

Profile: Women in Aquaculture

CECILE BRUGERE AND MERYL WILLIAMS

How to cite this profile: Brugere, C. and M. Williams. 2017. Profile: Women in Aquaculture. <https://genderaquafish.org/portfolio/women-in-aquaculture/>

In the 1970s, only 3 million tonnes of aquatic animals and plants were grown in aquaculture; today, the total production exceeds 100 million tonnes and strong growth continues. Women work in all sections of the aquaculture value chain but their opportunities have not kept pace with its growth. Indeed, many opportunities have contracted under the prevalent growth strategies. Women are more common in small-scale production, post-harvest industrial and artisanal processing, value addition, marketing and sales. When aquaculture intensifies and scales up, women tend to be displaced or relegated to the lowest paid, low grade work. Few women are senior staff, owners, managers and executives in the larger enterprises.

Women's opportunities in aquaculture have not kept pace with the rapid growth of the sector

Engaging women in aquaculture may not improve household food security and nutrition unless attention is given also to the species grown, women's empowerment and control over production, and their nutritional knowledge.

Sex-disaggregated statistics that could track women in aquaculture are scarce, and therefore women's presence, influence and interests are invisible. Statistics collection should be mandated in all jurisdictions because gender-blindness limits women's entrepreneurial opportunities and their protection at work.

Current aquaculture policy objectives and strategies are also gender blind. Certification, good practice accreditation, and all aquaculture labour practices should embrace the targets of Sustainable Development Goals (SDG) #5 (gender equality and empowerment of all women and girls), and #8 (decent work and economic growth). To reach the SDG targets, all aquaculture participants have responsibilities. Gender equality must be mainstreamed into aquaculture planning, development, monitoring and evaluation, requiring political action by sector leaders, advocates and gender champions, supported by new technical instruments for implementation.

NEEDING KEY FACTS, FIGURES AND POLICIES FOR WOMEN IN AQUACULTURE

Accurate, regular sex-disaggregated statistics for aquaculture are not collected in most countries, even though they would shed light on how many women are employed, the types of work they do, and how this is changing over time (Table 1). In academia, better data are available (Egna et al. 2012).

The lack of comprehensive and timely data on women in aquaculture is one reason why women are invisible in aquaculture policy. Reciprocally, gender inequality is reinforced and the social and economic progress of aquaculture is hampered by poor sex-disaggregated data and gender-blind aquaculture policies. Such discrimination limits women's protection at work and their entrepreneurial opportunities in this expanding sector (Brugere 2015, Williams et al. 2012). Social issues, including

decent work, are only just starting to gain attention in aquaculture initiatives such as certification and best practice programs. Gender issues, however, lack strong advocates, despite some efforts by development agencies to promote women in (usually) small scale aquaculture. In comparison, women in small scale fisheries are slightly better recognized in policy than is the case in aquaculture because fisheries research has provided more evidence of women’s contributions, and non-government organisations (NGO) and gender equality is now included in influential internationally-recognised documents, such as the 2014 Voluntary Guidelines on Small Scale Fisheries (FAO 2015).

Table 1: Scattered information from around the world on women’s involvement in the aquaculture workforce.

Europe
Women comprise 29% of European Union aquaculture employment (2012), of which % women: <ul style="list-style-type: none"> - Shellfish farming (27%), mariculture (24%), and freshwater farming (29%) - France (35%), Spain (29%), Portugal (19%), Scotland (18%). In Estonia , the gender ratio in the aquaculture workforce is 1:1
Asia
In Japan , 51% of the workforce in mariculture is female, 31% in freshwater aquaculture
In Malaysia , women are 10% of the total aquaculture workforce, mainly in freshwater aquaculture and hatchery operations
In Sri Lanka , women workers constitute from 5% (shrimp farms) to 30% (ornamental fish)
South America and the Caribbean
In Cuba , 27% of the aquaculture workforce is female. Of this, 19% are technicians with intermediate and higher education.
In Jamaica , women own and operate 8-10% of the fish farms. They dominate the workforce in processing plants.
In Panama , 80% of the workforce in processing plants are women, but only 7% in production.
Africa
In Zanzibar (Tanzania), about 80% of seaweed farmers are women.

Sources: STECF 2013, Williams et al. 2012 (from FAO National Aquaculture Sector Overview (NASO) Fact Sheets (accessed in 2011), Msuya 2012.

Good sex-disaggregated statistics are missing for aquaculture, and most policies are gender-blind.

WHAT JOBS ARE WOMEN DOING IN AQUACULTURE?

Aquaculture is gendered (Rajaratnam 2016): more men than women participate in the sector, and they occupy separate jobs. Women tend to have lower status jobs and often suffer pay inequalities for the same work, e.g., in salmon processing in Chile (Ramirez and Ruben 2015). Where aquaculture is perceived as low value, such as in the emerging or declining phase of an industry, women’s participation is more prominent. Women’s jobs and their influence in aquaculture value chains follow familiar patterns of asset ownership, rights and power structures to those in other productive sectors, e.g., agriculture. But aquaculture is multi-faceted and gender issues aren’t uniform. So examining them requires delving into the details and specificities of both the sector and how and why women are involved in it.

“Gender equality is in the detail”: Examining gender issues in aquaculture requires delving into the specificities of both the sector and women’s involvement in it

In farm production

Most farm production is undertaken by men. Women’s participation varies according to the type and scale of aquaculture, e.g., women produce more fish from freshwater ponds than from marine cages.

On small scale farms, women and men frequently work together, carrying out different activities. The division of labour varies according to the type of farming, capacities and relationships. Women tend to do less physically and technically demanding tasks, such as preparing feeds and feeding fish, pond maintenance, and harvesting small amounts for household use. Where women are literate and financially capable, they often manage the farm records and finances. They usually fit their farm tasks in with their other responsibilities, e.g., caring for the family, maintaining the homestead, and community duties. In male-headed households, men usually have greater say when making farm decisions, own more of the assets, and they retain more of the benefits.

Women’s own aquaculture enterprises are typically small in scale and turnover, and often combined with other income generating activities, or are part of a household farm enterprise carried out with others. Women farmers are held back by less access than men to finances and production inputs such as land and ponds (Weeratunge-Starkloff and Pant 2011) and by gender norms and discriminatory policies that inhibit their rights and limit their opportunities to benefit from aquaculture. Some women have become aquaculture entrepreneurs on their own or with help, e.g., in Tamil Nadu, India (Shanthi et al. 2010), but more studies are needed to understand when and how women can succeed.

On small scale farms, women and men frequently work together, carrying out complementary activities. In medium and industrial scale aquaculture, women are at the lower end of the pay scale or unpaid.

As production intensifies, women’s engagement drops. They rarely become managers.

In medium and industrial scale aquaculture, women are at the lower end of the pay scale or are unpaid auxiliary workers, e.g., with their husbands as the primary workers. As production intensifies and economic returns increase, through infrastructure and technology investments, women’s engagement drops, and they rarely become managers, e.g., shrimp aquaculture in north east Vietnam and catfish aquaculture in Nigeria (Velu et al. 2009; GAF6 Report 2017).

After harvest and in fish marketing

In developing and developed countries, women are the bulk of workers in post-harvest, product transformation activities (FAO 2017). Menial and tedious tasks are usually performed by women from poorer groups. Skilled but repetitive factory work essential for achieving export quality is done by more educated women. Coercive overwork and bonded women’s labor from migrant workers in processing factories have been reported in the media (e.g. The Guardian) and are typical of situations where women are disadvantaged by poverty and lack of alternatives.

Women are the bulk of workers in post-harvest and product transformation activities

In aquaculture education and highly skilled employment

Over the last four decades, more women than previously have graduated in aquaculture from higher education institutes in countries where data are available. Female-male student parity has been achieved in some countries as a direct result of national governments promoting girls' education, changing perceptions about professional career prospects for women, and availability of courses directly or indirectly related to aquaculture (Williams et al. 2012). In most societies, however, educated girls rarely choose aquaculture as a potential career.

Today, more women are graduating in aquaculture from higher education institutes and gender parity has been achieved in some cases. More women are entering highly skilled employment

Though few figures are available, the number of women in highly skilled employment, e.g., laboratory technicians and research positions, and in skilled upstream and supporting services, e.g., accounting, is increasing. Although education can give women access to a greater range of aquaculture activities, women are hired and promoted in far lower numbers than advanced degree completion rates in fisheries and aquaculture indicate (Egna et al. 2012).

In government fisheries and aquaculture positions, the number of women is growing, yet they are far from equal in pay, status and career progress.

WOMEN'S FOOD SECURITY AND EMPOWERMENT FROM AQUACULTURE

The evidence that fish farming improves the nutrition security of mothers and infants is not always convincing (Béné et al. 2016). Aquaculture is increasingly focusing on fewer farmed species to produce more animal protein, but increases in productivity alone do not necessarily fulfil the micronutrient needs of farmers and their households (Bogard et al. 2017). This is another of the downsides of intensification.

Aquaculture interventions with a nutrition component are nonetheless showing promise for improving nutrition, raising household incomes and empowering women. The nutrition options include growing small nutrient rich species (Haraksingh-Thilsted 2012), growing species for home use along with other species destined to market sale, and providing nutrition information and extension on eating behavior and patterns.

Aquaculture can empower women, and lead to better household food security and nutrition, but these benefits are not automatic

If women were empowered by aquaculture interventions, this could translate into improved nutrition outcomes for them and their children. Although aquaculture can give women power and control over their own lives, this is not automatic, especially if they are doing only low-grade, under-valued work.

Women's empowerment entails more than just economic betterment. It requires deeper societal, institutional and individual changes, and this usually takes time (Choo and Williams 2014).

A first step to women being empowered through aquaculture may be that women have to overcome their own conditioning by society on what they should and should not do, e.g., they should not go into the pond, or they should only work close to the home. Taking up aquaculture can even worsen women's already heavy workloads rather than empower them (Brugere et al. 2001, Choo and Williams 2014). In some cases, they may even be threatened unless key household members are sensitised to the demands of the work, encouraged to help relieve some of their existing workload, and local support networks and communities become more gender aware and knowledgeable about aquaculture.

AVENUES FOR TRANSFORMING AQUACULTURE AND GIVING WOMEN EQUALITY AND EMPOWERMENT

The first step towards gender equality in aquaculture is overcoming gender blindness. This is everyone's responsibility in the sector, not the business of only a few gender specialists. Women and men in farms, companies and institutions, regardless of their positions, have to be engaged on gender issues in a meaningful way throughout the spectrum of projects, research initiatives, education, government and donor and private interventions. To achieve this mindset change will need the work of gender champions, female and male role models and concrete suggestions showing how carefully-targeted and sensitive actions at different levels can revolutionise women's engagement and enhance the contribution of both women and men in making the aquaculture sector more gender equal.

- 1. Collection and dissemination of sex-disaggregated and other data relevant to gender equality should be mandated in every jurisdiction and systematically used in aquaculture planning and development.*

Data on women's participation in all nodes of aquaculture value chains is necessary but not sufficient. Data on the types of work, pay, benefits and work conditions are also needed. All aquaculture development planning should use these data in gender analyses of the current gender equality conditions, the likely changes that the development will bring and to design actions that could help overcome gender inequalities. Sex-disaggregated records of student enrollment in aquaculture courses should be pursued and published, and the same done for attendance to any type of aquaculture event. This data needs to be made publically available and regularly disseminated.

Networks (e.g. Genderaquafish.org, Aquaculture without Frontiers Women's Network, Women in Seafood) and social media provide an excellent conduit for promoting success stories of women in aquaculture as well as bringing to the attention of a wider public, both in and outside the sector, women's struggles to reach higher positions in aquaculture and achieve economic and personal emancipation.

- 2. All aquaculture development should be gender-responsive.*

Many international instruments designed to enhance the sustainability of aquaculture development (e.g. certification, ecosystem approaches) are not explicit enough on gender equality. Most aquaculture value chains are not certified or accredited for good practice, and they are not covered specifically by international labour standards such as the International Labour Organization Work in Fishing Convention C188 (2007, ratified 2017). Best practice schemes run by government and non-government organisations also lack a gender dimension, although some are beginning to address social issues as a critical step towards developing inclusive, sustainable and equitable aquaculture businesses. Ensuring that gender equality and decent work conditions are among the targets of

aquaculture development is directly contributing to the achievement of Sustainable Development Goal #5 (gender equality and empowerment of all women and girls), and #8 (decent work and economic growth). Where sustainability assessments are already being used in aquaculture, e.g., ASC guidelines for shrimp farming, these provide the opportunity to systematically incorporate gender equality criteria, regardless of the scale of production.

To achieve gender equality and empower women, the aquaculture sector has to mainstream gender targets in all its certification, accreditation, and labour policies and practices

3. *Gender should be mainstreamed in policies, toolkits and guidance on aquaculture development.*

Gender mainstreaming means assessing the implications for women and men of any planning, including sector activity, legislation, and policies, in any area and at all levels. In operations, social responsibility for gender action rests with each responsible stakeholder, corporation, activity, area, or level. At higher levels of organization, authorities in charge of aquaculture development are responsible for policy coherence and encouraging collaboration among institutions, for example between ministries or departments of aquaculture, environment, social development, women and health. This is essential to integrate gender equality, nutrition and decent work objectives in their programmes (Brugere 2014). To do this, practitioners need technical instruments for gender mainstreaming, e.g., gender-responsive planning methods, toolkits, indicators and checklists, technical and gender training, and communications that are relevant to aquaculture. Greater use of those already available in agriculture could be made, as long as these instruments yield a sound understanding of how and why unequal aquaculture practices prevail and what interventions could work. Reciprocally, all aquaculture development guidance needs to be made more sensitive to gender issues and include a gender component. Women and men in authority in aquaculture organisations should be trained in mainstreaming gender basics.

Aquaculture practitioners need good technical instruments for gender-responsive planning, indicators of progress, training and communications

4. *Research needs to document and analyse the causes of gender inequality to develop transformative solutions.*

Gender research, carried out in multidisciplinary programs, could shed light on the most critical gender inequality issues, especially on what makes women lose (or retain) control over their activities as the scale, intensity and economics of aquaculture production grows. A fine-grain analysis of the dynamics of the relationship between aquaculture intensification and women's empowerment is becoming urgent – or women will become the losers of the aquaculture boom. Finding out which influential factors could be altered to ensure that relevant gender equality measures are promoted, for example organizing women producers, building their capacity, and raising the awareness and will of aquaculture stakeholders to implement the measures, or altering the design of aquaculture technologies is critical. Lessons could also be learned by documenting successful and unexpected self-driven empowerment initiatives, e.g., why certain women establish themselves as aquaculture entrepreneurs and innovators and generate interest and followers, how women are contributing to aquaculture growth, and why their individual conditions and social interactions are shaped to produce equal or unequal outcomes.

We also need to remember that progress towards women's empowerment is not linear. Longer timeframes for research projects and development interventions stemming from these are needed to account for possible initial regression, as well as move beyond the economic dimension of women's empowerment and trigger the deeper societal, institutional and individual changes required to achieve empowerment (Choo and Williams 2014).

Research can shed light on what makes women lose (or retain) control over their activities as the scale, intensity and economics of aquaculture production grows

Finally, as part of a deeper societal change, we, as women and men, need to be the actors of the transformation of gender relations. We can, at our own individual level, start questioning the engrained and demeaning manner in which women's work is being portrayed and perceived in aquaculture (and often in other sectors). By challenging our own preconceptions about gender roles, we can help transform the societies in which we live towards greater equality.

REFERENCES

- Béné, C., Arthur, R., Norbury, H., Allison, E.H., Beveridge, M.C.M., Bush, S.R., Campling, L., Little, D.C., Leschen, W., Squires, D., Thilsted, S.H., Troell, M. and Williams, M. 2016. Contribution of fisheries and aquaculture to food security and poverty reduction: Assessing the current evidence. *World Development*, 79: 177-196.
- Bogard, J.R., Farook, S., Marks, G.C., Waid, J., Belton, B., Ali, M., Toufique, K., Mamun, A. and Thilsted S.H. 2017. Higher fish but lower micronutrient intakes: Temporal changes in fish consumption from capture fisheries and aquaculture in Bangladesh. *PLoS One*, 12(4): e0175098. <https://doi.org/10.1371/journal.pone.0175098>
- Brugere, C., McAndrew, K. and Bulcock, P. 2001. Does cage aquaculture address gender goals in development? Results of a case study in Bangladesh. *Aquaculture Economics & Management*, 5(3-4): 179-189.
- Brugere, C. 2014. Mainstreaming gender in transboundary natural resources projects – the experience of the Bay of Bengal Large Marine Ecosystem (BOBLME) project. *Environmental Development*, 11: 84-97.
- Brugere, C. 2015. Gender audit and recommendations for mainstreaming gender in the EAF-Nansen project. FAO EAF-Nansen Project Report No. 24 (EAF-N/PR/24). FAO, Rome. ftp://ftp.fao.org/fi/DOCUMENT/eaf_nansen/Reports/EAF-NansenReportNo24_en.pdf
- Choo, P.S. and Williams, M.J. 2014. Avoiding pitfalls in development projects that aspire to empower women: A Review of the Asian Fisheries Society Gender and Fisheries Symposium Papers. *Asian Fisheries Science*, Special Issue, 27S: 15-31.
- Egna, E., Reifke, L. and Gitonga, N. 2012. Improving Gender Equity in Aquaculture Education and Training: 30 Years of Experiences in the Pond Dynamics/Aquaculture, Aquaculture, and AquaFish Collaborative Research Support Program. *Asian Fisheries Science*, Special Issue 25S: 119-128.
- FAO. 2015. Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication. FAO, Rome. <http://www.fao.org/3/a-i4356e.pdf>
- FAO. 2017. Regional reviews of aquaculture status and trends. URL for all available reports: <http://www.fao.org/fishery/regional-aquaculture-reviews/aquaculture-reviews-home/en/>
- GAF6 (Sixth Global Symposium on Gender in Aquaculture and Fisheries). 2017. Engendering Security in Fisheries and Aquaculture: Report on the 6th Global Symposium on Gender in

Aquaculture and Fisheries (GAF6). Bangkok, Thailand 3-7 August 2016. Accessed 25 March 2017, <https://genderaquafish.org/events/2016-gaf6-august-bangkok-thailand/engendering-security-in-fisheries-and-aquaculture/>

- Haraksingh-Thilsted, S. 2012. The potential of nutrient-rich small fish species in aquaculture to improve human nutrition and health. In: Subasinghe, R.P, Arthur, J.R., Bartley, D.M., De Silva, S.S., Halwart, M., Hishamunda, N., Mohan, C.V. and Sorgeloos, P. (eds) Proceedings of the Global Conference on Aquaculture 2010: Farming the Waters for People and Food. FAO, Rome and NACA, Bangkok, pp. 57–73.
- Msuya, F.E. 2012. A study of working conditions in the Zanzibar seaweed farming industry. Women in Informal Employment: Globalizing and Organizing (WIEGO), Manchester. <http://www.wiego.org/sites/default/files/publications/files/Msuya-Zanzibar-Seaweed-Farming-OHS-2012.pdf>
- Rajaratnam, S. and MacDougall, C. (2016) Gender and fish aquaculture: a seven-country review. Paper presented at the 6th Global Symposium on Gender in Aquaculture and Fisheries (GAF6) Bangkok, Thailand 3-7 August 2016. https://genderaquafish.files.wordpress.com/2016/06/49_surendran.pdf
- Ramírez, E., and Ruben, R. 2015. Gender Systems and Women’s Labor Force Participation in the Salmon Industry in Chiloé, Chile. *World Development*, 73: 96-104.
- Scientific, Technical and Economic Committee for Fisheries (STECF). 2013. The Economic Performance of the EU Aquaculture Sector – 2012 exercise (STECF-13-03). Publications Office of the European Union, Luxembourg, EUR 25975 EN, JRC 81620, 237 pp.
- Shanti, B., Krishnan, M., Shandrasekaran, V.S. and Ponniah, A.G. 2010. Successful women entrepreneurs in aquaculture sectors: Case studies of Tamil Nadu, India. CIBA e-publication Series No. 20. Central Institute of Brackish Aquaculture, Chennai. <http://ciba.res.in/Books/ePublication20.pdf>
- Veliu, A., Gessese, N., Ragasa, C. and Okali, C. 2009. Gender analysis of aquaculture value chain in Northeast Vietnam and Nigeria. Agriculture and Rural Development Discussion Paper 44, The World Bank, Washington, D.C. <http://www.fao.org/3/a-at243e.pdf>
- Weeratunge-Starkloff, N. and Pant, J. 2011. Gender and aquaculture: Sharing the benefits equitably. The WorldFish Center, Penang, Malaysia. Issues Brief 2011-32. http://pubs.iclarm.net/resource_centre/WF_2832.pdf
- Williams, M.J., Agbayani, R., Bhuket, R., Bondad-Reantaso, M., Brugere, C., Choo, P.S., Dhont, J., Glamiche-Tejeda, A., Ghulam, K., Kusakabe, K., Little, D., Nandeesh, M.C., Sorgeloos, P., Weeratunge, N., Williams, S. and Xu, P. 2012. Expert Panel Review 6.3: Sustaining aquaculture by developing human capacity and enhancing opportunities for women. In: Subasinghe, R.P, Arthur, J.R., Bartley, D.M., De Silva, S.S., Halwart, M., Hishamunda, N., Mohan, C.V. and Sorgeloos, P. (eds) Proceedings of the Global Conference on Aquaculture 2010 : Farming the Waters for People and Food. FAO, Rome and NACA, Bangkok, pp. 785-922.

AUTHORS: Cecile Brugere and Meryl Williams

How to cite this profile: Brugere, C. and M. Williams. 2017. Women in aquaculture profile. <https://genderaquafish.org/portfolio/women-in-aquaculture/>

PEER REVIEWERS [of earlier draft]

- Hillary Egna, AquaFish Innovation Lab, Department of Fisheries and Wildlife, Oregon State University, USA
- Malcolm Beveridge, Institute of Aquaculture, University of Stirling, UK
- Max Troell, Associate Professor, The Beijer Institute of Ecological Economics, The Royal Swedish Academy of Sciences, Sweden

- Lionel Dabbadie, Fisheries and Aquaculture Department, Food and Agriculture Organization of the United Nations, Rome, Italy
- Mohammad Nuruzzaman, Krishi Gobeshona Foundation, Bangladesh
- Kyoko Kusakabe, Department of Development & Sustainability, Asian Institute of Technology, Thailand.
- Jennifer Gee, Fisheries and Aquaculture Department, Food and Agriculture Organization of the United Nations, Rome, Italy

SUPPORT This profile of Women in Aquaculture was made possible by a grant from Skretting (Australia), Aquaculture without Frontiers Australia, and the Gender in Aquaculture and Fisheries Section of the Asian Fisheries Society. The views expressed are those of the authors and do not necessarily represent those of the sponsoring organisations.