

Research Application Summary

Factors influencing the price of fish in central Malawi and its implications on the development of aquaculture

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Abstract

A study to investigate factors that influence prices of fish was conducted in Lilongwe, Salima, Kasungu and Mchinji districts of the Central Region of Malawi. Market type, form of preservation, species type, length of fish, weight of fish, distance to the market, and distance from the main city were examined using multiple regression analysis to find their influence on price. It was found out that species type, weight, form of preservation and market type influenced the prices of fish more than the other variables. This has a bearing when it comes to aquaculture policy. Producers in aquaculture must therefore take into consideration the market conditions when producing the fish.

Key words: Aquaculture, fisheries, fish price

Résumé

Une étude visant à étudier les facteurs qui influent sur les prix de poisson a été menée dans les districts de Lilongwe, Salima, Kasungu et Mchinji de la région centrale du Malawi. Le type de marché, la forme de conservation, le type d'espèce, la longueur des poissons, le poids des poissons, la distance pour se rendre au marché, ainsi que celle pour atteindre la ville ont été examinés en utilisant une analyse de régression multiple pour trouver leur influence sur les prix. Il a été constaté que le type d'espèces, le poids, la forme de la conservation et le type de marché ont influé les prix du poisson plus que les autres variables. Cela a une incidence quand il s'agit de la politique de l'aquaculture. Les producteurs en aquaculture doivent donc prendre en considération les conditions du marché lors de la production du poisson.

Mots clés: Aquaculture, pêche, prix du poisson

Background

The fisheries sector is of social and economic importance to Malawi, contributing about 60% of the animal protein consumed and 4% to the Gross Domestic Product (GDP). It employs about 50,000 fishers while 250,000 people are estimated to be engaged in secondary fishing industry activities like marketing,

boat making, and fish processing (Brummett and Chikafumbwa, 1995).

Of late, however, the production of fish from natural waters has declined from over 70, 000mt in 1990 to 55,000mt in 2007. This is against an increase in human population of 2% per annum. Consequently the per capita fish consumption has decreased from 10.5 kg in 1988 to 4.6 kg in 2003 denying people this source of protein (Garber and Starr, 2003). Aquaculture, which has great potential to succeed due to water availability, is now being promoted to supplement the fish production from natural waters. However, the existing technology in Malawi focuses on maximizing individual fish size based on the assumption that large fish would be more profitable to grow (Rouse, 1977). However this may not be totally true as other factors may also influence the profitability of the industry. Specifically prices at the market must guide fish farmers what products they should bring on the market. Fish farmers must raise fish types that will fetch high prices. In a competitive economy, prices are also signals of communication between producers and consumers. They guide and regulate production and consumption decisions (Kasulo, 2003). Therefore this study was conducted to determine which factors influenced the price of fish. Market type (whether rural or urban), preservation form, species of fish, distance to the market and distance to the main city in the central region of Malawi (Lilongwe) were analysed to determine if they had a significant influence on the price of fish.

Study Description

The study was conducted in four districts of the Central Region of Malawi. These included Lilongwe, Kasungu, Salima and Mchinji. These districts were selected because they had high population, had a lot of economic activities and most middlemen sold their fish to these districts. A total of 223 respondents (consumers) in thirteen (13) markets were interviewed using a questionnaire for a period of three months between August and October, 2008.

Multiple Regression was run to determine the extent to which the independent variables influenced the prices of fish on the market (dependent). Statistical Package for Social Sciences (SPSS for Windows ver. 15.0) was used for the analysis. Scatter plots were used to determine the relationship between price and the independent variables.

The analytical model was specified as follows:

$$P = f(F, S, D_L, D_m, M, L)$$

Where: P = price of fish (MK per kg), F = form of preservation, S = species group, D_L = distance from Lilongwe City, D_m = distance from fishery, M = market type, L = length of fish

Research Application

Results from regression analysis showed that species type, weight, form of preservation and market type had a significant influence on the prices of fish ($p < 0.05$). Over all, the market prices in urban markets were higher than prices in rural markets. The average urban prices of fish were MK 233.07 /kg (US\$ 2.20) while the average rural prices for fish were MK 210.19 /kg (US\$ 1.98). The results probably reflected the demand and supply or purchasing power of consumers. The length of fish did not matter when it came to finding the market. Any size of fish, which was caught by the fishermen, found consumers. The so called “trash fish” did not exist. This might have been because of the low supply as well as consumer preference.

The study also revealed that fish price depended on the species type as some species were preferred to others and hence by forces of demand and supply fetched higher price. For example, about 80% of the consumers indicated that they preferred cichlids to cyprinids. *Chambo* (*Oreochromis* spp.) was specifically mentioned to be the most preferred fish.

The forms of preservation used in Malawi included smoking, freezing, boiling and sun drying. Smoked fish constituted about 45% of the total fish purchased while frozen fish, boiled-sun-dried and sun-dried constituted about 26, 27 and 2%, respectively. Because of absence of ice plants, only smoking guaranteed long shelf life. In terms of price, boiled-sun dried fish fetched the highest price. Smoked, sun dried and frozen fish fetched the second, third and fourth highest market price, respectively, probably reflecting the cost involved in the preservation.

Implications of the results to aquaculture development in Malawi. The study has some implications as far as aquaculture development is concerned. It is recommended that fish farmers should produce species of fish that are preferred by consumers. Farmers should be market oriented rather than production-

oriented. Considering the aquaculture species being reared, *Chambo* (*Oreochromis karongae*) was the most preferred fish and hence fetched high price. Therefore research should aim at increasing productivity and overall value chain of this species. The results showed that fish of any size were sold on the market and therefore species that are prolific should be produced to supply the much needed protein irrespective of their size. *Tilapia rendalli* and *Oreochromis shiranus*, which are small and require low cost feed, could be raised by small scale poor resource farmers.

Urban markets offer higher prices than rural markets and fishers could organise themselves into cooperatives and transport their fish to urban markets. Thus, aquaculture should be promoted more in areas close to urban markets. Overall, the focus of aquaculture development efforts should be on a “market-driven technology development approach”, not a “technology-driven approach to market development”. A market-driven approach investigates what the market demands, and provides those products to the markets to meet human needs, rather than producing products, then scurrying around to try and find markets that will take them.

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