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## Privatization of Government Fish Hatcheries: A Worthy Move towards Sufficiency

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**Abstract** This paper is an overview of the state of government-owned fish hatcheries in Nigeria. As interest in fish farming increases in Nigeria, the need for supply of quality seed from reputable hatcheries stares the sector in the face. Fish hatchery is the bedrock upon which true and sustainable fish farming can be built. Unfortunately, over 50 percent of the hatcheries, mostly owned by Federal or state governments, are either non-functional or functioning far below their optimum production capacities. The major problems highlighted by the hatchery operators centered on technical management, economic and social issues. Most of these problems can be solved through privatization. The need for privatization of these facilities is expedient for sustainability. Privatization of government fish hatcheries cannot be executed without some inherent problems. Nevertheless, if the non-functional government hatcheries are privatized and all the existing hatcheries are put into full production, the national demand for fingerlings, which is put at 4.3 billion annually, can be met easily.

**Keywords** return, productivity, zooplankton, ponds, wild, fingerlings

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### Introduction

Nigeria (Fig. 1) spends N100 billion on fish importation annually and the current fish demand consumption in Nigeria stands at over 2.66 million tonnes per annum, while the present importation rate is over 750,000 metric tonnes. With importation of more than 750,000 MT of fish, more than USD 600 million are spent in hard currency and thousands of jobs are exported. The continuous importation of fish portends a colossal loss of foreign exchange earnings to Nigeria.

The trend in fish demand in Nigeria is shown in Fig 2. This local demand has never been met. The demand–supply gap (fish deficit) is rising much faster than the growth in fish production. In order to bridge the demand–supply gap, an aquaculture transformation agenda plan to increase annual fish production from the current production of 0.78 million MT to 3.0 million tonnes, for self-sufficiency in fish production and supply, is in place. This is being worked out through fish farm development program. Catfish is the chosen cultured fish of choice and Nigeria is among the first three topmost producer in Africa [1-3].

A number of factors have been identified as hinderances to achieving this goal of self-sufficiency in fish production. Quality fish seed supply has been identified as one of these bottlenecks [2-3]. As the interest in fish farming increases, Nigerian farmers move away from the era of scouting for fish seed from the wild and the issue of supply of quality seed from reputable hatcheries stares the sector in the face. Fish hatchery is the bedrock upon which true and sustainable fish farming can be built.

This is because, as the adult and table fish sizes are sold out from ponds and reservoirs for food, young ones (fingerlings) must be procured to replenish the stock.

A diagnostic survey of the status of fish hatcheries and fish fingerling production in Nigeria [4], updated in 1998 showed that there were over 200 fish hatcheries in Nigeria with at least two hatcheries in each state of the federation. However, due to the increase in demand for fish seeds all over the country, there is a tremendous increase in the number of fish hatcheries over the years. Unfortunately, over 50 percent of these hatchery



facilities ended up being either non-functional or functioning far below their optimum production capacities. Over 85 percent of non-functional hatcheries belong to the government- either Federal, State institutions. The major problems highlighted by the hatchery operators centered on technical, management, economic and social issues. Most of these problems can be solved through privatization.

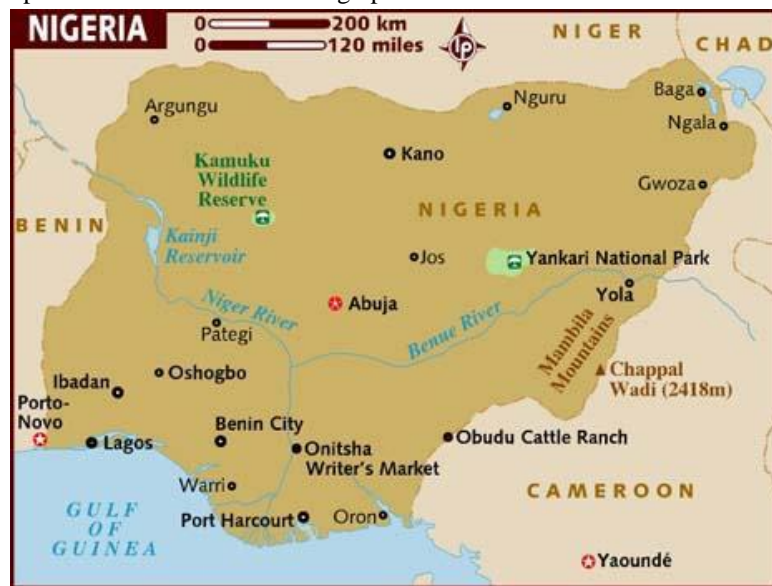


Figure 1: Map of Nigeria

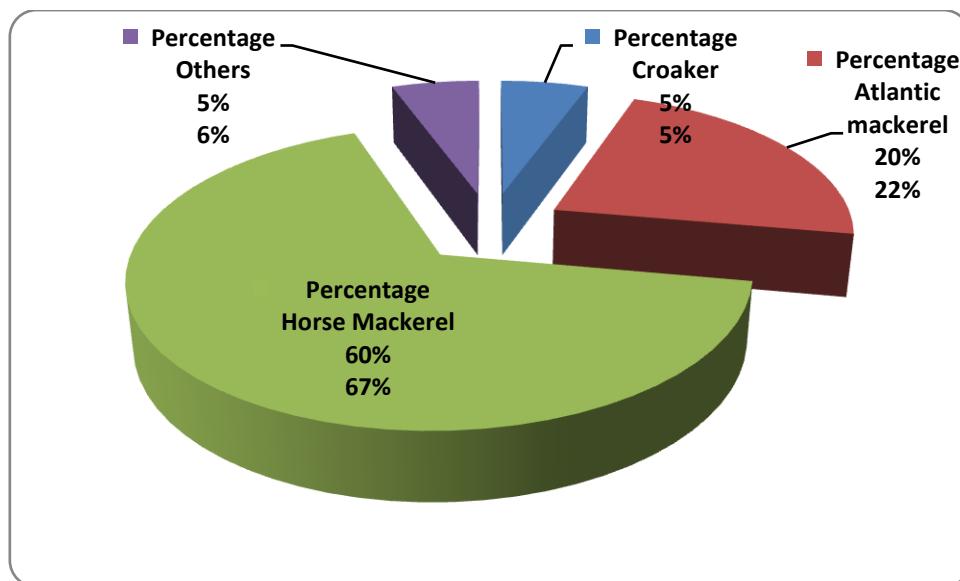


Figure 2: Nigerian demand pattern for fish products [5]

**Challenges of Hatchery Management**

The major problems associated with non-functional and low production hatcheries in Nigeria were identified to include:-

1. Poor management

This challenge comes in as a result of poor attitude and lack of commitment to government work.

A fish hatchery is like a breeding factory and the production process is time bound and consuming, labour intensive and most times requires 24 hour services because of the delicate nature of some of the activities (attending to baby fish). Hatcheries management, therefore, requires a lot of devotion and dedication to duty on the part of the hatchery staff. Some of the time-bound activities include,

- i. Injected ripe brooders must be stripped after a definite latency time, otherwise, fertilization and hatchability will be poor.
- ii. Zooplankton must be collected and fed to fry at definite rates, otherwise; the growth and survival of fry will be poor.
- iii. For the catfishes, fish must be sampled at definite time intervals otherwise; differential growth or cannibalism will set in.

This level of dedication and devotion to duty is not commonly instilled into the Nigeria civil service work force, but can easily be attained in the private sector with good incentive and supervision. The private hatchery owner is commercial and business-oriented and will do anything possible to maximize profit. He can hire or fire his staff with minimal sentiments, as against what is obtainable in the government sector.

## 2. Inadequate funding

Insufficient, irregular and untimely release of funds due to government bureaucracy and protocols was also identified as a major problem in government hatcheries. Hatchery operations are time specific and the activities come up in successive progressions i.e. brood stock management, induced spawning, egg incubation, hatching of eggs, nursery management of fry to fingerlings. Each stage of the breeding process has its own management protocols/procedures and any hindrance at any given stage will adversely affect the overall productivity of the breeding exercise. Irregular and untimely release of necessary tools/materials could be detrimental. The interest of every staff or stakeholders is vested in the project because their salaries, economic welfare and prosperity depend on the success and revenue from the project. The private sector is also more cautious in spending and accountability.

## 3. Inadequate infrastructure and poor maintenance of hatchery facilities

This problem emanates from low commitment to maintenance of government properties. Most of the government hatcheries were constructed by contract without due involvement and supervision by the end user, the hatchery operator. Technical errors and omissions in the infrastructure would be difficult to rectify. Hence, there are so many abandoned government hatcheries due to poor drainage, tank leakages, collapsed walls, etc. also, where the hatchery infrastructure is relatively good, funds will not be adequate to maintain/sustain the structures and facilities. This is because a government hatchery hardly generates enough revenue to sustain itself. Privatizing a government hatchery will make it more revenue yielding.

Recently, hatchery technology in Nigeria has advanced into the use of water re-circulatory systems, for both fingerling production and brood stock/table fish production. A typical re-circulating system has four major components, the bio-filter, the UV radiation, the holding unit and the water pump. Depending on the water exchange rate, a holding unit of 2m x 2m x 1m can conveniently nurse and produce up to 100,000 fingerlings per spawning exercise. The use of these high technology re-circulating systems for hatchery production of fingerlings is gradually gaining grounds in Nigeria but can only be effectively adapted by the private sector.

- a. High cost of feed inputs is a common problem in all aquaculture investments. Feed inputs constitute about 60% of the recurrent expenditure but if feeds of appropriate dietary quality are supplemented with non-conventional feed stuff such as maggot and trash fish, the feed conversion ratio will be low and the profit index improved. The farm will always make good profit on the investment.
- b. Differential growth and cannibalism in catfishes resulting in low percentage survival of fry and fingerlings. Differential growth and cannibalism in catfishes result from poor feeding and sampling regime. If the fish are fed adequately and sampled at regular intervals of not more than a fortnight, cannibalism will not develop. This problem is also a clear manifestation of poor management and low commitment to duty. This may not be tolerated in private fish hatcheries.
- c. Lack of regular training of hatchery staff lead to the optimal productivity being cannot be achieved. Some of the private or corporate farms spend a huge sum of money in training since they know the impact of such training on the farm.
- d. Change of government: more often, there is a great effect of change of government on hatchery project. The government of the day may have keen interest in fish business while the next in-coming government may have no interest in the existence of such project. Hence, the hatchery suffers.



### Privatization and Ownership Options

According to Kalu [6], the primary objective of privatization is to increase the efficiency of the economy through the transformation of state-owned enterprises to public owned companies run by the private sector. By this, the public resource is re-allocated to private ownership so that the use will be maximized. Privatization of government hatcheries, therefore, implies the transfer of the hatcheries from government control or ownership to private ownership. Such transfers could be directed to private individuals, corporate bodies, non- governmental organizations, co-operative societies or farm associations. There are two major options that can be adopted:

- i. Full or total transfer of ownership
- ii. Partial transfer of ownership

In total transfer, the hatcheries are sold out completely to the private individual or organization and the hatcheries cease to be the property of the government. In this way, the government hands off completely from the funding and management of such hatcheries. In partial transfer, the government still owns the hatcheries, but can lease the facilities out for a given period of time under definite terms or memoranda of understanding. In both options, the funding and management of the hatcheries are invested on the private owners.

### Challenges Associated with Privatization and Private Establishments

Privatization of government fish hatcheries cannot be executed without some inherent problems.

- i. Private investments are strictly profit oriented and the salaries of staff are paid from the revenue of the hatchery. Consequently, a staff in excess of the minimum number required for the job will not be accommodated. This does not go well with service provision, which is one of the mandates of any government.
- ii. Sometimes junior or unskilled staff will be stretched to perform duties of trained or skilled staff.
- iii. Private employees have little or no job security. A staff can be fired any moment at the discretion of the proprietor and without prior notice.
- iv. There is no pension scheme for retired staff.
- v. Most times, private employees are paid salaries and emoluments which are lower than their counterparts in the civil service. Such salaries are usually not commensurate with the job inputs and efforts of the staff. The employer makes sure that the staff is exhaustively utilized and every kobo paid to him/her must be genuinely worked for.

Hatchery production of fingerlings has been considered by Madu, [7] as the quickest revenue yielding aspect of fish farming, capable of attracting revenue within 2-3 months after the commissioning of such project. The internal rate of return is usually above 60% and the payback period can be less than 2 years [8]. If the non-functional government hatcheries are privatized and all the existing hatcheries are put into full production, the national demand for fingerlings which is put at 4.3 billion annually [9] can be met easily.

### Conclusion

Over 50 percent of hatcheries in Nigeria, is said to be either non-functional or functioning far below their optimum production capacities. Most of these facilities belong to the government- either Federal or State Institutions. The major problems highlighted by the hatchery operators centered on technical, management, economic and social issues. Even though privatization of government fish hatcheries is not without some challenges, it is a way out of scarcity of quality seeds being experienced in the sector. Privatization of government fish hatcheries is a welcome move and a positive step towards self-sufficiency in fish production

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