



Photo credit: Front cover photo Agencies

Gender in the farmed fish value chain of Bangladesh: A review of the evidence and development approaches



RESEARCH
PROGRAM ON
Livestock and Fish



Gender in the farmed fish value chain of Bangladesh: A review of the evidence and development approaches

Authors

Froukje Kruijssen, Surendran Rajaratnam, Afrina Choudhury, Cynthia McDougall and Jens Peter Tang Dalsgaard

Citation

This publication should be cited as: Kruijssen F, Rajaratnam S, Choudhury A, McDougall C and Dalsgaard JPT. 2016. Gender in the farmed fish value chain of Bangladesh: A review of the evidence and development approaches. Penang, Malaysia: WorldFish. Program Brief: 2016-38.

Acknowledgments

This study was funded by the CGIAR Research Program on Livestock and Fish. The program is supported by the CGIAR Fund Donors, listed on <http://www.cgiar.org/who-we-are/cgiar-fund/fund-donors-2>.

Introduction

Key messages

- There are major differences in the ways and degrees men and women can participate along—and benefit from—the aquaculture value chain in Bangladesh.
- These gender issues have received significant attention in the literature on the Bangladesh aquaculture sector, but have focused mainly on the producer node of the chain.
- The key gender differences are in the division of labor, access to and control over resources and benefits from aquaculture, and levels of decision-making power. Their workload in reproductive roles limits women from full participation, while a lack of access and control over assets and resources, as well as a lack of decision-making power, constrain opportunities and incentives for investment and upgrading.
- These differences are rooted in and perpetuated by social and gender norms and relations.
- Many aquaculture development projects in Bangladesh have taken gender into account to varying degrees, although our review was unable to assess to what degree of success.
- The approaches used by these projects show a progression over time with gender issues and their complex nature being increasingly recognized in project design and implementation. There is also growing recognition that project teams must be well aware of gender issues and embody the knowledge and skills to address these in their work, and that project teams themselves should be gender balanced.
- New aquaculture value chain projects could benefit from these lessons and take them onboard from the outset.

Introduction

Bangladesh is the world's fifth-largest aquaculture producer (FAO 2016), and statistics indicate that aquaculture now makes up about 56% of the country's total fish production in terms of value (FRSS 2016). In Bangladesh, fish is the most important food after rice, accounting for 60% of animal-source food consumed, and by far the most frequently consumed micronutrient-rich food (Toufique and Belton 2014).

Bangladesh is considered a patriarchal society, and its predominant gender norms and attitudes reinforce women's roles as primarily limited to domestic and care duties, which take place mainly within the confines of the homestead (Kabeer, 2011). This limits the ways women can participate in the labor market and renders them economically dependent on their husbands or families (Bridges et al. 2011).

Although aquaculture is the fastest growing food producing sector in the world, generating significant employment opportunities, men and women are not able to conduct activities along the aquaculture value chain in the same way, and benefits are not equitably distributed between them. This means they are unable to generate the same incomes and other benefits, and have limited incentives to invest time and resources to improve their position. To better appreciate the situation, it is important to understand the underlying social and gender norms that determine what women and men can and should do if the aim is to engage women, in particular, as more effective value chain actors (Farnworth et al. 2015).

This brief is based on a review of the relevant literature (Box 1), focusing on analyzing gender relations in fish farming and value chains, i.e. the roles women and men play in diverse aquaculture production systems and other value chain nodes, their relative access to and control over resources, intrahousehold decision-making, and social and gender norms and attitudes. Literature covering the shrimp and prawn value chains was excluded from the review, as the majority of shrimp and prawn is destined for exports, and the foreign trade aspects make these chains distinct from the more domestically focused fish chains.¹

Box 1: Methodology

The search focused on literature published in the past 15 years, while older projects were included if they were mentioned in the documents from this period. An online search of EBSCOHost, ScienceDirect, Google Scholar, and Google was carried out using search terms in various permutations ("women"; "gender"; "aquaculture"; "fish farm*"; "Bangladesh"). In addition websites of relevant organizations were also searched for applicable publications. The search identified 108 documents, of which 76 were excluded because they did not sufficiently cover gender issues, or were about shrimp and prawn, capture fisheries or natural resource management. We found some information on 15 projects, but in many cases there were no documents available that contained a full evaluation, and we were therefore not able to assess the effectiveness of the approaches used.

Gender division of labor

The general view is that women in Bangladesh have major but often unrecognized (and/or unpaid) involvement in specific activities related to fish production, such as stocking ponds, feed preparation, feeding, pond supervision and management, fertilization, liming, and harvesting fish for home consumption, as well as sorting, cleaning and grading fish for the market (Das and Khan 1996; Ahmed 2009; Shirajee et al. 2010). Tasks like harvesting fish for the market, marketing fish and the purchase of inputs such as fish seed and feed are usually done by men (Shirajee et al. 2010).

However, the situation is much more nuanced than this statement portrays, and it varies with production systems. For example, in cage and homestead farming done close to the home, women may be involved more actively (e.g. Halim and Ahmed 2006) and may have more control over decisions being made with regard to fish production and use. Women's involvement varies across locations, technologies and cultural contexts. For example, women in Hindu families were found to be active in fish farming, whereas women's participation was low in conservative Muslim families (Debashish 2001). Another study on cages in moderately and highly shaded ponds found that women's involvement was higher in the latter (Haque et al. 2015). The authors attribute this to the fact that the highly shaded ponds are located closer to the homestead. However, another potential explanation is that these ponds are less productive and therefore possibly of less interest to men. Production intensity also matters, with the contribution of labor days among women from farming households found to be lowest among intensive catfish (*pangasius* and *koi*) culture systems (2%), and female hired labor more common in gher-farming² than in intensive ponds (Jahan et al. 2015).

Involvement of women may also depend on the relative wealth status of the household, with women's labor in wealthier households being replaced by hired labor (Barman 2001). Women's involvement in other nodes of the farmed fish value chain is limited. A value chain study in the southwest of Bangladesh found that 0–1% of people involved in trading and retail were women (Kruijssen and Pyburn forthcoming). This is different from the capture fisheries chain, where 80% of people involved in drying fish are women and children (Belton et al. 2014). However, this processing method is not commonly used for farmed fish, which typically are sold fresh to consumers.

Workload is considered a major constraint on women's increased involvement in aquaculture and is related to the overall gender division of labor within households (Jahan et al. 2010; Shirajee et al. 2010; Morgan et al., 2016). Some aquaculture projects that targeted women did not consider these workload issues and developed activities that resulted in further increased workloads for women and intrahousehold conflict about it (Halim and Ahmed 2006). Clearly, when developing and implementing projects that promote new practices and innovations, the potential impact on workloads needs to be taken into account (Kantor et al. 2015).

Access to and control over resources and benefits

Access to and control over assets and inputs such as land, ponds, equipment, information, knowledge, skills and finances are critical for successful involvement in aquaculture value chains. The nature of access and control is highly gendered in Bangladesh's farmed fish value chain. Women often have limited access to high quality inputs such as seed, feed and fertilizers because of the location of vendors at long distances from the homestead, linked with mobility constraints stemming from social norms (Shelly and D'Costa 2001). The fish value chain in Bangladesh has mobile traders, in particular for seed. However, women often are reluctant to deal with them because of a lack of confidence in their own skills to select good quality seed and a lack of trust in the sincerity of these traders, while men may not trust the skill and ability of women to negotiate themselves (Kruijssen and Pyburn forthcoming). Access to aquaculture technologies, including equipment, may also be limited for women in Bangladesh due to strongly held beliefs that they cannot operate machinery and the fact that men mostly own all machinery (Naved et al. 2011). Furthermore, available technologies may be a poor fit because of perceptions that roles associated with the technologies are not acceptable for women (Morgan et al. 2015). A lack of access to inputs and equipment, as well as the financial resources to purchase them, may demotivate women from adopting new farming techniques or investing time (Kantor et al. 2015).

Linked to a lack of inputs, equipment and technologies is a lack of information, knowledge and skills to use them properly. A review of five projects in Bangladesh suggested that many women did not have the technical skills and basic understanding of commercial fish production (Halim & Ahmed 2006). This deficit of information and knowledge has been linked to lower levels of education and literacy among women (Caritas 2007; Danida 2009; Jahan et al. 2010; Shirajee et al. 2010; Morgan et al. 2016), inappropriate extension and technology dissemination mechanisms targeted mainly at men (Shelly and D'Costa, 2001; Naved et al. 2011; Quisumbing and Kumar 2011) and reduced mobility for women because of restrictive social norms (Barman 2001).

Few women own land and ponds in Bangladesh. Although Islamic law allows women to own property, the Islamic inheritance law stipulates that sisters inherit half the share of their brothers. In practice, women face other issues to own land, as husbands may

acquire property in their wives' names, or women are encouraged to relinquish inheritance claims to their brothers (Subramanian 1998 in Sproule et al. 2015). A study among 2678 farmers across the country found less than 1% pond owners are women (Jahan et al. 2015). This lack of assets translates into lack of access to collateral-based formal credit and loans (Shelly and D'Costa, 2001).

Finally, access to and control over the benefits of aquaculture are not always equitably shared between men and women. In a survey, men reported to set differential wages for male and female workers without much resistance from women, who in turn indicated they were forced to accept lower wages out of necessity and a lack of alternative options (Jahan et al., 2015). And even when receiving equal benefits, a majority (78%) of women involved in aquaculture in five regions in Bangladesh reported no or only limited control of the income derived from aquaculture (Halim and Ahmed 2006). Deliberately targeting women in projects does not guarantee that they will benefit as intended, because men have been found to take control of new technologies as soon as their profitability became apparent (Quisumbing and Kumar 2011).

Intrahousehold decision-making

Most authors indicate that decision-making power in aquaculture in Bangladesh is heavily skewed toward men (Shelly and D'Costa 2001; Halim and Ahmed 2006; Naved et al. 2011; Jahan et al. 2015), although it has been suggested that there is more joint decision-making when it comes to harvesting fish for home consumption (Naved et al. 2011; Jahan et al. 2015). A lack of decision-making power has been found to result in lower effectiveness in fish production (Barman

2001), a lack of ability to adopt innovations (Kantor et al. 2015; Morgan et al. 2015) and reduced motivation (Ireland 1999). Similarly, other studies suggest that overall levels of fish production, productivity and utilization may improve when women have stronger roles in household and community decision-making processes (Shirajee et al. 2010; Belton et al. 2011; Farnworth et al. 2015).



Photo credit: WorldFish

Washing *mola* for cooking, Madhob pasha, Babugong, Barisal, Bangladesh.

Societal norms and attitudes

In Bangladesh, women are expected to fulfill reproductive roles and responsibilities, such as household management, food preparation and nursing tasks. This reduces their ability to participate in paid economic activities outside of the household (Farnworth et al. 2015). Their freedom of movement is further limited by social norms regarding women's mobility, in particular where Islamic purdah (female seclusion) is practiced (Morgan et al. 2016). These social norms limit women's ability to participate in aquaculture value (Halim and Ahmed 2006; Shirajee et al. 2010; Caritas 2007; Danida 2009; Jahan et al. 2010; Morgan et al., 2016). The level of support by husbands and in-laws becomes a key determinant of the extent to which women are able to get involved in the aquaculture value chain (Debashish et al. 2001) because women's lives are governed by the gender relations that they coexist with (Morgan et al 2015).

Gender attitudes are also apparent in society's recognition and individuals' self-perception of their entitlements (Kruijssen and Pyburn forthcoming). This is seen, for instance, in the recognition by society of the work that women and men do along the value chain, and the individual's own sense of contribution. Where society does not perceive it to be a woman's right to participate in paid work outside the household based on gendered stereotypes, e.g. as a retailer or trader, these prevailing, deeply engrained, attitudes may result in self-perception among women of having inadequate skills to participate in market transactions (Kruijssen and Pyburn forthcoming). However, the ways that roles and responsibilities can change over time and the roles that some women and men fulfill in unusual situations (e.g. where the husband has employment away from the home) are indicative of the potential transformability of norms (Halim and Ahmed, 2006). For example, poor women and women with absent husbands seem to be less restricted by economic need.



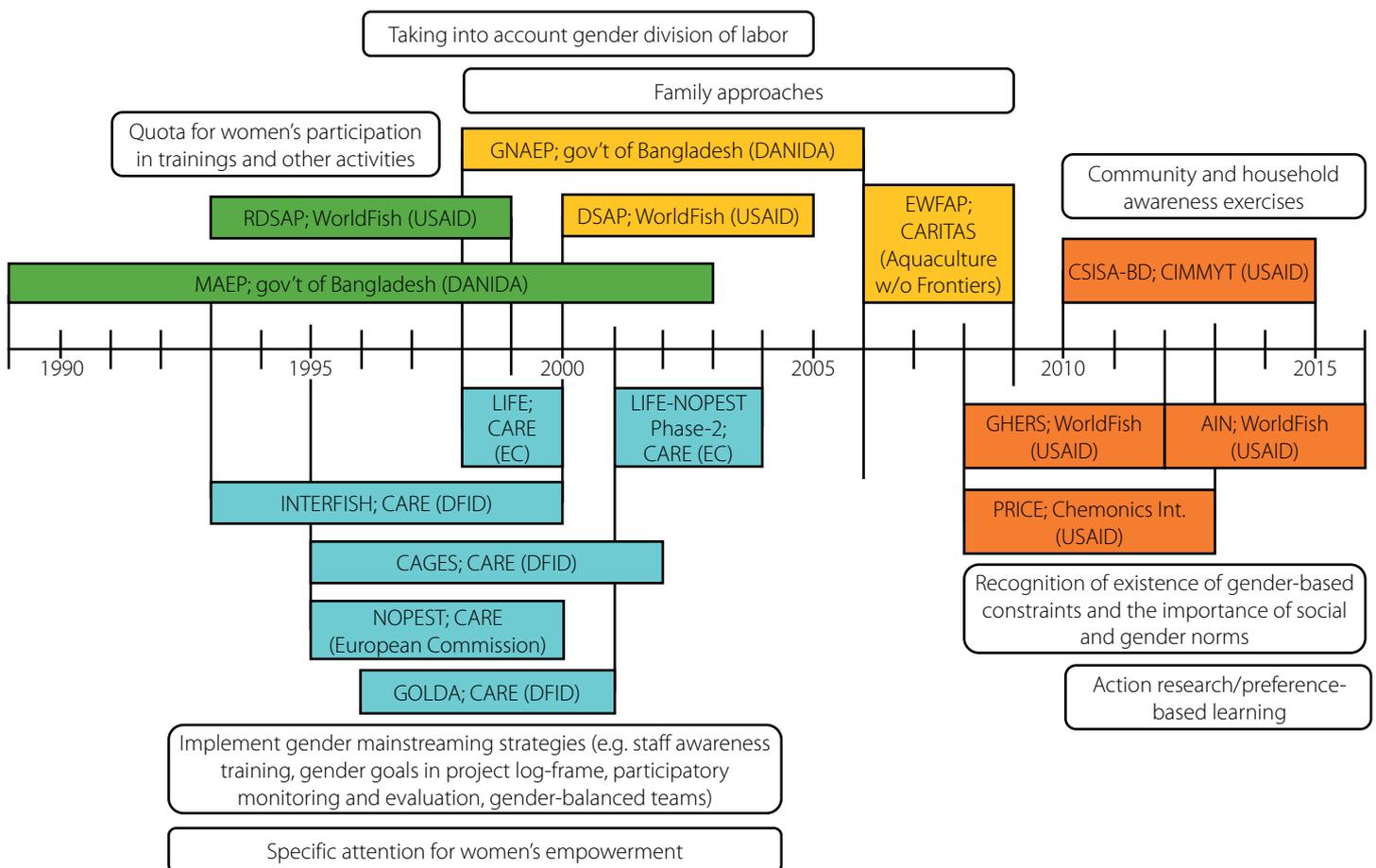
A private sector facilitator (PSF) runs training.

Gender approaches in development projects

The review uncovered 15 development projects in the aquaculture sector in Bangladesh, implemented over the past three decades, that included some focus on gender (Figure 1). These were the projects identified from the literature only, and it is most likely not an exhaustive list of projects implemented. Some early projects initially did not take gender into account at all, but a realization that women needed to be targeted led to the introduction of quotas for women's participation in project activities. There was also increased awareness for the need to take the gender division of labor into account in project implementation. More recent projects adopted family approaches, e.g. by enrolling both husband and wife together in farmer field schools. A third wave of projects realized the importance of addressing social and gender norms, e.g. through awareness training

and community theater, and gave explicit attention to gender-based constraints, access and control over resources, decision-making power and gender norms (USAID 2013). Project implementers also started recognizing the need for gender-balanced project teams and gender awareness raising among them.

The review methodology does not allow for an assessment of the effectiveness of the approaches, as most documents are not clear on specific successes and failures but report on overall project results without separate mention of gender work. It is clear, however, that development organizations have been progressively experimenting with and giving weight to gender approaches. Consideration of the key issues highlighted by the research literature is also increasingly evident in project documents.



Source: Authors' own compilation.

Figure 1. Timeline of aquaculture projects and gender approaches.

Conclusions

There are considerable differences in the ways and degrees to which men and women participate in the aquaculture value chain in Bangladesh. In the literature, the causes of these differences have been related to the gender divisions of labor, gendered access to and control over resources and benefits, and gender-based levels of decision-making power. These conditions are rooted in and perpetuated by societal norms and attitudes. A large number of development projects in the aquaculture sector that have specific aims around women's inclusion and/or empowerment were identified. The approaches used by these projects show a progression over time with gender issues and their complex nature being increasingly recognized in project design and implementation. There is also growing recognition that project teams must be well aware of gender issues and embody the knowledge and skills to address these in their work, and that project teams themselves should be gender balanced. New projects should take these lessons on board and build upon past learning for more effective implementation.

References

- Ahmed N. 2009. Revolution in small-scale freshwater rural aquaculture in Mymensingh, Bangladesh. *World Aquaculture* 40(4):31–35.
- Barman BK. 2001. Women in small-scale aquaculture in North-West Bangladesh. *Gender, Technology and Development* 5(2):267–87.
- Belton B, Hossain MAR, Rahman MM and Thilsted SH. 2014. Dried fish production, consumption and trade in Bangladesh. In Thilsted SH and Wahab MA, eds. Production and conservation of nutrient-rich small fish (SIS) in ponds and wetlands for nutrition security and livelihoods in South Asia. Proceedings of a World Bank/SAFANSI funded regional workshop on small fish and nutrition. Dhaka, Bangladesh.
- Belton B, Karim M, Thilsted S, Jahan MK, Collis W and Phillips M. 2011. Review of aquaculture and fish consumption in Bangladesh. Studies and Reviews. Dhaka: WorldFish Center. http://www.worldfishcenter.org/resource_centre/WF_2970.pdf.
- Bridges S, Lawson D and Begum S. 2011. Labour market outcomes in Bangladesh: The role of poverty and gender norms. *The European Journal of Development Research* 23(3):459–87.
- Caritas. 2007. Empowerment of women through family based integrated aquaculture. Completion report on CARITAS-AwF project. Caritas Bangladesh, Dhaka.
- DANIDA. 2008. Impact evaluation of aquaculture interventions in Bangladesh. Ministry of Foreign Affairs of Denmark.
- Das J and Khan MS. 2016. Women and aquaculture in Bangladesh: The unpaid labour. *Bangladesh e-Journal of Sociology* 13(1):115–25.
- Debashish KS, Shirin M, Zaman F and Ireland M. 2001. Strategies for addressing gender issues through aquaculture programs: Approaches by CARE Bangladesh. In Williams MJ, Nandeesh MC, Corral VP, Tech E and Choo PS, eds. International Symposium on Women in Asian Fisheries. 147–56.
- [FAO] Food and Agriculture Organization of the United Nations. 2016. The state of world fisheries and aquaculture 2016: Contributing to food security and nutrition for all. Rome.
- Farnworth CR, Sultana N, Kantor P and Choudhury A. 2015. Gender integration in aquaculture research and technology adoption processes: Lessons learned in Bangladesh. Penang, Malaysia: WorldFish. Working paper: 2015-17.
- [FRSS] Fisheries Resources Survey System. 2016. Fisheries statistical report of Bangladesh. Department of Fisheries, Bangladesh. Volume 32.
- Gammage S, Swanburg K, Khandkar M, Islam MZ, Zobair M and Muzareba AM. 2006. A gendered analysis of the shrimp sector in Bangladesh. Greater Access to Trade and Expansion. USAID Bangladesh.
- Halim S and Ahmed MK. 2006. Women in fisheries in Bangladesh: Level of involvement and scope for enhancement. In Choo PS, Hall SJ and Williams MJ, eds. Global Symposium on Gender and Fisheries: Seventh Asian Fisheries Forum. 1-2 December 2004, Penang, Malaysia.
- Hamid MA and Alauddin M. 1998. Coming out of their homesteads?: Employment for rural women in shrimp aquaculture in coastal Bangladesh. *International Journal of Social Economics* 25(2/3/4):314–37.

- Haque MM, Alam MR, Basak B, Sumi KR, Belton B and Jahan KM. 2015. Integrated floating cage aquaculture system (IFCAS): An innovation in fish and vegetable production for shaded ponds in Bangladesh. *Aquaculture Reports* 2:1–9.
- Ireland MJ. 1999. Cage aquaculture in Bangladesh: Social issues relating to successful expansion. In Middendorp HAJ, Thopson PM and Pomeroy RS, eds. Sustainable inland fisheries management in Bangladesh. ICLARM Conf. Proc. 58. 263–69.
- Jahan KM, Ahmen M and Belton B. 2010. The impacts of aquaculture development on food security: Lessons from Bangladesh. *Aquaculture Research* 41:481–95.
- Jahan KM, Belton B, Ali H, Dhar GC and Ara I. 2015. Aquaculture technologies in Bangladesh: An assessment of technical and economic performance and producer behavior. Penang, Malaysia: WorldFish. Program Report: 2015-52.
- Kabeer N. 2011. Between affiliation and autonomy: Navigating pathways of women’s empowerment and gender justice in rural Bangladesh. *Development and Change* 42(2):499–528.
- Kantor P, Morgan M and Choudhury A. 2015. Amplifying outcomes by addressing inequality: The role of gender-transformative approaches in agricultural research for development. *Gender, Technology and Development* 19(3):292–319.
- Kruijssen F and Pyburn R. forthcoming. Value chain, social and gender analysis of four fish species in Southwestern Bangladesh: A farm-level assessment of tilapia, silver carp, *rohu* and *mola*. Penang, Malaysia: WorldFish. Program Report.
- Morgan M, Choudhury A, Braun M, Beare D, Benedict J and Kantor P. 2015. Enhancing the gender-equitable potential of aquaculture technologies. Penang, Malaysia: CGIAR Research Program on Aquatic Agricultural Systems. Program Brief: AAS-2015-07
- Morgan M, Terry G, Rajaratnam S, Pant J. 2016. Socio-cultural dynamics shaping the potential of aquaculture to deliver development outcomes. *Reviews in Aquaculture*. DOI: 10.1111/raq.12137.
- Naved RT, Khan NN, Rahman MR and Ali KL. 2011. A rapid assessment of gender in agriculture in Bangladesh. Report submitted by ICDDR,B to CIMMYT, IRRI and WorldFish, Dhaka.
- Quisumbing AR and Kumar N. 2011. Does social capital build women’s assets? The long-term impacts of group-based and individual dissemination of agricultural technology in Bangladesh. *Journal of Development Effectiveness* 3(2):220–42.
- Shelly AB and D’Costa M. 2001. Women in aquaculture: Initiatives of CARITAS Bangladesh. In Global Symposium on Women in Fisheries, Sixth Asian Fisheries Forum, 29 November, Taiwan.
- Shirajee SS, Salehin MM and Ahmed N. 2010. The changing face of women for small-scale aquaculture development in rural Bangladesh. *Aquaculture Asia Magazine* 15(2):9–16.
- Sproule K, Kieran C, Quisumbing A and Doss C. 2015. Gender, headship, and the life cycle: Land ownership in four Asian countries. IFPRI Discussion paper 01481. Washington DC: IFPRI.
- Toufique KA and Belton B. 2014. Is aquaculture pro-poor? Empirical evidence of impacts on fish consumption in Bangladesh. *World Development* 64:609–20.
- [USAID] United States Agency for International Development 2013. Greater Harvest and Economic Returns from Shrimp (GHERS). Final Program Performance Report. USAID Bangladesh.

Notes and appendix

¹ In addition, shrimp and prawn have already been under significant scrutiny in the literature, including for their gender issues (e.g. Hamid and Alauddin 1998; Gammage et al. 2006).

² A gher is a modified rice field, in which rice and fish culture are combined. It is found predominantly in southern Bangladesh.

Appendix

List of projects reviewed

- Mymensingh Aquaculture Extension Project (MAEP) (1989–2003)
- Research for Development of Sustainable Aquaculture Practices (RDSAP) (1993–1999)
- Integrated Rice and Fish (INTERFISH) (1993–2000)
- Cage Aquaculture for Greater Economic Security (CAGES) (1995–2002)
- Greater Noakhali Aquaculture Extension Project (GNAEP) (1998–2006)
- New Options for Pest Management (NOPEST) (1995–2000)
- Greater Opportunities for Local Development through Aquaculture (GOLDA) (1996–2003)
- Locally Intensified Farming Enterprises (LIFE) (1998–2001)
- Development of Sustainable Aquaculture Project (DSAP) (2000–2005)
- Locally Intensified Farming Enterprises (LIFE-NOPEST Phase-2) (2001–2003)
- Empowerment of Women through Family Based Integrated Aquaculture Project (EWFAP) (2006–2009)
- Greater Harvest and Economic Returns from Shrimp (GHERS) (2008–2012)
- Poverty Reduction by Increasing the Competitiveness of Enterprises (PRICE) (2008–2013)
- Cereal Systems Initiative for South Asia (CSISA-BD) (2010–2015)
- Aquaculture for Income and Nutrition (AIN) (2012–2016)



Photo credit: Bag cover, Mike Lusmore/Food4Abilities

This publication should be cited as: Kruijssen F, Rajaratnam S, Choudhury A, McDougall C and Dalsgaard JPT. 2016. Gender in the farmed fish value chain of Bangladesh: A review of the evidence and development approaches. Penang, Malaysia: WorldFish. Program Brief: 2016-38.

© 2016. WorldFish. All rights reserved. This publication may be reproduced without the permission of, but with acknowledgment to, WorldFish.



www.worldfishcenter.org



RESEARCH
PROGRAM ON
Livestock and Fish

