

BRIEF | DECEMBER 2018

# WHAT'S THE CATCH?

## AQUACULTURE AND WOMEN'S ECONOMIC EMPOWERMENT

by Laura Burroughs

**OVERVIEW:** Aquaculture is rapidly increasing in Lake Victoria, but will women be left behind? This brief examines gendered contributions to food security, representation in fisheries activities, and opportunities and barriers facing women in aquaculture.

### I. INTRODUCTION

Lake Victoria is a paradox when it comes to food security—it is home to over 500 fish species, but food insecurity in its surrounding communities is pervasive. In 2008, Kim Geheb argued that this was a result of gender inequality. Fish contribute more to food security indirectly through incomes than directly through subsistence. And women tend to devote higher proportions of their income to feeding their families, making their incomes particularly critical to achieving food security. Yet, the lucrative Nile perch export market primarily employs men.<sup>1</sup> By missing out on the most profitable part of the fishing sector in Lake Victoria, women's income—and its corresponding contribution to food security—is lagging.

Aquaculture is emerging as a new income-generating activity for fishing communities in Lake Victoria. This may increase food security by providing new sources of income, especially for women, and through increasing or sustaining fish consumption. But, aquaculture has potential negative socioecological effects including pollution and genetic mixing with wild fish populations.<sup>2</sup> In particular, cage aquaculture may disturb natural breeding habitats for dagaa, fished primarily by women, and contribute to its overfishing by increasing demand for fishmeal to feed farmed tilapia.<sup>3</sup> It could also pose a financial risk to low-income fish farmers due to the high capital demand required to start aquaculture.<sup>4</sup> Aquaculture may also introduce “social dumping” in which foreign companies exploit locals for low-wage labor.<sup>5</sup> Rural communities with few competitive employment options may be particularly vulnerable.



*Cage aquaculture was introduced to Lake Victoria in 2005 and has expanded rapidly since. Above: feeding the fish in aquaculture cages, Lake Victoria. Photo: Paige Roberts, One Earth Future.*

Additionally, experts question whether aquaculture will really contribute to local employment. Around Lake Victoria, our findings indicate that women comprise a higher percentage of the aquaculture workforce than the capture fisheries workforce. However, only a small fraction of the overall population is involved in aquaculture when compared to capture fisheries and post-harvest activities. Furthermore, perceptions toward women in operational or managerial aquaculture positions are negative, which may ultimately limit their success in the sector.

Secure Fisheries' Sarah Glaser manages a National Science Foundation grant aimed at understanding whether aquaculture will ultimately help or hurt the biodiversity of Lake Victoria and the well-being of those living around it.<sup>6</sup> One of the grant partners, Karin Wedig, led a survey of over 1,300 people

in fishing sites around Lake Victoria in Kenya, Uganda, and Tanzania. The results of this survey contribute to understanding the socioeconomic conditions of the lake's coastal communities and whether they benefit from aquaculture development.

Over 400 survey respondents were women from the fisheries sector. This brief examines the preliminary findings from this research with disaggregated response data from men and women in fishing communities along Lake Victoria. It will review men's and women's contributions to household food security, proportional representation in fishing activities, and barriers to women in aquaculture. While this brief primarily focuses on women's employment, there are other important factors to consider in the pursuit of gender equity. It explores the potential for aquaculture to provide income for women that Geheb argues is necessary to increase food security around Lake Victoria.

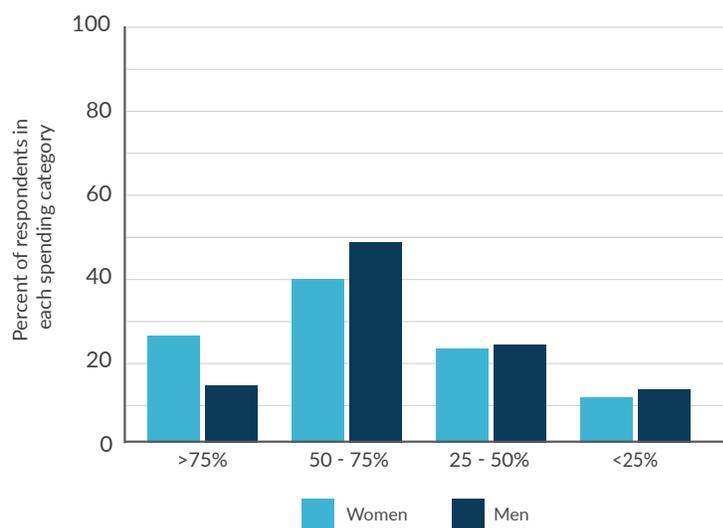
## II. CONTRIBUTIONS TO HOUSEHOLD FOOD SECURITY

To improve food security around Lake Victoria, it is imperative that both women and men are able to generate enough income to feed themselves and their families.

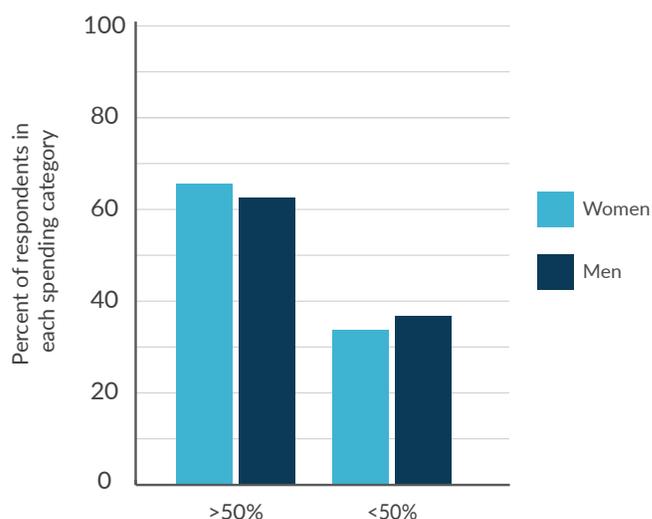
Research on gendered spending patterns finds that women generally contribute higher portions of their incomes to feeding their families than do men.<sup>7</sup> Gendered spending patterns mean that women spend more money on children and daily household necessities, while men frequently make larger family purchases or reinvest earnings. Geheb argues that this pattern, coupled with the fact that women around Lake Victoria do not have access to greater income-generating resources, results in malnourishment in the lake's coastal communities.

Our evidence from Lake Victoria adds important nuance to research on gender spending patterns in fishing communities. Women are more likely than men to spend over 75 percent of their incomes on food: 26 percent of female respondents, compared to only 14 percent of male respondents, reported spending more than 75 percent of their incomes on food. However, most survey respondents reported spending over 50 percent on food (66 percent of women and 63 percent of men), meaning food comprises the largest portion of spending for most respondents. This is consistent with research from the World Food Programme showing that the world's poor spend 60 to 80 percent of household income on food.<sup>8</sup>

**FIGURE 1.1: INCOME SPENT ON FOOD**  
Percentage, disaggregated by gender



**FIGURE 1.2: INCOME SPENT ON FOOD**  
aggregated spending categories, disaggregated by gender



Note: Same data as Figure 1.1 combined into two spending categories, greater than 50 percent and less than 50 percent.

Number of total respondents for Fig. 1, by gender



### III. GENDER DIVISIONS OF LABOR IN THE FISHERIES SECTOR

Aquaculture development may provide more employment for women around Lake Victoria. While few survey respondents overall were involved in aquaculture, the ratio of women to men in the sector was much closer than in capture fisheries.

In the fisheries sector, women and men earn incomes through different positions in the value chain. There is some regional variation in these roles, but broadly men are more involved in capture fisheries while women dominate the post-harvest sector, including salting and drying fish, trading fish at market, and working in fish processing facilities.

Aquaculture may be more conducive to women's employment than capture fisheries for a few reasons. While capture fisheries have existed for centuries with established and maintained gender roles, aquaculture is a much more recent development, introduced to many regions only in the last couple of decades.<sup>9</sup> Some argue that this means that gender divisions of labor are more flexible. Aquaculture activities, such as tending ponds or feeding fish, are also frequently considered an extension of women's household labor rather



*Aquaculture cages in Lake Victoria.  
Photo: Paige Roberts, One Earth Future.*

than an extension of capture fisheries. According to a report by the UN Food and Agriculture Organization (FAO), women make up 70 percent of the aquaculture workforce worldwide, including aquaculture processing. This number comes largely from small-scale operations in Asia, where 72 percent of the aquaculture workforce are women, compared to 20 percent in Africa.<sup>10</sup> In Kenya, women expressed being excluded to a lesser degree from aquaculture than from capture fisheries: "Women feel unwelcome in the fishing sub-sector but have little interest in participating anyway. In aquaculture, women feel discriminated against, but to a much lower extent."<sup>11</sup>

*While men are generally more involved in capture fisheries, aquaculture may be more conducive to women's employment than traditional capture fisheries.*

There are exceptions to women's involvement in aquaculture. Unlike pond aquaculture, cage aquaculture can be far from the home, limiting women's access.<sup>12</sup> And pond aquaculture is not always accessible to women. For example, in Indonesia, pond aquaculture is dominated by men.<sup>13</sup>

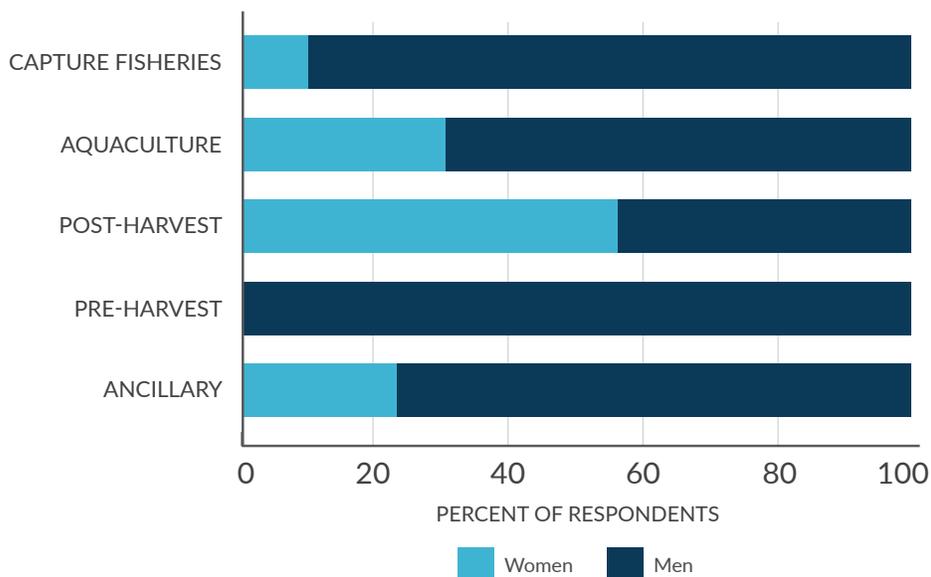
Cage aquaculture is relatively new to Lake Victoria. It was introduced in 2005<sup>14</sup> but is quickly expanding. Most of the cages have been introduced in the last five years. Aquaculture operations in Lake Victoria provide for the commercial, artisanal, and subsistence sectors, producing primarily tilapia and occasionally catfish. This presents a rare opportunity as coastal communities are highly dependent on fish stocks, such as tilapia, that are declining.



*Women around Lake Victoria are more likely to be employed in post-harvest activities, such as processing, salting and drying, or trading fish at market.  
Photo: Sarah Glaser, One Earth Future.*

**FIGURE 2: GENDER BREAKDOWN BY FISHERIES ACTIVITY**

Disaggregated by gender



Number of total respondents per category



Around Lake Victoria, over 50 percent of survey respondents reported being employed in the post-harvest sector. These positions were mostly filled by women, although the proportion of women to men is much closer than in other regions. Disaggregating post-harvest activities, women were particularly prevalent as fishmongers: 211 women reported being fishmongers, more than three times the number of men. The most common sector of employment was capture fisheries, with a total of 800 respondents employed in this category. Capture

fisheries also include the starkest gender divide. Men comprise 90 percent of capture fisheries. Aquaculture involvement was relatively low for both men and women. Only a total of 93 respondents (7 percent) reported being employed in aquaculture. Interestingly, the ratio of men to women involved in aquaculture is smaller than in capture fisheries. There were about twice as many men as women in aquaculture.

Respondents also reported, on a scale from strongly disagree to strongly agree, how frequently they encounter women in different roles: 86 percent of respondents agreed or strongly agreed that they frequently encounter women who work for owners of aquaculture ponds or cages, compared to 76 percent of respondents who agreed or strongly agreed that they often see women fishing or using traps along the lakeshore.

**OUR SURVEY FOUND:**

**MEN**  
COMPRISE  
**90%**  
OF CAPTURE  
FISHERS

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**>50%**  
EMPLOYED IN  
POST-HARVEST  
ACTIVITIES

**ONLY 7%**  
EMPLOYED IN AQUACULTURE

**3X**  
MORE  
WOMEN  
FISHMONGERS

**IV. PERCEPTIONS OF WOMEN IN AQUACULTURE**

Our survey data from Lake Victoria indicate that there are negative perceptions of women in managerial aquaculture positions.

As more women enter the aquaculture industry, their employment is often relegated to informal or lower-paid roles. In other parts of the world, women report being confined to low-level aquaculture positions. In shrimp farming facilities in Bangladesh, women were unable to access leadership or decision-making positions and were paid much less than their male counterparts. When women occupied leadership positions, it was primarily to deal with “women issues,” and they were not paid as supervisors.<sup>15</sup> A similar study by the

FAO in Indonesia found that women in shrimp farming were concentrated in low-value positions, such as shrimp sorting and grading.<sup>16</sup> In Indonesian milkfish processing, only women from medium wealth groups owned processing enterprises.



Other studies illustrate that women's status in aquaculture and their role in decision-making decrease as aquaculture scales up.<sup>17</sup> One study in northeast Thailand compared women's decision-making roles in subsistence, semi-intensive, and intensive aquaculture.<sup>18</sup> Subsistence aquaculture was considered part of household work, and women maintained control over their operations. However, women's level of control was diluted in semi-intensive and intensive aquaculture as their husbands played larger roles in decision-making.

When asked about perceptions of women in aquaculture, only 23 percent of respondents agreed or strongly agreed that women can be successful aquaculture operators. This indicates that perceptions of women occupying this role are largely negative. While the proportion of women to men in aquaculture is much closer than in capture fisheries, cultural perceptions may be a barrier to their success and income generation.



*While women's involvement is higher in aquaculture than in capture fisheries, participation still varies. Pictured above is pond aquaculture in rural Kenya. Photo: McKay Savage.*

## V. INCREASING FOOD SECURITY BY SUPPORTING WOMEN'S EMPLOYMENT IN AQUACULTURE

Aquaculture development in Lake Victoria offers the potential to improve food security where it is desperately needed. But, as Geheb argues, incomes and women's incomes especially, must improve to achieve food security. Our data show that while aquaculture is not a major form of employment for male or female respondents, women's involvement relative to men's is higher in aquaculture than in capture fisheries. This suggests that promoting women's employment in aquaculture could contribute to important gains in income and, indirectly, food security. However, this recommendation comes with notable risks. Women in aquaculture positions face issues beyond their status or incomes that are important to consider, such as employment conditions, workplace harassment, and work burdens.<sup>19</sup> In many areas, the most significant struggle women in aquaculture articulate is the tradeoff with other work. Because the time burden of other household duties remains, adding the responsibility of aquaculture can lead to women's being overworked. In many of the aforementioned studies, women in aquaculture had significantly less leisure time than their male counterparts due to the combination of external labor and household expectations.<sup>20</sup>

*Promoting women's employment in aquaculture could contribute to important gains in income and, indirectly, food security. However, this recommendation comes with notable risks.*

While the proportion of women may be promising in aquaculture as compared to capture fisheries, very few in this survey reported being involved in aquaculture, and many are skeptical that further aquaculture development will provide jobs for those around the lake. Furthermore, increases in women's incomes may be marginal if they are only concentrated in low-paid or informal positions. As aquaculture continues to develop in Lake Victoria, it is imperative that this development supports the incomes of the lake's coastal communities that rely on it.

## ENDNOTES

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## ONE EARTH FUTURE

[oneearthfuture.org](http://oneearthfuture.org)     

One Earth Future (OEF) is a self-funded, private operating foundation seeking to create a more peaceful world through collaborative, data-driven initiatives. OEF focuses on enhancing maritime cooperation, creating sustainable jobs in fragile economies, and research which actively contributes to thought leadership on global issues. As an operating foundation, OEF provides strategic, financial, and administrative support allowing its programs to focus deeply on complex problems and to create constructive alternatives to violent conflict.

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Secure Fisheries is a program of One Earth Future. Secure Fisheries works with local, regional, and international stakeholders to strengthen fisheries governance, combat illegal fishing, and promote sustainability in fragile and post-conflict regions as a pathway towards greater peace and stability.

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