Present And Anticipated Future Problems Facing The Fisheries Sector In Nigeria And The Ways Forward For Profitable And Sustainable Aquaculture In The Country

Ikape*, S. I. Solomon S.G. and Okomoda V.T.

Department of Fisheries and Aquaculture, University of Agriculture, Makurdi, Nigeria

ABSTRACT

Nigeria offers the largest market for fisheries products in Africa. Fish production from capture fisheries in spite of its being expensive and risky in the coastal line regions of Nigeria has been erratic and on the decline in recent years, resulting in increase in poverty and nutritional deficiency. Aquaculture production remains the best option to bridge the gap between the total fish demand and total domestic production in the face of high cost of production input and unstable government policy. This study enumerate the factors affecting aquaculture production in Nigeria with emphasis on fish seed, disease, education, production and management, feed and feeding, government policy, veterinary care and, breeding, infrastructure and suggested way forward for profitable and sustainable aquaculture in the country.

INTRODUCTION

Aquaculture is the husbandry of aquatic food organisms. The need arose from the decrease in supply from ocean fisheries as a result of over-fishing, habitat destruction and pollution. One of the ways to bridge the gap between the reduced fish supply and increased world food fish demand is through aquaculture. Unlike Africa, Asia has little aquaculture tradition and has been affected by a number of external problems that have prevented proper management and development despite investment. Aquaculture has been demonstrated as a cheap source of protein (FAO, 1983). FAO (2002) reported that an estimated 840 million people lack adequate access to food; and about 25% of these are in sub-Saharan Africa. As the population grows and puts more pressure on natural resources, more people will probably become food insecure, lacking access to sufficient amount of safe and nutritious food for normal growth, development and an active and healthy life (Pretty, 1999). A number of countries in sub-Saharan Africa are characterized by low agricultural production, widespread economic stagnation, persistent political instability, increasing environmental damage, and severe poverty. Given this situation, it is therefore pertinent to provide the poor and hungry with a low cost and readily available strategy to increase food production using less land per caput, and less water without further damage to the environment (Pretty et al., 2003).

In Nigeria, aquaculture development has been driven by social and economic objectives, such as nutrition improvement in rural areas, generation of supplementary income, diversification of income activities, and the creation of employment. This is especially true in rural communities, where opportunities for economic activities are limited. Only in recent years has aquaculture been viewed as an activity likely to meet national shortfalls in fish supplies, thereby reducing fish imports. But the artisanal fishermen still harvest fish in Nigeria. The use of poisons and dynamite for fishing has been prohibited in Nigeria since 1992. However, ita (1993) indicated that Nigerian inland water bodies are currently producing less than 50% of their estimated potential fishery yields. The over-exploitation of the limited resources has resulted in a sharp decline in Inland rivers and lakes fish production from 213,996 metric tons in 1998 to 181,268 and 194,226 metric tons in 2000 and 2001 respectively. This paper is aimed at assessing the current management practices in inland capture fisheries and the challenges it poses to fish production and suggest ways in which the management of capture fisheries could be improved so that the decline in domestic fish production from this sector could be reversed.

Present and Anticipated Future Problems Facing Fisheries in and Aquaculture Over Fishing

Fish resources are susceptible to environmental and man induced stresses and can deteriorate rapidly, particularly when environment and man act concurrently to limit production. Multi species fisheries react to fishing pressure. Welcomme (2001) was of the opinion that increasing effort involves progressive reduction in the size of the species caught. Reduction in size is associated with changes in mortality rates, growth rate, production and number of species comprising the catch; biomass and catch per unit effort (CPUE) both falls. The combination of falling biomass and rising productivity means that yield remains stable over a large range effort. This close association of effort and length of the fish caught implies that the fishing can be managed entirely on the basis of control of length both in terms of the assessment of the status of the fishery and through promotion of mesh or fish size limitations. However, many cases are documented where fishing and environmental pressures have together produced such a collapse. In Lake Kainji, Seisay and du Feu (1997) observed a reduction in mean sizes (that is, mean length and weight) in fish in Nigeria and changes in species composition due to both recruitment and ecosystem overfishing. Eyo (2004) reported a massive poaching of juvenile fishes on Lake Kainji by foreign fishermen who utilize Gill net and beach seines (Dala) less than 3 inches as stipulated by the Inland waters decree. He called for a new act, which would regulate the fishing culture on Nigerian freshwater, which suffered massive overfishing in recent times. According to the author, those reckless fishermen have reduced the population of fish in the lake from about 35,000 metric tons to less than 10,000 metric tons at present.

Unorthodox and Obnoxious Fishing Practices

This is a very bad fishing method, which is not good for the conservation of the aquatic resources. It is also a very old method used in harvesting fish in Nigeria. The use of poisons and dynamite for fishing has been prohibited in Nigeria since 1992. But the artisanal fishermen still...
Inadequate Information Base

A major problem is the current lack of accurate, reliable and timely basic data from the fisheries. Current data collection systems lack planning and transparency. Data formats vary widely and are often not amenable to effective stock assessment or monitoring of fisheries management regions or countries. Even at the national level a lack of comprehensive biological and economic statistics is a major constraint to effective fisheries management. This is compounded by a lack of awareness or application of the precautionary approach principle currently being adopted by other countries. The current state of overfishing in our water bodies is not unique; the history of marine fisheries is full of incidences of overfishing and stock collapses resulting in failure of fishing industries and bankruptcies. It can be argued that the primary objective of fisheries management and planning of fisheries development is to avoid over investment. When limited background data is available, the precautionary approach takes precedence. In this instance an approach taken by investors in the fishing sector. Knowledge and understanding about the real underlying ecosystem dynamics of fish stocks are crucial to informed decisions. For stocks targeted by small-scale/artisanal fisheries that provide livelihoods for hundreds of thousands of people and food for many more, the information systems in place throughout the Region are particularly poorly developed. This is largely due to the general difficulty of obtaining information from diverse and widespread sources, including from the communities themselves, particularly where local knowledge does not translate into official records. There is a need to develop standard methods used for small-scale fisheries statistical systems (census/frame surveys, stratified sampling programmes, etc.) are lacking. Even the key parameters such as catch, fishing effort, price and participants in the fisheries are largely unknown. In addition to the fact that tropical fisheries are inherently difficult to manage because of the diversity of species harvested, issues that affect the fisheries must await an improved database of catch and effort. Scientific advice is required to achieve full access.

Inadequate Information Base

Access to Affordable Credit

This is a major problem underpinning fishing activities. The high interest rates and difficult repayment terms required by banks often put credit lines beyond the reach of fish farmers. In Nigeria this has resulted in an inability to purchase fishing materials such as nets, hooks and boats by fish farmers.

Poorly Developed Market Systems

Monopoly activities by a few large traders or ’middlemen’ tend to stifle the full potential of, the production system. In some cases, the fish farmers are not able to sell their produce even at below their cost price. This is due to the high cost of inputs (cotton, fertilizers etc.) and the lack of viable marketing systems. No ice production or cold storage facilities exist outside the urban areas. The problems facing Nigeria artisanal fisheries are exacerbated by the remoteness of the fishing villages and the inadequacy of government institutional capacity. Fishing effort is limited due to lack of trained technicians (boat builders, engineers, and refrigeration specialists), chronic shortage of spare parts, fuel supply, and working capital.

Ways Forward for Profitable and Sustainable Aquaculture in Nigeria

Maintaining the contribution made by fisheries and aquaculture to food security, employment, national economic development, and recreation. Depending on geography, access to markets and affordable technology, the contribution of fish to food security varies. Fish production from direct local food consumption, but also from aquaculture products of all types which can be sold domestically or exported for funds, as well as those which generate income through recreation, tourism, and employment. Access to all potential contributions is not automatic and specific interventions are required to achieve the scientific potential.

Strengthening the base for fisheries management and aquaculture development

The decisions concerning management and development options could be more rationally based and informed if the base for fisheries management and aquaculture development is sound. This requires a multifaceted approach in these areas.

1. There is consultation with data users so that they get the data required for their work.
2. There is an appropriate data collection mechanisms and data management system.
3. There is a national commitment to provide data, and
4. FAO and non-FAO regional fishery bodies and other appropriate institutions and organizations are involved in regional assessments.

Shore Infrastructure

Lack of adequate shore facilities is a major constraint. Inadequate or over-developed jetties, service facilities including workshops, ice and cold storage facilities, spare parts and fuel facilities handicap fishing communities.

Communication, Training and Public Awareness

A common feature is the lack of effective communication between those formulating fisheries policy, and the fishing industries and communities who are ultimately affected by the management measures imposed. This results in poor understanding of the need for, and agreement with, management measures. Considerable opportunity therefore exists for increasing the involvement of rural communities in the development and implementation of appropriate management measures for coastal living marine resources. This trend of a ‘bottom-up’ approach to fisheries management is being used increasingly throughout the world.

Overfishing, due to over-capacity and ineffective application for their work.

Overfishing, due to over-capacity and ineffective application of control strategies, is by far the most serious threat to the survival of our marine and freshwater resources. The fisheries management agencies should豕 be more cautious and be aware of the limited resources available and how they may be affected by the exploitation of the fisheries. Overfishing has a negative impact on the living condition of the communities who are ultimately affected by the management measures imposed. This results in poor understanding of the need for, and agreement with, management measures. Considerable opportunity exists for increasing the involvement of rural communities in the development and implementation of appropriate management measures for coastal living marine resources. This trend of a ‘bottom-up’ approach to fisheries management is being used increasingly throughout the world.

Inadequate or over-developed jetties, service facilities including workshops, ice and cold storage facilities, spare parts and fuel facilities handicap fishing communities.

Communication, Training and Public Awareness

A common feature is the lack of effective communication between those formulating fisheries policy, and the fishing industries and communities who are ultimately affected by the management measures imposed. This results in poor understanding of the need for, and agreement with, management measures. Considerable opportunity therefore exists for increasing the involvement of rural communities in the development and implementation of appropriate management measures for coastal living marine resources. This trend of a ‘bottom-up’ approach to fisheries management is being used increasingly throughout the world.

Public awareness of the need for a balance between fisheries and environmental protection and conservation requires urgent attention. Many of the undesirable activities currently practiced (such as use of explosives, dumping of used gear at sea, poor fish handling practices leading to lower value products, etc.) could be reduced considerably if more physical and financial means were provided to national authorities in order to facilitate improved extension and training services and public awareness campaigns.

Access to Affordable Credit

This is a major problem underpinning fishing activities. The high interest rates and difficult repayment terms required by banks often put credit lines beyond the reach of fish farmers. In Nigeria this has resulted in an inability to purchase fishing materials such as nets, hooks and boats by fish farmers.

Poorly Developed Market Systems

Monopoly activities by a few large traders or ‘middlemen’ tend to stifle the full potential of the production system. In some cases, the fish farmers are not able to sell their produce even at below their cost price. This is due to the high cost of inputs (cotton, fertilizers etc.) and the lack of viable marketing systems. No ice production or cold storage facilities exist outside the urban areas. The problems facing Nigeria artisanal fisheries are exacerbated by the remoteness of the fishing villages and the inadequacy of government institutional capacity. Fishing effort is limited due to lack of trained technicians (boat builders, engineers, and refrigeration specialists), chronic shortage of spare parts, fuel supply, and working capital.

Ways Forward for Profitable and Sustainable Aquaculture in Nigeria

Maintaining the contribution made by fisheries and aquaculture to food security, employment, national economic development, and recreation. Depending on geography, access to markets and affordable technology, the contribution of fish to food security varies. Fish production from direct local food consumption, but also from aquaculture products of all types which can be sold domestically or exported for funds, as well as those which generate income through recreation, tourism, and employment. Access to all potential contributions is not automatic and specific interventions are required to achieve the scientific potential.

Strengthening the base for fisheries management and aquaculture development

The decisions concerning management and development options could be more rationally based and informed if the base for fisheries management and aquaculture development is sound. This requires a multifaceted approach in these areas.

1. There is consultation with data users so that they get the data required for their work.
2. There is an appropriate data collection mechanisms and data management system.
3. There is a national commitment to provide data, and
4. FAO and non-FAO regional fishery bodies and other appropriate institutions and organizations are involved in regional assessments.
impose stricter quality assurance requirements on the food supply. Although fish products are not identified as a major vector, the processing and enforcement; and limited numbers of fishers and landing points. fishery governance to ensure rational and effective fisheries management; including:
- Meeting growing demands for seed, feed, and fertilizers, in terms of quantities and quality;
- Reducing production losses through improvement in fish health management;
- Increasingly severe competition with other resource (land/water/food) users;
- Deteriorating quality of water supplies resulting from aquatic pollution;
- Promoting suitable integration of aquaculture with other farming activities, and promotion of small-scale low-cost aquaculture in support of rural development;
- Improvements in environmental management including reduction of environmental impacts and avoidance of risks to biodiversity through better site selection, appropriate use of technologies, including biotechnologies, and more efficient resource use and farm management; and
- Assurance of food safety and quality of products.

In order to face these challenges, the fisheries sector must develop the capacity to build and run effective quality assurance systems to comply with increasing stringent international standards of international markets and as well as this to the domestic markets. Similarly, it should promote efforts to improve selective fishing gears to minimize by-catch of juveniles and non-target species and to develop new technologies to make economical utilization of unavoidable by-catches. The implementation of the Code of Conduct for Responsible Fisheries could facilitate sustainable utilization of fishery resources and hence to overcome constraints in facing the above-mentioned challenges. In the long run, however, there is the need to develop national and regional fishery governance to ensure rational and effective fisheries management in our country Nigeria.

REFERENCES