

CHANGING ECONOMIC PROBLEMS FOR WOMEN IN THE NILE PERCH FISHING COMMUNITIES ON LAKE VICTORIA

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Abstract: Large-scale changes in the ecology of Lake Victoria have had a number of implications for the women in riparian households. It has proven difficult for them to take advantage of the economic opportunities that have arisen while their access to the lake fisheries has been diminished. This article reviews these changes at the levels of the lake, the community and the household. Fish-related economic activities are particularly important for women who are heads of households. These activities also afford married women greater independence than other activities. Women are responding to changes in access to the lake by working together at a community level.

Résumé: Des changements fondamentaux dans l'écologie du lac Victoria ont eu un certain nombre d'implications pour les femmes des villages riverains. Il leur a été particulièrement difficile de saisir les occasions économiques qui se sont présentées tandis que leur accès aux pêcheries du lac a diminué. Cet article examine ces changements au niveau du lac, de la communauté et de la famille. Les activités économiques reliées à la pêche sont très importantes pour les femmes, chef de famille. Ces activités donnent aussi aux femmes plus d'indépendance que certaines autres activités. Les femmes réagissent au fait qu'elles ont moins accès au lac en travaillant ensemble au niveau communautaire.

Introduction

Unknown persons introduced an exotic fish species, the Nile perch *Lates niloticus*), to Lake Victoria in the 1950s, and in the late 1970s its population sud-

denly exploded. The piscivorous Nile perch decimated most other fish species, and as many as 300 may have become extinct (Barel 1986). In combination with fishing pressure and changes in water chemistry (Bundy and Pitcher 1995), these events transformed the lake's fisheries. Where once there were many kinds of fish, now there are only three commercially important species: the Nile perch (*Lates niloticus*), one species of tilapia (*Oreochromis niloticus*) and the sardine-like dagaa (a Swahili term for *Rastrineobola argentea* which has no name in English).

These changes vastly increased the value of fish production, and the number of fishers in the Tanzanian portion of the lake increased 46% between 1980 and 1986 (Reynolds and Gréboval 1988). Tanzanian fishers christened the Nile perch the "saviour." Overfishing has been a problem on Lake Victoria since the beginning of the century (Dobbs 1927) and the lake was badly depleted in the 1970s. During the 1980s the Nile perch meant a new source of inexpensive protein for people around the Tanzanian shoreline.

The Nile perch is a large, white, meaty fish that finds a ready international market. An industrial processing and export industry grew up in Kenya and Uganda during the 1980s and in Tanzania in the early 1990s (Reynolds et al. 1992). The fish are exported as frozen fillets from processing plants on the lake shore. The export industry has driven up the price of Nile perch and led to an increase in capital investments in fish-harvesting equipment. The demand generated by the filleting plants is huge and growing. The degree to which this demand is felt varies in different parts of the lake. The plants are swiftly expanding their capacity for collecting fish by boat rather than truck, which deepens their penetration into isolated areas. All but one of these 11 plants are located in the large towns of Mwanza, Bukoba and Musoma (see Figure 1), with the greatest concentration in Mwanza. Several thousand people, both men and women, are employed in these plants.

For the people living beside Lake Victoria these changes represent a vast alteration in their human ecology. The present article focusses on one important aspect of this alteration—the impact of these changes on women. It presents a broad sketch of what is happening, rather than an in-depth analysis of changes in a particular village or region.

A Critical Approach to Human Ecology

When we approach human ecology from a critical perspective, the central question is how human responses to ecological change result from the interaction of groups possessing different amounts of social power. We can broadly understand these responses as new rules and institutions governing interaction with the environment. As the environment changes, new institutions are created and made effective through processes of legitimation, surveillance and discipline. One crucial aspect of such an analysis is the role that gender plays.

If differences in social power determine what new institutions will appear in response to changes in natural ecology, then these changes will have different implications for men and women. Ecological changes are intertwined with political and economic changes. For the populations living near Lake Victoria, changes in all three of these categories have always left women relatively more disadvantaged than they were before the change. At each juncture, the new "rules of the game" have served those who were in positions of advantage when the changes began.

A good illustration is change in rights to land. Okeyo (1980) charts how colonial authorities "reformed" the traditional, corporate, clan-based land-tenure system of the lake-side Luo people to reflect the male head-of-household model. Later, in the 1970s, Kenyan adjudicators believed that widows, and women who had only daughters, did not need as much land as families with men. In Tanzania, during the *ujamaa* village scheme, women were deprived of their traditional claims to land in favour of men and village leaders, while their participation in village planning was restricted because they were not "heads-of-households." That may have been just as well, because their work loads left them with no time to spend in endless village debates (McCall 1987).

Increasingly commodified economic relations have meant greater pressure on East African women. In agriculture more commodified relations have often increased economic disparities between men and women (Raikes 1978). The main driver of these disparities has been labour specialization on farms where men take charge of cash crops while women are left with subsistence crops. "In charge" should not be read as "doing the work." Indeed, in at least one district in Tanzania (not near Lake Victoria) the single most productive investment found among an emerging class of wealthier, commodity-producing peasants was the bride prices of the wives who provided the labour (Raikes 1978). Another important source of growing disparity has been the greater male opportunity for off-farm employment. Smith and Stevens (1988), in a study done on the west side of Lake Victoria, found that off-farm employment is the most important contributor to farm success. Male labour migration has also increased women's already disproportionate agricultural labour burden. Fortmann's (1979) study of farms near Mwanza shows that, in general, increases in labour burden due to commodification were greater for women than for men. Men also enjoy greater access to credit and agricultural extension services. The present article indicates that the patterns exhibited in the commodification of agriculture have had parallels in the intensified commodification of Lake Victoria fisheries.

Women in East Africa have not accepted these changes passively. In a survey article on the effects of structural adjustment in Tanzania, Mbilinyi (1990) observed an increased resistance among women to patriarchal social relations.

For example, women and children mounted a successful tea-picking strike in Rungwe (Mbilinyi 1990), a highland area southeast of Lake Victoria. Local organizing is providing a less dramatic, but still effective, strategy for increasing women's power. Women are refusing to work on family land and going to neighbours' lands instead. They are finding ways of circulating cash and labour among themselves, which are the two most important constraints that they face (Thomas 1988). They do so in ways that help them respond to immediate needs, thus giving them more flexibility in meeting economic and ecological changes.

A critical approach to human ecology recognizes that responses to ecological change are the products of interaction within tangible social networks, i.e., people talking and bargaining with one another while making practical decisions. Central to the ecological nature of the analysis is that these interactions take place in concrete time and space. Spatial (and temporal) scale is a central organizing principle of a human ecological analysis. Particularly important are the "back and front regions" (Giddens 1984) which influence potentials for the surveillance of behaviour and the enforcement of rules and institutions. These regions are, in turn, often a function of geographical scale and physical proximity.

Thompson (1985) in a survey of fishing communities from a number of different countries found that men's physical absence while at sea and their economic dependence on the women who process and trade the fish are important aspects of the situation of women in many fishing communities. The dependence, however, stems from the absence. The physical absence of the men, and their reduced ability to oversee the women's processing and trading activities, contributes to their economic dependence. This absence has not had the same effects on Lake Victoria that Thompson (1985) documents in other fishing communities, because small-scale fishing does not usually take the form of a husband-and-wife collaboration that is common elsewhere. The spatial dimension, however, remains crucial here in other ways.

The importance of scale in ecological analyses offers a logical way to present the data we have on Lake Victoria. To understand in concrete terms what the ecological changes have meant to the lake-side women, we analyze them at three¹ relevant spatial scales: the lake, the community and the household. After a short description of our research activities, we discuss each of these levels in turn.

Research Methods

The data presented here were collected by a team of researchers from the Tanzanian Fisheries Management Institute and Michigan State University from June of 1992 through December of 1994. Qualitative interviews were held with fisheries management professionals and others who work in the fisheries

sector. A standard schedule of open-ended questions was done with the owners, and in one case the manager, of 10 of the 11 fish filleting plants. Extensive field work was done between January and July of 1993 on five randomly selected fishing beaches and from June to November of 1994 on an additional four beaches. Week-long follow-up visits were made to the first five beaches in early 1994. The selection of these beaches was stratified to ensure geographical coverage and an adequate number of larger beaches. In our sample frame, we defined a fishing beach as any place where fishing boats gathered on shore and where fish are traded. On each beach a formal survey of boat owners, management and fishing crews, riparian households and fish processors and traders was conducted. In addition, group and in-depth interviews were held with members of the same populations during the approximately two weeks that the research team stayed on each beach. At least one group interview on each beach was conducted only with women with the exception that both Médard and Wilson participated. The major theme was always related to economics with a special emphasis on the problems women encounter doing fish-related and other small businesses. Many in-depth, individual interviews were done with women and the "stories" reported below were generated by these interviews, which were mainly conducted by Médard.

The formal survey included household interviews which were always done with the female head-of-household, save in the few cases where a bachelor's household was selected. When we arrived on a beach we selected a sample of 25 boats. Where there were fewer than 25 boats we selected all of them. Fishing household interviews were done with the spouses of a randomly selected sub-sample of the fishers working on the selected boats. Non-fishing household interviews were conducted with a random sample of households that were within one half kilometre of the beach but did not have a member of their household involved in fishing. Households were defined by physical compounds except when multiple wives shared a compound; in these cases each woman was treated as the head of a separate household and all were interviewed. Approximately 10 non-fishing households and the same number of fishing households were interviewed on each beach. These interviews were conducted, with close supervision, by a young woman on our research team. Médard also did fish trader interviews with both male and female traders who bought their fish on the beach.

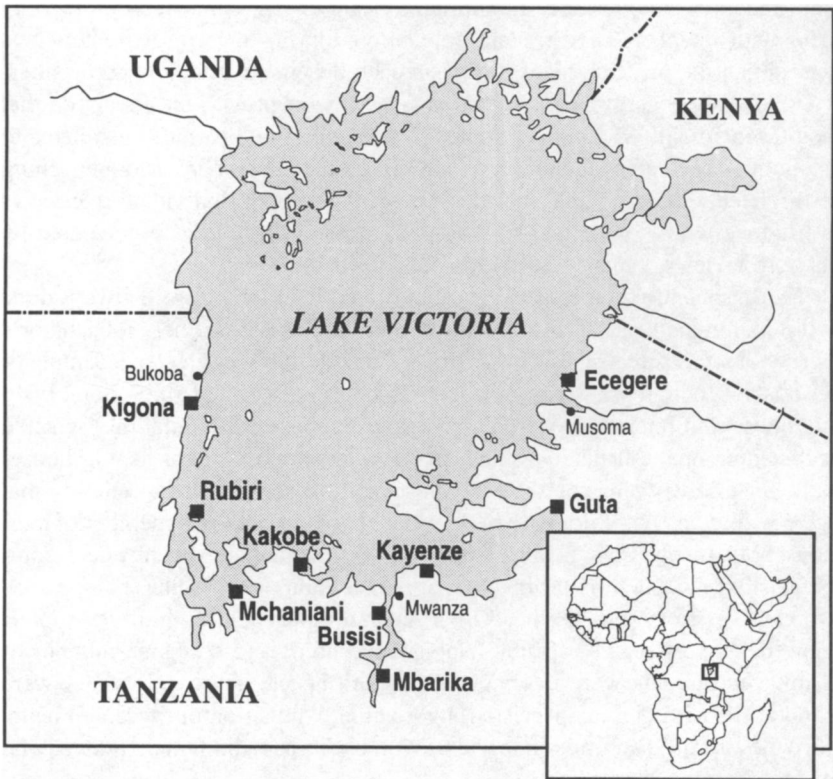
The Lake

General Changes

In surface area, Lake Victoria is the second largest freshwater lake in the world after Lake Superior. Three countries share it: Kenya, Uganda and Tanzania. The Tanzanian section is the largest with 51 percent of the lake's surface. The lake is situated on a plateau between the two East African Rift valleys. In con-

trast to other nearby lakes situated within the Rifts, Lake Victoria is shallow with a mean of 20 and a maximum of 79 metres depth. One result of this shallowness is that the lake is an extremely rich source of nutrition. The lake basin boasts a human population estimated as high as 20 million people (RTF2 1995). In some parts of the lake basin the population density is among the highest rural densities in the world.

Figure 1
Map of Lake Victoria Showing Research Beaches
and Major Tanzanian Towns



The biological causes of the changes in Lake Victoria are disputed. The Nile perch introduction happened in the 1950s, but, mysteriously, the population eruption did not happen until the late 1970s. Concurrent with the growth of the Nile perch, scientists have observed a depletion in the level of dissolved oxygen in the water. Most biologists had believed that Nile perch caused this change by eating plant-eating fish, which led to greater overall biomass and greater oxygen depletion when all this biomass rotted. More recent work has suggested that run-off from agriculture and sewage caused the drop in levels

of dissolved oxygen. This in turn made a certain shrimp, a preferred Nile perch food, more available. This new source of food is argued to be the cause of the Nile perch population explosion (Bundy and Pitcher 1995).

Lake-side people had many different kinds of fish available to them before 1980. The most abundant were various species of haplochromis. They are edible, but small and bony—think of eating aquarium fish, which many of these species are. Catching haplochromis with woven traps was women's work and they were always available as a source of protein when more appetizing options were not. Men caught lungfish, tilapia, catfish and other larger species. Women processed these fish using simple technologies such as sun-drying, smoking and salting, and there was an active regional and national fish trade.

These people responded swiftly to the advent of the Nile perch through new fishing practices, shifts in labour and investment. Employment on the whole lake, including ancillary activities, rose from 158 000 people before the Nile perch to a level of 422 000 people by 1992, the peak of the Nile perch fishery. Earnings per fisher² increased by \$473 per year adjusted for inflation, a significant sum in Tanzania (Reynolds et al. 1992). Fishers sent more of their catch to central markets, particularly the central market at Mwanza, which handles 90% of the legal trade to distant markets (Maembe 1990). Sun-dried dagaa has also undergone a recent explosion in exports to neighbouring countries (Reynolds et al. 1992).

Small-scale fishing boats generate almost all of the fishing effort on the lake. These fishers use plank-keel canoes taking a total crew of two to five people. Owners of boats are commonly involved in beach activities, for example, in selling the catch. On the more commercialized beaches they rarely fish themselves. An increased separation of ownership and management of fishing units has accompanied the new fishing patterns (Harris et al. 1995). Increasingly, small-scale fishers are receiving loans from large-scale processors who are competing to guarantee supplies.

Effects on Women

As early as the late 1980s, before any major incursion by the international market, Leendertse (1990) observed that women were being increasingly marginalized in the fishing industry. Women had remained involved in the smaller-scale, less-remunerative processing of native species, while the newer technologies associated with the Nile perch were dominated by men.

One reason was the oiliness of the Nile perch. The fat produced when this fish is smoked or fried is much more than the amount produced by other species. This meant that smoking kilns for the new fish had to be larger and use more fuel. This increase in capital costs was a barrier for women trying to enter the Nile perch smoking business. Low capital means lower-quality fish with a shorter shelf life.

Another reason was that new, and more remunerative, marketing channels arose for the Nile perch. Men dominated these new channels, and informal barriers limited women's access. This is beginning to change. While the near-lake trade in fresh Nile perch is the province of young men on bicycles, many women are involved in a large and growing regional trade in smoked Nile perch.

In fisheries around Africa, commercialization of fishing has pushed women from part-time participation to exclusion (Scudder and Conelly 1985). The Nile perch processing factories can afford to pay higher prices, making it much more difficult for women and other small traders to get fish. A significant amount of small-sized fish is not acceptable to the factories. These leavings are available for smoking, which requires significant capital and is usually done by men, and for other kinds of processing which do not require as much capital, and are done by both men and women. Salting, sun-drying and frying fish are the types of processing that are widely available to women on these beaches.

Recent management measures are bound to have a negative effect on women. All nets with a mesh size of smaller than five inches have been banned. This includes beach seines, which are an important source of the smaller fish that women use. Beach seines are very large, labour-intensive nets that are pulled into the shore. They often use local children as pullers in exchange for some fish. This makes them an important avenue of access to the resource for families who do not work on fishing boats or own fishing gear (Wilson and Médard forthcoming). These management measures are arguably needed from the perspective of having a sustainable resource, but their impact will be felt disproportionately by women and poorer households.

Of all the beaches we visited the one most deeply penetrated by the international Nile perch market was Rubiri Island. Rubiri is located in the southwest corner of the lake, which is the last area to have substantial numbers of Nile perch, mainly because it was the last area of penetration of the international market. In 1992 it was a quiet fishing island with a few people. By 1994 it had a population of more than a thousand people, possessed one hundred fishing boats, and was a regular stop for large fish collection vessels. Mama Nne's story is illustrative of the difficulties that the penetration of the international market has created for women.

Mama Nne first came to Rubiri in 1992 just when it was beginning to become an important fishing centre. She had investment capital of \$60 with which she intended to begin a tea shop. She decided to begin fish processing after she arrived on the island, mainly because of the difficulty she was experiencing getting supplies for the tea shop to the island at reasonable prices.

Mama Nne decided to salt and dry Nile perch. In 1992 the fish were plentiful and cheap. Beginning in 1993 ever more collection boats were arriving on the island from the fish-processing factories in Mwanza town. The factory agents began to build direct ties to the fishers; they offered higher prices and gave them

fishing gear, engines and fuel. Mama Nne, along with other local and regional fish processors, is only able to get fish that the factory boats reject. Going entire days without being able to buy anything is common. She sometimes travels by hired boat to other islands to find fish, but this is risky because the lake in that area is very open and rough.

Most of the women fish processors on Rubiri Island are single women with no other means of support. Mama Nne says, "I don't know what kind of business I can do, the poor continuing to lose while the rich get more and more."

The difficulties women face not only come from their economic disadvantages. Men will actively resist women's participation in sectors where they see them as a competitive threat. Male traders put pressure on fishers not to sell to women. On one landing beach women complained to us that men use their easier access to short-term credit to keep women from getting fish. Men have been known to physically block women from access to fish (Masaiganah 1992). We heard several reports of demands for sexual favours in exchange for business access.

Two other areas of the Nile perch trade have been available to women but are now threatened. The first is trade in sun-dried swim bladders. These bladders are used for soup in Asia and in beer brewing in Europe. This had been a minor, ancillary trade, and many women moved into it in the late 1980s (Bwathondi and Mosille 1988). Prices for these bladders rose steeply in the early 1990s; our survey of smaller fish traders found them to be the major source of profit. Men seem to be moving in and beginning to dominate activities in this sector.

The other area is the frying of fish "racks." These are the head and skeleton of the fish that is left after filleting in the processing factories. They sell these racks very cheaply to local women who fry them and sell them in neighbouring villages where they are popular. Currently, there is a move by large private concerns, supported by the government and international agencies (RTF1 1995), to use these racks to make fish meal. Some technical difficulties have slowed this effort, but women are threatened with the loss of this source of income and inexpensive protein as well.

It seems that when sectors of the fishing business are considered ancillary and minor they are available for women. If changes in prices or availability make these sectors more attractive, then women have more difficulty participating. In addition, fisheries management measures threaten women's access to the fish resource.

The Communities

Fishing communities are not alike. One important difference on Lake Victoria is the degree to which a community is part of the network for gathering fish for the international market. These communities have many full-time fishers, who are more likely to be temporary residents. These migrants, and the minority of local

fishers who can take advantage of new opportunities, are the beneficiaries of an increasing income gap among fishers (Wilson and Médard forthcoming).

A more diversified household reproduction strategy marks those villages that remain isolated from the international market. The fishing is less capital-intensive and more seasonal. Women's participation is often in response to specific needs for cash, rather than a full-time business.

The way lake-side women are blocked from participating in formal, community-level life has been a major factor in their increasing poverty and continued political marginality. Women are often able to make decisions about their own farms and families, but at the village level their participation is very limited (Fortmann 1979). Few women at the local level are members of the Chama cha Mapinduzi (CCM), the leading and formerly the sole ruling political party. Most of the "mabalozi," party ten-cell leaders who play a very important role in local life, are men. This community-level disadvantage is not absolute. A few women hold important posts in local government.

Women's Groups

The former ruling party has its own national women's group with branches in the villages. In all the communities that we visited we found that these local branches have become moribund. So completely have they defined the idea of women's groups, however, that new structures have been very slow to replace them. Ineffective, and at times manipulative, outside leadership, which has been a problem for women's groups throughout East Africa (Staudt and Col 1991; Udvardy 1988), has been an obstacle around Lake Victoria as well. Clan rivalries are another hindrance to organization in some areas (Gerrard 1990; Masaiganah 1992).

Around the lake, "most groups were organized in the atmosphere, and they are not strong" (Masaiganah 1992). An experienced organizer told us the story of one group that lasted only a short time. They were organized by a religious group. They decided to try to overcome the cultural bias against women fishing on open waters, although there was no great desire for this expressed by the women. Perhaps the organizers thought that the women's negative attitude toward going fishing would not be very strong—since the community was located miles away from the lake (Masaiganah 1992).

In the villages we visited, we found that a general distaste for collective economic action has surfaced as a reaction to the excesses of the *ujamaa* period. This is true of both men and women. Women want to work on their particular enterprise as individuals, although they are still willing to come together for common logistical support such as transportation. Gerrard (1990) described the women's fish-trading system as "one woman—one unit of trade," but pointed out that they still co-operate, helping and teaching one another. Attempts to manage common property, such as commonly owned fish-

smoking kilns on the beaches of Sote (Gerrard 1990) and Igombe (authors' observation), have not been successful.

Women's revolving credit groups are now beginning to emerge in the area, particularly near Mwanza, but have had a slower start than in other parts of Tanzania (Leendertse 1990). We found only one group of women, on Busisi beach near Mwanza town, actively pursuing this strategy. Women are generally distrustful of credit, although as a group they are a much better credit risk (Masaiganah 1992). They may also be distrustful of talking about credit, hence introducing a downward bias into our own observations.

The Busisi group began in 1993 and had been operating for nine months when we arrived. At that time, the group operated as many as six credit circles simultaneously. Each week every person contributed a set amount of money which was given to one of them on a rotating basis to use as capital for their business. Each circle could include up to 10 women and any woman could participate in as many as she wanted to and could afford. The group with the lowest contribution contributed one dollar per week, while the one with the highest contributed five dollars per week. In the nine months they had been operating they had experienced only one theft in the form of a woman who left the village after receiving her turn. The Busisi group helped each other with more than capital. They sold each other's fish when problems arose in someone's home and watched each other's children.

Fishing communities along the lake shore fit into two ideal types—the settled village in which mainly local residents fish and the fish camp where fishers live in temporary accommodations. These ideal types should not be drawn too starkly. In the settled villages fishing is a very important part of reproducing some households. Symmetrically, the same individuals often inhabit fish camps for extended periods, cultivating gardens and nearby fields. Of the communities that we visited, five are settled villages with active fishing, two are entirely fish camps and two are settled villages that contain fish camps.

Life for women in fish camps varies. The two fish camps we visited are very different sorts of communities, but they are alike in one crucial demographic respect: the vast majority of both populations are young men. It is this shared fact that makes their contrast so startling.

One of the two fish camps is Rubiri, which is very crowded and urban. It is an island half a kilometre across and a kilometre long that holds at least 1000 people. It is more reminiscent of the gold-mining camps near the lake than of the other fishing settlements. The island has only one latrine and the sanitary situation is unpleasant. Fishers on Rubiri said that the island attracted trouble makers. Rubiri is very noisy at night, with many bars and carousing young men. During the three weeks we were there, there were several fights and severe public beatings of miscreants by the village government. Although a few fishers had families with them, most said they would never bring their

wives to a place like Rubiri. Many women on the island are single, and come to provide various services for the fishers.

Nkome is just as much a fish camp as Rubiri, but its involvement in the international market is not nearly as great. The buildings are all made of temporary materials save for one small store, but several families live there together. Nkome is much cleaner than Rubiri. The sanitary infrastructure that someone familiar with rural East Africa would expect to see, such as dish racks and latrines, is in place. An elderly respondent on a nearby farm related that the fish camp used to be seasonal and fishers would come without their families. He said, in fact, that women had been prohibited. In recent years the camp has become year round, families are present and ten-cell leaders, rather than just beach leaders, have been chosen.

The striking difference is at night. Nkome is much quieter. There is still a great deal of drinking, but it does not become carousing. We saw no serious fights or punishments. The women told us that the young men consistently treated them with respect. One said that she had been surprised, but that the way she was treated on Nkome was no different from "in a village."

We discussed the relative peace of Nkome in several conversations with residents, some of whom thought it remarkable as well. The boat owners claim most of the credit, and may be justified in doing so. They see themselves as responsible for the behaviour of their young crew. Some boat owners had brought the crew from distant homes and say that they must answer "to their fathers." One large difference is that on Rubiri crew members are much less likely to be related to the boat owner. Only one (3%) of our sample of 36 Rubiri crew members was a relative of the boat owner, while on Nkome it was 28 percent, a figure that suggests that there is a good chance that at least one member of a boat's crew will be a relative. Other economic and social gaps between the owners and crew are greater on Rubiri as well. The owners are wealthier and, on average, own much larger fishing operations. There are also many owners who came to the fishery as outside investors in response to the export demand, several of these being of an Arabic rather than African heritage. The lesson from this comparison of two beaches is that increased commodification in the fishery not only affects women directly through economic pressures. It changes their lives, and the lives of their communities, indirectly through changes in social relationships that the increasingly stratified industry brings with it.

The Households

Female-headed Households

Female-headed households are disproportionately represented in the fishing industry (Table 1). This was found true in Kenya (Yongo 1991) and in Tanzania, where it is particularly the case for women over 40 (Masaiganah 1992).

The reasons for this are not mysterious. Smith and Stevens' (1988) investigation of female-headed households in the Bukoba area found that these households have severe agricultural disadvantages: smaller plots; insecure tenure; less access to hired labour, agricultural inputs and information; and fewer opportunities to generate capital. We found no significant difference in the average number of dependent children (three) or the average years of education (also three) between women in female-headed and couple-headed households. Fish trading is an opportunity for divorced or deserted women in a region where they have limited property rights (Croll 1981). Of the 195 women in our sample, 22 were divorced or separated; of those, one woman said she received \$50 and the rest continued their lives divorced and penniless.

Table 1
Type of Off-farm Activity Engaged in
by Women by Type of Household

	Type of Off-farm Economic Activity			
	Fish-related	Not fish-related	Only farming	All
Female-headed household	35%	11%	7%	12%
Married women	65%	89%	93%	88%
N	26	63	101	190

Notes: Chi square = 14.98 with 2 degrees of freedom; $p = .0006$. Women active in both fishing and non-fishing off-farm activities were classified as being fish-related. Data is missing for five women. Note that 32% of women doing non-fish-related work and 50% of those not engaged in off-farm activities are the wives of fishers.

Table 1 describes the type of non-farm activity engaged in by women from female-headed households. The fish-related activities are trading and processing fish, and in one case owning a boat. All the traders were independent, but fishers employed seven of the processors to sun dry dagaa. The other off-farm activities were of various types. They included running small tea shops, cooking and selling rice cakes and other snacks and running small shops. Fish-related activities clearly provide an important opportunity for these women. While they participate in other types of off-farm activities in proportion to their overall number in the population, they are underrepresented in agriculture and they are overrepresented in fish-related work.

The stories of two female household heads illustrate these statistics.

Mama Mwili lives in Guta, a beach on Speke Gulf that is central to the fish trade. She was married from 1961 through 1979 when she divorced. The reason she gives for the divorce is that her husband was not happy with her chronic poor health.

Mama Mwili moved to Guta after her divorce and began to support herself by making "local brew," an inexpensive mead. Within a year she began to invest

in fishing gear. She bought twine and made two fishing nets that she gave to a fisher in return for a share of the catch. She quickly discovered that this was a difficult arrangement to enforce. The man to whom she was renting the gears was selling the catch to other fishers on the lake and underreporting the catch to her.

She decided to buy hooks and a line and hire a second man to work with her in addition to the first. This arrangement seemed to work for the first year, until the first fisher reported that her nets had been stolen. Not long after this, the second reported that her hooks and line had been lost in the water. This was the end of her fishing. Mama Mwili turned from fishing to processing fish, processing cassava and carrying these items to sell in distant markets.

Another woman in Guta who became directly involved in fishing is Mama Tatu. She was born in 1946 and married at the age of 12. She suffered two stillbirths before finally giving birth to her first child after 14 years of marriage. After having this one son she was unable to have any more children. Her husband divorced her because of this infertility, combined with general ill health.

Mama Tatu is involved in many enterprises. She farms. She built three houses with money she earned from selling cotton and now rents two of them. She also sells cassava and maize flour and smokes fish. She became involved in fishing, when she convinced her grown son, who was working in Dar es Salaam, to send her 10 fishing nets. This was in 1992, just after the profitability of the Nile perch fishery had peaked. She supplied her nets to a fishing boat in return for a share of the catch. After four months the boat owner told her that five of her nets had been stolen.

She decided that she would employ her brother's son to help her with the fishing. She brought him to stay in her house and work on her remaining nets. The young man was unreliable, he would fish but then refuse to give her the proceeds; sometimes he would come home with nothing. Her experiences with fishing have led her to decide to concentrate on farming. In spite of the danger of drought, she feels that fishing is too unpredictable.

Mama Mwili and Mama Tatu's stories illustrate how much flexibility a single woman needs to make a living by Lake Victoria. They have to be able to shift from one risk-filled way of surviving to the next. The stories illustrate that precarious health, to which their poverty and marginality contributes, is an important source of risk, not only to their bodies but to their social relationships. Fish-related activities provide several options—and so make a major contribution to the flexibility they need. Men, however, still dominate these activities. This domination, in combination with the basic geographical facts that make fishing such a difficult thing to oversee, can make fish-related activities a dangerous option for women.

Couple-headed Households

Households around Lake Victoria are fluid entities with constant movement in and out of people sharing various relations. Co-wives often live together in a homestead, a complex called an *mji* in Swahili. Commonly the husband/father

allocates the land between co-wives and other relatives who may be present, but there are also *mji* lands on which everyone works (Kazimoto 1991).

One surprising result is that, unlike many other fishing communities around the world, fishing enterprises on Lake Victoria do not commonly involve husbands working with their wives. We found no significant relationship between a woman being the wife of a fisher and her being engaged in fish-related businesses.

Our data show husbands getting the money from 83% of the economic activities in which women participated. This includes agricultural activities, but does not differentiate types of agricultural activities. When wives control their own resources they must spend their money on the household, while husbands are not so constrained (Potash 1985; Safilios-Rothschild 1990; Smith and Stevens 1988).

Women do most of the field work and are involved in many practical decisions about the household and farm (Fortmann 1979). In our survey we asked respondents about who decided household issues. These responses are reported in Table 2.

What is interesting is the extent to which the responses converge. Save for the question about businesses, which is not precisely the same for the two populations, the numbers are remarkably close. The statistically significant differences are that men do not report that their wives are the sole decision makers in matters of crops, children's education and helping relatives to the same extent that women do. The only other difference is that more men see themselves as sole decision makers about the children's education. Even these differences are not large. Perceptions of who is making these decisions are not greatly different between men and women.

These data do not necessarily reflect the decision-making patterns in particular households. At the level of individual households the data in Table 2 lose their focus. As these relationships are created across time in concrete, day-to-day decisions, the categories lose the definition they have when the questions are abstractly placed. Survey questions and answers are a discourse. They are not the same discourse as deciding what will be for dinner. A wife may not ask her husband what he wants for dinner after he has just been difficult about what crops to plant. This does not mean that they are not able to reveal what people see as a general pattern.

These questions were asked of both partners of a couple in 14 instances. The couples' constructions of their own households' decision-making processes agree about half the time. Among these 28 people, three patterns of agreement and disagreement never emerge and we can infer that they are rare. One of these is one of three possible forms of agreement: both people never agree that the wife is a sole decision maker about some arena. We also never see two of the six possible forms of disagreement. No husband says that he makes the decisions about some arena while his wife says that she makes the

decisions. Second, no husband says that his wife makes the decisions while his wife says that they share them.

Table 2
Percentage Who Decide . . .

The person who decides . . .	Husband	Both together	Wife	N
<i>Women's responses</i>				
what food will be cooked	58	31	11	163
what business ventures the				
wife will pursue	45	41	14	163
what crops to plant	30	56	14	162
children's education	31	62	7	135
children's punishment	25	68	7	137
helping relatives	23	70	7	163
<i>Men's responses</i>				
what food will be cooked	60	33	7	123
what business ventures the				
husband will pursue	65	32	3	134
what crops to plant	36	57	7	133
children's education	44	56	0	119
children's punishment	22	69	9	111
about helping relatives	28	71	1	133

When we combine these data with discussions and observations in the villages, what emerges is a picture of gender relationships in transition. The expectation of male domination is being challenged, and women's status in the household is slowly shifting. There is a norm that most decisions are to be made by the couple together, but women's participation is still considered, particularly by the men, to be at men's sufferance. As Masaiganah (1988) observes, in Tanzania improving the status of women "is still considered by the majority to be a special favour to them" (1988:2).

The next four tables help illuminate the importance of the fish business for married women. Table 3 reports from whom, if anyone, women got money to start their off-farm, economic activity. It shows only two important sources of funds: husbands and other women.

Table 4 shows that one implication of a woman getting help from her husband in starting an off-farm business is that she is much more likely to be required to hand the profits over to him. We should note that the variable used is who spent the money, not who participated in deciding how to spend the money. The results are clear: if a woman received the money to start a business from her husband, the husband is much more likely to be the one who spends the profits. It is also revealing that more than a third of the women who started the business without their husbands' help also gave them the profits.

Table 3
Sources of Funds for Women's
Business Ventures

Source	Percentage citing source
Husband	51
No one	33
Female relative	8
Female friend	3
Parent(s)	1
Male relative	1
Male friend	1
Group	1
Local CCM Party Official	1
N	75

Note: N = Total number of different sources of help cited by women regardless of number of businesses.

Table 4
Relationship Between Receiving Husband's
Help in Starting an Activity and Keeping
the Money from the Activity: Women's
Off-farm Economic Activities

	Did wife receive husband's help when starting the activity?	
	No	Yes
<i>Person who spent the money</i>		
Husband	36%	85%
Wife	64%	15%
N	31	39

Notes: Chi square = 15.39 with 2 degrees of freedom; $p = .0005$. The unit of analysis is the activity. Nine respondents listed three activities, including work on their own farm, 73 listed two activities and 108 listed one. "Spent by wife" shows that some money from the activity was reported as spent by the wife, even if the husband spent some money from the activity. Eight activities generated no funds; we failed to get data on who spent the money for five activities.

As many scholars have pointed out, even when the woman spends the money, the husband may be leaving her to care for the household, while he spends other money on what he pleases (Potash 1985; Safilios-Rothschild 1990; Smith and Stevens 1988). Women often subsidize their husband's bachelor goods even when the money is kept in their hands. Moreover, Wamalwa (1989) found a pattern among the Wakamba in central Kenya in which women use their surplus for the community, while men invest privately, thus increas-

ing gender stratification. Nevertheless, a woman holding money still has more bargaining power within the household than a woman who does not (Holmboe-Ottesen and Wandel 1992). Several women, however, took pains to set straight the outside researchers who sometimes seemed intent on asking questions about how terrible their husbands were. It is true that many women on the shores of Lake Victoria are caught in bad marriages with lazy drunks. It is also true that custom and social structure give men permission, and even encouragement, to behave in repressive and irresponsible ways vis-à-vis their families. On the other hand, many women have responsible partners and live in households where decisions really are made together.

Tables 5 and 6 explore the relationship between husbands and types of off-farm economic activities. Table 5 shows two things. The first is that off-farm economic activities in general contribute to women's independent control of resources. The second is that fish-related activities contribute to this independence to a greater degree than do non-fish-related activities.

Table 5
Whether or Not Proceeds of an Activity Were
Spent by Husband, by Type of Activity for
Respondents Living with a Husband

	Type of off-farm economic activity		
	Fish-related	Not fish-related	None (farming)
<i>Person who spent the money</i>			
Husband	47%	67%	94%
Wife	53%	31%	6%
N	19	51	135

Notes: Chi square = 36.99 with 2 degrees of freedom; $p = .0000$. The unit of analysis is the economic activities of women living with a husband. Eight activities were reported to generate no funds; data on who spent the money is missing for five activities.

Table 6 profiles the relationship between the type of off-farm activity and receiving start-up money for that activity from a husband. Those who are not involved in fish-related activities are more likely to have received start-up money from their husbands.

Tables 4, 5 and 6 taken together reveal a clear pattern. Women engaged in economic activities are often operating as their husband's agents. They receive resources from their husbands who then receive the proceeds. For reasons that are not entirely clear to us, married women engaged in fish-related activities are likely to operate more autonomously. The stronger relationship is between providing capital and receiving the proceeds.³ Husbands for whom wives are playing the role of an economic agent seem reluctant to set them up in fish-related businesses.

Table 6
Relationship Between Receiving Husband’s
Help in Starting an Activity and Type of
Women’s Non-farm Economic Activity

	Type of off-farm activity	
	Fish-related	Not fish-related
<i>Did wife receive husband's help when starting the activity?</i>		
No	62%	37%
Yes	38%	63%
N	21	62

Notes: Chi square = 2.99 with 2 degrees of freedom; p = .08. The unit of analysis is the activity.

One possible explanation is surveillance. Fish-related activities keep women moving between the fish landings, processing areas and marketing areas. This may reduce the ability of husbands to superintend the activity, at least in comparison to cooking and selling rice cakes or running a store, which are more sedentary. This may discourage husbands from funding these activities. Years ago, men did not allow women to do any petty trading, but now they see it as a source of income (Masaiganah 1992). Fish-related work may be more attractive to women in certain types of marriages. Gerrard (1992) argued that fish traders in Tarime tend to be women with more co-wives, older husbands and/or husbands living elsewhere.

The story of Mama Mmoja provides illustration.

Mama Mmoja lives in Esegere, a small Muslim fishing community in Tarime District, near the Kenya border. She is 30 and has five children. She was married when she was 16 to a man who was already married. But she considers herself the first wife, because the other woman’s parents never received a bride price from the husband.

She describes her husband as lazy. He does not farm. He sends his fishing crew out by themselves and spends his own time “choosing where he will go to take his meals.”

Her husband set her and her co-wife up in a small tea shop close to the fishing beach. The wives alternated operating the shop in weekly shifts. They were expected to provide for their own consumption from the profits they made during their shift.

Mama Mmoja turned to her brother in Musoma town for help. Her brother bought her five pressure lamps and five nets for fishing dagaa. She invested this equipment in her husband’s fishing operation and this arrangement was successful for a while. Then her husband went to fish on Ukerewe Island and he stayed there for months without sending her share of the proceeds. During the same pe-

riod the tea shop business folded because neither wife could make the reinvestment necessary to keep in going. They were left to rely entirely on farming.

When her husband returned from Ukerewe, he had another wife who had two children by another man. The fish caught in Mama Mmoja's fishing nets was supporting the whole family, including her co-wives and their children. She took her five pressure lamps and two fishing nets, and now she has rented them to another fisher for what she considers good terms. The other three nets remain with her husband and she considers this a bad investment because of his laziness. Although she knew she would gain nothing, she decided to leave these nets with him to "comfort" him and insure peace in the family.

Turning again to her brother, Mama Mmoja got enough money to start the hotel business again. Her brother had also agreed to take her firstborn so that she could go to primary school. When she completed primary school, the brother wanted to continue to help her go to secondary school. Her husband refused, and sent a letter to the brother demanding his daughter's return. When she returned, he married her to a man of 46 in return for a bride price of 10 cows, 5 goats and 30 dollars. "I was confused," she said, "and my daughter had to agree for fear of her father. I cried because my daughter was very young and without an education probably will not be able to help me nor herself."

For Mama Mmoja access to fishing is an important resource. She needs to be able to have several different ways of protecting her own and her children's livelihood. Drawing on her bonds with her brother is clearly important. Even with outside help, fishing is a way she can put the small amount of help he can provide to good use. It gives her a measure of independence and flexibility in dealing with her husband, and proves an important bargaining chip. As Table 3 makes clear, however, male relatives are not a common source of this kind of aid.

Conclusion

Changes in the Lake Victoria ecosystem have increasingly marginalized economic opportunities available to women. This is not because of the changes themselves, but rather because of women's disadvantages in the day-to-day negotiations that determine how lake-side people will respond to the changes. Women have experienced a loss of access to the species that they once processed, and even fished for, while gaining access to the newer species has proved difficult. They have been faced with greater need for capital, powerful competition for fish procurement and even the active resistance of men. Areas that they have carved out for themselves in the new fisheries, fish racks and swim bladders, are now being threatened. The fisheries management measures that are going into place are making it more difficult for them to get fish.

These women are not giving up. Their responses are increasingly articulated at the community level. They help each other, often almost in spite of outside efforts to get them to do so. While revolving credit groups have been slower to start on the lake than elsewhere, they are coming into being. They offer pre-

cisely what the women need to deal with the new fisheries—flexible access to credit.

Access to the fish is very important to these women. It is not simply another economic option, although that alone would be very important. Fish are a resource that provides greater economic independence than others do. The fish business is an alternative to agriculture for single women with diminished access to land and other inputs, and it is an avenue of increased independence for married women.

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Notes

1. The importance of international and national markets mean that wider scales are also crucial. We address them at the level of the lake.
2. We use the inclusive term "fisher" throughout the article. The reader should understand that, with the exception of the ill-fated women's group discussed on p. 158, women do not go out fishing on the lake. A few do, however, own fishing boats and other gear. Some women fish for small species from the shore.
3. While space precludes a full report of the results, in a logistical regression of "fish-related business" and "husband as source of capital" on "control of proceeds" only "husband as source of capital" remains significant.

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