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FISH CULTURE PRACTICES AND CHALLENGES AMONG WOMEN IN TELLA LOCAL GOVERNMENT AREA, TARABA STATE, NIGERIA.

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ABSTRACT

This study was on fish culture practices and challenges among women in Tella, Gassol Local Government Area of Taraba State Nigeria. Purposive random sampling technique was used to obtain information from one hundred respondents through the use of questionnaire and scheduled interview. Data were analyzed through descriptive statistics (frequency counts and percentages) while inferential statistics (Pearson Product Moment Correlation (PPMC) was used to test level of significant relationship among the variables ($p < 0.005$). The results of fish culture practices showed that fish seeds were readily available (80.0%), Clarias species was the major fish cultured (41.0%), use of local feed (46.0%), run-off as major sources of water for fish culture (45.0%) and earthen pond as the major rearing facility (61.0%). Challenges experienced; disease outbreak 42%, problem of theft 28% and flood 27%. There was no significant relationship between fish culture practices and challenges faced by the women. The study concluded that challenges faced by the respondents are not related to fish cultural practices. It is recommended that highly experienced Subject Matter Specialist (SMS) should be engaged by the Extension agents to train and expose women in fish farming to various causes of fish farming challenges and remedies.

Key words: Culture, challenges, fish, species, women

INTRODUCTION

It is generally recognized that fish is an important component of a healthy balanced diet as well as one of the most commonly consumed sources of animal protein (Brummett 2003; Vanhonacker et al. 2011). As global population and per capita fish consumption rises, the supply of capture fishes to satisfy the demand for fish consumption is seemingly unsustainable. Hence, aquaculture development provides an essential supplement to capture fisheries (Louis & Oliveira 2020). Aquaculture is a diversified activity which includes the cultivation of aquatic and marine species in controlled environments including fish, crustaceans, mollusks and water plants (Belton, Bush, and Little 2018; Aquaculture provides a source of income and livelihood for millions of people globally. Hence, productivity as well efficiency of culture fisheries is much higher than capture fisheries whereas production of open water bodies showed decreasing trend and availability of some species have greatly reduced but still there is a rampant scope to increase the fish production level by using modern aquaculture technology (Sakib *et al*, 2014). In 2016, the aquaculture sector provided full time, part-time and occasional employment for 19.3 million people around the world. It is indicated that a total of 59.6 million people were involved in both capture fisheries and aquaculture. However, from this total, almost 14% of these were women (FAO 2018), with shares of 12% in capture fishes and 19% in aqua-culture. All of those involved in primary production, the majority are in developing nations, and the vast majorities are aquaculture workers and small scale, artisanal fishers (FAO 2020). Women as knowledge bearers of traditional fish processing and preservation technique play an important role in the transfer of knowledge from one generation to another in capture

fisheries. However with increase in demand for fish as a result of increase population in the country coupled with decline in catches from the wild, aquaculture development has increased the demand for

female labour and their participation is vital in fish rearing. The study therefore aimed at investigating fish culture practices and challenges among women in Tella Local Government of Nigeria. Specifically, the study: (i) Examined the various culture practices of the respondents (ii) Identified challenges of the respondents

MATERIALS AND METHODS

Study area

The study was carried out in Tella, Gassol Local Government Area (LGA), Taraba State, Nigeria. It is located at latitude $8^{\circ} 37'N$ and longitude $10^{\circ}, 45'E$, has an area of $5,548\text{km}^2$ and a population of 244,749 at the 2006 census (World atlas, 2015). The northern border of Gassol is River Taraba that flows through the area to form its confluence with the River Benue The major occupation of the people in Tella. Gassol Local Government Area, Taraba State are farming and fishing.

SAMPLING PROCEDURE AND SAMPLE SIZE

Purposive sampling method was used to select only women involved in fish culture in the study area. One hundred respondents were selected randomly as the total sample size.

DATA COLLECTION AND METHOD OF ANALYSIS

Questionnaire were used for data collection and supplemented with scheduled interview where respondents do not have formal education. Data collected were analyzed using descriptive statistics (frequency and percentages). Inferential statistics (Pearson Product Moment Correlation (PPMC) was used to test level of significant relationship among the variables ($p < 0.005$).

RESULTS AND DISCUSSION

Fish culture practices: Fish seed procurement

Table 1 indicated that fish seed were of good quality (95%), readily available (60%), available also in the locality (64%) and 50% respondents reported that fish seeds were cheap and vice versa. The implication of expensive fish seed is that some of the fish farmers may resort to stocking with seeds from the wild. Most of the farmers which depend on the wild indicated that they would have preferred stocking seed from specialized private or public hatcheries because of their high quality if the prices can be reduced and if some hatcheries can be sited very close to them. Mafimisebi (2003) reported that cost of feeds and seed stocks accounted for more than 50.0% of total production cost in aquaculture.

Table 1 Fish culture practices: Fish seed procurement

items	No	Yes
1. Are the fish seed readily available?	20(20.0%)	80(80.0%)
2. Are the fish seed available in your area?	36(36.0%)	64(64.0%)
3. If yes are they at cheaper rates?	50(50.0%)	50(50.0%)
4. Is there scarcity of fish seed?	66(66.0%)	34(34.0%)
5. Are the fish seed of good quality?	5(5.0%)	95(95.0%)

Source: Field survey, 2020.

Species of Fish cultured

Species of fish cultured include Clarias species (41.0%), common carp (26.0%), Tilapia species (12.0%), while Heterobrachius (10.0%) and Heteroclasias species (4.0%) (Table 2) however, Clarias species were mostly cultured in the study area. The reason for preference can be attributed to favourable culture characteristics of Clarias which include ability to adapt to the environment, acceptance of supplementary feeding, high yield, acceptance to the consumers and high market value. Catfish culture has been reported as one of the species that contributed to aquaculture development globally (Naylor *et al.* 2017)

**Table 2 Species of fish cultured**

Species of fish cultured	Frequency	Percentage
Tilapia species	19	19.0
Clarias species	41	41.0
Common carp	26	26.0
Heterobranchius species	10	10.0
Heteroclasias species	4	4.0
Total	100	100.0

Source: field survey, 2020.

Type of feed used to feed Fish

Table 3 indicated that 46.0% of the fish farmers used local feed; 31.0% used imported floating feed, while 23.0% used other agricultural waste. Local feed though readily available are not standardized. The usage and other agricultural waste are widely-spread in the area possibly to cut cost of fish production and at the same time make more profit. These feeds normally come from two sources which include plants and animal sources. Also kitchen remnants like bread, boiled rice are commonly used in the culture of fish. Different feeds are used in farms to feed fish depending on farm production systems (Yao1 *et al*, 2017). Maximum productivity most of the times to a great extent are function of the quality of feed given to fish.

Table 3 Types of feed used to feed fish

Feed for Fish	Frequency	Percentage
Local feed	46	46.0
Imported floating feed	31	31.0
Other agricultural waste	23	23.0
Total	100	100.0

Source: field survey 2020.

Sources of water for fish culture

This result (Table 4) showed that 45.0% respondents used rainwater/run-off, 30.0% used borehole water while spring water (9.0%) was not common. The implication is that rain water is the cheapest source of water which can be stored in reservoir especially for those that used cultured facilities such as tanks and fiber. However rain in form of runoff can also be captured in earthen pond for fish culture. In a similar study, Offen *et al*, (2020) reported rain water as a major source for fish culture.

Table 4 Source of water for fish culture

Source of water for fish culture	Frequency	Percentage
Rainwater/runoff	45	45.0
Spring water	9	9.0
Borehole water	30	30.0
Well water	16	16.0
Total	100	100.0

Source: field survey 2020.

Types of rearing facilities

Majority of the respondents (61.10%) cultured fish in earthen ponds (Table 5) of the respondents reared their fish in earthen ponds while 12.0% used concrete tanks. Earthen ponds are the cheapest rearing facilities for fish and easy to maintain compared to all others. Ragasa *et al*, (2020) reported that earthen ponds are mainly used for fish culture.



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Table 5 Types of fish rearing facilities

Types of fish rearing facilities	Frequency	Percentage
Concrete tank	12	12
Earthen pond	61	61
Fiber tank	6	6.0
Lined earthen pond	4	4.0
Others	17	17

Source: field survey 2020.

Challenges women faced in fish culture

Results in Table 6 showed challenges women faced in fish farming to include flood (27%), theft (28%) and disease outbreak (42%). High incidence of disease outbreak sometimes can majorly be attributed to water source or use of contaminated feed. Flood which is a natural disaster though not a serious challenge shows that rearing facilities especially ponds are well constructed with good drainage system. Low level of theft as a challenge may probably be associated to good security put in place. In some other places, it has been a major challenge in fish farming business.

Table 6 Challenges women faced in fish farming

Challenges women faced in fish farming	No	Yes
Do you experience flood	73(73.0%)	27(27.0%)
Do you have problem of theft	72(72.0%)	28(28.0%)
Do you experience diseased outbreak	58(58.0%)	42(42.0%)

Source: field survey, 2020.

Hypothesis 1: There is no significant relationship between fish culture practice and challenges faced in fish farming by the respondents

Table 7 showed that there is no significant relationship between fish culture practices and challenges faced in fish farming by the respondents ($r = -.023$, $n=100$, $p(.820)>.05$). Hence challenges faced in fish farming did not influence fish culture practice in the study.

Pearson Product Moment Correlation (PPMC) showing the relationship between fish culture practice and challenges faced by respondents

Variables	Mean	Std. Dev.	n	R	p-value	Remarks
Fish culture practice	23.4200	2.7235	100	-.023	.820	Not Sig.
Challenges faced in fish farming	26.5700	4.1833				

Source: Field survey 2020

CONCLUSION AND RECOMMENDATIONS

The study concluded that challenges faced by the respondents are not related to fish cultural practices but could be linked to other factors such as technicality. It is recommended that highly experienced Subject Matter Specialist (SMS) should be engaged by the Extension agents to train and expose women in fish farming to various causes of fish farming challenges and remedies. Water for impounding ponds should be tested and certified good before fish are stocked.

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