

# **RICH FISHERIES - POOR FISHERFOLK**

Some Preliminary Observations About the Effects of Trade  
and Aid in the Lake Victoria Fisheries

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Lake Victoria is the second biggest lake in the world. With its 69,000 km<sup>2</sup>, the lake has the same size as Ireland. The lake is shared between three countries; Tanzania (which possesses 49%, Uganda (45%) and Kenya (6%) of the lake.

The findings, interpretations and conclusions in this publication are those of the authors and do not necessarily reflect those of IUCN or the partner organisations in this project.

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## **SUMMARY**

This paper discusses the effects of trade and export of fish from Lake Victoria to industrialized countries. on the basis of preliminary findings from short visits to a number of fishing communities in the Kenyan and Ugandan parts of Lake Victoria in 1995 and 1996, the effects of the trade for the fishermen, fish processors, fishmongers and consumers are indicated and briefly discussed. The recent development of the Lake Victoria fisheries has taken place in a context where national and international institutions have played a major role. The paper focuses on four sets of "actors" which in their own ways, and in combination, have to a large extent influenced, and will continue to influence, the development of the fisheries. These institutions/actors are the governments of the three East African countries, the fish processing export factories located at the shorelines of Lake Victoria, the international market for fish and the multilateral and bilateral aid organizations.

The empirical material of the Lake Victoria fisheries is discussed in the broader context of trade liberalization which has become increasingly central to the economic policy of the developing countries. The paper briefly refers to the efforts which are being made by international institutions like OECD and the World Trade organization to develop rules and guidelines for promotion of "green" trade. The paper argues that unless considerations of social equity and fairness are linked to the promotion of "green" trade, even some types of trade which are environmentally benign, may have detrimental development effects for large population groups.

## **INTRODUCTION**

Trade liberalization has become increasingly central to economic policy in developing countries. The liberalization of trade is promoted by a number of international institutions. The World Bank and the IMF's insistence on structural adjustment programmes are closely tied to free trade, and the expansion of commerce through the deregulation of markets is at the core of the mission of the newly established World Trade Organisation. With the fall of communism and the system of centrally state planning, the doctrine of free trade is enjoying widespread acclaim all around the world.

With the increased awareness about the importance of the environment and sustainable development, trade has become linked to environmental issues. The UNCED process contributed much to create a stronger focus on the relationship between trade and the environment. Agenda 21, one of the central documents of UNCED, states that trade policies and environmental policies should be mutually supportive. Agenda 21 outlines a number of proposals on how environmental concerns and trade could be better integrated. The World Trade Organisation and OECD are presently developing rules and guidelines for how "green trade" can be promoted. These efforts include improvement of the product and process standards of export goods from the south, development of eco-labelling schemes and rules for packaging and recycling. Transfer of environmentally friendly technologies and provision of information about northern environmental standards are central measures in this regard.

OECD/DAC has for several years been concerned with the new role aid organisations can play in reconciling the interests between trade and the environment and how aid agencies can contribute to promote "green" trade. Many areas have been identified for support on how the natural resources from the south can be exploited and processed in a sustainable manner while at the same time meet the quality and environmental demands of the north.

On the basis of an empirical example, this paper will discuss the relationship between trade, environment and development co-operation between north and south. The example is from the fisheries sector. Trade in fish between south

and north is becoming increasingly important as the fish catches in the north are declining, while there at the same time is an unquestionable demand and sufficient purchase capacity for fish in the north.

The "case study" presented deals with the fisheries of Lake Victoria in East Africa. During the last 10-15 years a substantial export-oriented trade has developed on the basis of the fisheries resource of Lake Victoria. Development aid organisations and the international development banks have played an important role in stimulating this development.

The information presented in this paper on the effects of trade and aid in Lake Victoria, is based on preliminary findings from short visits to a number of fishing communities in the Kenya and Uganda parts of Lake Victoria. Interviews have also been conducted with representatives linked to the export-oriented industry and government officials in Kenya and Uganda. The investigations are still in their initial stage and more information will be collected and analysed during the next couple of years. We consider, however, that sufficient information and evidence are available to present some findings which are relevant for the general issues about trade, environment and aid we want to address in this paper. We believe that the very general conclusions we draw about these issues will still be valid when more information has been collected.

The paper is outlined as follows: The next section deals with the development of the Lake Victoria fisheries. The subsequent section spells out some of the effects of the present utilisation of the fisheries resources in Lake Victoria for the different actors who have been, and are, dependent on fisheries. Then follows a section which discusses some of the main institutions which have contributed to the development of export-oriented fishing industry. Finally some comments are made concerning the role of development aid agencies in promoting "green trade". It is suggested that unless considerations of social equity and fairness are linked to the promotion of more environmentally green trade, even some types of trade which are environmentally benign, may have detrimental development effects for large population groups.

## **Development of the Lake Victoria fisheries**

In order to understand the effects of trade and aid in the Lake Victoria fisheries, it is necessary to have some knowledge about how the traditional fisheries of Lake Victoria was organized and the factors which led to the export-oriented fishing industry.

Lake Victoria is the second biggest lake in the world. With its 69,000 km, the lake has the same size as Ireland. The lake is shared between three countries Tanzania (which possesses 49% of the area of the lake, Uganda (45%) and Kenya (6%). During the late 1950's and early 1960's Nile perch (*Lates niloticus*) was introduced in the Ugandan and Kenyan parts of Lake Victoria. Until 1979 the perch constituted only an insignificant part of the total catch. It is the rapid growth of the Nile perch during the last 15 years which has transformed the fisheries of Lake Victoria. In order to understand the recent developments of the Lake Victoria fisheries, it is therefore useful to distinguish between the "old" pre-Nile perch fisheries regime which lasted up to 1979 and the "new" fisheries regime which developed during the 1980's (Greboval, 1989).

### ***The pre-Nile perch fisheries regime***

The total catch from Lake Victoria during the 1960's and 1970's was quite stable; about 100,000 tons of fish was caught annually. Until the mid 1970's the fisheries of Lake Victoria was exploited solely by small scale fishermen. During the early 1970's it was estimated that some 50,000 fishermen operated from some 12,000 fishing vessels (Butcher and Colaris, 1973). The fishermen had a varying degree of involvement in the fisheries; some fished only on a part-time or seasonal basis while others were full-time fishermen. Some 80% of the fishermen derived their primary income from fishing. Most of the fishermen were engaged in complementary agricultural activities. The tendency during the 1960's and 1970's was, however, that due to increased scarcity of land and lack of employment opportunities, a larger number of the men left the originally subsistence/part-time mode of exploitation and became full-time fishermen.

In the pre-Nile perch regime there were clear barriers to investment in the amount of equipment in the production sector. Very few owners of canoes possessed more than one canoe or owned more gill-nets than they were able to control themselves. The ownership pattern was thus very decentralized and the income from the lake was distributed fairly evenly among the fishermen (Jansen 1973 and 1977). There was very little investment in technological improvements. The canoes were sailed and manually operated in the same way as they had been for decades. Although outboard engines had been available for the last 30 years, only a few per cent of the canoes were fitted with them. Almost all the canoes fitted with outboard engines were used for transport purposes only.

In the pre-Nile perch regime also the processing and trading sector of the traditional fisheries was almost totally dominated by small operators being based in the local communities around the lake. The great majority of the people involved both in processing and trading were women living in the local communities close to the lake. The part of the fish which was not sold fresh was processed (smoked, sun-dried) on the beach and carried to local markets inland by thousands of women. Most of the animal protein which the local population ate came from fish from the lake. There were few wholesalers in the fish trade, and the traders never acquired control over the fishermen as they have managed to do in so many other traditional fisheries through the establishment of credit relationships. Most fishermen sold their fish to a limited number of fishmongers with whom they developed long standing relationships.

In the pre-Nile perch regime, the fisheries to a large extent existed independent of outside interference. Except for a small trawler-fishmeal complex set up in the mid 1970s there was little penetration of capital from outside. Also the three governments' interventions were limited. The fisheries departments of the three riparian states collected statistics on the catch and adopted different types of regulations in order to control the fishing effort. The

governments had, however, very limited possibilities to enforce these regulations.

Although there in principle has been an open access to fish in the lake, the local fishing communities around the lake have all through this century developed rules which regulate the fisheries (Ogut, 1992 and 1994). These rules stipulate who may fish, in what season, in what area, what types of fishing gear which are acceptable and what type/size of fish which can be caught. Institutions have been developed in the local communities to enforce these regulations. The rules and nature of "enforcement institutions" vary from one area to another and they have also changed over time. In some places these rules are detailed, explicitly expressed and well-known in the community. In other areas the rules may be more vague, cover less issues related to the fishing effort and may not be generally recognized in the community. This system of local management has been threatened with the introduction of commercial fishing. The operators of the trawlers fishing in the lake have little knowledge of these rules, or feel free to disregard them.

#### ***Characteristics of Nile perch regime -1980-1995***

The rapid proliferation of Nile perch started in the Kenyan part of the lake about 15-20 years after the fish was introduced in the lake. In 1978 1,000 tons of Nile perch were caught, in 1981 23,000 tons and in 1985 the production had increased to 50,000 tons. An even faster increase took place in Uganda and Tanzania. In both these countries less than 1,000 tons of Nile perch were landed in 1981. In 1986 41,000 tons of Nile perch was caught in Uganda and 124,000 tons in the same year in Tanzania. In 1989 the total production of Nile perch in the three countries was 325,000 tons (Greboval, 1992).

The total catch of fish increased from about 100,000 tons in 1979 to about 500,000 tons in 1989. Since 1989 the annual production has remained at a level four to five times higher than what was achieved during the late 1960's and 1970's. During the last 6-7 years the production of fish from Lake Victoria has represented about 25% of the annual total catch from Africa's inland fisheries (FAO, 1995).

Along with the rapid increase in the catch for Nile perch, the composition of the fish biomass in the lake changed dramatically. Nile perch, being a predator, feed on most of the species of fish in the lake. From being a multi-species fisheries, the fisheries of Lake Victoria is to-day basically a "three species fisheries". Nile perch is the dominant species, but about a third of the lake's catch consists of a small sardine-like fish (*R. Argentea*), and various species of *Tilapia* constitute about 10% of the total catch of the lake.

These three species alone have during the last years made up about 98% of the total catch in the lake.

What is amazing with this rapid increase of production was how quickly all parts of the fisheries system adapted to this situation. Although there are few statistics to support this trend, it is clear that many more fishermen were recruited to work in the lake and that many seasonal and part-time fishermen became full-time fishermen. More canoes were built; the number increased from 11,000 in the late 1970's to 19,000 canoes in 1987. The fishermen purchased gill-nets with large mesh size in order to catch the Nile perch which often weighed between 20-50 kilos. (In Kenya the largest Nile perch caught weighed 179 kilos). Also the number of women engaged in the processing and marketing of fish increased (Abila, 1994 and 1995). Again, part-time processors and fishmongers became full-time in addition to new women recruited to the trade (Yongo, 1993 and 1994).

Initially the local market could not absorb the increase of Nile perch. Particularly in Kenya in the early 1980's it was difficult to sell the perch on the local markets. Many of the consumers living in the fishing communities near the lake resented the "oily" and fat fish. However, it only took a few years before the perch became a popular table fish also in Kenya as new forms of fish processing developed. In Uganda and Tanzania the perch was better known than in Kenya, as Lake Kyoga and Lake Albert in Uganda and Lake Tanganyika in Tanzania had supported flourishing perch fisheries in the past. During the mid-1980's, in a period of only 3 to 4 years, the market was able to absorb a supply

of 2 to 3 times higher than any time previously without much effect on prices (Greboval, 1992). This shows the popularity of the Nile perch and the existence of a huge demand for a medium priced table fish in the three countries. There is no doubt that many new fish consumers gained tremendously from the changes having affected the rich Lake Victoria fisheries during the 1980's, with huge amounts of fish having been made available at more affordable prices throughout a large portion of the three countries.

People in the harvesting, processing and distribution sub-sectors of the fisheries also benefited greatly from the new fisheries regime. It has been estimated that during the 1980's an additional 180,000 jobs were created in the primary and secondary fields of the fisheries (Greboval, 1992). Many people who had been unemployed or underemployed were able to obtain incomes at levels they had never experienced before. No wonder that many fisher-folk nick-named the Nile perch "the saviour". In the early and mid-1980's the fisheries continued to be almost exclusively operated by small-scale rural fisher-folk with little fundamental change in technologies, techniques and practices compared to the former fisheries regime.

Linked to the rapid growth of the Nile perch, another "revolutionary" change took place in the Lake Victoria fisheries. This change is related to the huge demand for the Nile perch which soon expanded beyond the three countries sharing the lake. A market for the perch developed quickly in the industrialized countries. In order to satisfy this market processing factories was established along the shorelines of Lake Victoria. These plants filleted the Nile perch and exported the fillets to Europe, Middle East, Japan and USA. In the early 1980's the first plants were put up in Kenya. They proved to be so profitable that more factories soon were set up in all the three countries. Today there are about 35 factories spread around the lake. Many of the factories have been financed by international development banks and received support from

government development aid agencies of the industrialized countries.

It is the activities of these factories which during the last ten years have been dominating and giving shape to the new fisheries regime of Lake Victoria (OSIENALA, 1995). From being a fisheries oriented towards the local and regional markets, the fisheries of Lake Victoria was thus opened up to the global economy. Because there seems to be an unlimited demand for the Nile perch abroad, there are dangers of over-exploitation of the fish. Although there is no available and precise assessment of the different stocks of fish in the lake, there are today strong indications that the Nile perch is being harvested in a way which is not sustainable in the long run.

In the latter part of the 1980's only a small part of the total catch of Nile perch was exported abroad. During the last few years several factories have been established, each with a capacity to process up to a quarter of the Nile perch landed on the shorelines of Lake Victoria. The 35 filleting factories around Lake Victoria are therefore competing hard to be able to secure sufficient raw material. Many factories have already been closed permanently or temporarily due to lack of Nile perch. Although there is no reliable statistics showing the total amount exported, an increasingly larger part of the catch is sent abroad. The only Nile perch available in the local markets are the ones which are damaged, or too small for the export market.

During the last years the processing factories have, due to lack of Nile perch, also started to fillet Tilapia and to market this fish in the industrialized countries. The owners of the factories naturally hope that the demand for Tilapia will take off in the same manner as it did for Nile perch. Also the small sardine fish, *R. Argentea*, has been subject to regional and international commercialization. Special factories have been established to convert the sardine into fish meal for use in the broiler- and animal fodder industry. Thus all the three important fish species of Lake Victoria, which together make up 98% of the catch, have become integrated into the global market.

## **Effects of the export-oriented trade in the Lake Victoria fisheries**

The export-oriented fishing industry has in a profound way affected the traditional fisheries and the different groups of people who depend on it. The effects can be found at different "levels"; individual and household level, community, national and international level. The effects are of different "character", economic, political and social. (C. Harris et al., 1995). More research needs to be carried in order to describe the more detailed impacts. In this paper we will only focus on some selected types of effects which are relevant for our comments on trade, environment and the role of development aid organizations.

### ***Effects for the fishermen***

In the pre-Nile perch regime most of the canoes were owner-operated which means that the owner of the canoe worked in the boat and was in charge of the fishing operations. The owner also managed the sale of fish when landing on the beach. Often the other men who were working in the same canoe as the owner possessed their own gear. This pattern has been completely reversed during the last 10-15 years. Asowa-Okwe reports that among the fishermen in the Ugandan part of Lake Victoria as many as 83 % of the men (only men) who participated in the work in canoes were crew only, owning neither the vessel nor any fishing gear.

The Nile perch fisheries have required stronger gill-nets. New synthetic multi-filament large mesh gill nets have been imported from abroad. These gill-nets are much more expensive than the traditional locally manufactured gill-nets. Many of the traditional fishermen cannot afford to buy this type of equipment. Because of the larger catches of fish, many well-to-do people outside the fishing industry have started to invest in canoes and modern and expensive gear. The owners of the equipment may live as far away as Nairobi and Kampala and many will hardly ever visit the fishing beaches. These owners employ skilled managers, coming from the fishing communities, to organize the fishing operations for them and to sell the fish when it is being landed. Many times these managers will not go into the canoe and participate in the fishing operations themselves. They will wait for "their" canoe(s) on the beach. Many of the

managers will hire experienced operators who handle and are in charge of the fishing operations in the lake. Thus, a number of new categories of fishermen have developed and become more prevalent during the Nile perch fisheries; absentee owners, managers, operators and labourers (crew) (C. Harris et al. 1995).

There exist many variations in how a unit (canoe and gear) is owned and operated. These different arrangements depend, partly, on the scale and type equipment used in the fishing operations. It is, however, still possible to come across owner-operated canoes in which the owner combines the role of operator in the lake and manager of the total fishing operations.

A fairly recent trend concerning ownership and management of the fishing operations is connected to the increased competition among the processing factories to secure sufficient supplies of fish. Presently the purchasing agents of the factories are said to be "chasing" the fishermen in order to be able to acquire fish. The agents make all sorts of arrangements with the fishermen (credit relationships, supply of gear, purchase of fish in the lake from special transport vessels, etc.) in order to obtain regular supplies from their "own" fishermen. These efforts have had mixed success. Therefore a few factories have during the last years purchased or rented their own vessels, including trawlers, and hired their own crew in order to get enough fish. In this way the owners of the factories will try to undermine the fishermen's opportunity to exploit the situation of "the sellers' market". To what extent this "vertical integration" will be adopted by the other factories, remains to be seen.

The recent tendency of the processing factories to enter into the production chain, contribute to strengthen the trend of transferring the ownership of the canoes and vessels away from the fishing communities. This implies that much of the profit earned in the fishing operations will not be reinvested in the fishing communities. There are indications of stronger concentration of ownership. Interviews we carried out in a number of landing beaches in Kenya and Uganda in late 1995, clearly showed

that there were quite many owners of canoes which possessed more than one canoe; in fact, it was not uncommon that a person living in Kisumu or Nairobi could be the owner of 5 to 10 canoes.

The crew in the canoes are being paid in different ways (in shares, fixed incomes). Harris (1995) reports that strikes among the crew are not uncommon, a clear indication that the people who carry out the work in the lake are not satisfied with their share of the earnings. The crew have, however, a strong sanction against being offered too little; they can steal both gear and fish.

During the last years sale of fish to the purchasing agents of the processing factories inside the lake, and not on the beach, has become more common. Sometimes crew sell part of the catch of fish to purchasing agents they have no obligations to, and put the money they receive in their pockets. Other times expensive gill-nets can be stolen, remounted and sold to fishermen going to far away beaches. During the last 10 years a whole new system of surveillance has been developed among the fishermen in order to avoid theft. The institution of elected beach-leaders for each landing beach has been established mainly in order to prevent theft and to mitigate in conflicts between fishermen. Also the fishermen co-operatives have developed techniques in order to reduce theft of gear and fish.

Although the level of income may be low for many of the labourers, there is no doubt that many fishermen, both those working in the canoes and the managers waiting on the beach, have obtained increased earnings from the rich fisheries. A clear evidence of increased purchasing power among the men participating in the various tasks connected with the fisheries, can be witnessed in the dramatic transformation of the landing sites for fish. In the past the landing sites were very modest, with open small hotels serving traditional food to the fishermen after returning from a hard day's work in the lake. To-day there is a "boom-town" atmosphere on many of the larger beaches with shops, hotels and restaurants catering for the needs of the fishermen after they return from the lake with their catch in the morning hours.

Nowadays many fishermen spend the night in the lake in order to protect the gill-nets and the catch from theft. Being tired after a night in the canoe, many fishermen are lured to the sweet music and beer of the restaurants as soon as they return from the lake. G. Ogutu has expressed his concern for the deteriorating moral behaviour which can be observed on the landing sites (G. Ogutu, 1992). It is quite obvious that many tired fishermen are tempted to spend a large part of their increased earnings in the new recreational facilities which have developed.

It is thus not only the family members who benefit from the share of money given to a crew member after a good night's catch. The aptly formulated title "Wife, today I only had money for pombe" (pombe= beer, E.G.J), given to an article dealing with food security and women's bargaining power in the agricultural households of Tanzania (Holmboe-Ottesen and Wandel, 1992), also seems to characterize very well a situation which the wives of many fishermen around Lake Victoria face.

#### ***Effects for the fish-processors***

In the past, thousands of women were engaged in fish processing. The fish which was not sold fresh, was smoked or sun-dried. Most of the processing was carried out on the landing sites or in appropriate places close to it. It was usually poor women who alone, or in small groups, processed the fish. Many of the fish processors were the wives of fishermen and many of them were also traders, selling the fish they had processed in the local markets. To-day most of the Nile perch is being transported directly to the factories where it is being filleted and frozen. The fish processors only process the juvenile Nile perch which is being caught and the damaged Nile perch which the purchasing agents of the factories reject.

The small sardine like fish (*R. Argentea*) is used for both human consumption and for fish meal produced for the animal fodder industry. In both cases the fish is being sun-dried by the traditional fish processors before it is being sold. Tilapia is mainly sold fresh and only being processed when it is not possible to sell it in a fresh state.

There is no doubt that thousands of traditional, small-scale fishmongers have lost their jobs as the processing factories have expanded their operations. However, the processing factories have created two new niches for employment for fish processors. Inside the factories both men and women are being employed in the filleting of fish. The number of people employed in the factories is very small compared to the number who lost their jobs in the traditional processing industry.

The second "niche" for employment created by the processing factories is related to the waste products of the factories. After the Nile perch has been filleted there still remains some pieces of meat on the skeleton of the fish. Due to lack of fish a new market has developed for the pieces of meat which are left on the skeleton. Many of the traditional fish processors are now engaged in processing the skeleton and head of the Nile perch. Traders purchase the skeletons and transport them to sites where they are being smoked and oil-fried. The largest site for this purpose in Kenya is situated a few miles west of the airport in Kisumu. Daily thousands of skeletons are brought from the factories to this place by hand carriages and motorized vehicles. No doubt, some hundred traditional fish-processors have gained employment in this new type of processing.

However, there is no doubt that the two niches created by the processing factories do not make up for the thousands of jobs which have been lost in the traditional fish processing industry. The women fish processors are clearly losing out in relation to the export-oriented fishing industry. Not only are the women losing out - also their children and other dependants suffer when the women's income are reduced or lost completely.

#### ***Effects for the fishmongers***

Another group who are also losers due to the export-industry, are the fishmongers. Almost all, at least of the small-scale fishmongers, are women. Traditionally the fishmongers had developed relationships with particular fishermen from whom they purchased most of the fish. The fishmongers also had their special markets in which they sold the fish. With the factories taking an increasingly larger share of

the catch, these relationships between the fishmongers and fishermen are being severed. The fishermen are under contract to deliver to the purchasing agents of the factories, who also can afford to pay them a higher price than the fishmongers and local market.

Although the catch of fish has increased by five times during the last 10-15 years, there is gradually becoming less fish to trade in for the traditional fishmongers. The Nile perch they are left to trade are the fish which is rejected by the factories and the processed skeletons of the perch. If the factories also succeed to sell Tilapia abroad they will also only be able to trade in the rejected Tilapia.

#### ***Effects for the consumers***

It is particularly among the consumers that the effects of the export-oriented industry can be felt. It is not possible to give precise estimates on how the level of consumption of fish has changed during the last ten years, but many institutions have expressed concern for the food security situation of the people around the lake. For many years FAO has warned about the detrimental effects a too large export of fish may have on the people who depend upon the fish (Greboval, 1989, 1992). Also the governments of Kenya, Uganda and Tanzania have in the "Sub-committee for the development and management of the fisheries of Lake Victoria" expressed the need for studying the "impacts of modern improved fishery technology on the fish stock and the socio-economics of the established fisheries" and "the need to find a balance between food use of the resources on the one hand and export and animal feed on the other" (CIFA, 1994). These concerns expressed above by the three governments seem to be even more relevant in light of the recent efforts to export the Tilapia.

The food security of a population can be defined in a number of ways, and depending on the way the concept is defined, the methods for documenting it will vary. However, it is possible to say something about the food security situation on the basis of some simple and strong indicators. Interviews we carried out on the beaches in Kenya and Uganda in late 1995 revealed that fish was no longer a part of the wage for the crew in the canoes. Some 15-

20 years ago it was common that the fishermen, in addition to their wage, were able to bring home fish for consumption for their own family. Interviews with crew members now revealed that fish was only consumed a few times a week while it was part of the daily diet some 15 years ago. Also consumers interviewed in the markets expressed that they could not afford to purchase fish as often as they did in the past.

The remains of the skeleton of Nile perch have always been considered "poor man's food", and many people will not consider to eat it. Even this fish has increased in price and many poor people often cannot afford to purchase it.

The price of "whole" table fish, whether it is Tilapia or Nile perch, is beyond the reach of even middle class people. One kilogram of Nile perch may cost as much as the daily wage of a government servant. However, even if a person has the available cash, it can prove impossible

to obtain the fish. Middle class people travelling regularly between Nairobi and the lake region have observed that the traditional fish dish is not waiting for them when they visit their lakeside home - nor are they able, on their return to Nairobi, to bring back fish to their friends and family in Nairobi as they did regularly in the past.

### ***Conclusions***

Although it has been difficult to present conclusive evidence about the effects of the export-oriented fishing industry, there are sufficient indications that large population groups that have depended on the traditional fisheries in the past, are losing out. The recent trends concerning the increased globalization of the Lake Victoria fishing industry only confirm the tendencies we have discussed above. The export-oriented fisheries is a threat both with regard to employment and food security for millions of poor people in East Africa

## **Actors at a national and international level**

The development of the Lake Victoria fisheries we have described above has taken place in a context where national and international institutions have played a major role. Here we will, very briefly, focus on four sets of "actors" which in their own ways, and in combination, have to a large extent influenced, and will continue to influence, the development of the fisheries. These institutions/actors are the governments of the three East African countries, the processing factories, the international market for fish and the multilateral and bilateral aid organizations.

### ***The governments of Kenya, Uganda and Tanzania***

It is the fisheries departments of the three governments which have been responsible for developing and implementing policies for the Lake Victoria fisheries. The governments' role in intervening in the fisheries sector had been fairly marginal until the proliferation of the Nile perch. It was not only the fishermen who were shocked by the rapid increase of Nile perch in the lake, also the fisheries departments of the three East African countries were caught by surprise by the dramatic increase of fish in the early 1980's. The Fisheries departments suddenly had to take new types of decisions concerning the management of the lake - how much of the fish should be used for local human consumption, how much for animal fodder and how much for export. The Fisheries departments were neither staffed nor prepared to take these difficult decisions. However, the new issues faced by the three governments were gradually accepted and reflected in the objectives of the new fisheries policies.

The Government of Kenya's fisheries policies clearly indicate that they are aware of the dilemma the government faces in managing the fisheries sources of the country. Besides maximising the production of fish on a sustainable basis, the Government has the following objectives for its fisheries policy:

- First and foremost, to increase the per capita consumption of fish through production of low cost high protein food (fish);

- Secondly, increase employment opportunities in the country through fishing, fish processing and fish trade;
- Thirdly, to enhance the living conditions of the fishermen and their families by maximising economic benefits to them. This is achieved through provision of cold storage, fish handling and processing facilities;
- Fourthly, to maximise export and foreign exchange earning capacity" (Government of Kenya, 1995).

Both Uganda and Tanzania have adopted similar objectives in their fisheries policy.

As we have noted above, the three governments are very aware that the above mentioned objectives are conflicting and that a balance has to be struck between the three first objectives and the fourth objective. There is, however, little doubt that it is the fourth objective which has received priority. This objective is also very much in line with national goals of the three East African countries and the objectives of the structural adjustment programmes, strongly promoted by the World Bank and IMF.

### ***The processing factories***

The first processing factories were established in Kenya in the early 1980's. They obviously did well, for during the next decade more than 50 factories were established around the lake. In addition some fish processing factories were set up in Nairobi and Mombasa and the fish were transported in refrigerated vans from the lakeside directly to the factories in these cities.

The owners of the processing factories have different background. Many factories are owned and managed by people belonging to the Asian communities in East Africa. Other factories are owned by multinational companies and nationals coming from many European nations. It seems to be a rule that the factories have employed influential Africans as directors. Common for almost all the owners of the factories are that they have no past connection with the Lake Victoria fisheries.

The processing capacity of the factories varies, some are only able to process 3 tons of "wet, whole" Nile perch per day while others have a potential to process up to 100 tons per day. The average capacity seems to vary between 5-25 tons per day. It is necessary to use 3 tons of wet fish to produce 1 ton of fillets. As we have noted above, the present overriding problem for the factories is to secure sufficient supplies of raw material in order to exploit as much as possible of the installed technical capacity of the factories. To day the technical capacity to process fish are much higher than the available raw material. This has led to a strong competition among the factories to get as much fish as possible. A number of mechanisms have been developed by the factories in order to establish long-term relationships with the local fishermen. We noted also that a few of the factories recently have become more vertically integrated and invested in the production chain (vessels, engines and gear). Some of the factory owners also own their transport firms. We do not, at this stage, have information of how the factories are linked up to the firms which purchase the fish in the industrialised world and if any of these firms have ownership interests in factories.

Although they compete over scarce supplies of fish, the owners of the factories also have joint interests and cooperate closely. The owners of the factories in Uganda meet once a month to discuss matters of common interest. These matters relate, inter alia, to the factories' relationship to government institutions and to conditions of import of equipment and export of fish. Together the owners constitute a forceful and articulate lobby group vis-a-vis the government with substantial resources at their disposal to influence decisions which affect them. There is no doubt that this powerful lobby group have considerable influence in deciding where the balance between the conflicting objectives (fish for export or local consumption) is drawn. There is no similar lobby group representing the interests of the population groups dependent on the traditional fisheries. Except for a few NGOs, in Kenya notably OSIENALA, the fisherfolk have no one to represent their points of view towards the major decision-makers.

At this stage we know little about how the profit earned from the sale of the fish fillets are being spent. It is clear, however, that very little of the profit is being reinvested around the lake.

### ***The international market***

The export-oriented fishing industry of Lake Victoria has been, and will continue to be, very dependent on the international market. Many of the processing factories have entered into long-term agreements with some of the major supermarket-chains in Europe and USA. According to interviews with owners and directors of some processing factories in Kenya and Uganda the demand for Nile perch seems "unlimited". A managing director of a European owned fish factory in Uganda informed us that Nile perch, in 1995, was fetching higher prices in the European market than Atlantic cod, and that the food chains just could not get enough of Nile perch fillets. Many of the factories around Lake Victoria have problems in delivering the quantities of Nile perch which they have promised to their purchasers in Europe and USA, and that is one reason why the factories now also have started to market fillets of Tilapia in the industrialized world in order to satisfy the demand of the food chains.

There is little doubt that the strong demand will continue to exist. A number of fish processing factories in Canada, USA and Europe have closed down due to lack of supply of raw material. In light of the reduction in the overall world catches of fish, table fish of high quality from the south will, with the strong purchase capacity in the north, increasingly be in great demand in the industrialized countries.

### ***International development banks and development aid organizations***

We still have limited information about the role international development banks and bilateral and multilateral development aid organizations have played in the support and establishment of the export-oriented fishing industry. There is no doubt, however, that the owners of many of the processing factories have received support in terms of finance and equipment from the banks and aid organizations. Both the IFC (The International Finance Corporation), the private investment bank attached to the World Bank,

the African Development Bank and the East African Development Bank have provided loans to many of the owners of the factories.

Many of the bilateral development aid agencies of the governments of the industrialized countries have supported the factories with equipment on good financial terms. Also various multilateral institutions, (FAO, UNDP, UNEP, The World Bank, GEF) have been, or will be involved in supporting the three governments in planning and implementing development schemes in the Lake Victoria fisheries. Government fisheries research institutes in the three countries have received support to carry out fisheries research, in particular stock assessment studies, which can contribute to the formulation of policies and guidelines for the sustainable management of the fish resources.

Another area in which the development aid organizations have been giving support, is in improving the standard of quality of the fish product so that it can satisfy the requirements set by the European Union and other industrialized countries outside EU. Technical assistance has been given to advise the processing factories on how to achieve "ISO 9002 standards" and other quality standards required by the importing countries. There is no doubt that improvements have been made and the owners of some of the latest factories built boast of not only being able to achieve EU standards, but even the supposedly higher Nordic standards for the product they export. All the most modern and advanced processing and refrigeration equipment have been imported from the north to ensure that the required standards are met.

Important tasks in the efforts to improve the quality are that the fish is slaughtered and cooled in ice-boxes as soon as possible after it has been caught. The new factories have obtained their own fast-going transport boats with refrigeration facilities. It is also important that the fish at no point in time touches the ground, which happens when the fish is brought to the landing beaches in the traditional ways. Several owners of the newly established factories maintained that with the new methods of handling the fish according to the required

standards, much less fish is being wasted. Even to-day many factories have to reject up to 25% of the fish they have purchased because the fish have been damaged by being trapped too long in the gill-nets and not being cooled quickly enough. With the new technology for collecting and preserving the fish quickly, the owners of modern factories estimated that only 5% of the fish they purchase will be wasted. This is good news for the owners of the factories, but bad news for the local population, who lately have become dependent on the fish rejected by the factories. They will find it even more difficult to obtain fish.

Another method for achieving the quality standards required by the north, occurs when the skeleton of the Nile perch, with its small pieces of remaining meat, is being converted into fishmeal. Some inspectors from industrialized countries had noticed that the skeletons of the Nile perch could contaminate the fillets for export, if the skeletons were left inside the factories. Some factories have therefore started to produce fish meal of the skeletons in order to comply with the required standards. Also this measure contributes to make fish less available to the local population.

Because of the scarce supply of fish for the local population, the price of the skeletons of Nile perch has increased. Some factories have recently built large and tall concrete walls around the factories and dispose off the skeletons as quickly as possible. The skeletons are sold outside the factory walls and in this way do no damage to the fillets. But if quality controls reveal that sale of the skeletons still are not compatible with the required hygienic standards, the skeletons will be turned into fishmeal.

Thus, two of the main sources of fish for poor people are being lost due to the efforts made to satisfy the quality standards of the north. Although it is unintended, the aid organizations in this way contribute to make fish less available to the local population.

However, some aid organizations have also expressed concern for the balance between the export of fish and fish needed for local consumption. In particular, FAO which has

been involved in the development of the Lake Victoria fisheries for more than three decades, has warned about the negative impacts a dominating export-oriented industry will have on food security and the employment situation for people around the lake.

### ***Conclusions***

All the external institutions/"actors" mentioned above have contributed significantly to build up the export-oriented trade in fish from Lake Victoria. The major development issue these institutions face is to what extent they are able to ensure that the fish resources are harvested in a sustainable manner, and that limits are set to the amount of fish which is exported.

## **Trade, environment and aid**

In the introduction of this paper some international efforts which have been made in reconciling the interests between trade and environment were briefly mentioned. OECD/DAC has during the last years proposed a number of areas where aid organizations could play a role in supporting "green" trade. General environmental guidelines have been developed for a number of sectors in the economy. More detailed Environmental Impact Assessments (EIAs) and Life-Cycle Assessment (LCA) have become available and are being used in connection with development projects which aim to increase export of goods. More specifically related to trade activities, are efforts to introduce eco-labelling schemes, adopt rules for packaging and recycling of the products exported from south to north and improve the product and process standards of the products which are being exported.

In the Lake Victoria fisheries, the aid organizations and the international development banks have been engaged in several of these above-mentioned tasks: Modern production and processing equipment have been supplied, advice has been given concerning packaging and transport of the products, and information has been provided about the standards of quality required in the north for the fish products. Although it has not been successful, measures have also been taken by the governments and development aid agencies to propose ways in which the fish resource in Lake Victoria can be harvested in a sustainable way.

However, seen in relation to the four development objectives of the Government of Kenya's fisheries policy, both the Government and the international aid organizations and development banks have mainly been concerned with the government's fourth objective: to

maximize export and foreign exchange earning capacity.

Even if it should be possible to promote exported trade in the Lake Victoria fisheries which satisfies the quality standards in the north and exploits the fish resources in a sustainable way, the three first development objectives of the Government of Kenya's fisheries policy are not being achieved, i.e., to increase the per capita consumption of fish, increase employment opportunities and enhance living conditions of the fishermen and their families. We have indicated in this paper that the three first objectives of the Government of Kenya's fisheries policy, mentioned above, are, in fact, being undermined by the strong emphasis which has been put on the fourth objective, i.e. the maximization of export and foreign exchange earning capacity.

We have seen that a framework of international rules and guidelines is being built up to ensure that the export products from south to north take environmental issues into consideration and comply with the quality standards required in the north. The national and international attention in the Lake Victoria fisheries has been concentrated around the Government of Kenya's fourth objective. No similar efforts are made to create a framework for trade which covers the three first objectives, i.e. objectives related to social rights, social equity issues, creation of employment, reinvestment of profit earned, etc. New institutions and policies must be developed which will ensure that human welfare considerations is also integrated into the trade between south and north. This is particularly the case if this trade is to be supported by development co-operation agencies. This task should be a major challenge to the international institutions which are trying to promote "green" trade.

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