

# TH1.2: Boosting women's participation and empowerment in aquaculture: Evidence from Ghana

Catherine Ragasa, Eva Torbi, Froukje Kruijssen, Sena Amewu, and others

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# Introduction

\*Aquaculture production in Ghana has been rapidly growing (Fig. 1), is the fastest-growing in Africa (Fig. 2), and now the second largest tilapia producer in Africa, next to Egypt.

## Main factors:

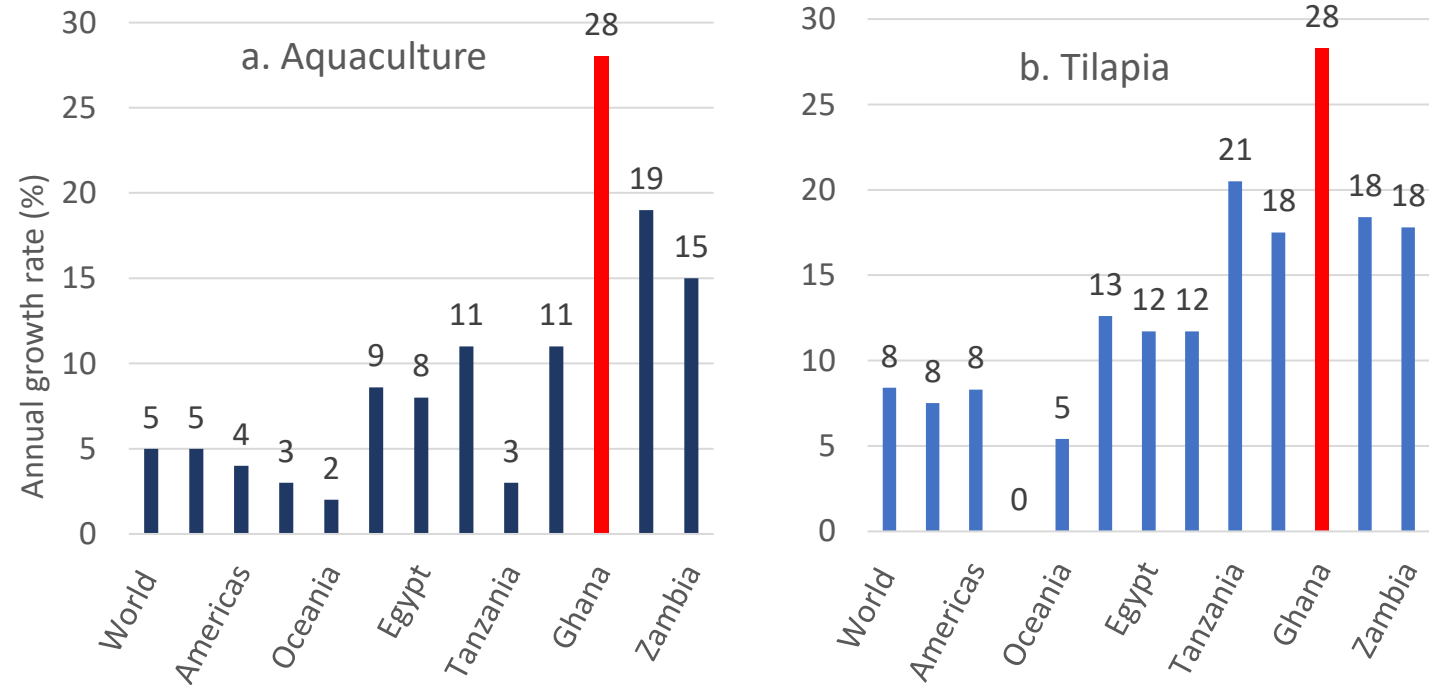
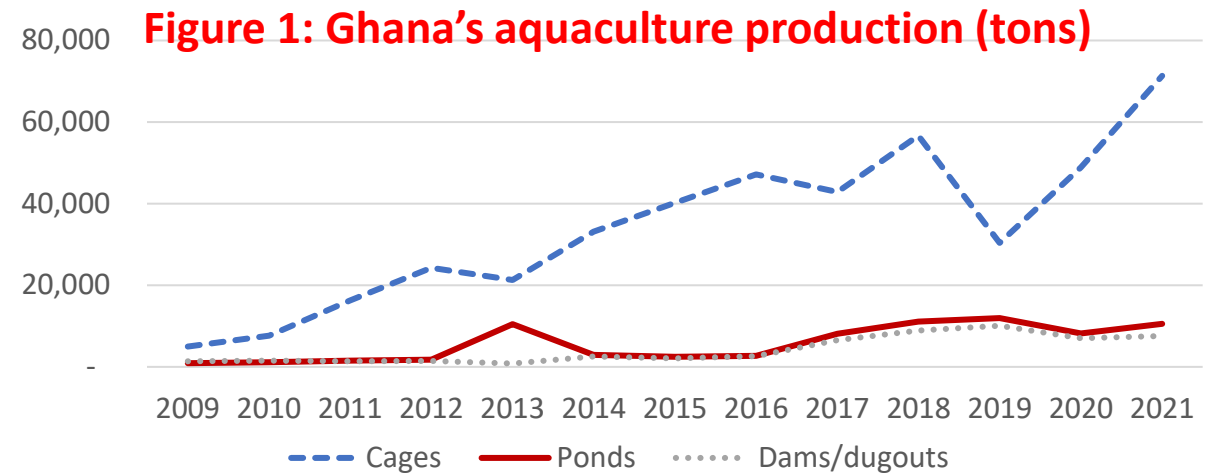
- improved seed
- gov't intervention
- local feed production

## Main drivers of production

- large-scale cage farms

## Challenges

- low tech. of small-scale farmers
- diseases/mortality issues
- illegal import of strains
- poor management practices
- poor participation of women



**Figure 2: Annual growth rate, 2005-2019 (%). Source. FAOSTAT.**

# Objectives of the study

- To understand the processes and strategies of encouraging women's entrepreneurship
- To analyze the impact of women's entrepreneurship on their empowerment

..... in the context of emerging aquaculture value chains in Sub-Saharan Africa (SSA), particularly Ghana

# Method and data sources

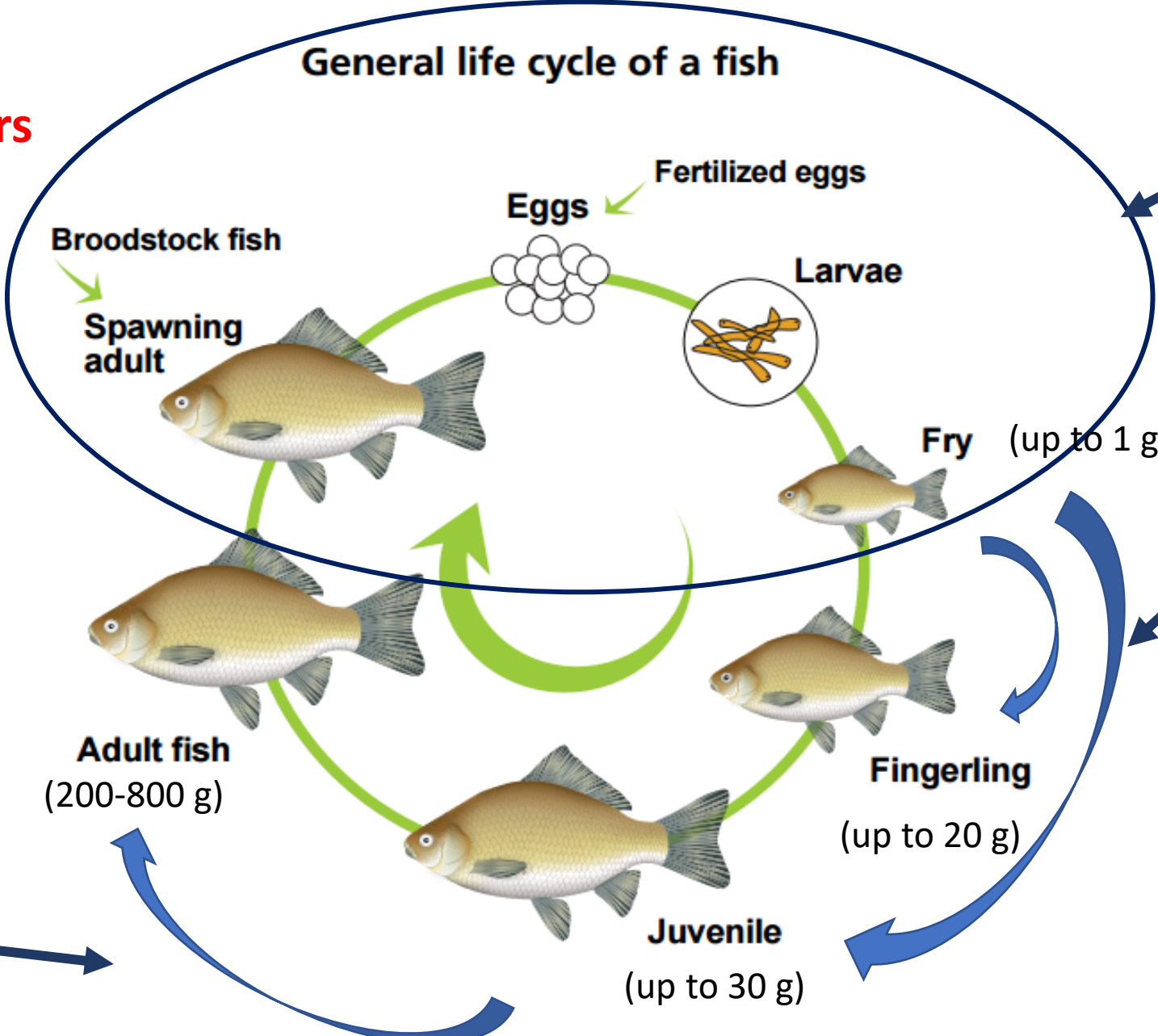
## Data sources:

- 3 rounds of household surveys with 700 fish-producing household in 7 major producing regions in Ghana (June 2019, 2020, 2022)
- Modified Abbreviated Women's Empowerment in Agriculture Index (A-WEAI)
- 11 in-depth interviews with women aqua-entrepreneurs and 5 focus group discussions (with about 5-8 women non-aqua-entrepreneurs) conducted in June to July 2021

## Method:

- Content analysis of the interviews and FGD transcriptions
- Descriptive/comparative profitability analysis
- Regression analysis

# General life cycle of a fish



**1. Broodstock multiplication centers**  
(1 public)

**2. Hatcheries**  
[8 large integrated hatchery/fishfarms; 25-40 small/medium-scale (5-8 women)]

**3. Nurseries**  
(15 total; 2 women)

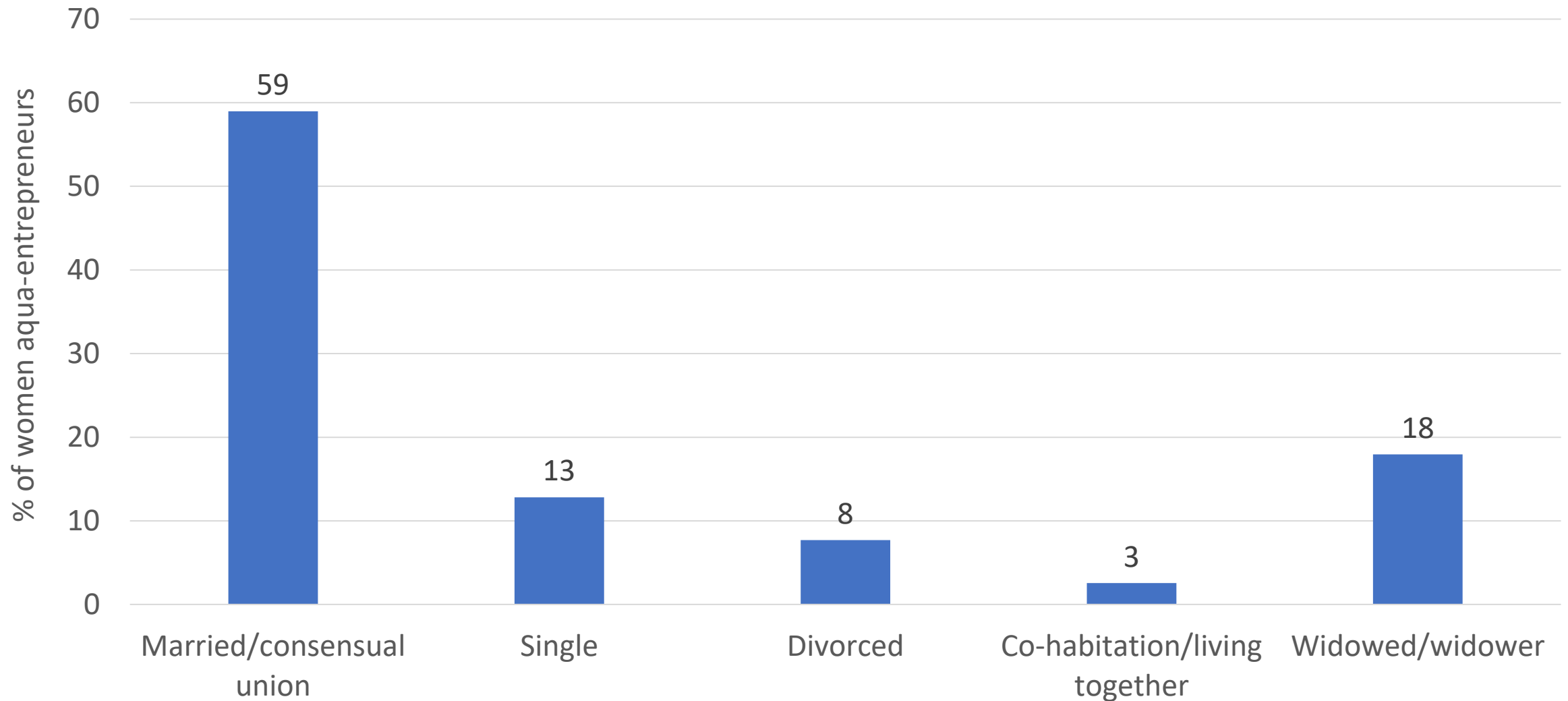
**6. Processors and traders**  
(majority are women)

**4. Grow-out farmers**  
(500-700 total; 50-70 women)

**5. Local feed producers**  
(8-15 total; 1-2 women)

Women make up 8-10% of seed, feed, and fish producers and dominate in processing and trading

# Characteristics of women aqua-entrepreneurs



# Characteristics of women/men aqua-entrepreneurs

**Multiple livelihoods:** hatchery, nursery and grow-out farming are interrelated, and many women aqua-entrepreneurs combine these activities and other livelihoods

**Dynamic process:** some entry and exit from and to different nodes of the fish value chain and across commodities → diversified livelihood strategies

Variable	female owner or manager (N=26)	male owner or manager (N=338)
Primary education or lower	11%	9%
High school education	54%	62%
University education and higher	35%	29%
<i>Percent of household income from aquaculture</i>		
Nearly all	4%	6%
More than half	19%	25%
About half	23%	30%
Less than half	46%	33%
Almost none	8%	6%

# Key findings on gender-based constraints

- **Gender norms and barriers to entry:**

“fish farming is a men’s job” and “fish processing and marketing are women’s job”

*“The public perceives that fish farming is a male job and women are not considered as fit to join associations.”*

*“You may have issues at home if your husband is not in agreement with you in fish farming.”*

- **Fish farming added to women’s time burden:**

*“The public perceives fish farming to be time consuming, so it is not for women who have to take care of the family.”*

*“You will have problems at home if you don’t have someone who takes care of family, children, food, and household chores.”*

*“When one is very much occupied with domestic chores, one can forget to feed the fish.”*

*“At times, you do not get much time for our family because much time is spent on the fish farming business.”*



# Drivers for women's entry into aquaculture

- **Support from male:** Women aqua-entrepreneurs have support from husband, son, or male relative.
- **Role of resources:** Women aqua-entrepreneurs have resources to invest, reinvest and diversify enterprises (e.g., land, water source, and capital)
- **Role of ICT and information:** Women aqua-entrepreneurs got the idea of starting fish farming from social media, video, or radio, complemented by FC extension agents

# No gender difference in productivity and profitability

- There are barriers to women's entry in aquaculture, but ones they enter, there is no difference (access to resources, practices, production).
- Women-led aquafarms are as equally productive and profitable as men-led aquafarms

	Women-led	Men-led
Tilapia only		
Production value (cedi)	14092	15509
Production cost (cedi)	5939	7673
Profit (cedi)	8152	7837
Profit margin (%)	42	37
N	10	127
Catfish		
Production value (cedi)	23096	30737
Production cost (cedi)	10256	11543
Profit (cedi)	12840	19195
Profit margin (%)	42	50
N	12	149
Mixed species		
Production value (cedi)	30146	47762
Production cost (cedi)	8864	18574
Profit (cedi)	21282	29188
Profit margin (%)	58	63
N	2	36

# No gender difference in aquaculture practices

	female owner or manager (N=26)	male owner or manager (N=338)
Pond Area (m <sup>2</sup> )	244.14	337.44
number of fingerlings stocked/pond	2330	2531
fingerlings survival rate (%)	90	87
size of fingerlings stocked (grams)	5	5
length of production cycle (months)	7	7
<i>Percentage of farmers</i>		
physical barrier	40%	50%
water level at one meter	90%	84%
harvest record	91%	91%
sales record	86%	76%
stocking record	59%	67%
feeding record	68%	75%
fish sample record	5%	10%
drugs record	0%	2%

# Gender of manager/owner is not significant in explaining feed use, productivity, and income

	farm profit	quantity of feed	yield (kg/m2)
Male	2561.169 [6813.417]	93.407 [443.893]	4.049 [6.868]
<b>Education level (Base = University and higher)</b>			
Primary education or lower	2740.989 [6159.486]	716.320 [401.289]	8.512 [6.767]
High school education	5204.387 [4025.309]	56.075 [262.248]	2.522 [4.128]
<b>Household income from aquaculture (Base = Nearly all)</b>			
More than half	7437.298 [6303.333]	-51.454 [410.661]	4.683 [8.181]
About half	2798.445 [6151.016]	-529.308 [400.737]	9.706 [8.078]
Less than half	-390.865 [6201.684]	-710.348 [404.038]	11.401 [8.054]
Almost none	-5020.188 [9887.841]	-693.531 [644.191]	4.401 [11.403]
Other control variables used	xx	xx	xx
Observations	386	386	328

# Benefits and empowerment effects to women

Many of the women respondents also mentioned the empowering effect of their fish farming

- *“It brings respect and knowledge to women.”*
- *“Women become more brave, confident, and empowered.”*
- *“Women become more financially independent.”*
- *“It brings publicity, exposure and respect in the community. It keeps women active and busy; fish farming is a good form of exercise.”*

There are mixed experiences in terms of time and effort needed for aquaculture compared to other livelihoods.

- *Most women respondents said fish farming was very stressful and required a lot of time, although one said it was “less stressful, and not much time needed, especially when you can hire labor to help out.”*
- *Many women respondents thought fish farming was a good income source, although one mentioned that it was capital-intensive and “it feels you always have to spend a lot of money.”*
- *“Compared to poultry farming I think fish farming is better because it is flexible in terms of feeding, care, risk and cost. I only feed them but with poultry I have to change the water and wash the troughs, feed them daily, give them antibiotic which is much involving for me as a woman compared to fish farming.” (A 42year old woman in the Atwima zone in Ashanti Region.)*

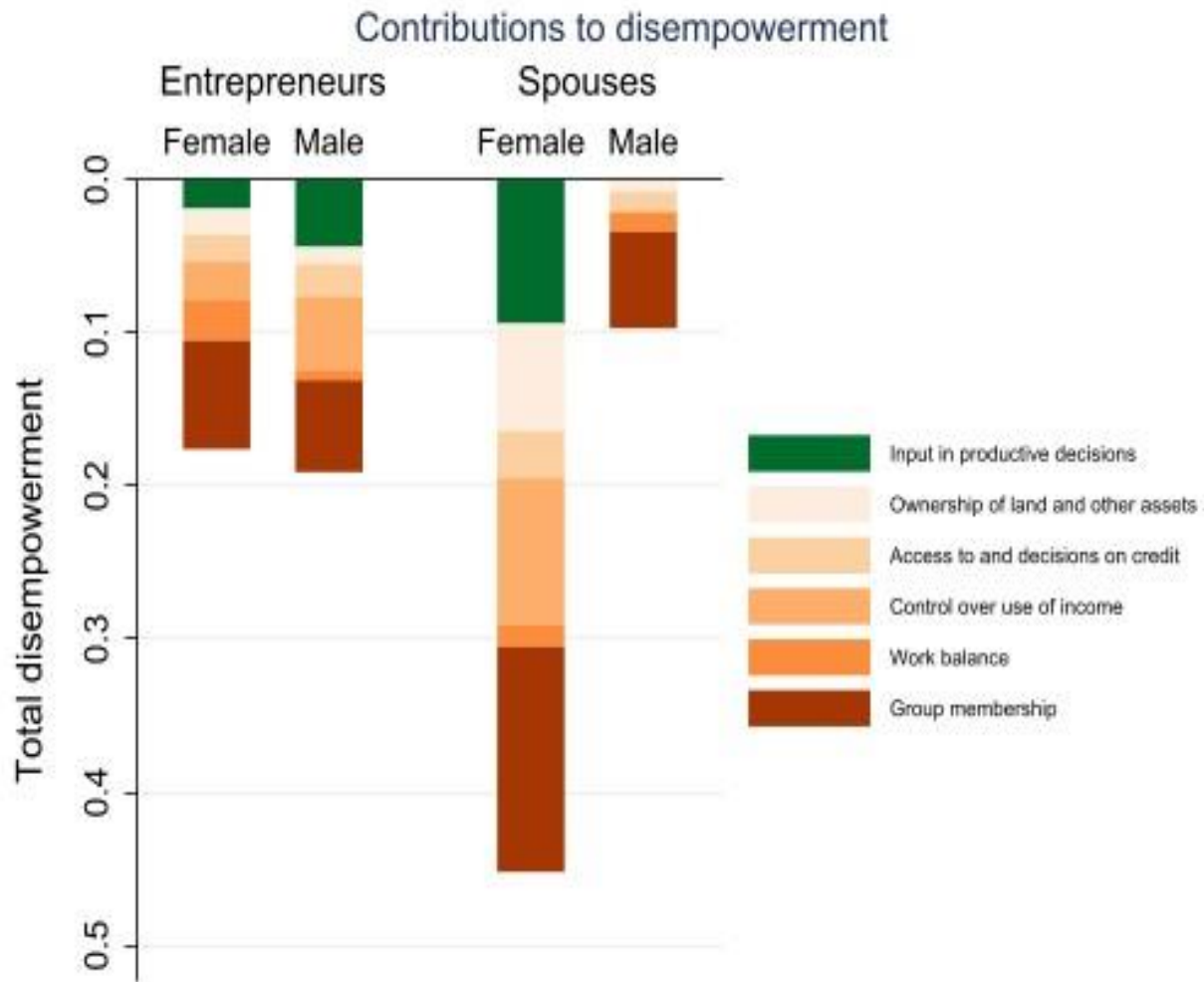
# Empowerment scores

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Indicator	<u>Owners/managers</u>		<u>Spouses</u>	
	Women	Men	Women	Men
Number of observations	31	550	232	16
<b>5DE score</b>	0.82	0.81	0.55	0.90
<b>% achieving empowerment</b>	<b>0.58</b>	<b>0.58</b>	<b>0.22</b>	<b>0.69</b>
Mean empowerment score	0.77	0.76	0.52	0.82
Mean empowerment score for not yet empowered	0.58	0.55	0.42	0.69
<b>Gender Parity Index (GPI)</b>				0.70
Number of dual-adult households				248
<b>% achieving gender parity</b>				<b>0.35</b>
Average empowerment gap				0.47
<b>AWEAI score</b>				0.59

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# Level and contributors to disempowerment



- High level of empowerment among female and male aqua-entrepreneurs
- Female aqua-entrepreneurs were already empowered to begin with; and have become more empowered through aquaculture
- High level of empowerment of male spouse of female aqua-entrepreneurs
- Low level of empowerment of female spouses of male aqua-entrepreneurs
- Female spouses are disempowered mainly through lack of group membership; control over use of income, and inputs to productive decisions
- Across all respondents, the lack of group membership is the main contributor to disempowerment
- Varied experiences in terms of time flexibility and time burden related to fish farming, other livelihoods, and household chores/care

# Women non-aqua-entrepreneurs' perception on fish farming

- **Perception on fish farming:** Fish farming is attractive to most male youth interviewed but less attractive to women; fish processing was more attractive for women (based on FGDs).
  - Of 5 FGDs (30 women participants), only 5 women participants were interested in fish farming; most were interested in fish processing
  - Varied experience and preference of female spouses in fish-producing households in terms of their involvement in fish farming to help improve household income
  - 59% of female spouses of male aqua-entrepreneurs would like to be more involved in fish farming and are interested in training/skills development related to fish farming



# Some insights from the study

- In terms of what can be done to encourage more women fish farmers, the overwhelming response was more education and training.
- A few women mentioned support through financial assistance, capital, or subsidized feeds or fingerlings. Other women said that men should encourage their spouses to be more involved in fish farming.

## **Possible interventions:**

- Gender awareness campaigns in the community and among household members, including both men and women, can help to break this gender-biased attitude.
- Inclusion of women in training and capacity strengthening; ensure that training venues and times are more accessible to women.
- Work with women aqua-entrepreneurs as “model farmers” and resource persons in radio programs, TV programs, trainings, and other extension programs
- Opportunities to involve more women will arise as the productivity and profitability of these farms improve.
  - Greater profitability will likely provide greater incentive to shift family labor and greater capacity to hire more labor, which is especially important for women to better balance domestic and productive work.

# What TiSeed project did in response to the gender and WEAI analysis?

- **Gender awareness:** video, radio programs, social media, and TV drama series showcasing women aqua-entrepreneurs and encouraging greater women participation in fish and seed production
- **Women's inclusion in trainings:**
  - Ensured the women aqua-entrepreneurs participate in trainings; encouraged interested women (who are just thinking about fish and seed production) to the trainings
  - Invited female spouse or other female family members interested in fish farming and seed production
- **Women-managed nurseries:** Supported 2 women grow-out farmers to upgrade/expand operation into nursery; discussing with government agency to expand
- **Fishponds for women groups:** We are under discussion with the government to provide ponds and organize women's groups into fish farming; and more trainings and marketing support for women fish processors



Thank you

