

CHALLENGES OF INCLUDING GENDER DIMENSIONS IN BIOTECHNOLOGICAL RESEARCH

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+ Outline



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- Traditional Gender Roles in Aquaculture and Fisheries
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- Challenges of Involving Women in Research Positions
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+ Introduction

- Aquaculture and small-scale fisheries provide a major source of protein
- An estimated 200 million people depend on Aquaculture and Fisheries for employment and revenue (World Bank 2006)
- As fisheries stocks decline, aquaculture has become a fast growing industry
- Women play an integral role in both fisheries and aquaculture



+ Traditional Gender Roles in Aquaculture

Men

- Construct ponds
- Manage farms
- Land and farm owners



Women

- Fry catchers
- Laborers
- Processing plants
- Postharvest activities



+ Traditional Gender Roles in Fisheries

Men

- Own most boats and do the fishing
- Manage large boats



Women

- Post harvest activities:
 - Marketing
 - Processing
- Manage smaller boats
- Net making and mending



+ Wealth and Power

- Regardless of gender-role differences, wealthier groups of women and men play dominant roles in the parts of the value chains where they operate
- Poor members of the chain:
 - have weak bargaining power and
 - little control over prices paid for goods and services
 - more vulnerable to decreases in catch or prices and poor services because they are unable to accumulate assets

(World Bank et al. 2009)





Barriers that Prevent Women's Participation



- *Time availability and allocation-* Women are expected to fulfill household responsibilities.
- *Land ownership and access to water-* This is a major barrier for women who want to own or operate fish farms .
- *Credit and labor-* Women have less access than men to formal sources of credit, such as banks or credit unions and rarely have the collateral required.
- *Access to training and extension services-* rarely receive technical advice directly from fisheries officers.
 - FAO has determined that women farmers receive only 5% of all agricultural extension services worldwide despite their increasing role in food production (UN and FAO 1998)



Efforts to Alleviate Gender Issues



- Since the beginning of the International Decade for Women in 1975, efforts have been made to improve the living conditions of women and to correct the imbalances between men and women
- Some fisheries projects have contributed to women developing and exercising leadership and sharing in decision-making
- More is yet to be achieved
- Few women reach the upper echelons of management in medicine, science, business, fisheries, or agriculture



Challenges of Involving Women in Research—The Leaky Pipeline



- There is a long history of women being under-represented in science, engineering, and technology careers
- Even with global improvements, women in the sciences are falling through the 'leaky pipeline.'
- Pipeline is the system that carries students from secondary school through graduate school and into their careers
- There are holes or leaks in the pipeline
- Women leak out more than men (Blickenstaff 2005)
- Problem is progressive and persistent



+ Equal opportunities do not necessarily mean equality



- An increase in women graduates has not been accompanied by associated increase in of women in academic science, engineering, and technology careers (Bebbington 2002)
- Even in science fields where women were well represented, such as biology, they aren't necessarily reaching the top of their field (Glover 2002)
- Even in developed countries today, women earn \$0.82 for every \$1 dollar a male earns in an equivalent job, or about a 15% disparity regarding equal pay for equal work.

+ What are the barriers?

- Balancing work and family demands
- Societal gender roles
- Science curricula and pedagogy are more geared toward men
- Women's work is often overlooked/undervalued
- Personal values
- The culture of science itself



Adapted from (Bebbington 2002),(Blickenstaff 2005) and (Glover 2002)

+ The AquaFish CRSP efforts

- The AquaFish CRSP is dedicated to improving gender equity in the aquaculture and fisheries sectors
- Some of the specific actions taken by the AquaFish CRSP include:
 - Collection and analysis of disaggregated data from projects;
 - Promoting the participation of women in education and training opportunities by setting a 50% benchmark for training women;
 - Mandating that all core research projects have a Gender Strategy;
 - Working with each of the core research projects to ensure it has at least one gender-focused investigation;
 - Providing specific extension and technical services for women producers.



+ CRSP Long-Term Training

- Through equity in training opportunities, the CRSP has been able to provide women the tools to empower themselves
- Long-term training typically took the form of participation in degree programs (BS, MS, or PhD) at higher education institutions, either in the US or Host Country
- Goal is to empower graduates with the ability to do research, generate new knowledge, and solve pressing problems in their home countries



+ Long-Term Training Data

PD/A and ACRSP (1984-2008)

- 683 students in degree programs with 36.8% being women (of those for which data was recorded)
- Number of women increased dramatically beginning in about 1999
- Women's enrollment was consistently greater than 40% from 2006-2008

AquaFish CRSP (2006-present)

- 273 students in degree programs with 130 being women (47.6%)
- In 2009 and 2010, at least 50% of the students completing degrees each year were women
- When combined with the previous 3 years of ACRSP data, it shows that roughly half (49%) of the graduates in the past five years were women.





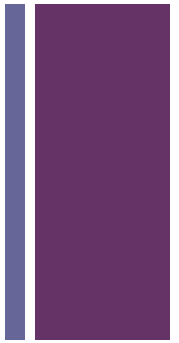
Are women graduates entering into research careers?



- We are nearing a 50/50 gender ratio in long-term training but not seeing the same proportion entering higher positions in research careers.
- Women in leadership roles in the CRSP:
 - 3 out of 24 (12.5%) in the older ACRSP program
 - 1 woman out of 7 total US PIs (14.3%) in the AquaFish program
 - The CRSP's Lead Principal Investigator and director is a woman
 - 25 women out of 99 personnel (25%) in the 7 core research projects in the AquaFish CRSP
- 1 of every 2 women degree holders is not yet represented in the scientific leadership of the Program—might increase as the women graduates make it further down the pipeline

+ Mainstreaming gender into biotechnological research programs

- Context: More women in the workforce than any time in history; With retirements more top leadership positions will be filled by women; Women still earn less than men for the same work
- What works:
 - On going research: Climate studies; Focus groups; Exit interviews (PCOSW P&T report); Publish regular reports with metrics
 - The Process: Do a few things instead of a big agenda; Find and empower the champions – the others will come along later; Move forward despite the pushback
 - Leadership: Create a climate where inequities can be addressed; Support identity groups; Model the behavior you want to see; Put accountability measures in annual reviews
 - Programming: Mentoring programs; Leadership academy; On-going workshops; Women identity groups (The Voices Project)



+ Conclusion

- Future research should include follow up studies of CRSP women graduates
- Need to bridge the gap between training and employment, and between employment and promotion to the highest levels
- Need qualitative research to look at how and why these barriers are persisting
- An epistemological approach (Bebbington 2002) to understand women's relationship to science and the production of scientific knowledge





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Funding for this research was provided by

the
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The AquaFish CRSP is funded in part by United States Agency for International Development (USAID) Cooperative Agreement No. EPP-A-00-06-00012-00 and by US and Host Country partners.

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