

Forms of Gender Inequalities in Fish Farming in Kwnza Division, Trans Nzoia County, Kenya.

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Abstract

Fish farming being a sub-sector in agriculture has a major contribution to the Kenyan economy and therefore should be fully promoted to enhance its productivity. To achieve this, women who form a large proportion of the rural population should be fully empowered in order for them to participate in fish farming. The information obtained from Trans Nzoia County Fisheries Office, indicated that women were not equally involved in fish farming as their male counterparts did. The objective of the study was to determine the forms of gender inequalities in fish farming? The target population of the study consisted of 400 fish farmers in the district with a sample of 100 being selected. The target population was divided into two strata according to household headship. The samples comprised of 50 male farmers and 50 female farmers (male-headed households and female headed households) were selected from the two strata. The data was collected using interview schedules and observation checklists. Qualitative data, in textual form was indexed and rearranged according to the appropriate part of thematic framework which they related. Statistical Package for Social sciences (SPSS) Computer software was used to analyse the quantitative data. The results showed that lack of formal education, land ownership, source of funding and farm inputs were the main constraints facing women farmers. However, the study also established that there wasn't gender disparity in the following area: reasons for engaging in fish farming, access to extension services, and availability of labor. Access to extension services was a constraint for both men and women with 26.2% male farmers and 14.9% female farmers reporting that they never received any services. Women were further constrained by limited time to perform their roles as caregivers to their families as well as limited access to technologies. It was therefore concluded that women did not participate fully in fish farming activities in Kwanza Division as their male counterparts. The findings provide useful information to policy makers on how to address the complex issues related to gender, food security and rural poverty.

Key words: Gender, gender inequality, fish farming, aquaculture, Kenya

1.0 Introduction

Literature reports gender disparities in value-for-labour income, access to and control over resources in many communities (FAO 1999). This is an impediment to socio-economic development, food security and the improvement of livelihoods, since it denies women, who are half of the population essential means of production. Traditional inequities among communities relating to gender relations need to be fully understood, so that technology can target the right people without being biased towards a certain group of people.

Food insecurity has been a global concern and measures have been put in place to address the concern. The threat to food security has been posed by different factors such as climate change, environmental and land degradation, poverty, poor farming methods and switch by farmers from growing food crops to non-food crops with the aim of making more income. Besides these factors gender imbalances within different communities have as well been a threat to food production. Unequal access to land and other resources, unequal dissemination of information, lack of credit and other services to a certain gender and differentiated gender roles are all be gender issues that can lead to inadequate food production in rural areas. Where women are the majority of small-holder farmers, failure to release their full potential in agriculture is a contributing factor to low growth and food insecurity (World Bank, 2007). Normally the significant role women play in agriculture and specifically aquaculture is overlooked. Women are therefore suffering from greater poverty than men in virtually every society due to exclusion in most of the rural economic activities.

Women are not recognized for the vital role they play particularly in post harvest, processing and marketing of farm produce. They are frequently a major percentage of the labour force in the processing and marketing sectors, working under conditions of great inequality and frequently receiving little direct remuneration for their work. The problem of declining fish stock is compounded within families. Often fish provides a livelihood for the whole family, a lower catch means less to process and market, and none is left over for the family to eat. This has called for the urgent need to develop aquaculture more vigorously and women empowered for active participation. It is well acknowledged that women are key players in Africa's agricultural sector and that their participation is critical to achieving food security and economic wellbeing (Moehl 2003). It has also been

observed that where women participate in fish farming it is limited largely to women-headed households. To ensure that women utilize their full potential in aquaculture and hence contribute to food security, it is necessary to provide capacity building, support and proper training to rural women, which will eventually lead to their empowerment. Both men and women are supposed to derive knowledge of fish farming from the department/Ministry of Fisheries development, other various departments or whoever promotes fish farming. How these bodies convey their information is vital. The purpose of this study was to establish the various gender inequalities that hinder full participation of women in aquaculture. The factors that were considered include information dissemination, gender relations, and control of income, cultural attributes and availability of resources. The factors should support participation in sustainable fish farming and attainment of food security.

2.0 Materials and methods

2.1 Study area

Kwanza Division is situated at the extreme West of Kenya at the border of Uganda. It has an area of 1105.5km² and it borders Uganda to the North West, Mt. Elgon to the West, West Pokot to the North, Trans Nzoia East to the East and Trans Nzoia West to the South. The division has highland equatorial type of climate with fairly distributed rain throughout the year and an annual precipitation of 1242mm. the rainfall pattern in the division is bimodal in nature with long rains falling from the month of March to July while the short rains fall between September and November. The mean temperature of the division stands at 28.6°C but varies between 10°C and 30°C. The predominant activities in the division are maize and wheat farming, which is done mainly as cash crop. The population and housing census of 2009 enumerated a total of 236, 218 persons in the division from whom 118, 038 were males and 118, 180 were females (KNBS, 2010). Kwanza Division has high potential for agriculture, livestock production and aquaculture. The average farm sizes range from 0.5 acres to over 100 acres for large scale farmers (KDDP, 2009). The main livestock breeds include dairy and beef cattle, sheep and goats. Maize, wheat and beans are the main crops grown in the district both on large and small scale. The Division has got very high potential for fish farming. This is due to presence of good soils suitable for pond water retention, presence of rivers and underground water that is very close to the surface in most areas.

2.2 Target population

The target population for the study was the 400 fish farmers in the Division. According to the data from the District Fisheries office there are about 400 fish farmers households in the division comprising 300 male-headed and 100 female-headed households. The farmers were the key respondents from whom primary data was collected.

2.3 Sampling procedure

Households were stratified according to household headships i.e. male headed and female headed households. Samples were selected from male-headed households and female-headed households to ensure that the sample consists of equal respondents from both genders (Castillo, 2009). Therefore the sample consisted of 50 men and 50 women.

A sample of 100 [using the formula $n = \frac{N}{1 + N(e)^2}$ (Where n = sample size, N = population size and e = level of precision)] farmers was interviewed and used to make the inferences about the entire population (Yamane, 1967).

2.4 Data collection and analysis

Semi-structured interviews and observation checklist were used to obtain both qualitative and quantitative data. Qualitative data, in textual form was indexed and rearranged according to the appropriate part of thematic framework which they related. This was done to generate or develop analytical categories and theoretical explanations. Percentages, fraction defective (p) and chi-square (χ^2) were used to compare the proportions of respondents in each category and case of study as well as deriving various statistical significances of various variables. Tables, graphs and charts were used to present the results.

3.0 Results

3.1 Demographic Information

Table 1: Demographic data of respondents

| Characteristic | Frequency (<i>f</i>) | Percentage (%) |
|---------------------|------------------------|----------------|
| Gender | | |
| Male | 42 | 46.7 |
| Female | 48 | 53.3 |
| Age | | |
| Less than 35 Years | 31 | 34.4 |
| 36 to 50 Years | 36 | 40.0 |
| Above 50 Years | 23 | 25.6 |
| Education Level | | |
| Primary Education | 41 | 45.6 |
| Secondary Education | 30 | 33.3 |
| College/University | 10 | 11.1 |
| None | 9 | 10.1 |

According to Table (1) above, 53.3% of the respondents interviewed were females while 46.7% were males. Further, 34.4% of the respondents were aged below 35 years, while 40.05% were between 36 and 50 years and 25.6% of the respondents were aged above 50 years. Finally, 45.6% of the respondents were primary school leavers, 33.3% were secondary school certificate holders, 11.1% had either college or university education while 10.1% had no formal education.

3.2 Forms of gender inequalities

3.2.1 Education, extension services and training

There was gender discrepancy in education. While the majority of women had secondary level education (37.5%), more men had basic primary education (59.5%), while a slightly higher proportion of women were found to have college college level and university education (12.5%) as compared to men (9.5%). A higher percentage of women of women did not have formal education (16.7%) while only 2.0% of men lacked any formal education. There was a significant relationship between gender and education at 0.05 level of significance ($\chi^2=8.649$, $p=0.034$).

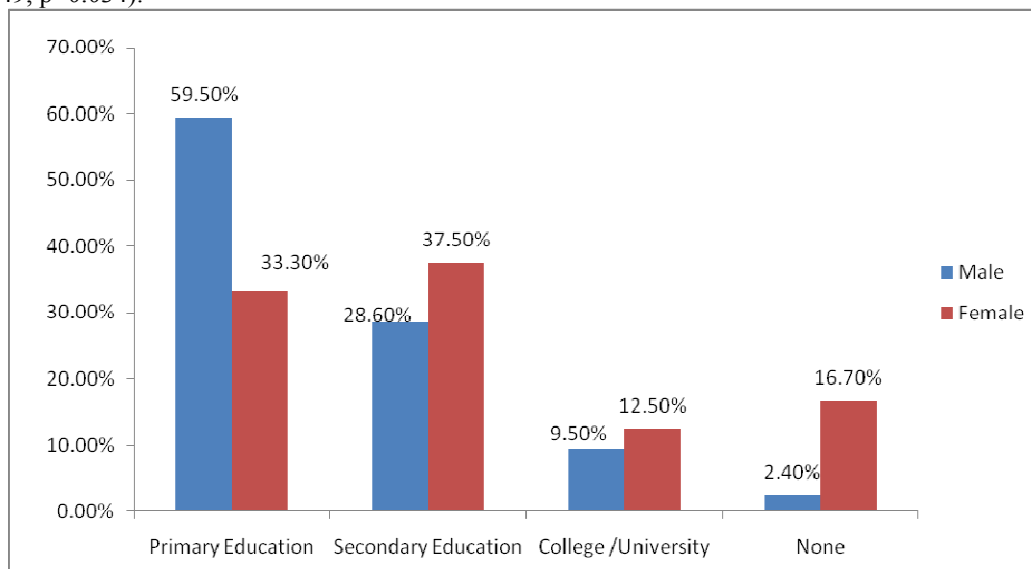


Figure 1: Education Distributions by Gender

The results showed that only 73.8% of male-headed household and 85.1 female headed households were visited by an Extension Officer. However, 26.2% and 14.9% of the male and female farmers said that the Extension Officer did not visit their fish farms. Nevertheless, the relationship between visitation by Agricultural Officers and gender was found to be insignificant at 0.05 level of significance ($\chi^2=1.754$, $p=0.185$). However visitation to Farmer Training Centres showed gender variation with 54.8% and 45.8% of the male farmers and female farmers respectively having attended fish farming related training.

3.2.2 Sources of funds and access to credit

According to the study, 38.1% and 29.2% of the male farmers and female farmers respectively were able to fund themselves either through their income or loans from banks while initiating fish farming. Men were likely to

fund their activities since they had access and ownership to land and other assets which they used as collateral to secure loans from financial institutions. Unlike men, women, although they had access to land, could not claim ownership, hence no documents to present as collateral. Further, 61.9% and 70.8% of the males and females respectively, said that they obtained funds from the government, NGOs and donation from friends and relatives. Women also obtained some funding for fish farming from their small welfare groups (*chamas*). Moreover, this relationship between source of funding and gender was found to be significant at 0.05 level of significance ($\chi^2=41.2$, $p=0.000$). Women were found to depend more likely on donation and welfare groups for fish farming activities unlike men who could raise funds on their own.

3.2.3 Size of land under fish farming

The study revealed that, 54.8% and 66.7% of the males and females respectively utilized less than 0.125 acre of land in fish farming, 14.3% and 20.8% of males and females respectively utilized 0.125 to 0.25 acre, and 31% and 12.5% of males and females respectively utilized more than 0.25 acres of land in fish farming. The relationship between the size of land that farmers in Kwanza Division utilized in fish farming was significantly dependent on gender ($\chi^2=14.12$, $p=0.001$). Women were therefore practicing fish farming on a smaller scale as compared to men.

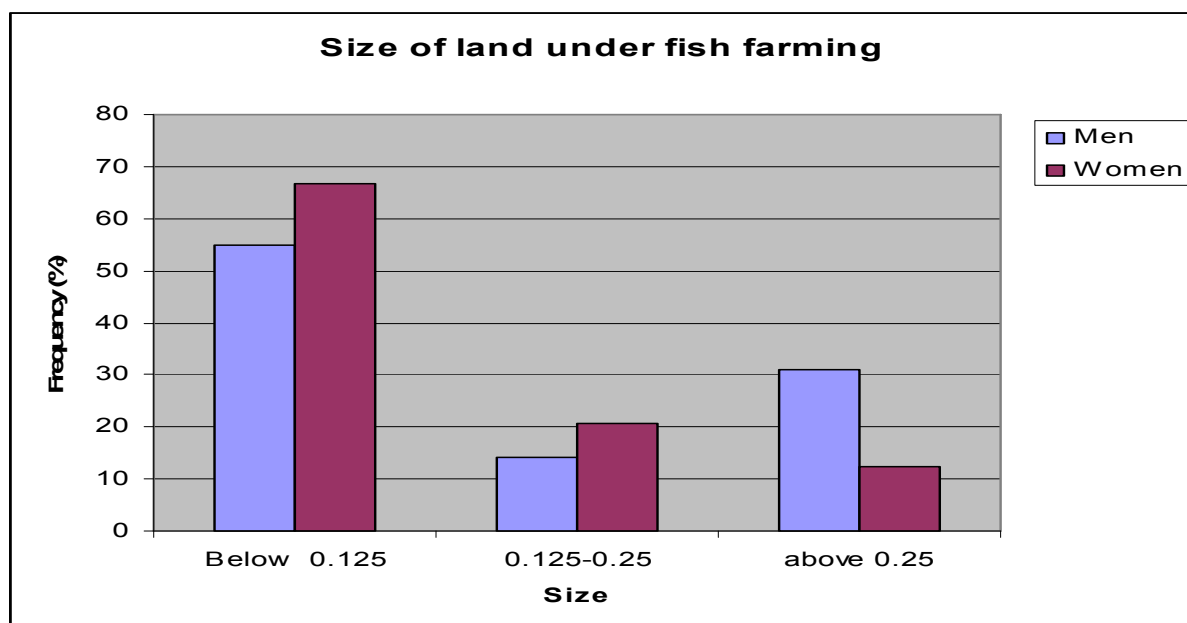


Figure 2: Land utilized for Fish farming

3.2.4 Aim of engaging in fish farming

The results showed that 78.6% and 83.3% of male farmers and female farmers respectively engaged in fish farming to boost their income while 19% and 14.9% of the male farmers and female farmers engaged in fish farming for subsistence. However, at 0.05 level of significance, this relationship between the aim of fish farming and gender was found to be insignificant ($\chi^2=0.332$, $p=0.565$).

3.2.5 Availability of fish farming inputs

According to Table 2, 7.1% and 8.3% of male farmers and female farmers respectively lacked enough labour, 23.8% and 0% of male and female farmers required farm implements, 33.3% and 58.3% of the male and female farmers respectively required more capital and 35.7% and 33.3% of the male and female farmers required feeds. Further, the study established the farm input requirements and gender were significantly related at 0.05 level of significance ($\chi^2=14.506$, $p=0.002$).

Table 2: Fish Farming Inputs Requirements by gender

| | | | Which is the farm input that you GREATLY require | | | | Total | Chi-Square (χ^2) | P-Value |
|---------------|---------------|-----------------|--|-----------------|---------|--------|--------|-------------------------|---------|
| | | | Labour | Farm Implements | Capital | Feeds | | | |
| Gender | Male | <i>f</i> | 3 | 10 | 14 | 15 | 42 | 14.506 | 0.002 |
| | | % within gender | 7.1% | 23.8% | 33.3% | 35.7% | 100.0% | | |
| | Female | <i>f</i> | 4 | 0 | 28 | 16 | 48 | | |
| | | % within gender | 8.3% | .0% | 58.3% | 33.3% | 100.0% | | |
| Total | Σf | 7 | 10 | 42 | 31 | 90 | | | |
| | % | 7.8% | 11.1% | 46.7% | 34.4% | 100.0% | | | |

3.2.6 Source of labour in fish farming

The results showed that 88.1% and 87.5% of the males and females farmers respectively utilized domestic labour while 11.9% and 12.5% of males and females respectively utilized hired labour. However, the relationship between the source of labour and gender was found to be insignificant at 0.05 level of significance ($\chi^2=0.007$, $p=0.931$).

3.2.7 Availability of fish market and control of income

According to the study results 2.4% of the male farmers and 10.4% of the female farmers said that the market for fish was readily available, 71.4% and 66.7% of the males and female farmers respectively said that the fish market was available, while 26.2% and 22.9% of the males and female farmers respectively said that fish market was not available. Overall, 6.7% of the farmers said that the fish market was readily available, 68.9% said that the fish market was available while 24.4% said that the market was not available. The income from sale of fish during harvest was controlled by men in the men headed households, with women in the female headed household controlling their incomes. However, some women, especially those who were widowed and still living with their in-laws reported interference from their in-laws on the sharing of income.

4.0 Discussion

In Kwanza Division, fish farming was taken as a supplementary activity and hence given less priority than crop farming. Over the last three years (2010, 2011 and 2012) support from the government under the Economic Stimulus Programme (ESP) greatly increased fish farming activities in the area by over 75%. Some Non-Governmental Organisations (NGOs) and the Lake Victoria Basin Development Authority (LVBDA) were also mentioned to support fish farming, though their input was minimal.

Having formal education is a key pillar in the adoption of any technology. In Kwanza Division women were found to be relatively educated but not as much as compared to their male counterparts. This has been contributed by the fact that education of boy-child is prioritized to that of girl-child in most of the African societies. Girl and women are commonly associated with household chores and marriage duties including taking care of the family unlike men who are associated to providing for the families. According to Katherine, et al (2010) priority is placed on boy's education rather than girls especially in Africa and girls are thus likely to be the first ones to be pulled out of school when resources are not enough. Considering the roles and duties associated with each gender, women duties are viewed as not to require formal education but for men, they should acquire formal education so as to be able to secure gainful employment. This notion has limited the education of girls in the Division contributing to a large proportion of women having no formal education. Most of the Men on the other hand tend stop learning at primary level. According to The millennium Development Goals Report (2013) girls are less likely to start school than boys, but once enrolled, they are more likely to reach the last grade of primary school, except in Western Asia and Eastern Asia. Boys tend to repeat grades more often than girls, which can increase the risk of leaving school early. The literacy rate among young women is growing at a faster pace than that of young men: In Northern Africa, the female literacy rate rose 28 percentage points from 1990 to 2011, compared to 16 percentage points for young men over the same period. In Southern Asia, the literacy rate for young women and young men grew by 26 and 17 percentage points, respectively, over the same period. All regions are moving closer to the point at which male and female literacy rates are equal. Since 1990, the literacy rate among adult women has risen by 10 percentage points versus 7 percentage points for men. Even so, women still represent two thirds of illiterate adults worldwide. Men drop out of school to engage in menial jobs for money and some end up marrying at this early stage therefore completely blocking their chances of ever going on with their education since they have acquired new responsibilities of providing for

the new family. Girls on the other hand if lucky to graduate from primary school, since they don't have many opportunities for menial jobs opt to proceed with education instead of just staying at home and assist in household chores. Affirmative action on girl-child education has also contributed to attainment of higher education by girls and women. This explains why more women had both secondary and tertiary education as compared to male farmers. According to the Millennium Development Goals Report (2013) disparities are much greater at the tertiary level compared to lower levels of education. More women than men are enrolled in tertiary education in Latin America and the Caribbean, the Caucasus and Central Asia, Eastern Asia, Northern Africa and South-Eastern Asia. In contrast, young women are less likely than young men to pursue tertiary education in Western Asia and Southern Asia, with Gender Parity Indexes (GPIs) of 0.89 and 0.77, respectively. The situation is most extreme in sub-Saharan Africa, where the gender gap has actually widened, with the GPI falling from 0.66 to 0.61 between 2000 and 2011. In nearly two thirds of countries (62 percent), enrolment of women at the highest levels of education exceeds that of men.

Extension services were well given to both male farmers and female farmers although there is need to increase coverage in order to reach the percentage of farmers who reported to have never been visited. It was reported that trainings and seminars in fish farming were irregular and the venues in which the seminars were organized were very far from home. This mostly affected women who could not attend the seminars due to other domestic duties. This is due to roles women play in their families especially in the female headed households where they served the role of the father and the mother. This increased their responsibilities leaving them with little or no time at all to attend trainings especially those which were conducted away from their homesteads. Culturally women are supposed to stay at home to carry out household chores whereas men are the ones to participate in outdoor activities including meetings and other gatherings. This was also an impediment to women participation in fish farming since they are hindered from obtain information and technologies that are usually passed on during such gatherings. Lack of female friendly means of transport was also mentioned as a factor for lack of participation. Where training was done far away from home men were comfortable using bicycles to get to the venue but women are not comfortable to use then on cultural grounds.

According to the results, men were more likely to fund their fish farming while females were more likely to be funded by external funders such as the government. Women normally claim minimal ownership of land and other assets which they can use as collateral to secure loans from financial institutions. In cases where women own land, it is either through inheritance from their deceased husbands or from their parents. This is similar situation in Africa as was also reported by Aggarwal (2003), women's access to land is gained either through the state or family, while in Asia women access land through the market., The situation is worse for women when it comes to money-related decisions, which are disproportionately concentrated in the hands of men. In the majority of countries no more than 50 per cent of women report that they are given the opportunity to participate in the decision on large household purchases. These disparities are the direct result of differences between women and men in terms of their control over resources, including income and asset ownership. These, in turn, are determined by institutional factors such as laws and norms related to inheritance and property ownership, which, in many countries, tend to discriminate against women (Millennium Development Goals Report, 2013). In such situations women don't possess ownership document and in most cases the land is considered as family land and therefore they can't access loan facilities using such land as security. Men on the other hand have both access and control over land. They either acquire land through buying or inheritance from their parents but even in such cases they are allowed to have full control of the land. Women therefore are limited in their fish farming activities due to lack of sufficient funds having been left with the option of either depending on donations, welfare groups (*chamas*) or depending on their meager daily earnings from other farming activities. Women also owned fish ponds as groups in order to pool resources together.

Furthermore, where women took part fully in fish farming, it was only restricted to women-headed household. It was only in these households that women assumed ownership of land due to patriarchal system in the country. In male-headed households Women and children were involved in activities, such as feeding and application of fertilizers. Men on the other hand did harvesting, slashing and marketing of fish. However, when fish farming involved large investments hired labour was employed although this was minimal. Fish farming in Kwanza division is still being done as a secondary activity and in small scale and therefore family labour is sufficient for many farmers. All the farmers reported that they visited their fish ponds for feeding twice per day i.e. early in the morning (between 8am and 10am) and late in the day (between 4pm and 6pm).

In cases where fish farming was a family enterprise, men had the sole responsibility of marketing, and deciding how the proceeds were shared, while in joint fish farming; market related decisions were made by the group. Women only controlled marketing in the case where they were heads of the families. Most of the group ventures constituted of only women but in situations where the groups contained both men and women, decisions were done jointly by both genders. Gender ideology was found to have led to unequal distribution of benefits between sexes in Kwanza Division. Men looked at benefits from the financial aspects and women respondents viewed

benefits from social aspects, such as nutritional improvements and social interaction especially where fish farming was a group activity. Most of the farmers were engaged in fish farming to raise income but the income has remained generally low. Non cash benefits were experienced such as marshy land utilization, knowledge and experience acquisition and increased social interaction.

5.0 Conclusion

From the study it is clear that fish farming productivity is being hindered by gender inequality since women who have great potential are not fully involved. This is due to lack of enough resources such as land, capital and income. This is an impediment to attainment of food security and gender equity. However, the study has highlighted an emerging trend of equal access to extension services between men and women indicating improved policy. There was a larger proportion of households that were visited by extension officers which is an indication of improved services. The predominance of informal credit facilities among women also requires intervention in order to strengthen such welfare associations and also to remove obstacles that hinder women from accessing credit from formal organizations. There is also need to improve policy formulation in order to enhance gender mainstreaming in various government interventions.

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