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Transforming Aquatic Agricultural Systems Towards Gender Equality: A Five Country Review

Weeratunge, N., Chiuta, T.M., Choudhury, A., Ferrer, A., Hüsken, S.M.C., Kura, Y., Kusakabe, K., Madzudzo, E., Maetala, R., Naved, R., Schwarz, A., and Kantor, P.



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Weeratunge, N.
Independent Consultant, Manila, Philippines

Chiuta, T.M.
WorldFish, Lusaka, Zambia

Choudhury, A.,
WorldFish, Dhaka, Bangladesh

Ferrer, A.,
University of the Philippines Visayas, Iloilo, Philippines

Hüsken, S.M.C.
Independent Consultant, Lusaka, Zambia

Kura, Y.
WorldFish, Phnom Penh, Cambodia

Kusakabe, K.
Asian Institute of Technology, Bangkok, Thailand

Madzudzo, E.
WorldFish, Lusaka, Zambia

Maetala, R.
Independent Consultant, Honiara, Solomon Islands

Naved, R.
International Centre for Diarrhoeal Disease research, Dhaka, Bangladesh

Schwarz, A.
WorldFish, Honiara, Solomon Islands

Kantor, P.
WorldFish, Penang, Malaysia

Table of Contents

1. Introduction	4
2. Role of gender equity in improving AAS outcomes	4
3. AAS CRP's conceptual approach to gender and social analysis	5
4. Gender disparities in the five country contexts	6
4.1 Macro trends	6
4.2 Gender, livelihoods and the division of labor	8
4.3 Gender disparities in assets, capabilities and wellbeing	11
4.4 Gendered patterns of household and community decision making	14
4.5 Gender, representation and the policy environment	16
5. Conclusion	18
References	19

1. Introduction

Aquatic agricultural systems (AAS) are systems in which the annual production dynamics of freshwater and/or coastal ecosystems contribute significantly to total household income. Improving the livelihood security and wellbeing of the estimated 250 million poor people dependent on AAS in Bangladesh, Cambodia, the Philippines, the Solomon Islands and Zambia¹ is the goal of the Worldfish Center-led Consortium Research Program (CRP), "Harnessing the development potential of aquatic agricultural systems for development." One component expected to contribute to sustainably achieving this goal is enhancing the gender and wider social equity of the social, economic and political systems within which the AAS function. The CRP's focus on social equity, and particularly gender equity, responds to the limited progress to date in enhancing the inclusiveness of development outcomes through interventions that offer improved availability of resources and technologies without addressing the wider social constraints that marginalized populations face in making use of them. The CRP aims to both offer improved availability and address the wider social constraints in order to determine whether a multi-level approach that engages with individuals, households and communities, as well as the wider social, economic and political contexts in which they function, is more successful in extending development's benefits to women and other excluded groups.

Designing the research in development initiatives to test this hypothesis requires a solid understanding of each CRP country's social, cultural and economic contexts and of the variations across them. This paper provides an initial input into developing this knowledge, based on a review of literature on agriculture, aquaculture and gender relations within the five focal countries. Before delving into the findings of the literature review, the paper first justifies the expectation that successfully achieving lasting wellbeing improvements for poor women and men dependent on AAS rests in part on advances in gender equity, and in light of this justification, presents the AAS CRP's conceptual framework for gender and social analysis.

2. Role of gender equity in improving AAS outcomes

There is now widespread recognition of the importance of gender in development. This is reflected in the growing prominence of gender strategies for development institutions and their programs, the emergence of compelling approaches for gender integration, and the development of indicators for tracking performance. The agricultural research community has built on this progress to pursue increasingly more substantive approaches to gender, as reflected recently in the gender dimensions of USAID's Feed the Future program and in the new CGIAR CRPs.

Yet despite this progress, there is growing concern that these recent achievements need to go much further to be fully successful in integrating gender into development in ways that achieve lasting impacts on poverty and hunger. This concern arises from the recognition that unless development research and practice address the underlying causes of gender disparities in access to and control over agriculture resources and in the way social relations and culture influence capabilities, sustainable change is unlikely to be achieved. Growing acknowledgement of the need to move beyond addressing only the symptoms of gender inequality to addressing its causes has arisen from analyses of the slow pace of change resulting from the primarily technical orientation of most agricultural development interventions (Cornwall and Edwards 2010; Okali 2011).

For example, decades of research have produced considerable evidence documenting gender gaps in access to productive resources, technologies, markets, networks and business services between women and men engaged in agriculture (FAO 2010; Jones 1986; Saito et al. 1994; Udry 1996; World Bank 2001) and in AAS (Kusakabe et al. 2006; Madanda 2003; Medard 2005; Okali and Holvoet 2007; Porter 2006; Tindall and Holvoet 2008; WB/FAO/IFAD 2009; Weeretunge-Starkloff and Pant 2011). Early work related to gender differences in agriculture, such as Boserup's (1970) classic text documenting women's roles in African agriculture and often-cited empirical work by Udry (1996), Saito et al. (1994) and Jones (1986), quantify gender gaps in agricultural inputs and in some cases estimate the productivity gains from their reversal. The Food and Agriculture Organization (FAO) estimates that closing the input gap between agricultural land held by women and men would lead to an increase in agricultural output by an average of 2.5–4.0% in the developing countries for which data are available (FAO 2010b). This literature is a major driver of efforts to advocate for investments in gender integration in agricultural development programming, and it has been successful. However, it has motivated efforts that mainly focus on filling the identified gaps—the visible symptoms of gender inequality—without addressing the factors causing the gaps. (Cornwall et al. 2008; Okali 2011) Therefore, programs have not directly addressed the norms, beliefs and power relations that influence what women and men can and should do with their assets and therefore do not address the structural drivers of inequality to produce sustainable changes in the inclusiveness of agricultural systems and their development outcomes (Cornwall and Edwards 2010). For example, a study showed that productivity and income increases from fish ponds in Bangladesh did not result in the expected nutrition improvements for women and girls in the household in part because there was no effort to address the source of gender inequality (Kumar and Quisumbing 2010). More positive and sustained outcomes for women resulted from a program where women were assisted to engage in dialogue with groups having power over public water bodies in order to secure their rights (Nathan and Apu 1998). Similarly, given the long history of research identifying and documenting the problem of gender differences in access to assets and inputs, the persistence of this finding decades later

¹These are the five focal countries of the CRP.

demonstrates that the way we respond to it needs to change. The persistent documentation of women's lack of access to agricultural markets is similarly problematic. Even with this knowledge, value chain analyses tend to exclude analysis of the social norms, values and relationships that influence who can do what, aspire to what, decide what and get what. Where such analysis is included, practices required to change gender relations within value chains are not necessarily implemented. Such gender-blind approaches risk getting incentives wrong for both women and men (Dolan 2002; Fairhead and Leach 2005) and can lead to programs that increase women's unpaid workloads, reduce women's and the poor's control over resources, poorly position women in value chains, or unintentionally contribute to declining household welfare and food security (Dolan 2002; FAO/WB/IFAD 2009; Guhathakurta 2008; Okali and Holvoet 2007; Porter 2006). More complex socially embedded value chain analyses that avoid compartmentalizing individual women and men as farmers, vendors or processors and instead place them within the diverse institutional environments, roles and relationships in which they make livelihood decisions—i.e., as parents, spouses, community members and economic agents—need to become standard practice. Recent efforts to define gendered approaches to value chain analysis make strides in this direction, adding explicit attention to sex-disaggregated data collection and identifying gender-based constraints, as well as their causes (Bolwig et al. 2008; Coles and Mitchell 2009; Gallina 2010; Laven et al. 2009; Riisgaard et al. 2010; USAID 2009). However, these have not become the norm.

Moving beyond addressing the symptoms of gender inequality to engaging with its causes requires socially and contextually nuanced analysis to inform the design of locally appropriate interventions at multiple scales—i.e., at the individual, household, community and macro policy levels. Therefore, investment in gender and social analysis is critical to improving agricultural development effectiveness. How this analysis is done matters, since gender analysis itself can become a technical exercise to identify gender gaps. To avoid this problem, the AAS CRP will operationalize Kabeer's social relations framework to inform its research in development program (Kabeer 1994, 1996, 1999, 2001a, 2003).

3. AAS CRP's conceptual approach to gender and social analysis

Social relations are the multiple social interactions between people that shape and are shaped by social norms such that they position individuals and groups relative to each other. These positions have consequences for groups' and individuals' social and material wellbeing. Gender relations, a subset of social relations, influence and are influenced by gender roles and responsibilities and claims over resources and rights; they define women's and men's relative social positions and therefore gender inequality in a specific time and place (Kabeer 1994). Institutions such as the market, state, community and family produce and maintain these social relations, and hence gender inequalities (Kabeer and Subrahmanian 1999). Applying the social relations framework requires analysis of social structures, including gender norms, that underlie economic and social differences, as well as of the actions of individuals and groups within and against these structures.

The AAS' goal of achieving wellbeing outcomes complements the social relations approach well. Recent work on wellbeing by the Wellbeing in Developing Countries Research (WeD) Group demonstrates this link through its definition of wellbeing: "A state of being with others, which arises where human needs are met, where one can act meaningfully to pursue one's goals, and where one can enjoy a satisfactory quality of life" (McGregor 2008; emphasis added). The link to social relations is further emphasized by the second of the three dimensions into which the concept is categorized: material (e.g., resources, capabilities); relational (e.g., social and institutional relations, networks, rights and obligations, social/political identities); and subjective (e.g., motivations, personal identities, aspirations) (McGregor 2008; White 2008). Combining a wellbeing approach with the social relations approach to gender analysis within AAS adds value by providing a framework to assess the following:

- The differential resources, capabilities, needs, social relations, rights and obligations, motivations, aspirations, and identities upon which livelihood strategies and wellbeing outcomes of women and men in AAS are based;
- How gender differences are embedded within structures/systems larger than the AAS such that action is needed at both individual (micro) and institutional (micro, meso and macro) levels to create sustained improvements in wellbeing; and
- How market and state structures and processes could be used to improve the rights and obligations of women and men in households and communities in order to achieve gender-equitable wellbeing outcomes.

While differences in resources, agency and outcomes in the lives of women and men in fishing and farming communities have been explored,² Kabeer's social relations approach has rarely been used for gender analysis in aquatic agricultural systems. (An exception is Holst and Plange 2007.) However, its attention to agency, social structures and the interactions between the two provides an appropriate frame for understanding the social causes of gender constraints in order to identify how to act to create more equitable social conditions within which both women and men can take advantage of a wider array of development opportunities.

² These span more sophisticated perspectives on the gender division of labor in fisheries (Bird 2007; Broch 1988; Krabacher 1988; Kronen and Vunisea 2009; Medard 2005; Neis et al. 2005; Nowak 1988; Overa 2005; Porter 2006), some of which are linked with the sustainable livelihoods approach (Bennett 2005; Tindall and Holvoet 2008); to ethnographic research on women's livelihoods and life experiences in the South Indian context (Gulati 1988; Hapke 2001; Hapke and Ayyankeri 2004; Ram 1993; Rubinoff 1999; Samuel 2007); to work on the construction of gendered identities (masculinities and femininities) (Feltault 2005; Menzies 1991; Nadel-Klein and Davis 1988; Neis 1993); on markets, sexuality and health issues (Allison and Seeley 2004; Béné and Merten 2008; Neis 1994); on gender and literacy (Maddox and Overa 2009); and on conceptualizing the links between capabilities and wellbeing in gendered employment (Weeraratunge et al. 2010).

4. Gender disparities in the five country contexts

This section describes gender disparities in social and economic outcomes and opportunities in the five focal countries within which the AAS CRP will work. In doing so, it begins to illustrate the social and cultural factors that the program will need to engage with to successfully achieve its goal of improving the lives and livelihoods of poor women and men dependent on AAS. It starts by describing macro-level outcomes for women and men in the economy, politics, health and education. It then describes the gender division of labor and gender differences in asset ownership and wellbeing outcomes. Finally, it reviews women's and men's decision-making involvement and differences across the countries in women's representation in political bodies and in commitments to gender mainstreaming in state structures.

4.1 Macro trends

In the Solomon Islands and Zambia, agriculture's contribution to the national GDP increased in the period up to 2010, but in the other three countries, the contribution of agriculture declined in favor of industry and services.³ The shifting sectoral composition of the focal countries' economies has ramifications for the share of the labor force in agriculture that play out somewhat differently for women and men, as Table 4.1 demonstrates. In all cases except for men in Zambia, the agricultural share of economically active women and men declined in the period from 1980 to 2010. The starkest decline for both women and men was in Bangladesh,⁴ followed by the Philippines, while the smallest was in the Solomons, reflecting the stability of agriculture's economic contribution there. Even with these declines, except for men in Bangladesh and women and men in the Philippines, the majority of economically active women and men remain in agriculture, which includes fisheries and aquaculture.

Rural-urban migration is a predominantly male phenomenon in Bangladesh (Omelandiuk 2005), the Solomon Islands (SI-NSO 2006) and Zambia (Cligett 2005), and this has likely contributed to the increased share of women in total agricultural employment. In contrast, in the Philippines, women predominate among rural-urban migrants and migrate overseas at almost equal rates as men, explaining some of the pattern above in relation to women's low involvement in agriculture (PCW 2010a). In Cambodia, where rural-urban migration rates are near parity for men and women, the majority of youth aged 15–19 who migrate to cities are female (Maltoni 2007). These variations in gendered patterns of migration are important to understand in relation to considering the livelihood strategies acceptable to rural households and women and men within them in the AAS CRP countries.

Women's share of the economically active population is highest in Cambodia and lowest in the Solomon Islands and the Philippines (see Table 4.1). While women's share of the economically active population has increased considerably between 1980 and 2010 in Zambia, and slightly in Bangladesh, it has decreased markedly in Cambodia (where women constituted the majority (54%) of the labor force in 1980) and marginally in the Solomon Islands, while remaining unchanged in the Philippines. These figures say nothing about the quality of this employment. However, evidence globally suggests that women are somewhat more likely than men to be in vulnerable forms of employment (50.5% of women compared to 48.2% of men), such as unpaid family labor or subcontracted piece-rate work (ILO 2012). Data from Zambia and Bangladesh support this, with 91% of females in Zambia reported to be in informal employment in contrast to 76% of males (CSO 2004); also, 60% of women in Bangladesh were reported to be unpaid family workers in the period 2004–2007 (UN 2010).

Table 4.1: Gendered employment patterns in agriculture in program countries, 1980–2010.

Country	Share of total economically active population				Agricultural share of economically active population*				Share of total economically active in agriculture†			
	Female %		Male %		Female %		Male %		Female %		Male %	
	1980	2010	1980	2010	1980	2010	1980	2010	1980	2010	1980	2010
Cambodia	54.0	48.3	46.0	51.7	80.0	69.8	70.1	62.2	57.3	51.2	42.7	48.8
Zambia	36.3	43.3	63.7	56.7	84.7	68.0	50.1	59.7	41.2	46.5	58.8	53.5
Bangladesh	37.7	40.3	62.3	59.7	80.9	57.4	66.5	37.3	42.4	51.0	57.6	49.0
Philippines	38.4	38.8	61.6	61.2	37.0	20.9	60.5	41.9	27.6	24.0	72.4	76.0
Solomon Islands	40.0	38.7	60.0	61.3	85.3	80.2	72.3	64.8	43.9	46.0	56.1	54.0

Source: Data from FAO (2010).

*This refers to the proportion of women and men employed in agriculture out of the total numbers of women and men, respectively, employed in all sectors.

†This refers to the respective share of women and men in total agricultural employment.

As to the relative presence of women and men in total employment in agriculture, in Cambodia women maintain a majority share, even if by a smaller margin than previously. Men's majority presence reversed in Bangladesh and shrank in Zambia and the Solomons. However, in none of these cases is the gap as wide as in the Philippines, where agriculture is demonstrably a male-dominated occupation (FAO 2010).

Rural poverty, although on the decline in Bangladesh, Zambia and Cambodia to different degrees, remains high in most of the program countries. Zambia stands out with the highest rural poverty rate and the Solomon Islands with the lowest. In the Philippines, poverty rates among fishers and farmers are considerable (Table 4.2).

³ In Zambia, though the contribution of agriculture increased, its overall contribution remained low relative to other sectors (16% in 2000 to 17.4% in 2010) (AfDB 2011).

⁴ Increasing opportunities, for younger women particularly, in the readymade garment industry explain part of the declining agriculture share of economically active women. Equally important is growth in women's employment in the health and community service (i.e., NGO) sectors (World Bank 2008).

Table 4.2: Rural poverty and gender gaps in income/wages in program countries.

Country	Rural population in poverty (%)		Female:male ratio of estimated earned income ^a		Female:male ratio of wage equality for similar work ^a	
	<i>Previous</i>	<i>Most recent</i>	2006	2011	2006	2011
Bangladesh	43.8 (2005) ^b	35.2 (2010)^b	0.54	0.55	0.41	0.57
Cambodia	22.23 (2004) ^c	20.78 (2007)^c	0.76	0.66	0.77	0.74
Philippines	44 (fishers), 43 (farmers) (2003) ^d	49.9 (fishers), 44 (farmers) (2006)^d	0.59	0.60	0.73	0.76
Solomon Islands	n/a	15.2 (2005/06)^e	n/a	n/a	n/a	n/a
Zambia	78 (2004) ^f	80 (2006)^f	0.56	0.56	0.86	0.76

Sources: Data from ^aHausmann et al. (2011); ^bBBS (2011a, b); ^cWorld Bank (2009); ^dCastro (2009); ^eSI-NSO/UNDP (2008); ^fJayne and Hichaambwa (2011).

Nothing can be said of the distribution of poverty head-count rates by sex, as poverty data are collected at the household rather than individual level. This is a key gap in sex-disaggregated data collection that needs to be addressed for better poverty targeting and progress monitoring. However, a comparison between female- and male-headed households⁵ is possible.⁶ Poverty among female-headed households in Zambia is 70%, higher than that of male-headed households at 63% (CSO 2011). In the rural sector in the Philippines, where traditional gender hierarchies persist (Sumagaysay 2005), total incomes of female-headed households are lower than those of male-headed households among the lower 30% of income earners, most of whom are located in the rural agricultural sector (NSCB 2010). This is in contrast to the national pattern of higher total incomes of female-headed households overall (NSCB 2010). In the Solomon Islands, while 15% of rural households fall under the basic needs poverty line, many more households and individuals are estimated to have expenditure only just above the basic needs poverty line, with rural female-headed households disproportionately represented among the bottom 30% of income deciles (SI-NSO/UNDP 2008).

Data on female-to-male wage ratios demonstrate the effect of gender norms on the type, quality and valuation of work available to women and men (Table 4.2, from Hausmann et al. 2011). Overall, and even for similar types of work, women in the four program countries for which data are available earn significantly less than men. The situation is worst in Bangladesh, where the ratio of female to male earnings is lowest both overall and for similar work. However, the gap closed between women and men in similar work in the period 2006 to 2011. The opposite is true in Zambia, where the ratio of female to male earnings in similar work, while better than the overall wage gap ratio, grew in size from 2006 to 2011. Cambodian women experienced a similar decline in status, with the female-to-male ratio of overall earned income declining significantly. Considering both indicators, the deterioration in women's economic returns relative to men's is most pronounced in Cambodia and Zambia, while its persistence is most problematic in Bangladesh (Hausmann et al. 2011); both patterns have negative implications for achieving poverty

reduction, wellbeing and women's economic empowerment objectives.

The Global Gender Gap Index⁷ traces macro-level trends in gender inequality across countries. It is disaggregated into indicators representing economic participation (including the wage ratios reported previously), educational attainment, health status and political empowerment (Hausmann et al. 2011). Four of the AAS program countries are included in the exercise, and the data are presented in Table 4.3.⁸ The Philippines is very well positioned and holds the distinction since 2006 as the only Asian country, and one of only two developing countries among the top ten countries, with the lowest gender gaps. Zambia is ranked the worst among the four program countries, with Cambodia performing only marginally better. Both of these countries performed relatively worse in 2011 than 2006, as evidenced by their declining rankings. Bangladesh shows marked improvement in reducing overall gender gaps over this same period.

Looking within the index's components, it is clear that economic participation and political empowerment are the more challenging areas in which to achieve gender equality, given the wider range in scores (from the maximum of 1) for these components across the four countries compared to the health and education components. This is unsurprising, since advancements in both areas involve redistribution of resources and direct challenges to norms and values about what is appropriate for women and men to be and do.

⁵ The concepts of "female-headed" and "male-headed" households follow the multiple definitions used in the studies reviewed; while a literature problematizing these concepts exists, that discussion is beyond the scope of this paper.

⁶ The highest proportion of female-headed households is in Cambodia, amounting to almost a third of total households, while the lowest is in the Solomon Islands. The proportion of female-headed households has increased in all program countries for which data are available—from 10% in 2004 to 12.8% in 2007 in Bangladesh (NIPORT 2009); from 25.7% in 1998 to 29.2% in 2004 in Cambodia (JICA 2007); from 11.3% in 1993 to 21.1% in 2009 in the Philippines (PCW 2010a); and from 23% in 2001–2002 to 24.3% in Zambia (CSO 2003, 2009). In both the Philippines and the Solomon Islands, female-headed households are over-represented in the poorest 30% of income earners.

⁷ The GGGI is one of several gender indices available globally—others are GEM and GDI of UNDP, SIGI of OECD and GEI. This analysis has used the GGGI, as it is updated annually and is comprehensive in the four dimensions covered; these dimensions are relevant in contextualizing livelihoods within a program on aquatic agriculture.

⁸ The Solomon Islands have not been assessed in the Global Gender Gap Index.

Table 4.3: Gender gaps in four program countries, Global Gender Gap Index 2011.*

Country	Overall GGGI 2011		Overall GGGI 2006		Economic participation & opportunity 2011		Educational attainment 2011		Human survival and health 2011		Political empowerment 2011	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Philippines	0.7685	8	0.752	6	0.763	15	1	1	0.98	1	0.331	16
Bangladesh	0.6812	69	0.627	91	0.493	118	0.917	108	0.956	123	0.359	11
Cambodia	0.6464	102	0.629	89	0.632	75	0.865	116	0.98	1	0.109	78
Zambia	0.6309	106	0.636	85	0.600	87	0.851	120	0.969	97	0.100	84

Source: Data from Hausmann et al. (2011).

* Ranks indicated are for all countries assessed in the Index. Scores in the GGGI range from 0–1, with 1 indicating the attainment of gender equality.

The persistence of gender disparities based on socio-cultural norms and practices, as well as negative impacts of development strategies and processes on women, have been recognized in all five program countries, resulting in an increased focus on women's participation and/or gender mainstreaming in development. Policies and strategies adopted at the national and/or sectoral level(s) offer opportunities for pursuing gender equality in AAS. In Bangladesh, the most recent policy effort is the newly approved "Women Development Policy 2011," which promotes the equal rights of men and women in all spheres of life. Its most controversial aspect is the provision of equal rights to inherited property; the provision is perceived by fundamentalist groups, which have opposed the policy, as contravening the inheritance laws prescribed by the Holy Quran. This policy attempts to overcome the gulf between women's equality in the public and private spheres in Bangladesh; the policy refers to the personal laws that govern family life as a major impediment for women in exercising their fundamental human rights relating to marriage, divorce, custody of children, alimony and inheritance of property.

The Rectangular Strategy and the National Strategic Development Plan 2006–2010 in Cambodia strongly support gender equity and mainstreaming. These plans have been elaborated in sectoral strategies for gender mainstreaming to increase the ability of rural women to access, manage and benefit from resources and services. The Beijing meeting provided the guiding principles on which Cambodia's Ministry of Agriculture, Fisheries and Forestry (MAFF) based its Gender Mainstreaming Policy and Strategy in Agriculture (GMPSA), prepared in 2005 (MAFF 2005). Subsequently, the Fisheries Administration (FiA) and MAFF spearheaded the development of a Gender Mainstreaming Policy and Strategy in the Fisheries Sector (GMPSFS), endorsed and published in 2007. Since then, the Ministry of Environment has also published its gender mainstreaming strategy in 2010. Despite the commitment of Cambodia's FiA to the GMPSFS, only a fraction of activities have been funded for implementation due to lack of sufficient budget allocation from internally secured funds or bilateral donor assistance, and there are policies and strategies missing in sectoral agencies that are not yet thought of as "gender relevant."

The most recent and comprehensive effort to address gender equality by the government of the Philippines is the introduction of the Philippines Magna Carta of Women in 2009. In addition to redressing imbalances in women's participation in decision making at all levels of society, the charter has special provisions for improving economic and social benefits to marginalized rural women, providing windows of opportunity for reducing gender gaps in AAS (PCW 2010b). Gender mainstreaming in the Philippines is supported by gender budgets allocated to all national and regional government agencies, as well as local government units.

The National Development Strategy (NDS) of the Solomon Islands incorporates concerns of the country's national policy on Gender

Equality and Women's Development (GEWD) of 2009 (MWYCA 2009). The GEWD policy focuses on economic empowerment of women to improve livelihoods and wellbeing and includes principles of relevance to AAS, such as the equal participation of women and men in decision making and leadership; improved economic status of women through access to and share of productive resources; and increased capacity for gender mainstreaming through capacity building among partners and stakeholders across government. The Ministry of Fisheries adopted a Gender in Fisheries strategy in 2011, linked to its Community Management Strategy; this affords an opportunity to build on the strong, ongoing partnerships among the WorldFish Center, the ministry and NGOs within the sector.

Zambia adopted its National Gender Policy in 2000 and installed an institutional framework for gender mainstreaming, including the Gender Consultative Forum at national level, Gender Focal Points in each line ministry, and provincial and district gender focal point persons. However, there is no Act that makes gender mainstreaming mandatory across all sectors, and combined with the lack of skills and capacities for gender mainstreaming and low political will and commitment, this lack is graphically represented by the insufficiency of budgets for gender mainstreaming (Farnworth and Munachonga 2010). Additionally, statutory and customary laws are at odds within the governance framework and challenge the implementation of well-intended policies.

This review has attempted to delineate the macro-economic context of gendered processes of change that have occurred in the five program countries to better understand gender relations and disparities within households and communities and how these are linked to broader institutional structures and processes of the market and state, building on the conceptual approach presented in this paper.

4.2 Gender, livelihoods and the division of labor

Male and female members of households pursue different livelihood strategies, supporting or complementing one another's activities in the pursuit of wellbeing. A preliminary gender analysis of the five program countries reveals both differences and similarities in gender division of labor at household level, as well as in the communities within which households are located. Underlying these differences is a wide range of marriage and residence patterns, norms, beliefs and practices that shape gender relations. Without a better grasp of these norms, beliefs and practices, it is difficult to understand both why the gender gaps in participation in and benefits from AAS exist and how to address them.

In areas with monogamous marriage and bilocal, ambilocal or matrilocal residence patterns, such as the Philippines (Fox 1977;

Hayase 2007) and Cambodia (Ledgerwood 1995), and among some groups in the Solomon Islands (Fugui 2001; Hviding 1996; Maetala 2008) and Zambia (Chondoka 1988; Mair 1953; Poewe 1979; Richards 1969), the gender division of labor tends to be more flexible, with fewer restrictions on agricultural tasks for women and on their mobility beyond the household. In contrast, in areas with monogamous or polygynous marriage and patrilocal residence patterns, such as Bangladesh⁹ (Naved et al. 2011), and among some groups in the Solomon Islands (Maetala 2008) and Zambia (CSO 2003, 2009; Mbozi 2000), the gender division of

labor is more rigid, with women often restricted in mobility beyond their homes or villages and in the range of tasks they can perform. The less rigid marriage and residence patterns and the relatively flexible gender division of labor in the Philippines and Cambodia are also reflected in the larger proportion of women who engage in rural-urban and overseas migration, in contrast to the other three countries. In all five countries, little empirical data exist on the impact of increasing out-migration trends on changes in the gender division of labor within rural households.

Table 4.4: Marriage/residence patterns and the gender division of labor in program countries.

	Bangladesh ^a	Cambodia ^b	Philippines ^c	Solomon Islands ^d	Zambia ^e
Marriage type	Predominantly monogamous; around 10% ^f of marriages are polygynous	Predominantly monogamous;* polygyny exists among some minority hill groups such as the Hmong	Predominantly monogamous; polygyny and polyandry exist among some indigenous groups	Predominantly monogamous; 5% ^g of marriages are polygynous	Predominantly monogamous; 16–25% ^h of women in polygynous marriages
Residence patterns	predominantly patrilocal	matrilocal, ambilocal, bilocal, patrilocal	matrilocal, ambilocal, bilocal, patrilocal	patrilocal, matrilocal, ambilocal	patrilocal, matrilocal
Female-headed households	12.8% (2007) ⁱ	29.2% (2004) ^j	21.1% (2009) ^k	6.1% (2005/6) ^l	24.3% (2008) ^m
Production:					
<i>Agriculture</i>	men: land preparation, manuring, irrigation, plant protection; women: nursery, planting, weeding; women & men: harvesting	men: land preparation; women & men: all other tasks; <i>women predominate</i>	men: land preparation, manuring, irrigation, plant protection; women & men: all other tasks	men: land preparation; women: all other tasks; <i>women predominate</i>	men: land preparation; women & men: all other tasks
<i>Fishing</i>	mostly men	men & women: freshwater mostly men: marine	men and women	men and women	mostly men
<i>Aquaculture</i>	women and men	women and men	women and men	women and men	women and men
<i>Livestock</i>	women and men: poultry, goats, cattle†	women and men: cattle, pigs, poultry	women and men: cattle, pigs, poultry	women and men: pigs, poultry	women: poultry; men: cattle, goats
Processing	women and men	mostly women	mostly women	mostly women	mostly women
Trading	mostly men	mostly women: small-scale trading; men: medium and large-scale trading	mostly women: small and medium-scale trading; men: large-scale trading	mostly women: small-scale trading; men: medium-scale trading	mostly women: small-scale trading; men: medium and large-scale trading
Childcare and housework	women	mostly women	mostly women	women	women

Sources: Data from ^aNaved et al. (2011), Sultana and Thompson (2006), WorldFish (2007); ^bCampbell et al. (2005), FAO (1997), IFM (2007), JICA (2007), Keang (2001), Khim et al. (2002), Kusakabe et al. (2006), Ledgerwood (1995), MAFF/CBNRM (2008), Sam Ath and Roitana (2006), STREAM (2000), Teng (2003), Weeratunge et al. (n.d.); ^cBrewer (1995), de la Cruz (2005), Fox (1977), Hayase (2007), Jimenez (2004), Koda (2001), Lu (2007), Paris (2002), Reyes-Cantos and Bernabe (2006), Rodriguez (2008), Santiago (2008), Sekhar and Ortiz (2007), Siason (2004), Spieldoch (2007), Sumagaysay (2005); ^dBoso and Schwarz (2009), Fugui (2001), Holst and Plange (2007), Hviding (1996), Maetala (2008, 2009), Prange et al. (2009), Weeratunge et al. (2011); ^eAfDB (2006), Chondoka (1988), Geisler (1992), Hüskén and Heck (2012), Knatterud (2007), Kumar (1994), Mair (1953), Mbozi (2000), Richards (1969); ^fOECD (2009); ^gSI-NSO (2007); ^hCSO (2003, 2009); ⁱNIPORT (2009); ^jJICA (2007); ^kPCW (2010a); ^lSI-NSO/UNDP (2008); ^mCSO (2009).

*"Predominantly monogamous" (which includes serial monogamy) refers to the social norm/common practice, which might be flouted by considerable numbers of individuals, as in Cambodia (Keo 2004). It signifies that the social group does not have institutionalized alternative forms of marriage, such as polygyny or polyandry.

†The extent of involvement depends on the size of production (Naved et al. 2011).

⁹ Women from minority Hindu communities have more mobility than those from the majority Muslim communities in Bangladesh.

In all five countries, care of the household and children remain the primary task of women, although there is evidence of men sharing some of these tasks to some extent, especially in the Philippines (de la Cruz 2005; Lu 2007) and Cambodia (MAFF/CBNRM 2008). For example, a study in Benguet, the Philippines shows that approximately 46% of men in the vegetable-farming households studied were engaged in food preparation and cooking, in contrast to 74% of women (Lu 2007). Women's responsibility for social reproduction activities can be a key constraint to women's abilities to choose to be involved in paid work, or to the types of paid work they can enter. This is a critical area for more innovative thinking about how to shift norms and develop and disseminate appropriate technologies to reduce the drudgery related to these tasks.

The nature and extent of involvement of women and men in AAS vary in the five countries (Table 4.5). While women are involved in production and processing activities in agriculture in all five countries to different extents, women's engagement in fishing is considerable only in Cambodia and the Solomon Islands (FAO/WorldFish/World Bank 2008). With the exception of Bangladesh, where the practice of *pardah*, based on notions of man-shomman (honor/respect), restricts the mobility of women (Amin 1995; Naved et al. 2011), women's involvement in trading agricultural crops, fish and livestock is extensive in the other four countries. In Cambodia, both women and men perform almost all tasks within AAS (MAFF/CBNRM 2008). Men are generally predominant in the production of crops grown for the market in all countries, with the exception of Cambodia (Weeratunge et al. n.d.).

Value chains in relatively market-oriented economies, such as Bangladesh, Cambodia and the Philippines, are more complex and differentiated than those in relatively subsistence-oriented economies, such as the Solomon Islands and Zambia. Gendered value chain analysis (GEVCAL) reveals where and in what type of value chains women and men are located, and the gendered benefits and disadvantages of small-scale farmers, fishers, fish farmers and traders in being linked to market processes or

of value chains or the differentiated returns for women and men from their participation. Among the more insightful gendered value chain analysis relevant to AAS in the five countries is work on shrimps (Gammage et al. 2006; USAID 2008) and poultry (Farnworth 2011) in Bangladesh and seaweed (Arnold 2008) in the Philippines.

Based on what we do know, women are generally located in segments at the lower ends of aquatic agricultural value chains in all five countries, as home-based producers or small-scale processors and traders in local value chains (Table 4.5). While women are predominant in marketing segments of aquatic products as collectors/assemblers, intermediaries and retailers in Cambodia (Kusakabe et al. 2006), the Philippines (Arnold 2008), the Solomon Islands (Brewer 2011; Weeratunge et al. 2011) and Zambia (Hüsken and Heck 2012; Lungu and Hüsken 2010), they are often absent from this node, and overall, in Bangladesh (Naved et al. 2011; USAID 2008). However, women's unpaid contributions as wives or subsistence producers might be invisible within value chains in all countries. Most national, global and regional value chains in program countries are dominated by men. An exception is women engaged in small-scale cross-border fish trading in Cambodia. There is evidence that the transaction costs for women traders (negotiating with customs/tariffs/red tape) are higher than for their male counterparts in such cross-border trade (Kusakabe et al. 2006). Despite the active role of women in fish marketing in Cambodia, trade policies such as the government's open-border policy has encouraged larger players in fish export and has marginalized small-scale female traders who had dominated the market (Kusakabe et al. 2008). The lack of access to credit for small women traders has also deprived them of the ability to purchase fish directly from fishers, placing them at a more disadvantageous position in the value chain (Kusakabe et al. 2008). Moreover, in Zambia women traders in fish value chains are more vulnerable to transactional sex, violence and sexually transmitted diseases, as they are dependent on men for the procurement and transport of fish (Béné and Merten, 2008;

Table 4.5: Gendered patterns of engagement in selected aquatic value chains in program countries.

	Bangladesh (Shrimp)^a	Cambodia (Freshwater fish)^b	Philippines (Seaweed)^c	Solomon Islands (Reef fish)^d	Zambia (Freshwater fish)^e
Producers	Women and men	Women and men	Women and men	Women and men	Mostly men
Input providers	Mostly men	Mostly men	Mostly men	Mostly men	Mostly men
Collectors	Mostly men	Mostly women	Women and men	Women and men	Mostly women
Assemblers	Mostly men	Mostly women	Women and men	Women and men	Mostly women
Retailers	Mostly men	Mostly women	Mostly women	Women and men	Mostly women
Wholesalers	Mostly men	Men and women	Mostly men	Absent	Mostly men
Processors	Mostly women	Mostly women	Mostly women	Mostly women	Mostly women
Exporters	Mostly men	Mostly men	Mostly men	Mostly men	Mostly men

Sources: Data from ^aGammage et al. (2006), USAID (2008); ^bKusakabe et al. (2006); ^cArnold (2008); ^dBrewer (2011), Weeratunge et al. (2011); ^eHüsken and Heck (2012), Lungu and Hüsken (2010).

excluded from these processes. It shows the rules under which such value chains are governed and how these might work differently for men and women.

Gender inequalities are often critical to understanding and addressing the "weakest links" within value chains and are central for upgrading quality and growth, as well as poverty reduction (Mayoux and Mackie 2008). Even though value chains are gender segmented everywhere, studies or data on gendered value chain analysis done in a systematic manner are rare or lacking for all five countries; this remains an area where much work needs to be done. For example, value chain analysis often does not provide detailed sex-disaggregated data on participation within segments

Hüsken and Heck 2012; Lungu and Hüsken 2010; Merten and Haller 2006, 2007).

Complementing the evidence on women's concentration in the low-value segments of value chains, data on gender differences in entrepreneurship rates, motivations and sustainability reflect gender inequalities in society. Only 4% of women of the working-age population engage in early stage entrepreneurial activity¹⁰ in Bangladesh, compared to 21% of men (Kelley et al. 2011). In Zambia, too, early stage entrepreneurial activity for women is lower (29.9%) than for men (35.4%) (Kelley et al. 2010). The Philippines is an outlier, as this activity is higher for women (22.5%) than men (18.3%) (Madarang and Habito 2007). Women

are more often considered necessity-driven entrepreneurs, while men are more likely to be considered opportunity driven. In Zambia, while the proportion of opportunity-driven entrepreneurs is overall higher for both women (60%) and men (72%) than necessity-driven entrepreneurs, the proportion of necessity-driven entrepreneurs is higher for women (38%) than for men (28%) (Kelley et al. 2010). In contrast, in the Philippines, the proportion of women driven by opportunity (49%) is higher than by necessity (43%), whereas the proportion of men driven by necessity (57%) is higher than by opportunity (51%) (Madarang and Habito 2007). While women own the majority of nascent (69%) and new (51%) enterprises in the Philippines, 66% of established businesses¹¹ are owned by men (Madarang and Habito 2007). Madarang and Habito (2007) argue that while more women than men start and grow businesses at critical and fragile stages in the Philippines, men take over once these businesses become stable. Discontinuance rates are higher for women (60%) than men (42%) in Zambia (Kelley et al. 2010). Women discontinue more often for lack of finances and personal reasons in Zambia, in contrast to men, who discontinue due to lack of profitability and the draw of other opportunities (Kelley et al. 2010).

Overall, the data available for the five program countries paint a stark picture of how gender is relevant to the extent and quality of livelihood opportunities available to women and men. A key challenge to the AAS program will be identifying context-appropriate ways to address the norms and values underlying the persistence of the gender division of labor.

4.3 Gender disparities in assets, capabilities and wellbeing

Asset gaps

Assets are important building blocks of secure livelihoods. They come in a range of forms, including human, financial, natural, productive and social assets. Different social groups have very different abilities to access and control assets, and therefore different capabilities to use them to achieve valued outcomes. A considerable body of empirical material documents gender differences in access to and control over a range of different resources, from agricultural inputs to land, credit and social networks, as well as the larger consequences of the gaps (see Deere and Doss 2006).

Findings from this literature relevant to AAS program countries include how in Bangladesh (Quisumbing and Maluccio 2000) and Zambia (AfDB 2006; Machira et al. 2011; Milimo et al. 2004) most productive agricultural assets, such as land, machinery and large livestock are owned by men. However, in Zambia's Eastern Province, a gender analysis documented the belief that a greater share of women had access to oxen, agricultural tools and inputs, and technical skills, compared to other productive resources, but this access tended not to lead to control over the resources (Milimo et al. 2004). In the Solomon Islands, men own and have access to a much wider range of fishing gear than women (Prange et al. 2009), whereas both women and men own and have access to agricultural tools (Weeratunge et al. 2011). In Cambodia (Weeratunge et al. n.d.) and the Philippines, it appears that fishing gear and agricultural tools are considered joint property of the household by both women and men, and both have access to these. Women have access to

micro-credit in the three Asian countries, Bangladesh, Cambodia and the Philippines (MIE 2012), but not to credit from formal lending institutions such as banks, which favor male and better-off clients (JICA 2007; Naved et al. 2011; Santiago 2008). However, women often borrow micro-credit on behalf of male relatives, at times taking on the burden of repayment (Kabeer 2001b). The outreach of micro-finance is restricted in Zambia (MIE 2012) and almost non-existent to rural residents in the Solomon Islands regardless of gender, reflecting the subsistence nature of the economy as well as the transaction costs of delivering micro-finance to a string of relatively isolated islands. There is less empirical material on the ownership and use of jewelry, a liquid asset often owned by women, especially in Bangladesh, Cambodia and the Philippines (Antonopoulos and Floro 2005; Quisumbing and Baulch 2009; White 1992). Jewelry may be considered a form of savings, to be liquidated in times of need; however, it is less clear how much say women may have in these decisions.

Gender disparities also exist in access to agricultural and fisheries extension services, social welfare services and safety nets, as well as social capital. Women's access to agricultural/fisheries information and extension services is restricted in all five countries due to women not being considered farmers and fishers, the low number of female extension agents, cultural norms that restrict the interaction between women and male extension agents, and women's restricted mobility (JICA 2007; Naved et al. 2011). Gender gaps in access to information, extension services and nutrition reduce productivity in agriculture and fisheries. In terms of social capital, the proportion of women who are members or leaders of farmer or fisher organizations is considerably lower than of men (Khim and Ponley 2011; Kusakabe 2002; Lu 2007). For example, in a vegetable-growing region in the Philippines, while 51% of male farmers were members of a cooperative, only 28% of female farmers were (Lu 2007). In Cambodia, only 30% of members of community fisheries committees are women (Khim and Ponley 2011).

A significant livelihood diversification strategy of rural Filipinos is migration to urban areas or overseas to augment family incomes through remittances. Women are as likely to migrate as men, with their rate higher for internal migration and slightly lower for international migration than that of men (NSCB 2010). Female migrants work as domestic helpers and entertainers in more developed Southeast Asian countries, the Middle East, Europe and North America (Santiago 2008), mostly concentrated in unskilled sectors, although they also work in skilled occupations such as nursing. Filipino male overseas migrants are also concentrated in both unskilled and semi-skilled sectors, such as construction labor and merchant seamen. Migration is made possible through access to informal social networks, as well as formal recruiting agencies.

Access to services such as education and health is often gendered. Education outcomes demonstrate this across program countries, as well as illustrating differences in how gender matters. Education outcomes are lower for girls than boys in Cambodia and Zambia (Hausmann et al. 2011). This proportion is worst in Zambia, where the fraction of girls completing Grade 10 or higher is only half that of boys (CSO 2009). In the Solomon Islands, there is near parity in education outcomes, although enrollment rates for boys are higher at the secondary level (JICA 2010). While enrollment rates for girls are higher than for boys in both the Philippines and Bangladesh (Hausmann et al. 2011), performance and completion rates at the secondary level are higher for girls only in the Philippines (David et al. 2009). Moreover, apart from the Philippines, the adult literacy rate is higher for men in all program countries (UN 2010).

¹⁰ Owner/manager of a new enterprise—including those just establishing an enterprise up to 42 months of operation (Kelley et al 2010).

¹¹ Enterprises operating more than 42 months (Kelley et al 2010).

While evidence about gender asset gaps exists across the range of asset types, areas for further inquiry remain. One such area is a need to understand which assets are most beneficial to women and men in AAS to support their individual and joint livelihood security. For example, the Global Gender Gap Asset project (Grown 2012) identified ownership of a house and non-farm business as the most important assets for women's empowerment in the countries where the survey was conducted. Such knowledge helps to focus efforts to enhance poor women's and men's asset holdings. Even more important is a better understanding of why gender asset gaps exist, in order to move action beyond addressing the visible evidence of gender differences to also addressing what causes them. This involves developing more knowledge of how norms, customs and laws influence the asset rights of women and men in different AAS program contexts.

Inheritance patterns are one key factor influencing gender differences in asset ownership. Where inheritance patterns are bilateral, bilineal, ambilineal or matrilineal, as in the Philippines (Goda 2001; Hayase 2007) and Cambodia (Ebihara 1977;

access, except as members of a joint farming household. However, land or reef ownership along the matriline does not necessarily guarantee that women have decision-making powers over this asset—this power might be vested with male kin within the matriline rather than with females, as is the case with several groups in the Solomon Islands (JICA 2010; Maetala 2008; White 1991) and Zambia (Machina 2002). Moreover, while land might be passed along the matriline, high-value crops such as coconut trees on these lands might be passed along the patriline, as in Isabel in the Solomon Islands (White 1991).

Women might bring material or symbolic assets into a marriage or provide these to their natal family through the practice of bride price in Cambodia (Ledgerwood 1995) and Zambia (Chondoka 1988; Mair 1953), as well as among some groups in the Philippines (Junker 2000) and the Solomon Islands (Keesing 1992; SPC 2009). This might include land or other gifts, such as livestock, shell necklaces or cash, presented by the groom's family to the bride or her family. In contrast, in rural Bangladesh the practice of dowry (which could also include land or other gifts, such as cash, jewelry, furniture, household appliances or livestock presented by the

Table 4.6: Inheritance patterns and gendered access to/ownership of productive assets in program countries.

	Bangladesh ^a	Cambodia ^b	Philippines ^c	Solomon Islands ^d	Zambia ^e
Inheritance patterns	patrilineal	bilateral, bilineal, ambilineal, matrilineal, patrilineal	bilateral, bilineal, ambilineal, matrilineal, patrilineal	patrilineal, matrilineal, ambilineal	patrilineal, matrilineal, bilateral
Marriage payments	dowry	bride price	bride price	bride price	bride price
Land tenure	men	joint/tribal	mostly controlled by men	tribal/mostly controlled by men	men
House tenure	men	women	mostly men	n/a	men
Marine tenure, reefs	common property	n/a	common property	tribal	n/a
Freshwater tenure	mostly men: ponds; common property: reservoirs, rivers	mostly men: fishing lots in lakes; common property: rivers	n/a	n/a	mostly men: ponds; common property: lakes and rivers
Agricultural tools	men	joint	joint	women and men	mostly men
Fishing gear	men	joint	joint	men and women	mostly men
Livestock	men: cattle, goats; women: poultry	joint	joint	joint?	men: cattle, goats; women: poultry
Credit	men: banks; women: micro-credit	men: banks; women: micro-credit	men: banks; women: micro-credit	n/a	men: banks; women: micro-credit

Sources: Data from ^aAnderson (2007), Naved et al. (2011), NWDP (2011), Quisumbing and Maluccio (2000), Rao (2011); ^bEbihara (1977), JICA (2007), Ledgerwood (1995), Teng (2003), UNIFEM (2004), USAID (2010); ^cArnold (2008), Dalrymple and Batistiana (2009), de la Cruz (2005), Giovarelli and Lastarria-Cornhiel (2006), Goda (2001), Hayase (2007), Jiminez (2004), Junker (2000), Lu (2007), NSO- GCOM (2011b), Santiago (2008); ^dBoso and Schwarz (2009), Hviding (1996), JICA (2010), Keesing (1971, 1992), Maetala (2008, 2009), NDS (2011), Prange et al. (2009), Scheffler (1965), SPC (2009), Weeratunge et al. (2011), White (1991); ^eAfDB (2006), Coldham (1990), GIDD (2005), Himonga and Munachonga (1991), Kumar (1994), Machina (2002), Machira et al. (2011), Milimo et al. (2004), Poewe (1979).

Ledgerwood 1995) and among some groups in the Solomon Islands (Hviding 1996; JICA 2010; Keesing 1971; Maetala 2008; Scheffler 1965; White 1991) and Zambia (Machina 2002; Poewe 1979), women are more likely to inherit land or house reefs, or have access to land or reefs held communally within descent groups such as tribes or clans. When inheritance patterns are patrilineal as in Bangladesh (Rao 2011) and among some groups in the Solomon Islands (JICA 2010) and Zambia (GIDD 2005; Machina 2002), women do not own land and might not have easy

bride's family to the bridegroom or his family) has been increasing in prevalence since the 1960s (Anderson 2007; World Bank 2008). This is a major switch for a region formally characterized by brideprice. Theories behind the change include a marriage squeeze, wherein cohorts of females are large relative to males making finding a groom of the appropriate age difficult; and reductions in land holding size making female labor less valuable (World Bank 2008).

Marriage payments can affect women's status and wellbeing within the household, either positively or negatively (Quisumbing and Maluccio 2003).¹² Demands for dowry in Bangladesh (Naved and Persson 2010) and bride price in the Solomon Islands (SPC 2009) have been found to increase the likelihood of wife abuse. Gender disparities in access to assets are also due to institutional and governance structures that go beyond communities and households. For example, colonial systems of land tenure (British, French, Spanish) that favored male inheritance and recognized men as heads of households have been superimposed on customary systems, with the result that systems that favored female inheritance or were flexible in providing access to women in practice in the past have been diluted, eliminated or transformed (Colchester 2001; Davison 1988; Griffen 2001; Yngstrom 2002). Current national legislation on land ownership does not appear to discriminate against women in Bangladesh (NWDP 2011), Cambodia (JICA 2007; USAID 2010), the Philippines (Giovarelli and

Cultural beliefs and taboos restrict women's access to the sea in Bangladesh and Cambodia. In the Philippines (Arnold 2008; de la Cruz 2005; Jiminez 2004) and the Solomon Islands (Prange et al. 2009), on the other hand, it is quite common for women to have access to reefs and the sea and participate in marine fishing and mariculture. Gendered access to interior water bodies, such as ponds, lakes and rivers, is more complex and varies according to country, ethnic group and locality. Multiple and often conflicting systems of tenure at the household, community, district, provincial and state levels or mixes of these levels (e.g., co-management) have different implications for access by women and men.

Table 4.7: Gendered capability gaps and wellbeing outcomes in program countries.

	Bangladesh		Cambodia		Philippines		Solomon Islands		Zambia	
	F	M	F	M	F	M	F	M	F	M
Adult literacy %^a	50	60	71	85	94	93	69	84	61	81
Enrollment in primary education %^b	90	83	87	90	93	91	94 ^c	95 ^c	92	90
Enrollment in secondary education %^b	43	40	32	36	66	55	32 ^c	31 ^c	42	51
Life expectancy (years)^a	67	65	63	59	74	70	67	65	46	45
Healthy life expectancy^b	55	56	55	51	64	59	n/a	n/a	40	39
Mortality under 5 years (per 1,000 live births)^a	56	58	85	92	21	32	57	56	152	169
Underweight children %^d	49	44	36	35	26.2 (< 5 yrs) 21.5 (6-10 yrs) ^e	26.1 (<5 yrs) 29.5 (6-10 yrs) ^e	28.8 ^f	36.7 ^f	18	21
Adult population with CED* %	29.7	n/a	16.1	n/a	14.2	10.6	1.9 [†]	n/a	9.6	n/a
Disease burden (DALYs per 100,000 population, 2004)[§]	27957	25246	33630	39460	17091	21924	18765	19715	63503	61486

Sources: Data from ^aUN (2010); ^bGlobal Gender Gap Report (2011), Hausmann et al. (2011); ^cJICA (2010); ^dFAO (2010); ^eNSCB (2010); ^fADB/SPC (2010). *CED = Chronic Energy Deficiency (FAO 2011).

†The figure is for underweight Body Mass Index (BMI), ADB/SPC (2010).

§DALY= Disability adjusted life year (WHO 2008).

Lastarria-Cornhiel 2006) and Zambia (Machina 2002). In the Solomon Islands, 80% of the land is owned by tribes, and therefore national legislation does not apply in most cases (NDS 2011). However, implementation of land reform or resettlement results in new land titles being distributed predominantly to men, as in the case of Cambodia (UNIFEM et al. 2004), the Philippines (Dalrymple and Batistiana 2009) and Zambia (AfDb 2006; Himonga and Munachonga 1991). In Bangladesh, family laws are defined along religious lines; women inherit a lower proportion of the property compared to men, and they usually give up that inheritance in favor of their brothers as a security measure in case of marital crises (Naved et al. 2011).

¹² The significance of marriage payments both as assets and as an indication of women's status is debated. The ethnographic evidence has been used to argue that women are more valued in societies practicing bride price, while men are more valued in those practicing dowry. While bride price was customarily regarded as a compensation to the bride's family for their loss and a way of cementing the alliance between two families/clans/tribes, this is disputed in the Solomon Islands (SPC 2009) and Zambia (Whande 2007), where bride price in the modern context is seen as a means of control over the wife by the husband. Similarly, dowry is considered both either as an extortion by the bridegroom/his family or as collateral for the status of the bride in her marital household. However, what appears to be important is the extent to which women or men are able to control and use assets, such as land, house and jewelry, which they might bring into a household at marriage.

Capability gaps and wellbeing outcomes

Gender norms and relations shaping disparities in the distribution of assets are also reflected in the gaps in capabilities and wellbeing outcomes among women and men, girls and boys. The indicators used to measure capabilities and wellbeing range from those assessing the material dimension, such as gender gaps in nutrition, education and health; those assessing the relational dimension, such as disparities in experience of violence; and the subjective or aspirational dimension, such as gaps in happiness. For example, the overall positive social outcomes for women in the Philippines are reflected in a higher level of happiness indicated by women relative to men (NSCB 2010). Thus, development interventions for addressing gender gaps in the Philippines need to redress men's as well as women's sources of disadvantage.

Overall nutrition indicators are worse for girls than boys in Bangladesh (FAO 2010; Table 4.7). In Cambodia and the Solomon Islands, nutrition outcomes among male and female children are near parity (FAO 2010), while in the Philippines and Zambia, overall nutrition indicators are in favor of girls (FAO 2010; NSCB 2010). Life expectancy is considerably higher for women than men in the Philippines and Cambodia, and near parity in Bangladesh, the Solomon Islands and Zambia (UN 2010). Under-five mortality is higher for boys than girls in all program countries, except in the Solomon Islands, where it is near parity (UN 2010). Health conditions of women are better relative to that of men in Cambodia, the Philippines and the Solomon Islands, while these are worse for women than men in Bangladesh and Zambia (WHO 2008). However, almost half of rural women in Cambodia (NIS/DGH/ICFM 2011) and 44% in the Solomon Islands (ADB/SPC 2010) suffer from anemia. In Zambia, females (16.1%) are more likely to be HIV positive than males (12.3%), due to biological, economic and social factors (CSO 2009; NAC 2010). Life expectancy, although it remains slightly in favor of women, has been declining for both genders due to the spread of HIV/AIDS, a serious development challenge for Zambia in particular (NAC 2010).

Freedom from violence is both an important capability and an indicator of wellbeing. Women are more vulnerable to gender-based violence than men in the domestic sphere and in public contexts, such as in markets. In Bangladesh, the Solomon Islands and Zambia over half (50–60%) of women reported experiencing physical or sexual violence or both, mostly at the hands of an intimate partner (NIPORT 2009; SPC 2009; UN 2010; World Bank 2004). What is alarming is that significant majorities of women in these countries justified the violence of partners (NIPORT 2009; SPC 2009; UN 2010; World Bank 2004), indicating the pervasive influence of gender norms and socialization. Violence against women is less prevalent in the Philippines, with 17.9% of women reporting physical or sexual violence (NSO-ICFM 2009), and in Cambodia, with the corresponding proportion at 23% (USAID 2010). There are considerable differences across program countries in the extent to which women accept such violence. In Zambia, 79% of women agreed that a husband was justified in beating his wife for going out without telling him, whereas only 9% of women in the Philippines agreed with this view (UN 2010). Moreover, the majority of women in Zambia believe that a husband is justified in beating a wife for neglecting the children (61%) and arguing with him (52%), while a considerable proportion of women also justified physical abuse for refusing sex (47%) and for burning food (45%) (UN 2010). The comparative figures for the Philippines indicate much smaller minorities of women justifying such abuse—21% (neglecting children), 5% (arguing) and 3% (refusing sex and burning food), respectively (UN 2010). Even though the prevalence rates of violence against women were markedly lower in the Philippines and Cambodia than in the other three countries, relatively larger percentages of women in

Cambodia, in contrast to the Philippines, justified wife beating—39% (neglecting children), 30% (going out without telling husband), 23% (arguing) and 13% (refusing sex and burning food), respectively (NIS/DGH/ICFM 2011). In the Philippines, both cultural norms and capabilities, such as higher educational levels, appear to account for the lower levels of both the acceptance and prevalence of violence against women.

Sexual abuse and violence outside the household, especially due to internal and external migration by women for work, is increasingly becoming a critical issue. For example, around 17% of Cambodian women, most of them aged 20–24, are engaged in internal migration, usually from rural to urban areas, and there is concern that substantial numbers of them are trafficked into the sex trade (JICA 2007). Women fish traders in Zambia are vulnerable to sexual abuse and violence when they migrate to fishing camps to purchase fish, engaging in so-called “fish-for-sex” transactions (Béné and Merten 2008; Hüsken and Heck 2012).

4.4 Gendered patterns of household and community decision making

Decision-making patterns within households and communities relating to livelihoods, resource management and participation in markets are gendered and vary according to context. At the household level, key decisions related to AAS include the type of crops or species to produce or harvest, types of gear, tools and inputs to purchase, the number of laborers to employ, the markets and prices at which to sell products, and how to invest earnings back into production. In addition, decisions are made relating to daily needs, including household management, purchase of food and clothing, and spending on sickness; decisions are also made relating to more strategic life choices, such as children's education, house construction, and marriage or migration of a household member.

Available research indicates both similarities and differences in gendered decision-making patterns among the five program countries. Decisions related to agriculture and fishing activities within the household seem to be made predominantly by men in Bangladesh (Naved et al. 2011) and Zambia (Kumar 1994). In Cambodia, the decision-making process around the allocation of household livelihood activities and resources appears to be a joint one (MAFF/CBNRM 2008). In the Philippines, there are data to support joint decision making in agricultural and fishing activities (de la Cruz 2004), as well as decisions being made by the household head, regardless of gender (Paris 2002), and by men predominantly (Lu 2007), possibly reflecting different cultural norms in the country among different social groups. The data for the Solomon Islands are scanty and show no clear patterns (JICA 2010; Holst and Plange 2007). Evidence from Zambia illustrates well the complexities of decision making. Women's participation in decisions relating to weeding, fertilizing, harvesting and marketing was higher than in decisions about purchasing inputs and hiring labor for clearing land and planting (Kumar 1994). Moreover, women's participation in decision making was higher in local maize (60% of women reported involvement) than in hybrid maize cultivation (25% reported involvement), as well as in crops grown independently rather than jointly with the husband (AfDB 2006; Kumar 1994). In the context of the gender division of labor in fisheries in Zambia, men are likely to make most decisions relating to fishing, while women decide on the marketing of fish. Where women traders provide finances to male fishers, they can drive decisions on the type of species harvested and the gear used by men, as indicated for Ghana by Overa (2003).

Earning income is expected to improve women's decision-making status in the household. However, the quality and location of women's work can influence the extent to which this relationship holds (Kantor 2003). A sizeable proportion of married women (15–49 years) in Cambodia (47%) and the Philippines (43%)

earned their own cash incomes,¹³ in contrast to Bangladesh (27%), the Solomon Islands (33%) and Zambia (39%) (ADB/SPC 2010; UN 2010). In all five countries women's own income from agriculture, livestock and fishing is considerably lower than men's on average (Hausmann et al. 2011; see Table 4.2). However, in Cambodia (Weeratunge et al. n.d.) and the Philippines (Lu 2007; NSO-GCOM 2011a), even women who do not earn their own income are often receivers¹⁴ of household income and participate in most decision making related to its use. Moreover, in the case of remittances, Filipina migrant workers often entrust female relatives, rather than their spouses, to make decisions on the use of this income (Ang et al. 2009). In eastern Zambia, somewhat dated evidence of income allocations from own and joint production raise questions about the value of joint production for women, if they do not benefit from income men control. While women received 83–87% of the income from crops they grew independently, and men received 88–91% of the income from crops they grew independently, men received 70% and women 30% of the income of jointly grown crops (Kumar 1994). Thus, the transition from separate female and male farming systems into joint family systems in Zambia with the adoption of new agrarian technology may have exacerbated gender disparities, if the income under male control does not benefit women.

Evidence suggests that joint decision making over the use of income is common, if not increasing, in four of the five AAS program countries (ADB/SPC 2010; CSO 2009: 256–57; NIS/DGH/

outside of the couple of the women's claims to joint ownership, and inconsistencies in what perceived joint ownership actually delivers to women in terms of access to and control over the asset (Jacobs and Kes 2012). It would be interesting to replicate this study in AAS program countries in order to inform strategies to improve women's asset rights.

Table 4.8 provides further data on gendered decision-making patterns. Larger shares of women in the program countries are involved in the less strategic daily household management decisions, with smaller shares involved in decisions on major household purchases and even children's educations. Focusing on decision making is important, because women's increased involvement in decisions in which they were previously less involved can demonstrate increased levels of empowerment (Kabeer 1999).

At the community level in all five countries, men tend to dominate decision making on resource use. This is because men often hold most of the leadership positions in community-based organizations, due to customary power relations that favor males. In Bangladesh (Sultana and Thompson 2006), Cambodia (Khim and Ponley 2011; MAFF/CBNRM 2008), the Philippines (Plaza Moralde 2007; Prieto-Carolino 2005; Savaris et al. 2011; Siason 2004) and the Solomon Islands (Paul et al. 2010), there are cases where women have gained some access to this decision-making sphere. However, women's engagement in community-based

Table 4.8: Gendered patterns of decision making in program countries.

	Bangladesh ^a	Cambodia ^b	Philippines ^c	Solomon Islands ^d	Zambia ^e
Agricultural activities	mostly men	women and men	men; HH head; women and men	mostly women	mostly men
Fisheries activities	mostly men	men and women	mostly men; men and women	mostly men	mostly men
Marketing/trading	mostly men	mostly women	mostly women	women and men	women and men
Income receiver	mostly men	mostly women	mostly women	men and women	men and women
Married women (15–49 years) earning own cash income^f	27%	47%	43%	33% ^g	39%
Married women (15–49 yrs) not participating in decision on how own earned money is spent^f	13%	5%	6%	n/a	21%
Married women (15–49 yrs) participating in decisions on daily HH needs^f	64%	93%	86%	83% ^g	79%
Married women (15–49 yrs) participating in decisions on major HH purchases^f	56%	79%	77%	70% ^g	56%
Married women participating in decisions on children's education	50% ^h	n/a	69% ⁱ	n/a	n/a

Sources: Data for rows 1–3 from ^aNaved et al. (2011); ^bMAFF/CBNRM (2008), Weeratunge et al. (n.d.); ^cde la Cruz (2004), Lu (2007), Paris (n.d.); ^dJICA (2010), Holst and Plange (2007); ^eAfDB (2006), Kumar (1994); other data from ^fUN (2010); ^gADB/SPC (2010); ^hWorld Bank (2008); ⁱLu (2007).

ICFM 2011; NSO-GCOM 2011a). This raises an interesting related research question about what joint-ness means to both husbands and wives, and what women gain from joint asset rights and decision making under different conditions. A study by the International Center for Research on Women (ICRW) on asset rights in Uganda and South Africa demonstrates the complexities of joint ownership between married couples. This complexity manifests itself in lack of agreement between the marriage partners as to the joint-ness of ownership, variable recognition

fisheries organizations has often been limited to managing finances and communication, in which tasks women are perceived to be particularly skilled (MAFF/CBNRM 2008; Prieto-Carolino 2005; Siason 2004; Sultana and Thompson 2006). Women's lack of participation in community decision-making structures is also due to time and mobility constraints related to domestic tasks and concern for reputation that stem from traditional gender norms, beliefs and practices (MAFF/CBNRM 2008).

¹³ This is in contrast to incomes in cash and kind, in kind only or lack of income from unwaged work.

¹⁴ By "income receivers" it is meant that women receive, keep and manage household income, although they are not necessarily "income earners" of the totality of this income.

4.5 Gender, representation and the policy environment

Women's share in political representation at the national and local levels (Table 4.9) is generally low in all five countries, with the Philippines and Bangladesh at the higher end, and the Solomon Islands at the lower end (Gender Links 2009; NSCB 2010; UN 2010; UNDP 2010). Bangladesh is significant in having reserved seats for women's political representation at the local, municipal and national levels (Pandey 2008). This is reflected in its relatively high score globally in the political empowerment of women (Hausmann et al. 2011). The Philippines has achieved a similar outcome at the national level, based on the overall high status of women in the country, in addition to a voluntary system of political party quotas. When legislators, senior officials and managers are combined, the Philippines holds the global distinction as the only country in which women constitute a majority (UN 2010). In the Solomon Islands, women do not have a single seat in Parliament, an outcome explained by a national discourse on *kastom* (custom, culture), based on the prevalence of the "big man" political system common to Pacific island societies (Scales and Teakeni 2006; Whittington et al. 2006). Women's representation at the local level also remains low at around 4% (UNDP 2010).

However, the extent to which women's presence in political bodies, such as in Bangladesh and the Philippines, equates to either political power or to the representation of women's interests in politics remains unclear. A growing literature questions both whether women are in political positions in Bangladesh and the Philippines due to their own merits or due to their relationship to powerful men, and how much decision-making power they command in making and implementing policies (Pandey 2008; Veneracion-Rallonza 2008). Moreover, in countries where women's national-level influence is low, such as in Cambodia, the Solomon Islands and Zambia, the extent to which women are represented at the local level, including in customary decision-making bodies in AAS, needs to be better understood. For example, more needs to be understood about how the male-dominated chiefly structure among the 'Are'Are in Malaita in the Solomon Islands interrelates with the separate Auaapuha leadership structure for women's decision making (Whittington et al. 2006).

Regarding the policy environment for gender equality, policies and legislation to support gender equality have been introduced in all five countries, including accession to international agreements such as the Convention on the Elimination of Discrimination against Women (CEDAW). However, it is how these policies are put into practice through gender mainstreaming in state (and NGO) action plans, programs and projects that is key to their effectiveness in improving women's and men's lives. All five countries have executing and/or coordinating mechanisms for gender mainstreaming in the form of a women's ministry or desk with gender focal points in line ministries or agencies.

However, gender focal points often lack capacity and clear terms of reference necessary for implementation, leading to disempowerment, rather than to the intended empowerment of women, as argued by Kusakabe (2005) in relation to Cambodia. The capacity for gender mainstreaming at the local level appears to be higher in Bangladesh (Nazneen et al. 2011) and the Philippines (PCW 2012; SEPO 2010) due to the relatively higher representation of women in national-level politics and/or the presence of active women's NGOs compared to other program countries, and, in the case of the Philippines, high representation of women in the administrative level of local government units.

The persistence of gender disparities based on socio-cultural norms and practices and the negative impacts of development strategies and processes on women have been recognized in all five program countries and addressed through some form of national-level gender strategy (see Table 4.9). However, policies everywhere are not adequately implemented, as gender

mainstreaming is not mandatory, and there is often a lack of commitment, resources or both. The only exception appears to be the Philippines, which has allocated gender and development budgets to all of its government agencies and local government units and has engaged in capacity building for gender mainstreaming at local and national levels, with considerable success (PCW 2012; SEPO 2010). Cambodia remains the only country with comprehensive sectoral gender policies in agriculture, fisheries and forestry (FIA 2007; MAFF 2005; MOE 2010). Gender mainstreaming at the sectoral level follows a more piecemeal or tokenistic approach in the other countries. The Ministry of Fisheries in the Solomon Islands initiated a Gender in Fisheries Strategy in 2011, linked to its Community Management Strategy, in partnership with WorldFish, which supported a gender analysis and mainstreaming initiative for government officers and NGO practitioners in the fisheries and coast conservation sectors. That said, care needs to be taken that gender policies are generated within the country, rather than imposed through donor or external pressures. Efforts to support gender equality will be stymied if some constituencies perceive gender policies to be donor driven. This perception already exists among some groups in Bangladesh (Jahan 2003; Nazneen et al. 2011), Cambodia (Eyben and Bagal 2007; Kusakabe 2005) and Zambia (Wendoh and Wallace 2005).

Overall, though, the policy arena at the national level is conducive to gender mainstreaming in that relevant policies and strategies have been introduced in all program countries. While challenges regarding resources and political will exist, the AAS program needs to seize opportunities to support and strengthen the implementation of these policies on the ground by pursuing synergies, especially where sectoral policies and action plans relevant to AAS are being initiated, as in Cambodia and the Philippines, and where resources exist, as in the Philippines.

Table 4.9: Gendered political participation and policies/legislation incorporating gender mainstreaming in program countries.

	Bangladesh	Cambodia	Philippines	Solomon Islands	Zambia
Share of women in local government %	33% ^a	15% (2007) ^b	18% (2008) ^c	4% ^d	6.7% ^e
Share of women in Lower/single House of Parliament % 2009 ^f	19%	16%	21%	0%	15%
Share of women in Upper House of Parliament % 2009 ^f	-	15%	17%	-	-
Women's share of legislators, senior officials & managers % (2004–2008) ^f	23%	14%	55%	n/a	n/a
Global gender treaties signed	CEDAW, BPA, MDG	CEDAW, BPA, MDG	CEDAW, BPA, MDG	CEDAW, BPA, MDG	CEDAW, BPA, MDG
National gender mainstreaming or women-focused policies/strategies/plans	National Policy for the Advancement of Women 1997; Women Development Policy 2011	Comprehensive gender mainstreaming in the National Strategic Development Plan 2002; Rectangular Strategy for Growth, Employment, Equity and Efficiency 2004	Philippine Plan for Gender Responsive Development 1995; Magna Carta of Women 2009	National Women's Policy 1998; National Policy on Gender Equality and Women's Development 2010	National Gender Policy 2000
Sectoral gender mainstreaming policies/strategies/plans	Gender mainstreaming in National Water Policy 1999, National Food Policy 2006, Bangladesh Labor Law 2006, National Livestock Policy 2007, National Agricultural Policy 2009, National Industrial Policy 2009	Gender Mainstreaming Policy and Strategies in Agriculture 2005, Fisheries 2007, Environment 2010	Gender and Development (GAD) budgets for all sectors and local government units	Gender in Fisheries Strategy linked to Community Management Strategy of Ministry of Fisheries	WID approach of Ministry of Agriculture and Livestock

Sources: Data from ^aLocal Government (Union Parishad) Law of 1997; ^bUN Women website; ^cNSCB (2010); ^dUNDP (2010); ^eGender Links (2009); ^fUN (2010).

5. Conclusion

The productivity and sustainability of AAS are linked to equitable economic returns and social wellbeing of the women and men whose livelihoods are dependent on these systems. This review of the economic and social contexts of the program countries demonstrates two things. First, it illustrates the prevalence of gender disparities across the AAS program countries, meaning considerable challenges remain in achieving gender equity in economic returns and social wellbeing. Second, it shows how varied these contexts are and how good research in development programs will need to be based on solid contextual understanding—including of the causes and consequences of gender inequality.

For example, the review has found no clear relationship between the extent of women's participation in livelihood activities in AAS and their access to and control over assets, or between women's asset ownership and wellbeing outcomes. Greater involvement of women in agriculture, as in Cambodia and Zambia, does not imply the absence of gender disparities, especially in terms of wellbeing outcomes. Engagement of women in production and marketing does not necessarily ensure control over livelihood or income decisions, as in the case of Zambia, although it does in Cambodia. Women's greater education, nutrition and health outcomes may be associated with their higher decision-making levels in the Philippines. However, near gender parity in education and nutrition levels in the Solomon Islands does not seem to translate into higher levels of decision making for women there. Both the Philippines and Bangladesh have higher wellbeing outcomes for women with lower overall economic participation and agricultural participation rates by women, compared to the other program countries. Cultural norms and practices intersect with economic and social factors everywhere to explain some of these differences.

Research is available on the gender division of labor in AAS of the program countries at the micro-level, as well as gendered capabilities at the national level.¹⁵ However, there are many gaps in knowledge on the socio-cultural norms, attitudes and practices on which the division of labor and other gender inequalities are based, on the differences in gendered assets and capabilities, and in the complexities of decision making within households and communities at the local level. The types of assets and capabilities that bring most benefits to women and men need to be understood. Very little research is available on the gendered nature of value chains in AAS—e.g., sex-disaggregated data on the extent of participation, costs and benefits of engagement, as well as research on governance structures and processes, which result in gendered exclusion or inclusion. Best practices in resourcing and implementing gender mainstreaming policies and strategies need to be identified and exchanged among program countries. Filling these gaps in knowledge is critical for pursuing analysis and action based on a transformative approach to gender equality in aquatic agricultural systems.

Program interventions to work towards gender equality in AAS need to be based on gendered understandings of wellbeing and aspirations for change, and thus follow a demand-driven and participatory approach. Identifying gender-equitable options to improve current household livelihood portfolios, based on an integrated approach to increasing productivity while maintaining sustainability of AAS, will be critical. This approach will need to encompass new methods and technologies that combine permutations of farming, fishing, aquaculture, livestock rearing and forestry with non-agricultural livelihoods. It will be important to offer a suite of options, best suited for women and men

within different categories of households, adapted to local environmental conditions and seeking spaces to support locally driven social change processes. The approach therefore needs to effectively combine interventions to enhance productivity with actions that redress the causes of gender disparities in resources, opportunities and resilience. It should focus on outcomes such as improved intra-household distribution of food and quality nutrition, increased capacity and skill levels, and greater decision making and political representation, as much as on improved incomes and assets.

Therefore, gender transformative action in the program countries aimed at improving women's material situations within AAS, as well as the social contexts within which they act as economic agents, needs to be based on rigorous gender analysis that describes the consequences of gender inequality as well as explains its causes. The results of these analyses will inform a research in development agenda that seeks to identify what works to promote positive change in women's and men's economic and social lives. This involves actions at the micro level to redress gender disparities, as well as actions across the micro, meso and macro levels to address the socially embedded norms, attitudes and practices framing what it is possible for women and men to be and do. The AAS program will accomplish this through a learning agenda focused on innovative research methods and program practices, testing different interventions to evaluate what works in different contexts and conditions, and designing and implementing gender-responsive process, outcome and impact monitoring and evaluation systems that demonstrate effects and improve practice. The AAS program recognizes that the community-led change processes it aims to support are long term in nature, and that fostering gender equality is at the heart of getting them right so that all community members can contribute and benefit.

¹⁵ The only exception here is Solomon Islands, where sex-disaggregated economic and social statistics at the national level are only beginning to be generated.

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Contact Details:
CGIAR Research Program on Aquatic Agricultural Systems
Jalan Batu Maung, Batu Maung, 11960 Bayan Lepas, Penang, MALAYSIA
Tel: +604 626 1606, fax: +604 626 5530, email: aas@cgiar.org



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