Women and youth participation and empowerment in aquaculture:

Mixed-Methods Evidence from Ghana

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*Ghana aquaculture is among the fastest growing (Fig. 1-2), and now the second largest tilapia producer in Africa, next to Egypt.

Main factors:

improved strain/seed

local feed production

Main drivers of growth

large-scale cage farms

Challenges

Fish diseases/mortality issues

Poor development/maintenance of strain and broodstock

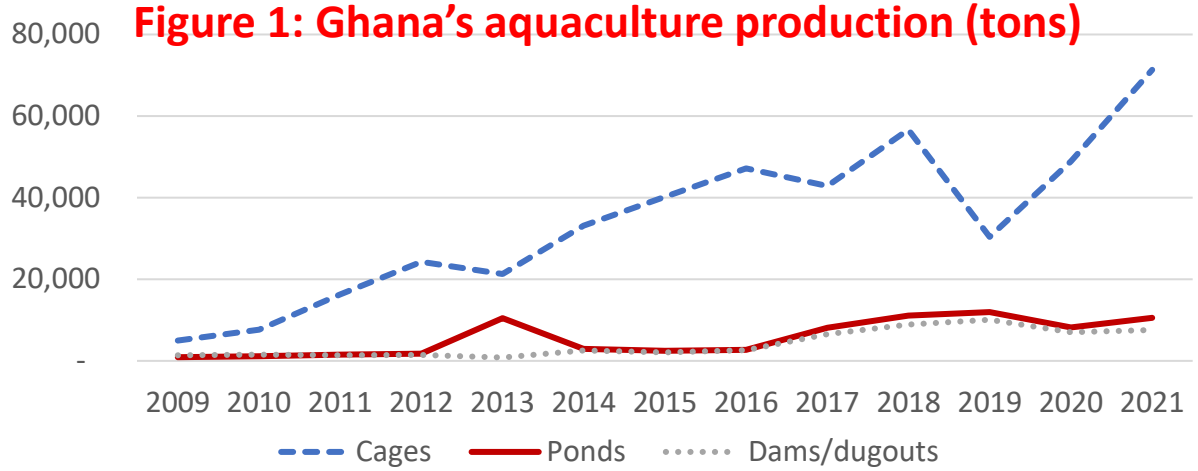
Slow productivity growth of small-scale pond farmers

poor management practices

poor participation of women

how to encourage more youth

Figure 1: Ghana's aquaculture production (tons)



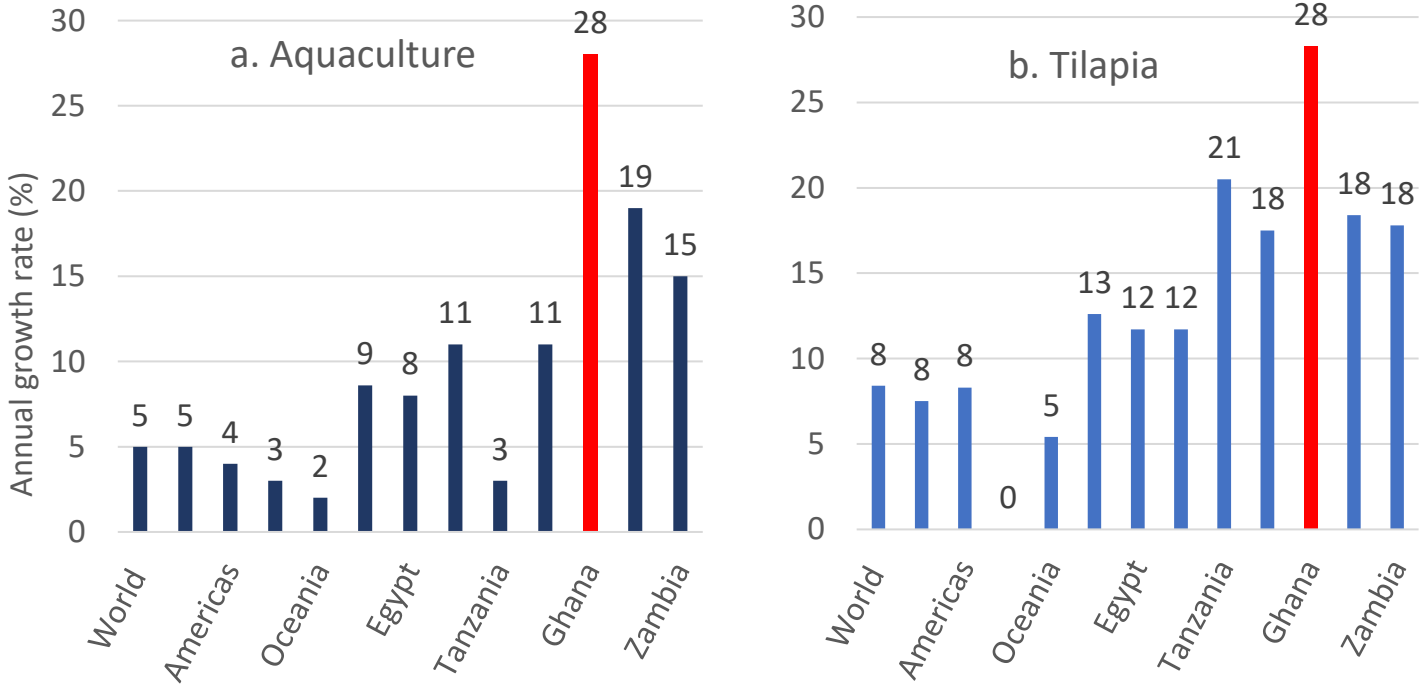


Figure 2: Annual growth rate, 2005-2019 (%). Source. FAOSTAT.

Objectives of the study

- To characterize the role of women and youth as owners, managers, and laborers in fish farming
- To describe and compare women-, men-, youth- and nonyouth-led aqua-enterprises to understand their relative adoption of aquaculture practices, productivity, and profitability
- To identify motivation, challenges, and opportunities for women and youth aqua-entrepreneurs to improve their productivity and incomes

..... 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 400 fish-producing households in 7 major producing regions in Ghana (June 2019, 2020, 2022)
- Abbreviated Women's Empowerment in Agriculture Index (A-WEAI)
- 25 in-depth interviews with value chain actors and 21 FGDs (with more than 100 women and youth participants) conducted in September 2019 and July 2021

Method:

- Content analysis of the interviews and FGD transcriptions
- Comparative profitability analysis
- Regression analysis

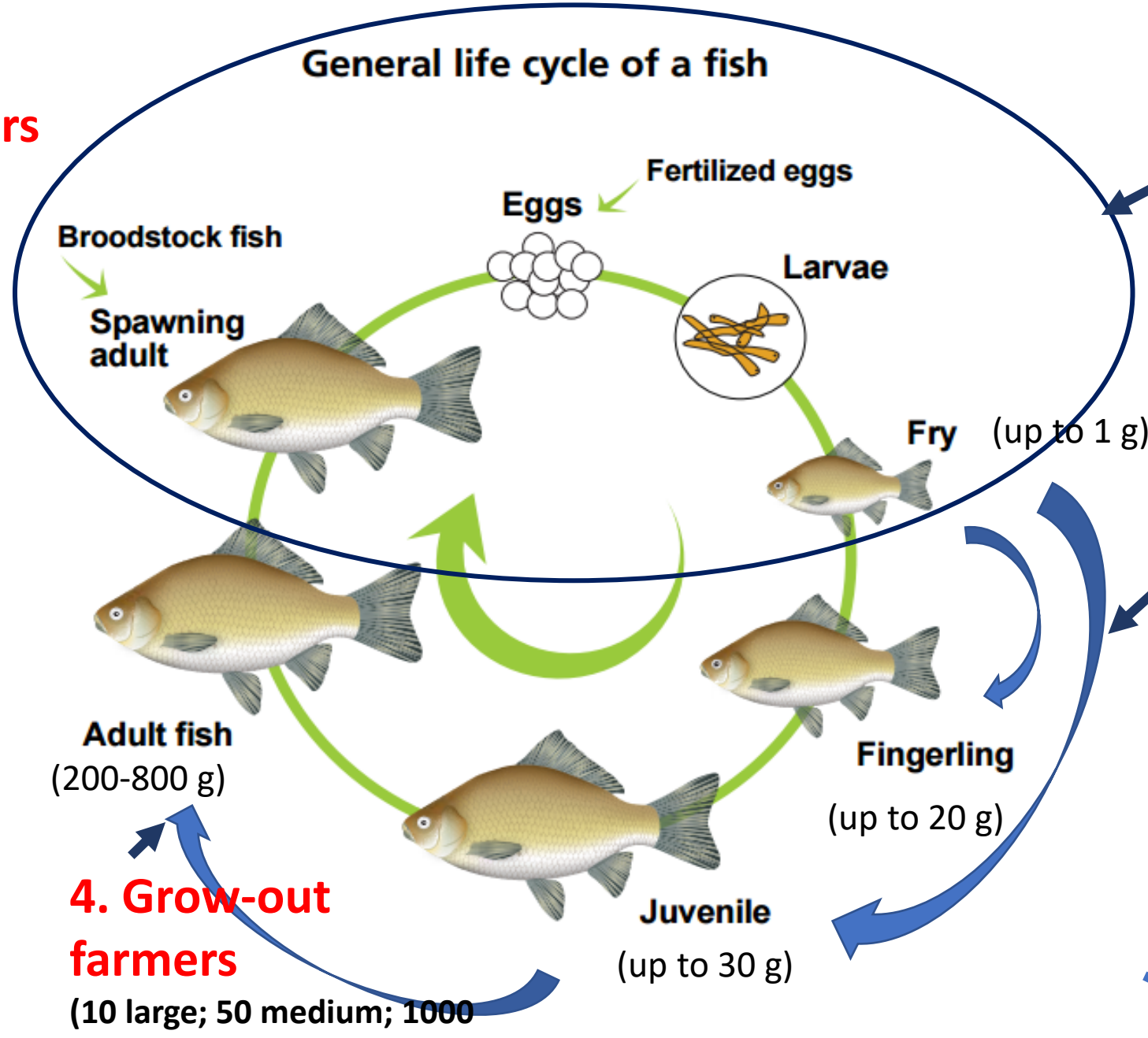
1. Broodstock multiplication centers

(1 public)

6. Processors and traders

(majority are women)

- *Women make up 5-8% of seed, feed, and fish producers and dominate in processing and trading (very few female youth)*
- *Male youth made up 14% of farm owners and 24% of farm managers; 68% of the total labour person-days in aquaculture*



2. Hatcheries

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

3. Nurseries

(15 total; 2 women)

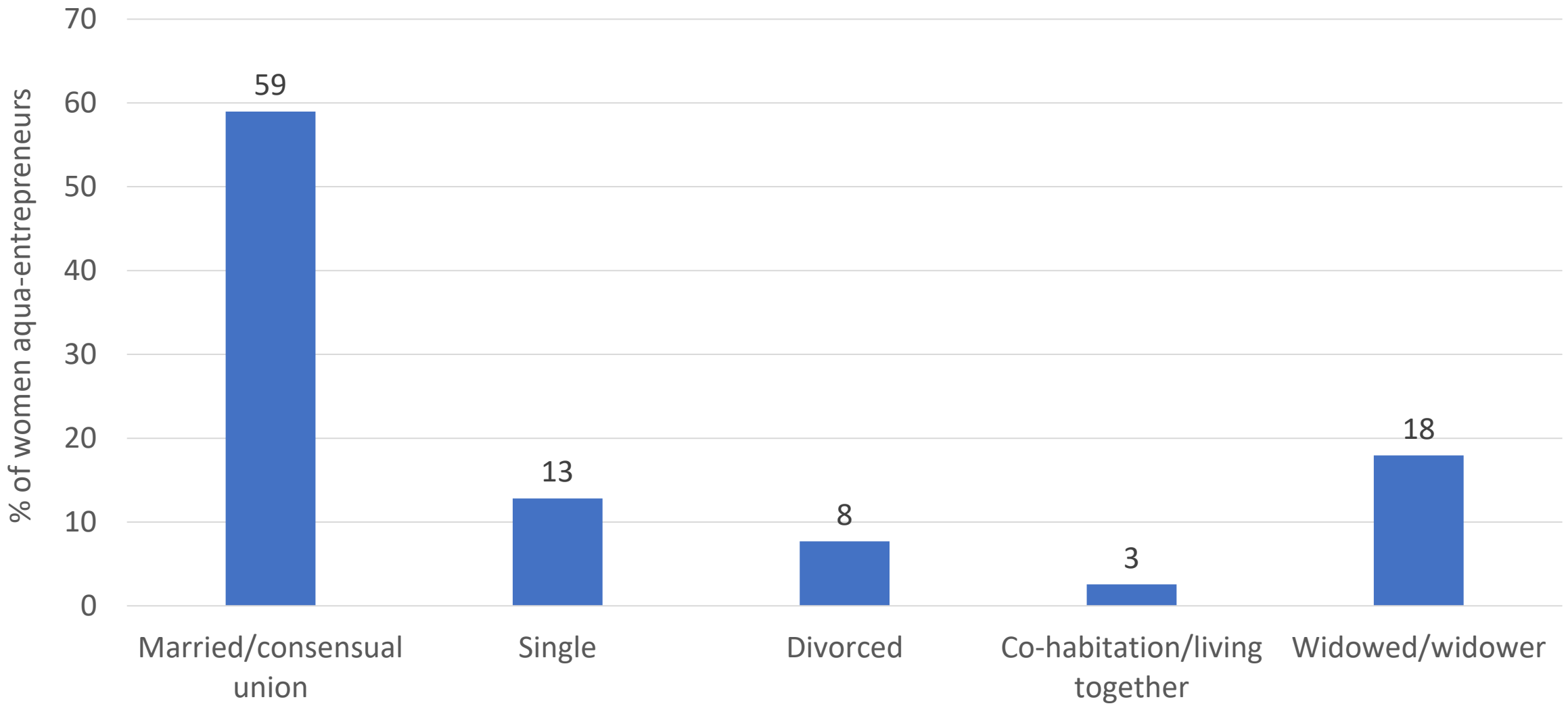
4. Grow-out farmers

(10 large; 50 medium; 1000 small-scale; 50-70 women)

5. Local feed producers

(8-15 total; 1-2 women)

Characteristics of women aqua-entrepreneurs

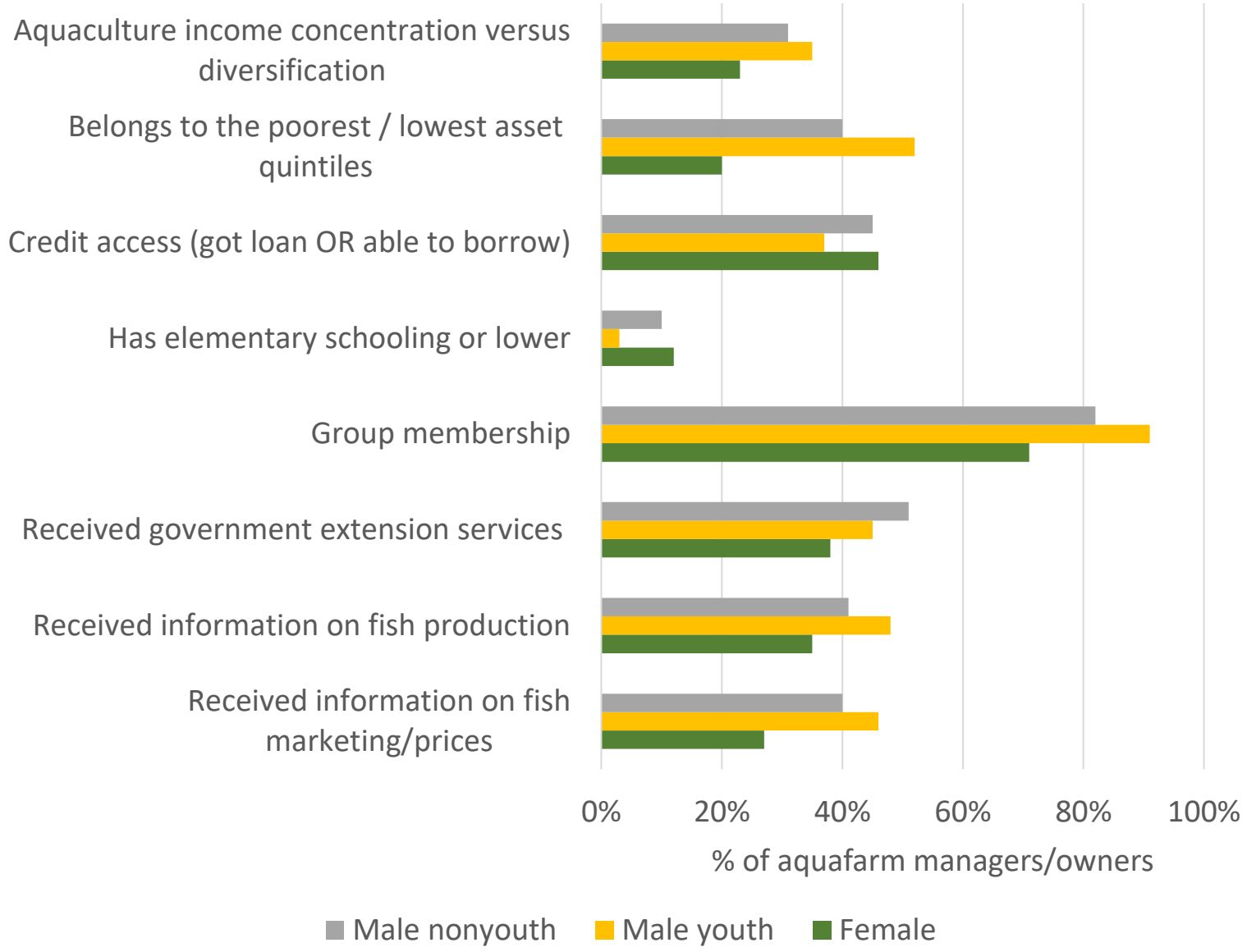


Characteristics of women, men, youth aqua-entrepreneurs

Multiple livelihoods: hatchery, nursery and grow-out farming are interrelated, and many women aqua-entrepreneurs combine these activities and other livelihoods/commodities →diversified livelihood strategies

Women aqua-entrepreneurs have more diversified income (other than aquaculture), greater access to credit and generally wealthier; but low group membership and weaker access to extension services

Youth aqua-entrepreneurs have more concentration on aquaculture, higher education level, stronger in group membership and in extension services; but generally poorer and weaker credit access



No gender difference in productivity and profitability

- Generally similar production practices
- Women and youth aquafarms generally have lower costs and use less feeds and higher profits and profit margins, although not statistically different.
- Women-led aquafarms are as equally productive and profitable as men-led aquafarms
- Some very successful women and youth aqua-entrepreneurs

Table 1. Comparative profitability, by gender/youth status

	Female	Male youth	Male nonyouth
Tilapia only			
Production value (cedi)	14,092	11,573	16,427
Production cost (cedi)	5,939	6,451	7,957
Profit (cedi)	8,152	5,123	8,469
Profit margin (%)	42	40	36
Catfish			
Production value (cedi)	23,096	24,295	32,228
Production cost (cedi)	10,256	9,882	11,927
Profit (cedi)	12,840	14,413	20,301
Profit margin (%)	42	53	50

Table 2. Regression model results

	Farm profits (cedi)	Feed used (kg)	Productivity (kg/m2)
Gender/youth status (control=male nonyouth)			
Female	4084.30 [7187.80]	-35.20 [482.40]	-2.46 [6.75]
Male	4893.10 [5891.10]	-655.60 [394.10]	0.90 [5.53]
Other controls	YES	YES	YES
Number of observations	382	382	382

Key findings on gender-based constraints

- **Gender norms are major barriers to entry**:

  "Fish farming is a men's job" and "fish processing and marketing are women's job"

  "... women are not considered as fit to join associations"; "women are not respected as fish farm managers"

  "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 to some, but time-saving to others.**

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

  "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."

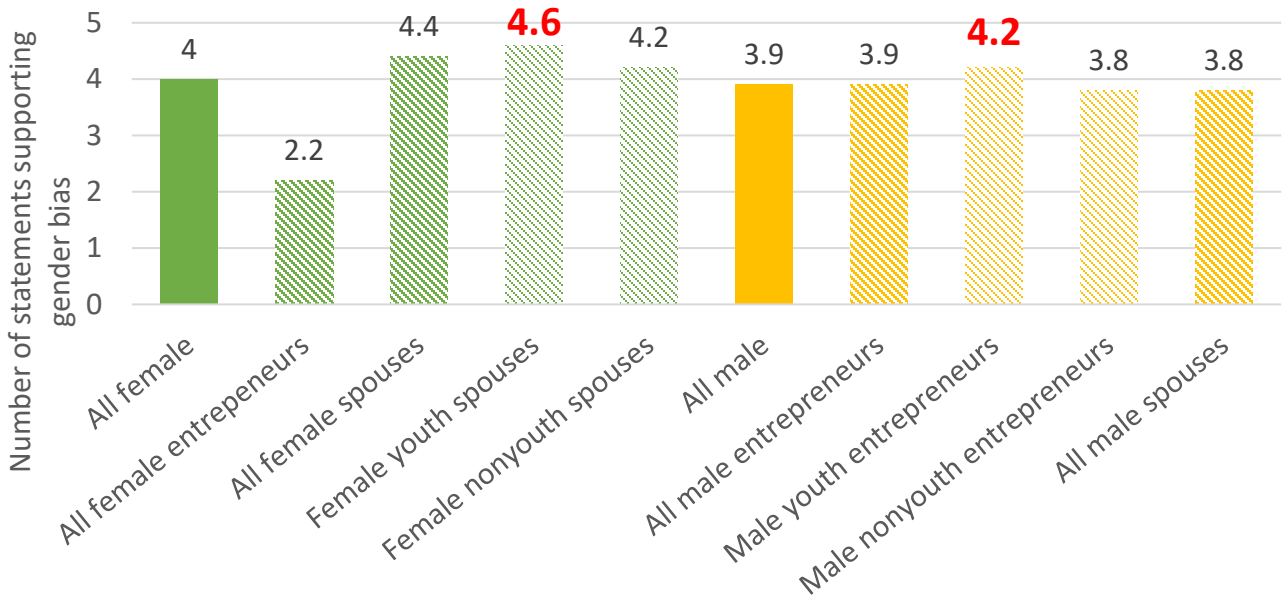
  "Less stressful, and not much time needed, especially when you can hire labor to help out."

  "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."

- **Diversity: Farm size, farm location, ability to hire labor, presence of (young) children and a helpful spouse are critical factors.**

Gender attitudes

- Of the13 statements indicating gender bias, female and male respondents agreed or strongly agreed to 4 of the statements, on average, indicating persistently strong gender bias
- (As expected) Women aqua-entrepreneurs are less likely to have attitudes supporting gender bias (i.e., fewer statements supporting gender bias that they agree on) since they have already circumvented or overcome any gender bias that exists by being a fish farmer.
- (Surprisingly and alarmingly) Younger female and male were showing more gender bias (more statements supporting gender bias that they agree on) than older female and male.



Constraints among youth entrepreneurs

- Youth often lack the experience and access to land/pond and capital that older farmers have.
- Norms: Family and friends were not very supportive of them studying and engaging in aquaculture. Fish farming or fingerling production is also not necessarily considered a good career choice for recent graduates.

  "There is a misconception about aquaculture. People think you end up as a fisherman. I remember when I gained admission into the university to study the course my mother started tagging me with the name "fisherman". […] As a result of that sometimes when you go out you do not want to talk about the course you studied because of the tag people will give to you".
- Young females are particularly disadvantaged due to multitude of norms affecting them:
  - Norms, beliefs, and physical challenges related to women being in or on the water when they are menstruating; beliefs that young women being in or on the water affect fertility
  - Challenges to balance productive and reproductive roles (especially women, with small children)
  - Norms and attitudes about women's capabilities of managing a fish farm or being a fish farmer
  - Challenges related to physical strength required for certain tasks (esp. young women are perceived to be fragile for the heavy work required in fish farming)

Drivers for women's entry into aquaculture

- **Support from men**: 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

Benefits and empowerment effects to women and youth

- Empowerment effect of fish farming:
  "It brings respect and knowledge to women."
  "Women become more brave, confident, and empowered."
  "It brings publicity, exposure and respect in the community."
  "Women become more financially independent"
- Aquaculture is flexible and allows to combine other responsibilities
  - Many young men and women who have their aquaculture business close to their home decided to engage in aquaculture because it allowed them to combine it with their other responsibilities.
- General interest in aquaculture among youth, although less among women
  - Many female spouses were interested to get involved in aquaculture with their husbands;
  - Youth perceived aquaculture as profitable and were motivated to start or expand into aquaculture;
  - But, only few women were interested in fish farming largely due to taboos and norms; while all women participants in the FDGs were interested to enter or expand into fish processing.

Some insights from the study

- **Methodological insights:**
  - Quantitative and qualitative measures of norms/attitudes provided complementary insights
  - Diverse types of women have different experiences → looking at intersectionalities provided more nuanced analysis
- **Potential entry points for more gender-inclusive aquaculture value chain:**
  - Education and training (overwhelming response)
    - 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
  - Gender-transformative approaches
    - Gender awareness campaigns in the community and among household members, including both men and women, can help to break this gender-biased attitude.
  - Strengthening the value chain
    - Improved practices, productivity, and profitability will be pull factors for women and youth to the sector
    - 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.