

A Multifaceted Approach to Closing the Gender Gap in Aquaculture for Improving Global Nutrition

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Introduction

The United Nations Food and Agriculture Organization estimates that nearly 842 million people, or roughly one in eight people in the world, suffered from chronic hunger and undernourishment from 2010-2012. **Hunger is concentrated in developing nations and especially affects women and children in poor, rural environments.** As demand for animal-source proteins continues to grow, aquaculture stands out as an efficient and sustainable method for food production. The nutrients in fish can help fill gaps that represent some of the most widespread deficiencies among vulnerable populations. While women play various roles in aquaculture and their representation in the industry has improved in recent years, they remain a marginalized group. **Women are key to the growth of the aquaculture sector and are gatekeepers of household nutrition, therefore a multifaceted approach to gender integration in aquaculture can help address global hunger and nutrition needs.**

AquaFish Gender Integration Strategy

The AquaFish Innovation Lab is working to address hunger and undernutrition in Africa and Asia through aquaculture research and through the equitable involvement of women and men in leadership and training activities.

Women's potential to contribute to broad goals such as agriculture sector growth and improved nutrition is limited by:

- Restricted market opportunities
- Lack of access to education
- Unequal economic participation
- Unequal involvement in decision-making

AquaFish has adopted a versatile approach to promote gender equity in the aquaculture sector and increase the retention of women in the aquaculture pipeline upon completion of training (Egna, Reifke, & Gitonga, 2012).

A Multifaceted Approach to Closing the Gender Gap

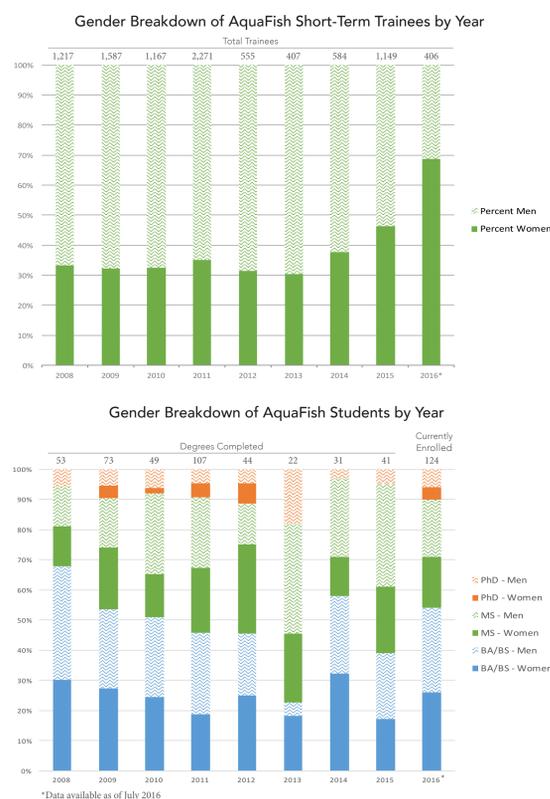
- **Ensure equal opportunities in all AquaFish training activities**, with a 50% benchmark for women and men participants.
- **Provide project leadership roles to empower women scientists and administrators** to lead aquaculture research and to mentor and train the next generation of women aquaculturists.
- **Conduct research that focuses on women's roles in the aquaculture pipeline**, barriers to participation, and their roles in household nutrition.
- **Monitor and evaluate gender inclusiveness** by collecting disaggregated gender data and taking appropriate actions as indicated through data analysis.

Training Women in Aquaculture

Successful aquaculture development depends on building and sustaining a gender-balanced community of students, professionals, and community members. To achieve this, AquaFish works to ensure that women make up at least half of participants in short-term trainings (non-degree training activities such as workshops, seminars, and on-farm trainings) and degree-seeking students.



Since 2008, AquaFish has trained over 3,400 women and funded more than 250 women earning degrees. AquaFish has successfully increased the proportion of women participating in short-term trainings, with an average of 50% participation during the most recent funding cycle (2013-present). Currently, 47% of the enrolled degree-seeking students are women.



Closing the Gender Gap through Research

In Zanzibar, Tanzania, two women AquaFish researchers from the University of Hawaii and the University of Dar es Salaam Institute of Marine Sciences are combining the development of aquaculture with integrated coastal and fisheries management to advance alternative livelihoods. Shellfish provide one of the main income sources for coastal women through direct sales and alternative products that include pearl farming, crafting shellfish jewelry, and other activities. Farming of bivalve shellfish also represents a direct means of improving nutrition through local consumption.

AquaFish researchers are currently working to address one of the primary obstacles in the further development of small shellfish farms – how to obtain stock in a sustainable manner. Spat collection is one of the most sustainable and cost-effective methods to obtain stock for shellfish farms, so different methods are being tested to determine the best materials and timing for spat collectors. Additionally, AquaFish researchers are working with women to develop an action plan for further development of the small-scale bivalve industry.



Women involved in the project earn \$160 to \$220 per month in supplemental income from pearl farming (equivalent to the lowest salary earned by an employed person in Tanzania).



The extra income has allowed women to pay school fees, build houses, and, in one case, even buy a fishing boat.

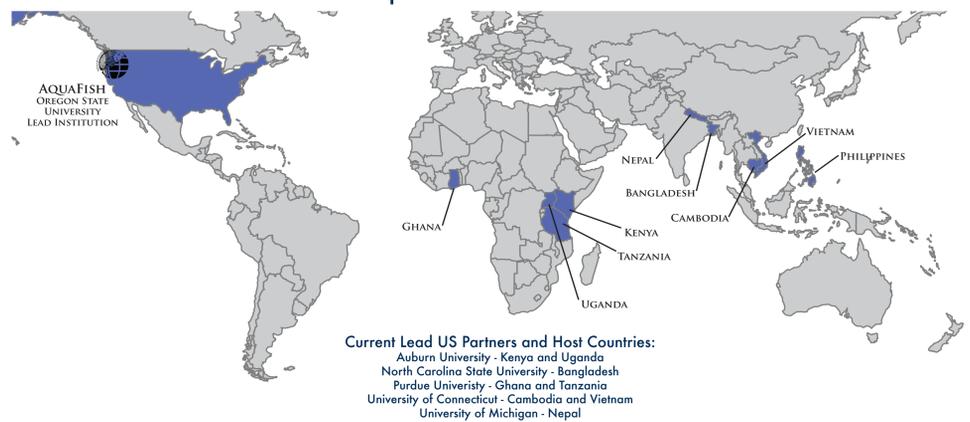
AquaFish research in Nepal on periphyton enhancement in polyculture systems exemplifies successful program efforts of supporting higher education of women, involving women scientists in leadership roles, and conducting research aiming to improve health and nutrition of women and children. Since 2008, the Institute of Agriculture and Animal Science (now Agriculture and Forestry University, AFU) has been developing and promoting an innovative carp and small indigenous species (SIS) polyculture system to be grown by households, with a goal of improving the nutrition of poor women and children.



This research has resulted in doubled consumption rate of nutrient-rich SIS by farm owners and also empowered them economically by providing income through the sale of surplus fish. Continuing AquaFish research is being led by Dr. Sunila Rai, an Associate Professor and Assistant Dean at AFU whose MS and PhD degrees were supported by AquaFish. Dr. Rai will work with farmers to identify the best substrates for periphyton growth, test periphyton substrates in polyculture systems, and extend results to at least 40 women through workshops.



AquaFish Host Countries



All photos and graphics are courtesy of the AquaFish Innovation Lab.

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Egna, H., Reifke, L., and N. Gitonga. 2012. Improving gender equity in aquaculture education and training: 50 years of experiences in the World Dynamics of Aquaculture, Aquaculture, and AquaFish Collaborative Research Support Programs. Asian Fisheries Science Special Issue 235:119-128.