in fish culture (50%) and in buying and selling (85%) (ADB 2007). Aquaculture has been promoted as a development strategy for women based in part on the assumption that it is an extension of their domestic tasks allowing them to integrate fish ponds with housework and childcare (Kelkar 2001). However, this assumption has not been adequately tested as there are still few studies that look at how labour is distributed across the year in communities with fish ponds. In Asia and Africa, women’s participation in and incomes from aquaculture could be improved through better extension services, and improved policies that take women’s needs and constraints into account (Rahman 2005; Kibria and Mowla 2006; WorldFish Center 2007).

The invisibility and under-enumeration of women’s work in agriculture have been recognized and discussed since the 1970s. However, a similar recognition came later to the fisheries/aquaculture

sector due in part to the long-standing assumption that it was primarily 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, especially in developing countries, is partly to blame for this oversight. This lack of data impedes gender analysis, which is the basis for the development of gender sensitive policies and planning. While scanty statistics have been remarked upon for the last 20 years, little action has been taken to rectify the situation (Sharma 2003). The first significant attempt to address this issue can be seen in the BNP, which examines data from many countries around the world (FAO, WorldFish Center and World Bank 2008).

In contrast to research 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 how the gender division of labour in fisheries/aquaculture affects comparative gains (income differentials) for men and women, their social status and well-being, and how these have changed over time. The first substantial attempt in this direction came from the work of Neis *et al.* (2005) which contains a number of case-studies from Africa and Asia, primarily on the negative impacts of globalization on the status of women engaged in fishing-related livelihoods. Some positive impacts of market changes on women fish traders have also been recorded in several developing countries (Krabacher 1988; Rubinoff 1999). Cultural practices and social networks shaped the strategies of women fish vendors in Goa to make a successful transition from barefoot head-load peddlers to market entrepreneurs, a process that helped to maintain relatively egalitarian relationships within the household (Rubinoff 1999). However, the very activities that brought them economic success were considered 'shameful, dirty, lacking honour and prestige' (Rubinoff 1999:636) by these traders who withdraw their daughters and granddaughters from fish vending so that they could pursue higher education, professional careers or office jobs. While this dissociates the younger generation from their 'lower' caste identity as fishers and brings higher social prestige, Rubinoff argues that the entrepreneurial and domestic power derived by women from marketing is reduced.

Although research on women's activities in the fisheries and aquaculture sector is valuable, a truly

gendered analysis is impossible when comparative data about men are absent. For example, a Malaysian case-study points out that around 57% of women in two fishing communities were involved in non-fisheries livelihoods activities but presented no comparable data for men (Yahaya 1994). Without this information, it is difficult to make assessments about the extent of disparities between female and male activities in the sector.

### **The livelihoods context**

The sustainable livelihoods framework, proposed by Chambers and Conway (1992) and used widely in the development field, came to inform the socioeconomic analysis of fisheries communities in the early 2000s (Allison and Ellis 2001; Allison 2003; Allison and Horemans 2006). This approach created a broader understanding of the environmental and social context in which livelihoods are pursued and moved analysis beyond looking at more narrowly defined 'employment.' Long stresses the importance of incorporating normative and cultural factors in livelihood analysis, especially the need to understand the 'social fabric upon which livelihood and commodity flows are woven' (2000:196). The livelihoods approach is particularly useful for understanding gendered rural employment.

Many of the gendered disparities in employment are rooted in ideological notions of gender identity and roles, in which women are associated with such tasks as household chores and childcare. Time management is gendered as well: men may spend more time in economic activities outside the home whereas women must juggle both domestic and outside work. These decisions also shape the benefits that accrue to each group.

Adequate understanding of fishing community livelihoods and the larger social, cultural and political landscape in which they are embedded is only beginning. What is still lacking is an analysis of the differentiation within households of the livelihood portfolios of men and women and male and female youth. We need better knowledge of what resources are available to different groups, the trade-offs between fisheries and non-fisheries livelihoods, and the gendered processes of decision-making of households on the distribution of livelihood activities. This access to resources and the processes of decision-making affect how people use fisheries and engage in fisheries and aquaculture, and thus have an impact on the resources themselves.

In our analysis of gender in the fisheries/aquaculture literature, we focus below on four thematic areas – markets and migration, capabilities and well-being, networks and identities, and governance and rights. This focus provides a means to tease out the ways in which gendered livelihoods and commodity flows are interwoven with wider social, cultural, economic, political and environmental structures and processes. We believe these analytical entry points illuminate the complex nature of gender and fisheries relationships and also enable us to identify important areas for future research as well as management priorities within the sector. These thematic areas all have a rich literature beyond the scope of this article. Due to limitations of space, our focus on these themes here is confined to their articulation within the fisheries and aquaculture literature.

### Markets and migration

Many interventions in the fisheries sector have been aimed at fishers involved in the production process and at improving or sustaining the aquatic environment. These interventions are concerned ultimately with maintaining fish stocks and the long-term viability of the fishery but often overlook, marginalize or misinterpret gender issues. For example, women engaged in post-harvest activities and marketing have often been neglected. In addition, interventions often ignore or fail to understand the connection between fishing and trading. This interconnection is seen in Walker's (2001, 2002) work in Ghana which indicates that female traders can spur over-exploitation of fish resources by financing and promoting the gear types that contribute to harvesting smaller and more fish.

Globalization of markets and supply chains, combined with the depletion of fish resources, has affected livelihoods in fisheries' communities. We are only beginning to understand the impact of changes from globalization on men and women in fisheries and how it affects their position within labour markets in supply chains (ICSF 2002; Madanda 2003; Thorpe and Bennett 2004; Neis *et al.* 2005; Kusakabe *et al.* 2006; Tekanene 2006; Ram-Bidesi 2008; Tindall and Holvoet 2008). The overall trend appears to be that increased value from the fish trade, both nationally and globally, as well as productivity increases in aquaculture do not necessarily accrue to women. Neis (2005) argues that globalization, characterized by changes in

ownership and control of fisheries, transnational investment, commodification, global trade and the accompanying resource depletion, is jeopardizing the lives and livelihoods of women working in fish-related activities. Development of infrastructure and improved market access has resulted in the altering of power relationships between different socioeconomic groups, including gender relationships, and excluded vulnerable actors in fish supply chains (Tindall and Holvoet 2008).

A number of studies in the developing world indicate that industrialized fishing has caused displacement of men and women from small-scale fisheries (Makussen 2002; Medard 2005a; Porter 2006; Okali and Holvoet 2007; Guhathakurta 2008; Porter *et al.* 2008). Industrial fishing can result in smaller catches for artisanal fishers and a decrease in stock for processing and trading, leading men and women engaged in small-scale fisheries employment into poverty. This includes a wide range of activities, from subsistence, unwaged work in gleaning and fishing to waged work in pre-harvest tasks, processing and trading. For example, mechanization led to a rapid decrease in women engaged in net making and fishing with hand nets in some West Bengal villages in India, resulting in loss of incomes and social status (Pramanik 1994). However, industrial fishing also can result in an increase in employment in processing factories. Indeed, employees in seafood processing plants are often female. Many women in developing countries work as casual labourers in these plants with inadequate social protection (Nishchith 2001; De Silva and Yamao 2006; Okali and Holvoet 2007). Moreover, female workers generally get paid less than men for the same jobs in seafood processing plants (Nishchith 2001). The increasingly globalized seafood trade also provides opportunities for small-scale fishers to supply high-value commodities for export and thus potentially earn higher incomes. This market spurs fishers and gleaners to take up new activities or transform previous subsistence activities, such as harvesting and trading shellfish, sea cucumber, seaweed, octopus or jellyfish. Porter *et al.* (2008) observe that women who are engaged in these activities often get displaced by men when these aquatic products become global commodities, fetching higher market prices. There is also evidence of innovation and success of women entrepreneurs engaged in new processing activities (Chao *et al.* 2006). These contradictory trends, however, are less researched

than the more explicit negative impacts of globalization on women employed in fisheries. There is, thus, a critical need to understand how globalizing trade processes are mediated by gender, race, class, ethnicity and sexuality (Neis 2005). A nuanced analysis (Hapke 2001; Hapke and Ayyankaril 2004) of the gender ideologies underlying the work of fish traders in Kerala, India reveals how women and men pursue different strategies in their work-life course and achieve different outcomes as they confront increased commercialization in fisheries. These strategies are mediated not only by caste, religion and class but also by the differential social (e.g. physical mobility) and economic assets (e.g. types of investments) that men and women can mobilize during different stages of their life cycle.

Development agencies and projects increasingly emphasize or have a component to support micro-finance and micro-enterprises but as of yet, there is little scholarly analysis of the gendered impact of these interventions on the fisheries/aquaculture sector (cf. Medard 2005b for an exception). The introduction of new technologies has accompanied market expansion and increased production. In aquaculture, introduction of new high-yield species and methods of rearing fish have often tended to favour men over women (Asian Institute of Technology 2000; Barman 2001; Brugere *et al.* 2001; Kusakabe and Kelkar 2001; Kusakabe 2003; Mowla and Kibria 2006; Sullivan 2006; Okali and Holvoet 2007). With the shift in technology from canoes to multiday boats in Kerala, the roles of women have changed from trading to supportive roles in financial management, family welfare and increased processing (Ashalettha *et al.* 2002) This has decreased women's access to and proportion of cash incomes.

A common livelihood strategy among both fishers and traders is seasonal migration between regions and even across national boundaries to find a better catch, and search for better locations and conditions for trading and alternative employment. In West Africa, traders and fishers engage in circular migration patterns to and from places where fish is available.

International labour migration has begun to receive considerable attention. Studies indicate a 'feminization' of this migration with women comprising half of all global migrants; in some Asian countries they are now the majority of migrants (Kabeer 2007; Piper 2007). In Thailand, 26% of the registered Cambodian labour migrants are reported

to be working in the fishery and in fish processing (Maltoni 2006). The numbers might well be higher if illegal migrants and fish trading were taken into account. For fishing/aquaculture communities, the gendered patterns of migration are still relatively unknown. Saradmoni (1995) has pointed to a substantial seasonal labour migration of women recruited from fishing communities in Kerala for shrimp peeling and fish grading work in other Indian states, such as Gujarat. This process is a response to the crisis in the fishing industry in Kerala brought about by stock depletion, as a consequence of mechanization.

Another consequence of migration and mobility in fishing communities is a high prevalence of HIV/AIDS, especially in southern parts of Africa. The literature often correlates this with the phenomenon of fish-for-sex observed in some fisheries, whereby female fish traders engage in sexual relationships with male fishers to secure their supply of fish (Bene and Merten 2008). Women processors and traders travel to remote fishing camps to purchase fish. Some of them develop long-term liaisons with men who provide them with fish in exchange for sex and/or other favours such as cooking and housekeeping.

The fish-for-sex issue illustrates the gendered nature of markets and labour. In many of these societies, it is men who fish and women who process and engage in trade. It is not clear whether exchanging fish for sex is a new strategy brought about by scarcity of fish or increased demand for the product in global markets or both. Transactional sex is not, however, confined to the fish trade and is found in a variety of other contexts where women rely on men for access to resources and financial support (Chatterji *et al.* 2004). Bene's and Merten's (2008) evidence suggests that women are neither entirely victims nor in total control of these relationships. However, the prevalence of HIV/AIDS certainly makes both male fishers and women traders and processors highly vulnerable to disease, which has a wide societal and economic impact (Allison and Seeley 2004). Women and men living with HIV/AIDS face social stigmatization, marginalization and poverty as their ability to work declines and the costs of maintaining health increase.

### Capabilities and well-being

Employment and income remain insufficient measures of the gendered nature of poverty in both the agricultural and fisheries/aquaculture sectors.

Sen's (Sen 1993, 1999) 'capabilities approach' which emphasizes access to food security and nutrition, health and education, provides a better understanding of how well people can function and pursue their potential. However, within the fisheries/aquaculture sector, there are very limited data on disparities between men and women, male and female children and youth in nutrition, health, education and social safety nets. We have little knowledge on how these disparities may translate into opportunities and constraints in employment. Because fisheries and aquaculture projects often focus on increasing food availability, access to food within the household or among households receives much less attention. Fishing communities are often marginalized, mobile and found in remote locations and in the absence of widespread data, access to education and information is assumed to be low, while health and nutrition are similarly poor. Women and girls in these communities often suffer the worst levels of education and health (Khader *et al.* 2006; Porter 2006). In many African fishing communities, illiteracy is prevalent among both men and women (Medard *et al.* 2002). However, there is contrary evidence from some areas in Africa and Asia, where literacy levels in fishing communities are higher or equivalent to that of neighbouring agricultural counterparts (Maddox and Overa 2009). Moreover, if functional dimensions of literacy are included, such as the ability to maintain lists and records, practice informal book-keeping, and use mobile phones, literacy might be higher relative to that of many farming communities (Maddox and Overa 2009). They also point out that there is no necessary correlation between literacy and poverty. While some of the richest female canoe owners in Ghana are formally illiterate, they are well versed in 'vernacular literacy', which, for example, enables them to keep complicated records of debts and debtors (Maddox and Overa 2009). In addition, lack of language skills do not necessarily incapacitate female fish traders in Ghana; they rely on English speaking male intermediaries to negotiate with foreign trawler companies to purchases by-catch for sale in local markets (Overa 2005).

Available well-being studies at the national level indicate that motivations behind choosing particular employment options are not based on economic factors alone. In Zambia, farmers establish fish ponds for a host of reasons: to provide food for hired labour, to supply food for funerals and weddings, to diversify incomes, to secure rights to the land on

which ponds are dug, and to appear more 'modern' and developed (Crewe and Harrison 1998). Supplying neighbours and kin with fish also wards against witchcraft. Projects are often designed to increase production and income on-farm, yet sometimes farmers are more concerned with a wider variety of benefits from ponds, including water for irrigation. Such projects also do not take into account than men's and women's needs, motivations and aspirations might differ; these differences can be instrumental to project failure.

Well-being is closely linked to vulnerability of both individuals and households and affects their ability to withstand and cope with the shocks of unexpected events. Shocks can include price shocks in fish or input markets (e.g. fuel, fish food, etc.), climate change, natural disasters, war and conflict, sudden illness, and life-cycle events such as birth, marriage and death. All these events can push households into transient or longer-term poverty and in some cases opportunities that were previously unavailable. We have little understanding yet of how they differently affect men and women in fishing communities and constrain their livelihood choices. Gendered coping and risk adaptation strategies (Bennett *et al.* 2004) are increasingly becoming important in our analysis of resilience in a sector that is highly exposed to climate change and other sources of vulnerability.

Women often have less access to natural resources to begin with, which increases their vulnerability particularly in times of scarcity. Resource degradation in fishing communities affects livelihoods of men and women differently (Williams *et al.* 2005; Nowak 2008). Scarcer resources increase competition for access to fish which in turn may increase women's vulnerability to sexual transactions and thus HIV/AIDS (Allison and Seeley 2004). HIV/AIDS together with high exposure to water-related diseases like malaria and schistosomiasis severely affect the well-being of fishing communities and women and children in particular (Huang 2002; Grellier *et al.* 2004; FAO 2006; Williams *et al.* 2006; Westaway *et al.* 2007; Williams 2008). Results from a study in Tanzania show that caring for HIV/AIDS-affected adults causes a great burden of labour on women, compounding their economic marginalization (Tarimo *et al.* 2008).

### Networks and identities

Individual and household social networks affect resource endowment and access to food, shelter,

finance, labour, moral support, tacit 'cultural knowledge', education, participation in organizations and processes, employment and migration opportunities, status and finally their very identity. All of these elements in turn affect the poverty and well-being of men and women. Social networks also exact costs as they may require individuals to meet various obligations such as financial or resource support at weddings or funerals, or for school fees and medical expenses of relatives. While these relationships may offer some security and help mitigate risk, they can also maintain poor women and men in social structures that perpetuate poverty (Wood 2003).

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 Ghana, access to and membership in networks in many ways determine one's success in the fishing industry and lead to considerable differentiation both among fishers and fish traders (Overa 1993). In Kerala, India the formation of self-help mussel farming groups among women not only increased production, farm intensity and farm area, but also provided additional employment in mussel processing and trading, as well as in ancillary businesses such as rope making (Kripa and Surendranathan 2008).

Even though fishing is often considered a risky and dangerous occupation, men engaged in it often report high levels of job satisfaction (Pollnac *et al.* 2001; Allison and Horemans 2006) and enjoy the identity of 'fisherman'. Similarly, women may also have strong identities as fisherwomen, fish traders and processors (Overa 1993; Appleton 2000). Nadel-Klein and Davis (1988) pioneered work on gendered meanings and identities in fishing communities. While several scholars working on European or North American fisheries have elaborated on this work, very little research has been carried out on this topic in the developing world, with some exceptions (Broch 1988; Gulati 1984, 1988; Nowak 1988; Overa 1993; Ram 1993). In the promotion of gender equity in the fisheries sector, it should not be assumed that all women want to become fishers (cf. Mwaipopo 2000; Porter 2006). Indeed, much research on fishers assumes it is the preferred identity, failing to acknowledge that in some areas being a fish trader actually carries more prestige and often greater economic status.

Identities are often rooted in social differentiation. While there is recognition that fishing communities can be highly stratified, studies rarely examine the complexities of other forms of social differentiation (such as wealth, age, religion and ethnicity) that intersect with gender disparities. In Ghana, fishing communities have marked differences in wealth and '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).

Clearly, networks and identity and how they play out in fishing communities have gendered consequences and affect the abilities of individuals to cope with or rise out of poverty.

### **Governance and rights**

Governance regimes significantly affect access, control over and management of resources in fishing and aquaculture communities throughout the world. Co-management and community-based fisheries management have emerged as important efforts to shift management from a top-down, command and control approach to one in which the decisions about resource use and the benefits from those resources are devolved to the people who depend on them for their livelihoods. Pomeroy *et al.* (2001) have analysed how these governance regimes manage and reconcile the different interests of a variety of stakeholders, from government to farmers, fishers and traders. Still a closer look at how co-management may sometimes exclude certain groups of people and privilege others remains to be carried out for many parts of the developing world. There is little information on how women and youth participate in these new management systems or how they may be excluded (Neiland and Bene 2004).

Adopting or creating new governance systems can come up against traditional and local governance structures, local patronage systems, as well as national institutions. In some instances, these other institutions have undermined community-based fisheries initiatives and have caused them to fail. In other cases, development project interventions aimed at improving management have actually reduced the roles and decision-making powers that women had in previous local management regimes (Harrison 1997; AIT 2000; Tarisesei and Novaczek 2006; Okali and Holvoet 2007). Yet,

participation of women also has been improved sometimes with the introduction of new structures (Than 2005; Kafarowski 2006; Okali and Holvoet 2007).

In Cambodia, one study found that women participated in community-based fisheries committees to improve their livelihoods, their skills and knowledge, and because they believed it important for the long-term sustainability of the fishery (FA/MAFF and CBNRM Learning Institute 2008). While women actively engaged in the savings and credit and self-help groups, they rarely sought out leadership positions in the committees. Traditional gender norms associated women with household financial management, patience and negotiation, traits seen as important in such tasks as collecting dues from group members.

Women in these Cambodian communities identified gender equity, better living standards, education for children and sustainable resource management as future aspirations. They also listed the difficulty of balancing productive work (income generation) with reproductive work (household and childcare), and the gender restrictive social norms associated with this work, as major constraints to improving livelihoods and participation in community-based management. Finally, they included illiteracy or limited education and a lack of confidence as obstacles. Women's involvement in CBFM is an outcome of an explicit gender mainstreaming policy within the Department of Fisheries in Cambodia, which is one of the few developing countries with such a commitment to gender equity in the fisheries sector.

Enabling women to participate in community-based fishing management does not, however, always lead to more equitable outcomes. As Resurreccion (2008b) notes, this emphasis can lead to the exclusion of other stakeholders who might actually be more dependent on these resources. In her work in Cambodia (Resurreccion 2008a), she found that women leaders were often the wives of male leaders, a pattern which reinforced the existing social and economic stratification patterns in the villages. Further, she found that gender norms emphasizing women's roles in social reproduction restricted their overall participation. The fact that women are heavily engaged in reproductive work is often overlooked in conceptualizing and planning for women's participation in community fisheries. Thus, a policy commitment to gender mainstreaming does not necessarily result in positive out-

comes for women without a more nuanced analysis of gender relationships. Finally, targeting women can also sometimes lead to failure as it may increase polarization between men and women in a community, in response to a perceived threat by men to their economic control, as in the case of one intervention in Bangladesh. (Naved 2000).

In aquaculture, more work needs to be carried out on the gendered nature of access to land and the potential conflicts that arise from the construction of fishponds. While household pond construction might be a negotiated and collaborative effort between women and their husbands, use of existing water bodies without clearly defined rights to them by different stakeholders can lead to disputes in the community (Bhujel *et al.* 2008). More attention to how pond tenure and land tenure complement or conflict with one another would help our understanding of how aquaculture is integrated into existing natural resource management practices and livelihood strategies. In addition, as water becomes scarcer with the expansion of fishponds, issues of rights of access and governance become more pressing.

Governance also comes into play in fish trading, as trade is subject to licensing and tariff regimes that can affect men and women differently. Small-scale women fish traders are vulnerable to both official and unofficial rules and regulations. Kusakabe *et al.* (2006) highlight the impact of some of the cross-border trade practices between Cambodia and Thailand (such as the payment of arbitrary fees to customs officers), which lead to unpredictable costs.

To access new high-value global markets, small-scale producers and processors must conform to quality and hygiene standards of developed countries. There is a lack of rigorous, empirical research on the gendered effects of these policies, although there is much debate among fisheries associations and NGOs about issues such as eco-labelling. There has been displacement of women from micro and small-scale processing as a result of the introduction of large processing factories to which women must sometimes now migrate in search of work. The trend of small-scale processing being replaced by more industrialized factories may continue as developing countries strive to meet the hygiene and quality standards for exports to developed countries (Sharma 2003).

There have been studies recently on women's concepts of organizational fairness in shrimp processing factories (De Silva and Yamao 2006)

together with case-studies of women's struggles for resource access and fishworkers' rights (Munoz 2008; Nayak 2008; Quist 2008; Sunde and Telela 2008). Collective action is gaining more attention in the literature, particularly in agriculture. There is often an assumption that women act collectively, or join together easily, to access credit or share ponds, and that thus the benefits for all will be greater. Yet, there is evidence that this prediction is not always true. In Ghana, attempts to encourage cooperative women's groups have led to an increase in friction and tension among women fish traders (Walker 2001). Similarly, in Tamil Nadu, India, formation of thrift and credit groups among women fish traders differentiated according to socioeconomic status proved to be difficult but the poorest category of traders made some progress in accessing loans at interest rates lower than that offered by local money lenders, as well as in increasing capacity to maintain accounts within their groups (Mathew 2004).

Finally, there is a literature on women's rights to land and to fishing assets, as well as studies on the rights of women fish workers (Munoz 2008; Nayak 2008; Quist 2008; Ram-Bidesi 2008; Sunde and Telela 2008). Protest action of women fish workers, for example, has successfully contributed to a total ban on trawling during the monsoon spawning season in Kerala, India, since 1989 (Kurien 1993). However, more work needs to be performed on a gendered analysis of marginalization and the causes of discrimination. Furthermore, we need to understand how women and men might define and understand rights differently.

## Conclusion

The literature on gender and fisheries/aquaculture in Asia-Pacific and Africa provides substantial evidence of the gendered division of labour in the sector and begins to show how globalization and changes in markets are affecting it. However, a more nuanced understanding of how gender is embedded in livelihoods in fishing communities is still missing. Indeed, our review of gender has also alerted us to the fact that more inclusive studies of fishing communities, which include a wider understanding of livelihoods, and social and economic context are still quite rare in the literature on fisheries and aquaculture. Our approach, in which we focus here on markets and migration, capabilities and well-being, networks and identities, and governance and rights draws out some of the

complexities involved in examining gender in fisheries/aquaculture. We suggest key areas which need further work both in the specific analysis of gender and fisheries, as well as in social and economic studies of the sector in general. By focusing on these topics, we believe we might come to a better grasp of how livelihoods in this sector are shaped by a wide variety of social, cultural, economic, political and ecological structures and processes. In review, we note some specific analyses in each area of focus that we think would enhance our understanding of the gendered nature of the sector and thus guide efforts to promote and achieve gender equity.

In the area of markets and migrations, we still know little about the changing nature of seafood and labour markets in Africa, Asia and the Pacific and how engagement in the markets affects livelihoods. We lack enough evidence to draw conclusions about the overall impact of market changes on poverty in fisheries/aquaculture communities, and how these changes may differ according to gender. This hampers our ability to inform sectoral policies which emphasize the poverty-reduction benefits of global market integration. Similarly, if we are to strengthen household livelihood systems and reduce dependence on fish capture, we need a better understanding of differential access to credit, the different scales at which men and women run enterprises, gender disparities in technology investment and their potential for increasing income (Herrold-Menzies 2008). Finally, to what extent do migrant remittances offer alternatives to, or subsidize fishing-related activities in home communities?

While there has been some work on capabilities and well-being in fishing/aquaculture communities, we still know little about how men and women in these communities perceive well-being. How do they define what a good or bad life is? How do these notions affect their livelihood choices? A greater understanding of the gendered nature of vulnerability will help us assess how men and women of different ages and social status can withstand shocks such as illness, death and disasters. This analysis would contribute to work being performed on resilience, which seeks to assess and promote adaptive strategies to improve people's ability to withstand climate change. Often, resilience is enhanced by greater livelihood diversification but we still have little understanding of how diversification affects men and women differently and whether it might detract from overall income generation. And finally,

we need to build knowledge on the gendered response to HIV/AIDS looking at issues of access to health services, coping with loss of labour and productivity, social stigma, and how people meet cash needs for medical expenses and perceive the impact of the disease on their well-being.

While social networks and social capital have received attention in the development literature, there is little analysis on how they affect livelihood strategies in fishing/aquaculture communities. How do formal networks such as membership in associations affect informal networks? What are the costs and benefits of membership in these networks and how do they help or hinder men and women to get out of poverty? Scholarly work on identity has shown how it influences decisions and choices but we still know little about how identities are constructed in fishing/aquaculture communities and how they affect changing work roles. Related to this analysis is the need for more investigation into power relationships within households and how this influences livelihood choices. There is considerable evidence from different parts of the world that women's identities are closely linked to reproductive work and the domain of the household. This situation clearly puts limits on what women can realistically do in terms of participation in labour and other activities outside the house.

Research in governance and rights needs a better grasp of how men and women participate in fisheries' governance structures (or do not) at the local, regional and national levels. While efforts in community-based fisheries management have attempted to devolve more authority to resource users, it may still be difficult for women to participate in these regimes for cultural and practical reasons. Thus, efforts at improving governance will benefit from gendered analyses to devise ways in which to address the lack of women's participation.

In developing countries, fishing and aquaculture are rarely full-time activities throughout the year and thus we need a far better sense of how fishing and aquaculture affect other livelihood strategies, labour patterns and well-being. The work carried out so far has been largely focused on the gendered division of labour and the rights to and control over assets. It has helped to expand our understanding of how both men and women engage in fisheries and aquaculture. But, if policy and technical interventions are being designed to improve livelihoods and protect aquatic resources, we need a far broader and more nuanced understanding of how gender actu-

ally works in these communities and how it is related to wider economic, cultural and political processes. Without gender analysis, policies may have negative impacts on people's livelihoods, well-being and the environment they depend on, or fail altogether to achieve intended outcomes of improved fisheries and aquaculture management.

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