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EVALUATION OF SOME FACTORS OF FISH FARMING AND MANAGEMENT SYSTEMS IN KUJE AREA COUNCIL OF FEDERAL CAPITAL TERRITORY, ABUJA, NIGERIA

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ABSTRACT

This study examined some factors of fish farming and management systems in Kuje Area Council of the Federal Capital Territory (F.C.T), Abuja, Nigeria. Kuje Area Council is among the five area councils created in November, 1987. The Area Council is bounded on the west by Gwagwalada Area Council, to the north and east by Municipal Council and to the South by Abaji Area council. The area covers a land area of 1,800 square kilometres, (22.5% of the Federal Capital Territory). The current population of the area council is 97367 peoples (N.P.C, 2006 population census estimate).

Thirty (30) structured questionnaires were served to collect data from the respondents for this research, but only twenty were returned, i.e. recovered. Statistical analysis was accomplished by means of descriptive statistics in form of means and percentages. The study revealed that most of the fish farmers were males, while the women folk were mostly involved in other businesses. It also showed that majority of the practicing fish farmers have sound educational background, as most of them have attended tertiary institutions and practice fish farming at large scale using the intensive system, personal funds, concrete ponds, personal lands, Polyculture and monoculture. Most of the fish farmers were within the age range of 21-40years and procure their seeds (fingerlings) from other established private farms.

Key words: Factors, fish, farming, management systems, kuje area

INTRODUCTION

Aquaculture or fish farming has been defined as the farming of aquatic organisms, including fish, mollusc, crustaceans and aquatic plants. Farming in this case implies some form of human intervention in the rearing process to enhance production such as regular and adequate stocking, feeding, and protection from predators. (UNO/FAO, 1990). Aquaculture has been practiced for more than 5000years in several Asian countries. Its development in Africa started in Egypt in 2,500 BC (Balarin, 1988). Aquaculture can provide an alternative source of sea food. (O Sullivan, D; savage, J., 2003). Fish is a major source of protein and livelihood for millions of people. It is a major source of foreign exchange to many countries (Al-jufaili and Opara, 2006). The protein contribution of fish is estimated at 4.8% of total contribution of protein from all foods consumed in Nigeria (Olayide, *et al*, 1981). The growing need for fish supply and increased awareness of aquaculture in Nigeria has led to remarkable investment in aquaculture in recent years. However, the growing population in the country poses a challenge, which requires more investment to fill the gap of 1.6 million metric tons (Fish network, 2009). Fish farming world over, has recorded extreme rapid growth during the last decades. The reason for this is more consistency in supply of high quality of cultured fish and utilization of resources which

cannot be used for other types of food production. Intensification of aquaculture to complement the dwindling capture fisheries resources has necessitated the expansion of the feed industry. Feed cost accounts for 40-70% of the cost of intensive aquaculture operation (Pathmasothy, 1983). It is evident that the total fish supply in Nigeria is very much less than the demand. For example, the *per capita* fish consumption of Nigeria stands at 7.5kg as against 13kg recommended by the Food and Agricultural Organization (F.A.O). Nigeria has a population of about 150 million. By the end of the last century (2000AD), the fish demand in the country stood at 2.70 metric tons. The production of fish from capture fisheries is militated against by various problems like cost and availability of inputs, coupled with decreased catch, in spite of increased fishing efforts. Aquaculture as a manageable fish production system has been identified as a more reliable alternative, which can contribute towards meeting the increasing fish demand of the teeming Nigerian population. Therefore, the examination of the factors that affect fish farming and management systems attempts to portray the status of these factors in relation to the contemporary standards is very justified.

METHODOLOGY

Description of the study area

The study area, Kuje Area Council which was created in November 1987, is among the five area councils in the Federal Capital Territory (FCT) of Nigeria. The Area Council is bounded on the west by Gwagwalada Area Council, on the north and east by Abuja municipal Area Council and on the south by Abaji Area Council. The area council covers a land area of 1,800 square kilometers (22.5 % of FCT) and is made up of the following places; Chikuku, Kwaku, Gaube, Chibiri, Rubochi, Kujekwa, Gudun Karya, and Yenche. The major ethnic groups are Gbagyi, Gade, Gbari, Bassa, Igbira-koto and Hausa/Fulani. The major sources of livelihood are farming, trading and employment in the civil service. Crops produced in the area include yams, potatoes, maize, millet and groundnuts. The major livestock are goats, fish and poultry. The current population of the people in Kuje Area Council is 97,367 (2006, Nigerian population census estimate).

Data Collection

This study was conducted in August, 2010. The data collection instrument employed in the study was a structured questionnaire. A total of thirty (30) were administered, out of which twenty (20) were returned i.e. recovered and analyzed. The reason for having such a few number of respondents is because fish farms are very few in Kuje Area Council. The questionnaire was centered on age, education status, sources of land and fund, fingerlings, farm size, management and culture systems.

Analytical Techniques Used

Analytical tools used were descriptive statistics in form of means and percentages.

RESULTS AND DISCUSSION

Some personal characteristics, fish production and management variables of fish farmers in Kuje Area Council are presented in Table 1

Table 1: Some Personal characteristics, Fish Production and Management Variables of f respondents

Variable	Type	Frequency	Percentage (%)
Age range	0-15	0	0
	16-20	0	0
	21-30	7	35
	31-40	9	45
	40-50	3	15
	51 and above	1	5
Educational status	Primary education	0	0
	Secondary education	7	35
	Tertiary education	13	65
Source of land	Family	5	25
	Community	4	20
	Rented	0	0
	Personal	11	55
	Government	0	0
Source of fund	Personal savings	13	65
	Bank (loans)	3	15
	Relations (family members)	4	20
Source of fingerlings	Private farms	15	75
	Government farms	5	25
	Wild	0	0
Scale of farming	Large	11	55
	Small	9	45
Management system	Extensive	2	10
	Semi intensive	7	35
	Intensive	11	55
Culture system	Polyculture	12	60
	Monoculture	8	40
Type of pond	Earthen pond	3	15
	Concrete pond	10	50
	Earthen and concrete pond	7	35

Source (Field Survey, 2010)

The evaluation of some factors affecting fish farming and management systems in Kuje Area Council with a population of 97367 people revealed that all the respondents were above the age of twenty one years. This could probably mean that individuals under the age of twenty one years do not own farms. Most individuals below this age group were considered to be pursuing education either at the primary or secondary level and therefore lack necessary knowledge, skills and enough time for practical fish farming. However, individuals within the age ranges of 21 – 30 and 31- 40 years make up 35% and 45% of the respondents as shown in the above table and were discovered to be the most age groups involved in fish farming. Relatively fewer individuals were involved within the age range of 41-50 years (15%) and 51 years and above (5%). It is therefore recommended that in designing interventions targeted at increasing fish output through aquaculture in the study area individuals within the age range of forty (40) and fifty (50) should be taken into consideration as their participation in Fish farming was rather low.

The data from the table above revealed that 35% of the fish farmers in Kuje Area Council did not go beyond secondary education, while 65% had tertiary education. The farmers can read and write and therefore can be direct beneficiaries of agricultural extension, a development considered an important prerequisite for mass and profitable fisheries enterprise. The place of education in any business cannot be overemphasized. Education is very fundamental in the management of the factors of production.

Land is a crucial factor of production. With the establishment of the Federal Capital Territory (FCT) in this part of Nigeria, (Kuje Area Council is a part of the FCT), the value of land has appreciated over a relatively short period of time. The area hitherto predominantly used by indigenous farmers for arable farming is now competitively taken over by public and private developers for public and private buildings. This study found out that fifty five percent (55%) of the fish farmers used their personal lands while 25% and 20% used family and community lands respectively. No farmer was found to use hired or government lands. This may likely be as result high rent rates and government development priorities in the Federal Capital Territory.

Capital is necessary in any business venture. The data in the table above reveal sixty five percent (65%) of the fish farmers in this area council used their personal money to run their farms, while twenty percent (20%) obtained loans from relations and fifteen percent (15%) sourced their funds from the banks. Government and commercial institutions should create an enabling environment by providing credit facilities at subsidized rates in order to achieve some of the millennium development goals like provision of employment and self reliance in food production.

The procurement of fingerlings is very crucial in fisheries production as this can make or mar the enterprise. Hence, fingerlings should be obtained from reliable sources. It is interesting and encouraging that eighty five percent (85%) of the fish farmers procure their fingerlings from private hatcheries as shown in the above table. This may probably increase the chances of obtaining viable seeds.

The size of farm being envisaged or operated by an individual farmer (s) is mainly a function of the factors of production, particularly capital. This study revealed that fifty five percent (55%) of the fish farmers were involved in large scale farming while forty five (45%) practiced small scale farming. Large scale farming requires large capital investment by the individual or group investor (s). In this regard, commercial institutions such as banks should extend their support services at low interest rates to the fish farmers.

This study revealed that fifty five percent (55%) of the fish farmers practice intensive pond management system, while thirty five (35%) and ten (10%) percents practice semi intensive and extensive respectively. The choice of management system may be considered as function of

availability of funds and the degree of interest and commitment of the individual farmers, in addition to an enabling environment such as availability of land, labour, market, etc. Related to management system is culture system. It was observed that sixty percent (60%) of the farmers practiced polyculture while forty percent (40%) were involved in monoculture. Polyculture is noted for its advantage of providing the market with different species of fishes to meet the needs of different buyers according to their tastes and financial capabilities. In addition to this, the system confers the advantage of maximum utilization of ponds by different species.

The study revealed that fifty percent (50%) of the fish farmers use concrete ponds, while thirty five percent (35%) operated on both concrete and earthen ponds, and fifteen percent use earthen ponds only. Concrete ponds are relatively characterized by high water retention and great pond walls security.

CONCLUSION AND RECOMMENDATION

The present status of fish farming in relation to the facilities used and the personnel involved in Kuje Area Council is a clear pointer that individuals of this population are gradually picking interest in this enterprise. In view of this, there is the need for the local authority of this area council, the Federal Capital Development Authority and the Federal Government to do everything possible to assist these farmers to expand their enterprise. The concern of government should be to improve and strengthen its support services. This will go a long way in attaining the millennium development goals. Aquaculture is an attractive investment area and a pivotal point for national development. It contributes to food production, rural development, nutrition, employment and environmental management.

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