

PRESENT STATUS OF FISH POND MANAGEMENT IN ARGUNGU METROPOLIS, KEBBI STATE

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ABSTRACT

The survey was carried out to assess the level of fish farming in Argungu metropolis. A total of 17 questionnaires equal to the number of farms in the study area were administered which include; Galadima Ward (4), Dikko ward (2), Kokani north (3), Kokani south (3), Gwazange ward (5). The result of the investigation revealed that out of 17 farms operating in the study area, only two were operated by the Government, while the remaining 15 were owned and operated by individuals which were found to be predominantly males (100%). Majority of the rearing facilities used by respondents were made of concrete tanks (70.59%) which were mostly purchased (52.94%). Only three (3) species of fish were cultured in the study area with *Clarias* being the highest (76.47) and *Tilapia* the least (5.88%). The study found the problems faced by the farmers to include inadequate technical knowledge (41.17), poaching (23.52), inadequate capital (17.64) and high price of feed (17.64).. It is recommended that unmarried men should venture into fish farming as a source of income and civil servants in the study area should invest in fish farming.

Key words: Fish farming, Pond management, Culture species.

INTRODUCTION

A fish pond is defined as a structure used for the farming of fish. In addition, it is filled with water, is fairly shallow and is usually non-flowing. A fish pond may have any shape, as shown by barrage ponds whose shape depends exclusively on the topography of the valleys in which they are built (Glover, 1986). Pond fish culture refers to the farming and husbandry of fish under controlled or semi controlled condition (Akankali *et al* 2011).). Fish pond system is the commonest fish farming method. It remains important source of food nutrition, income and livelihood for hundreds of millions of people around the world (FAO, 2016). Specific kind of ponds is required for specific life stage development of fishes - such as nursery, rearing, stocking, treatment and brood stock pond. The current supply of culture fish is low with respect to the high demand of fish in Argungu metropolis. These might be due to improper management of the pond culture products or lack of information and orientation on the management of ponds in the study area. The purpose of this research was to identify methods adopted in the pond management and the constraints associated with management of fish ponds in the study area.

MATERIALS AND METHODS

Sampling Procedure and Sampling Size

The respondents were purposefully drowned from each ward based on the number of ponds in the wards as follows; Galadima Ward (4), Dikko ward (2), Kokani north (3), Kokani south (3), Gwazange ward (5).

Research Instruments and Data Collection

Primary and secondary data were used for the study. The primary data for the study was gathered through field survey with the use of structured questionnaires designed in line with the objectives of the study.

Data Analysis

Data collected for the study was operationalized and analyzed through the use of Statistical Package for Social Sciences (SPSS). Descriptive statistical tools were used to analyze the data.

RESULTS AND DISCUSSION

The socio-economic characteristics of the fish farmers examined in the study area are presented in Table 1. Results indicated that all (100%) of the respondents are male. This observation is in tandem with the report of Ideba, *et al.* (2013) who reported that fish farming is dominated by the male population in Cross Rivers State, Nigeria. The results indicated that maximum age of the respondents

falls between age brackets of 31-40 years (41.17%). This implies that higher proportions of the respondents were within their productive age and with the possibility of possessing the necessary vigour to carry out fish farming activities. This was contrary to Igoche, *et al.* (2019) who reported 41 – 50 years maximum age of fish farmers in Plateau State, North Central Nigeria. The unmarried men are small in number (17.64%) and the larger number (70.59%) of the respondents are married men. This is similar to Ezeano (2014) who reported that married people participated more in fish farming in Rivers State, Nigeria. For the tribe of the respondents, majority (88.25%) are Hausa/Fulani. With respect to their occupation, the minimum numbers are into ranching (17.64%) while the majority are civil servants (58.82 %) in the study area.

Table 1: Socio-economic Characteristics of the Respondents

Characteristic	Frequency	Percentage
Gender		
Male	17	100
Female	0	0
Total	17	100
Age range[years]		
10-20	1	5.89
21-30	1	5.89
31-40	7	41.17
41-50	6	35.29
50 and above	2	11.76
Total	17	100
Marital Status		
Married	12	70.59
Single	3	17.64
Divorced	2	11.77
Widower	0	0
Total	17	100
Tribe		
Hausa/Fulani	15	88.25
Yoruba	2	11.22
Nufe	0	0
Traditional religion	0	0
Total	17	100
Level of education		
Illiterate cannot read and write	1	5.89
Primary	7	41.17
Secondary	8	47.05
Tertiary	1	5.89
Other specify	17	100
Total		
Occupation	10	58.82
Civil servant	4	23.52
Business	0	0
Crop husbandry	3	17.64
Ranching [Animal rearing]		0
Other specify		
Total	17	100

The results indicated that the majority of respondents prepared their ponds through dewatering, liming and also fertilize the ponds in order to improve and control the water quality parameters before stocking. It was also found that the species of fish stocked in the study are mostly *Clarias gareipinus* (76.47%) and some tilapia species Table 2.. The culturing of African catfish as the most cultured fish

can be attributed to the ease of culture, marketability and acceptability of the species in the region and Nigeria in general (Akinwole, *et al.* (2014).

Table 2: Fish species cultured by the respondent Table 3: Type of Pond

Fish species	Frequency	Percentage
Clarias species	13	76.47
Heterobanchus	3	17.64
Tilapia species	1	5.88
Total	17	100

Type of pond	Frequency	Percentage
Earthen pond	5	29.41
Concrete tank	12	70.59
Barrage pond	0	0
Contour pond	0	0
Cage culture	0	0
Total	17	100

Majority of the respondents (58.82%) engaged in fish farming for 1-3years and only 5.89 % of the respondents have been into fish farming for a longer period of 5-7 years. This revealed that fish farming in the study area has not been practiced over a long period of time does not last for long duration by most of the participants unlike what obtains in the Southern part of the country. For instance, Akinwole, *et al.* (2014) in a similar study reported that 50% of the respondents have their farms in operation between 5 and 10years, while 32% have been operating for 10 years and above, only 18% of them have been in operation for less than 5 years in Ibarapa Area of Oyo State, Nigeria. Information on the individual farms visited Results indicated that 70.59 % culture facilities were made of concrete tanks which are mainly used for table size fish production while earthen ponds constituted 29.41% (Table 3). This agreed with Egwenomhe, *et al.* (2020) who opined that majority of the respondents used concrete tanks (48%) to culture their fishes in Edo South Nigeria. This was however, contrary to the results obtained by Akinwole, *et al.* (2014) who reported that majority of fish farmers preferred earthen ponds for fish culture in their study Ibarapa Area of Oyo State. This contradiction was expected due to the different soil types found in the two regions, Kebbi and Oyo States According to the result, 35.29% of the respondents obtained their fingerling from recognized hatcheries, 17.62% percentage got their supply from the wild source. On the fish feed usage the result indicated the majority of farmers (58.82 %) preferred to use commercial pellet while 29.41% use crumbles. Based on harvesting frequency, results indicated up to 88.23% of farmers harvest twice a year while less than 11.77% harvest annually.

A number of constraints and risks were reported by the farmers but 90% of the farmers reported that the main problem facing them was water scarcity. Other problems included inadequate technical knowledge, theft, poisoning, poor quality of fish seed, high price of feed, inadequate capital, etc. On the sources of fingerlings, it is evident that the artificially hatched fingerlings are available in enough quantities at any time requested. In this case, the envisaged fear is that the widespread hatcheries could serve as source of sub-standard fingerlings. Result showed that 55.3% of the respondents use industrial feed. Many of the respondents used industries feed because of its availability even though it costs more than the local feed. Perhaps, to meet the fish requirement about (70%) of the respondents feed their fish to satiation while (30 %) feed according to the body weight of the fish.

Results showed that 92% of the respondents carry out harvesting exercise twice within the year while (7.5%) carry out harvesting once a year

CONCLUSION

The result of the investigation revealed that seventeen farms were currently operating in the study area out of which seven of the farms were operated by the Government while the remaining 10 were owned and operated by individuals. *Clarias* spp. was the major fish cultured in the study area using concrete tanks. Constraints such as include inadequate technical knowledge (41.17), poaching (23.52), inadequate capital (17.64) and high price of feed (17.64) have been observed to hinder profitable fish

production in the study area. It is recommended that unmarried men should venture into fish farming as a source of income and civil servants in the study area should invest in fish farming.

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