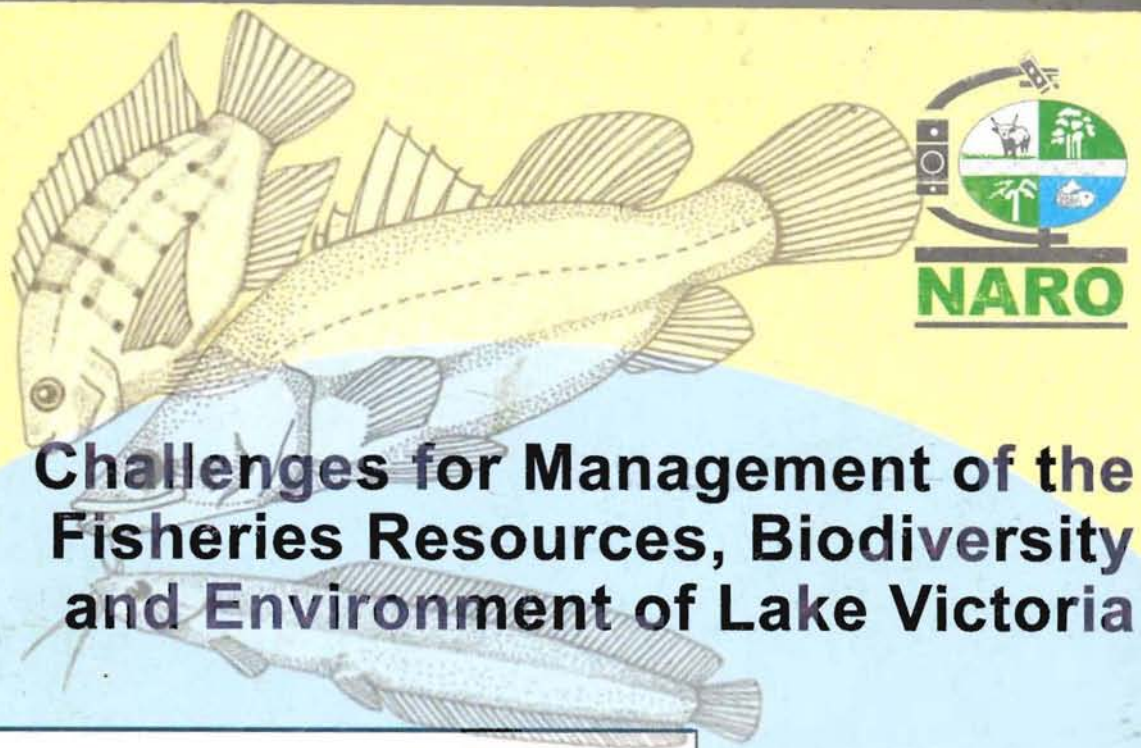


**FIRRI**



# Challenges for Management of the Fisheries Resources, Biodiversity and Environment of Lake Victoria



Editors:  
J. S. Balirwa,  
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R. Ogutu-Ohwayo.

**Fisheries Resources Research Institute**

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## 9.5. The Nutritional Status of Fishing and non-fishing Communities of lake Victoria basin.

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### **Introduction**

Fishing communities traditionally depend on fish for animal protein because they have easy access to the resource. Fishing is the main source of livelihood in terms of food, income and employment. An increase in regional and international demand for fish has created a supply gap that compromises domestic consumption needs. Initially, only Nile perch was exported but currently Nile tilapia and mukene are also sold as export commodities.

Fish prices have thus risen due to increased fish export demand and there is concern about the reduced amount of fish available to local communities. The riparian states of Lake Victoria have food security contained within their National Policy. However, despite all measures designed to prevent food insecurity, the riparian states experience different forms of malnutrition in varying degrees. For example acute malnutrition in Uganda occurs in children at an average rate of 2% and is subject to wide regional differences.

We examined socio-economic variables that contribute to malnutrition in selected communities in the Lake Victoria basin during 2001. The study was carried out in nine districts and hinterland communities up to 25 km away from the beach were used as the reference population. The main variables examined were: feeding habits, income and intra-household food distribution and living standards. Others included disease and health, sanitation and hygiene, childcare and mothers' age and workload, weaning practices, agricultural production and food availability, care during pregnancy and food taboos.

### **Nutritional status of mothers and their children**

The prevalence of malnutrition in children residing in the lake basin is not determined by the mother's nutritional status. Generally mothers (95.4%) were well nourished with more undernourished mothers at hinterland (6.2%) compared to beach (3.0%) mothers. The well-nourished class falls within the range of 18.5-25 Body Mass Index (BMI) with a mean score of 3.1. Of the children who suffer from varying degrees and forms of malnutrition, 94% of stunted children had

well-nourished mothers. Those who were wasted, 96% were from well-nourished mothers and underweight children, 91 % were from well-nourished mothers.

Comparison between beach and hinterland children revealed a positive relationship between their weights for height (WHZ), weight for age (WAZ) and height for age (HAZ), indicating that children from the hinterland were suffering from wasting. Height for age and weight for age comparisons showed that the children were stunted and underweight for their ages. In comparison to the reference population, the low weights and heights for age in hinterland children clearly indicated acute malnutrition.

Overall, 45% of the children (both hinterland and beach) suffered from chronic malnutrition (Table: 9.5.1). However, 9% of wasted children were registered in children from hinterland in comparison to 5% at beach sites. Combination of chronic and acute malnutrition (stunting and wasting) were high 29% were at hinterland sites compared to 17% from beach sites. These differences were statistically

$(\chi^2 = 0.003, P < 0.05)$  where x are the degrees of freedom.

significant.

<i>Site</i>	Chronic malnutrition	Acute malnutrition	Chronic /acute malnutrition
	<i>Stunted %</i>	<i>Wasted %</i>	<i>UndelWeight %</i>
Beach	44.2	5.0	166
Hinterland	44.8	9.4	28.6
Average	44.5	7.2	22.5

Table: 9.5.1 Percentage average **Malnutrition** forms in children.

Cross tabulations in the districts visited revealed that children from different districts suffer varying degrees and forms of malnutrition (Table 9.5.2). Wakiso (25.0%), Mukono (21.6%) and Masaka (12.5%) had more underweight children than other districts. Stunted children were found in Mukono (24.1%), (Wakiso (17.2%), Bugiri (14.9%) and Kalangala (12.6%). Children who suffered from wasting were in Wakiso (25.0%), Mayuge and (25.5%), Busia (14.3%) and Masaka (10.7%).

**Table 9.5.2. Percentage Malnutrition in children from nine sampled Districts**

District	Nutritional status of the sampled children		
	Underweight %	Stunted/ too short%	Wasted/ Thin%
Masaka	12.5	9.8	10.7
Rakai	9.1	3.4	3.6
Kalangala	8.0	12.6	-
Mpigi/Wakiso	25.0	17.2	25.0
Mukono	21.6	24.1	14.3
Jinja	4.5	2.9	-
Mayuge	8.0	8.2	25.5
Bugiri	4.5	14.9	7.1
Busia	6.8	6.9	14.3
Total	1000	100.0	100.0

Source: FIRRI survey data, 2001

### **Causes in differences in mothers and children's nutritional status**

Malnutrition in children is caused by inadequate food intake during critical periods of growth. Prevalence of malnutrition is easily detected in children compared to the mothers because mothers are mature and are able to adapt to changes in food shortages. In addition, mothers sometimes eat foods, which children do not like. This therefore renders the children more vulnerable to diseases that dehydrate them faster than adults.

### **Feeding Habits**

The consumption of staple food was high at beaches (24.6%) for both mothers and their children compared to hinterland communities (19.3%). This was significant (t- test =0.000 at 95%) for households that consumed staple foods three times a day. Generally (43.0%) of the community had consumed peas, beans and nuts in their diets with the majority (59.5%) from the hinterlands. The consumption of fats and oils for mothers and their children was higher at beaches (53.1 %) with a significant difference (t-test =0.005 at 95%). Children at the hinterlands ate fruit and vegetables as frequently as beach children. However hinterland mothers (55.7%) ate fruit and vegetables more frequently than beach mothers.

### **Fish protein consumption**

The frequency of animal protein consumption was generally high (60.2%). However, high consumption frequency was recorded at beaches (73%) in comparison to 40% at the hinterland sites although the quantity consumed per meal may not be sufficient for normal body requirements. A relatively high percentage of mothers at beach (83.0%) and hinterland (96.6%) had not consumed Nile perch.

(Fig. 9.5.3) This was attributed to the high Nile perch prices. Household heads would rather sell Nile perch and buy other animal protein substitutes for home consumption (Olenja 1991). However, some few families reported that they could not eat Nile perch because of its smell and food taboos.

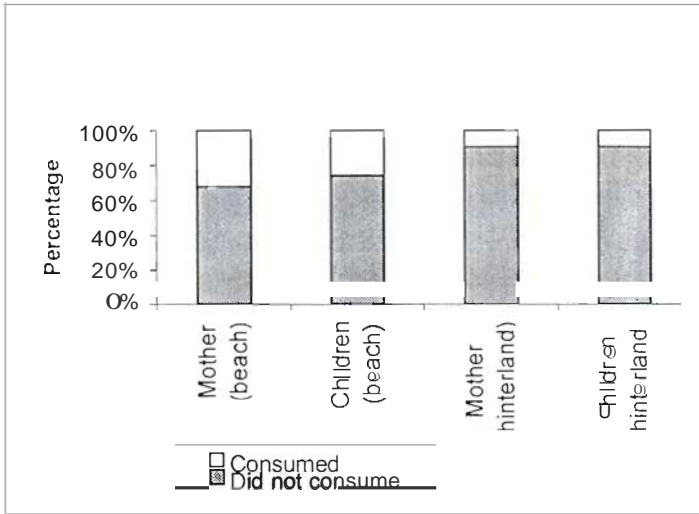


Fig: 9.5. 3 Nile perch consumption for mothers and their children by site.

Source: FIRRI survey results

Nile tilapia was the most consumed fish species. The consumption was satisfyingly higher amongst children at beach (48%) compared to those from the hinterland (13%) (t-test = 0.000 at 95%). The study revealed that the general demand for fish has influenced the prices making it unaffordable to the local communities. Mukene fish consumption was low for both mothers and children at both sites (8%).

### Income and intra-household food distribution in relation to living standards

Income and its distribution play an important role in the nutrition of a household's (Kennedy and Peters 1992; Vella *et al.*, 1995). The study showed that households with diverse income base fed its members on high-energy foods, animal protein, fats and sugar unlike the poor who were vulnerable to malnutrition due to lack of income. However, income and malnutrition will depend on the size of the income, who controls it and the diversity of sources from which it is drawn. At hinterland sites, food items are often produced for subsistence but are later sold without compromising household food security. Poverty and malnutrition can be exacerbated by the demand for cash income. Olenja (1991) reported that families from western Kenya sell highly nutritious foods such as eggs, milk and ground nuts instead of feeding them to children in an effort to obtain cash incomes.

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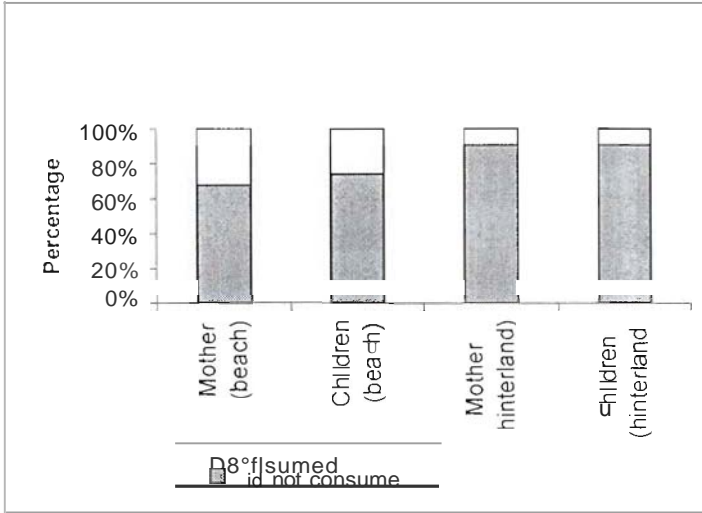


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The socio-economic conditions that mothers find themselves in contribute to the under nutrition of their children. The study revealed that the living standards of beach communities are very different from those of hinterland settlements. Hinterland communities have access to fair infrastructure as opposed to beach communities who are frequently afflicted by disease due to the poor environment. A study carried out in southwestern Uganda found out that "health and nutrition are affected more by the socio-economic situation than by health services. (Vella *et al.*, 1995).

### Malnutrition in relation to disease, health and sanitation

The most common diseases that contribute to malnutrition are malaria, HIV/AIDS, pneumonia, diarrhoea, measles, tuberculosis, anaemia, marasmus and sleeping sickness. Studies have shown that HIV-positive mothers gave birth to children with low birth weights. Vella *et al.* (1995) in their study from south - western Uganda, argued that the most significant cause of malnutrition is diarrhoea and therefore called for better hygiene and latrine construction.

### Childcare, mothers age and workload

Increased responsibilities for mothers have limited the amount of time available for them to care for their children (Wandel and Holmboe-Ottesen 1992). The study revealed that mothers are involved in income generating activities, which negatively affect the nutritional status of their children. Children between 40 - 59 months are given responsibility to care for their younger brothers and sisters, this increased the risk of food contamination during feeding. The age at which the mother gives birth is yet another factor. Because very young mothers are not able to provide adequate care to their children, there are higher chances that children born to such mothers would be undernourished. In 1998, UNICEF estimated that, 18% of Ugandan girls between the ages of 15 and 19 had given birth.

### Weaning practices

Early child weaning practices and food supplements of poor nutritional value contributed to malnutrition (Olenja 1991). Mothers in Uganda's rural areas will breastfeed their children far up to two years. However, today, mothers are forced to wean their young at an earlier age due to social and economic pressures. More so the study showed that many households couldn't afford nutritious weaning foods, so their children would be weaned on whatever was available for the whole family. More prudent from a nutritional perspective, the preparation of a special diet for children was time consuming and potentially expensive (Mwadime *et al.*, 1995).



## Agricultural production and food availability

During good harvest periods, the foods are available and fairly cheap compared to poor seasons (Haartog *et al.*, 1995). During famine the nutritional status of communities are very much affected since prices of food staffs increase. The study showed that hinterland households that depend on farming experienced food scarcity between planting and harvesting which is normally a time of high levels of energy expenditure a similar observation to Chambers *et al.*, 1981). Because of lack of alternative income hinterland households are forced to eat one meal or even go without meals for some days. This impacts on the young who are unable to cope easily with seasonal shortages. On the other hand, food availability for fishing households was very much dependent on good catches. The study showed that fishing households always had access to fish but the demand for cash income did not allow them retain Nile perch for household consumption. During periods of fish scarcity fishers are forced to migrate to other areas, and hence household food intake is reduced (Latham 1997).

## Conclusion and Recommendation

The study shows that fish has become an expensive animal protein and Tilapia is the most consumed fish species. Low economic production, food availability, household income, mothers' workload and weaning practices contribute to malnutrition. Diseases such as HIV/AIDS, malaria, diarrhoea, measles tuberculosis; anaemia and sleeping sickness also cause malnutrition in children. The study further shows that beach communities live under poor conditions and lacked basic sanitary facilities. Furthermore, the mothers' nutritional status was better than that of their children and likewise beach mothers and children had better nutritional status than their counter parts in the hinterlands.

The current National Fisheries Policy report does not prohibit export of tilapia but encourages market share value without compromising domestic food security. There is need therefore to discourage the export of tilapia since it is the most locally consumed fish species. There is need to strengthen health services and education of mothers on proper feeding habits, hygiene and care of their children. The constitution of the Republic of Uganda includes a policy on food and nutrition in its national objectives and principle of state policy. To ensure that every household has enough food throughout the year, it is important to strengthen byelaws to regulate future uncertainties. Nutrition intervention in the major forms of malnutrition such as protein energy and Vitamin A deficiency need to be strengthened. Further studies to investigate the energy and protein intake to establish kilocalories and grams of protein per consumer unit need to be carried out (Uganda National Food and Nutrition Council 1995).