Sustainable Management of Lake Victoria Fisheries.

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Lake Victoria is the second largest lake in the world, the largest in the tropical area. The lake is a trans-boundary property between Tanzania, Kenya and Uganda. The lake offers vast economic opportunities for the people living around it and beyond. One of the major economic resources provided by the lake is fish. Fish from the lake offers a valuable nutrition supply to people as well as employment opportunities and foreign exchange earnings. One would thus expect that communities living around the lake would as a result enjoy improved welfare and suffer less poverty than communities located afar from the lake.

However, looking the same thing in a different angle we can came into quite opposite conclusion that increased commercialisation in Lake Victoria fisheries intensified poverty level among the fishing communities. That is the growing export of fish is endangering food security and the local livelihood of the lake's riparian communities and also has negative consequences on the stock of the fish. These observations may need to be empirically verified. That is while accessibility to commercially valuable resources such as fishery by communities is expected to improve the welfare of people; in reality this is not the case. The observation above indicates a possibility that as Nile perch become even more commercially valuable, the welfare of the riparian communities might have suffered as a result. That's poorer, less well-equipped operators stand to be marginalized or displaced from the fishery. Consumer price for fish tend to spiral upward, and at the same time local markets are increasingly supplied with smaller and/or lower quality fish that are not suitable for industrial processing.

In this project the three broad research issues will be as follows:

Paper 1: Estimating the demand function for Nile Perch and dagaa(Rastrineobola Argentea):

An analysis of fish consumption patterns, and how they are likely to change as income change and relative prices changes, is required to assess the welfare impact of technological and policy change in fisheries. The analysis is intended to be based on price and income elasticities of demand for fish by type, as fish is a heterogeneous product and consumption patterns may differ by type of product.

The motivation for this therefore, we need to know how much household are made worse off if the quantity of dagaa decrease as result of an increase in Nile perch conservation measures. Thus we need to obtain the empirical estimates of the social cost of lower nutrition levels as a result of higher prices and lower quantity of dagaa consumed. Most of policy and focus of the politicians is on the conservation of Nile perch as the one, which generates the needed foreign currency. Little attention is given on the dagaa, which again is an important source of relatively cheap protein to local people.

Theoretical Framework:

A multi-stage budgeting framework will be used in this study for modelling the behaviour of fish consuming households. In the first stage, the household makes decisions on how much of their total income (expenditure) is to be allocated for food consumption, condition on household characteristics and the consumption of the non-food goods. In the second stage, the household allocates a portion of food expenditure for fish consumption. In the third stage, the household allocates the fish expenditure between different type of fish species. The source of data to be used in this paper will be HHBS 2000/2001 data from the Tanzania Nation Bureau of statistics.

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Paper 2: Stochastic Frontier Production Function of Lake Victoria Fisheries.

The motivation for this study is the fact that it is important that the fishing enterprises and the technology used in the exploitation of the fisheries are investigated empirically. From this model we will be able to investigate the performance of each gear or Skipper and the substitutability possibilities of different fishing gears. By so doing we will possibly be able to answer some question usually raised by fishery managers as to whether or not there are observable and measurable attributes of the skipper or vessels that the fishery managers can monitor and possibly regulate to control expansions in fishery capacity from this sources. In addition to the productive performance of individual fishermen to the available technology, and its interaction with other socio-economic factor can also be useful for fishery management.

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Paper 3: Fishermen Compliance Behaviour to different conservation measures.

Declining in fish stock and disappearance of some species of fish caused partly by excessive efforts and the use of illegal fishing methods has been approached through different measures. Among them include; entry license, gear restrictions, area restrictions, quotas, minimum mesh size, minimum size of catch constraint, landing tax, and so on. In practice, however, most of the widely employed regulations are not self-enforcing; enforcement costs must therefore be incurred. These has often been a source of concern as to whether there are ways to improve the cost effectiveness of traditional enforcement and whether there are ways to secure compliance without heavy reliance on costly enforcement. As argued in the literatures, central to improving the cost effectiveness of enforcement and compliance programs understands the compliance behaviour of the economic agent subject to regulations.

To be able to accomplish this, the data will be collected from the sample of fishermen in lake Victoria fisheries. This is going to be done from May 2003. And a range of questions regarding the regulations that are in place will be asked and they decision to comply or not comply with the existing regulations will be explored.

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