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MWAMGONGO

**Socio-economic study of Mwamgongo village,
Kigoma Region, Tanzania**

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**Pollution control and other measures to protect biodiversity
in Lake Tanganyika (RAF/92/G32)**

**Lutte contre la pollution et autres mesures visant à protéger
la biodiversité du lac Tanganyika (RAF/92/G32)**

The Lake Tanganyika Biodiversity Project has been formulated to help the four riparian states (Burundi, Congo, Tanzania and Zambia) produce an effective and sustainable system for managing and conserving the biodiversity of Lake Tanganyika into the foreseeable future. It is funded by the Global Environmental Facility through the United Nations Development Programme.

Le Projet sur la Biodiversité du Lac Tanganyika a été formulé pour aider les quatre états riverains (Burundi, Congo, Tanzanie et Zambie) à élaborer un système efficace et durable pour gérer et conserver la diversité biologique du lac Tanganyika dans un avenir prévisible. Il est financé par le FEM (Fonds pour l'Environnement Mondial) par le biais du Programme des Nations Unies pour le Développement (PNUD)

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1 INTRODUCTION

1.1 Background

The Lake Tanganyika Biodiversity Project is developing a Strategic Action Plan for the conservation of Lake Tanganyika. In preparation for this, the Project is undertaking a series of Special Studies of biodiversity, sedimentation, pollution, fishing practices, and socio-economics. The Socio-Economic Special Study (SESS) aims to identify ways in which the Project can promote:

- participation in fisheries and wider natural resource management by local communities;
- improved, more sustainable fisheries and resource utilisation practices;
- alternative livelihood and income earning opportunities outside of fisheries, especially where lake biodiversity is threatened; and
- environmental education work, to facilitate the above, and to promote general awareness of the importance of the lake resource, especially amongst local people and local government.

1.2 Aims and objectives

The aim of the SESS is to investigate the social and economic aspects of life at selected sites in the area with the objectives of improving understanding of:

- livelihood strategies of local communities, as a basis for informed intervention by interested partners in development;
- patterns of natural resource utilisation, and the threats to natural resources and biodiversity of the lake;
- the socio-economic make-up of lakeshore communities and the key stakeholder groups;
- institutional mechanisms whereby improved resource management and local development initiatives might be introduced.

From these investigations specific proposals for action will be developed for implementation by appropriate local, national, or international institutions and organisations. Data collected from the studies will form a baseline against which their impacts can be measured.

Since January 1997 PRA investigations have been carried out in various villages in Tanzania. The first investigation which involved a multidisciplinary approach was carried out at Mtanga village in the vicinity of Gombe Stream National Park (GSNP). Results of that work are reported in Lwoga, 1997. A second comprehensive PRA was undertaken in August 1997 in four villages in Kirando Ward, Nkansi District, Rukwa Region; results are reported in Mung'ong'o (Ed.) (1997a). A third PRA was undertaken in December 1997 in Buhingu Ward, Kigoma Rural District, Kigoma Region, in the vicinity of the Mahale Mountains National Park, and a was reported in Mung'ong'o (Ed.) (1997b).

In February and July 1998 two surveys were conducted in selected areas in the wider catchment in Kigoma Rural, Kasulu, Sumbawanga Urban, Sumbawanga Rural, Nkansi, and Mpanda Districts to collect data on the socio-economy and institutional set-up of the Tanzanian lake basin (Mung'ong'o, 1998ab). The areas were selected according to peculiarities in economic activities, type of institutions and stakeholders, and habitats.

This report covers the results of a fourth socio-economic study undertaken in Mwamgongo village, Kigoma Rural District, in October, 1999 (see appendix A for fieldwork itinerary). The study team comprised of :

- Dr C.G. Mung'ong'o, National Socio-Economics Co-ordinator;
- Mr B.T. Tarimo, Training, Education, & Communications Co-ordinator;
- Mr Omari Kashushu, Research Officer, TAFIRI;
- Mr Hamza Mabochi, Community Development Officer, Kigoma;
- Mr Amani Kingu, Agricultural Co-ordinator, TACARE;
- Ms Dinnah Peter, Community Development Officer, Kigoma; and
- Ms Karen Zwick, Socio-Economics Facilitator

2 METHODS

2.1 Sampling strategy

Although Mwamgongo village, like the villages in Buhingu Ward, is located in proximity to a protected area (GSNP), interest in this village was also determined by its proximity to the Burundian border, as it was hypothesised that trading in fish and other commodities would be an important component of the local economy.

Community and themed focus group meetings were held opportunistically on the first day of fieldwork and resulted in maps, transect walks, timelines, seasonal calendars, and wealth group definitions (see appendix B for list of people met). These meetings were supplemented on the second and third day with informal semi-structured household interviews, in which every fourth household on two transects was interviewed. Thirty-six out of a target of 40 households were interviewed. Informal key informant interviews were held with the Head Teacher of the local school, the village Sheikh, the Health Officer, the Fisheries Officer, and the Village Chairman.

2.2 Data collection techniques

In order to improve understanding of household characteristics, dynamics, and survival strategies one of the first data collection tools used was wealth and social group definition. Informed local people were asked to define what constitutes "wealth" in the village, and then, on the basis of this definition, to identify socio-economic groups. Steps followed included:

- Listing of assets that are perceived as "wealth" in the village. The list was headed by catamarans, transport boats, and shops (*duka*).
- Determining the importance of each of these as criteria for assessing wealth or social status. After short discussions items such as cultivable land, goats or sheep, and houses were dropped because of their marginality in terms of income generation.
- Determining the number of catamarans and transport boats, and the size of shops which define a household as well-off or poor.

A household with more than one engine-powered catamaran, more than one engine-powered transport boat, or a *duka* with a capital of 1.5 million TSh qualified as well-off. A household with a combination of a catamaran and a *duka*, or a transport boat and a *duka* was considered more well-off than one with only one of the three assets, as the former's income generating capacity was diversified and constant, while the latter was seasonal.

A very poor household was, on the other hand, defined as one with none of these assets, insecure food supply; poor shelter and clothing, and little hope in life. Begging is a major survival strategy, and the elderly and unemployed are included in this group.

In between these extremes villagers identified two other middle groups. These were the not-so-wealthy (*Wenye uwezo kiasi*) and the not-so-poor (*Wasio na uwezo kiasi*). The not-so-wealthy had paddle catamarans, paddle boats, some duka worth less than 500,000 TSh, or were fish traders operating with a capital of 100,000 to 200,000 TSh. The not-so-poor depended on *kibarua* on other people's catamarans/boats/*shambas*, cultivated less than half of an acre for subsistence, had a few goats/sheep and chickens, but did not have a secure food supply throughout the year.

A semi-structured checklist of questions (see appendix C) was used to collect information on household size and composition, educational levels, sources of livelihoods, expenditure priorities, labour use and availability, access to financial resources, health and sanitation, access to natural resources, and gender relations and the division of labour. Other data collection tools used included daily timetables, seasonal calendars, and direct observation. Each morning after breakfast the team met to review the previous day's work and plan for the day. Information gaps were identified and ways of plugging them were decided upon.

2.3 Methodological limitations and data quality

The reliability of any data depends on the accuracy and precision of the methodology used to collect them. Although the semi-structured interviews were not part of a census, some data distortions characteristic of censuses were observed. Crop production figures, field sizes, and information on age are most suspect in these interviews, primarily as a result of problems of respondent recall or incomprehension rather than deliberate manipulation. For example, many farmers could not easily quantify their production since crops such as cassava for household consumption are not harvested at once, but continuously as soon as they are ready. Furthermore, modern measurements, such as kilograms, acres and hectares are not commonly used in rural areas, and are hence not meaningful or even familiar to many. For example, not only are farm plots rarely planned and hence measured, many farmers find it difficult to conceptualise the difference between an acre and a hectare. Information on livestock numbers, however, is often deliberately manipulated and understated because of the government's animal taxation policies.

The nature of this study also affected its objectivity, as elders seemed to over-emphasise the prevalence of poverty and helplessness in the village and understate "wealth" apparently:

- to emphasise the negative effects of the ban on beach seining; and
- to hide fundamental differentiation in case some form of aid materialised from the study.

The conclusions of this study are drawn with these limitations in mind. In all cases efforts were made to verify the sources and identify possible areas of error.

Doubts on the validity of findings drawn from qualitative methods applied in very short research periods are even more serious, especially among investigators using conventional quantitative techniques. These doubts include the ability of the investigator to see through the eyes of other people and interpret events from their point of view. Questions are raised as to whether researchers can really provide accounts from the perspective of those whom they study, or if they can really evaluate the validity of their interpretation of those perspectives. Finally there is the important question of objectivity: how do researchers using qualitative methods avoid their cultural values and personalities from influencing their descriptions of the community they are studying?

These are difficult questions to answer. Each researcher handles them according to the dictates of the relevant research problem and research environment. In the context of the PRA techniques used in the present study such doubts were constantly in the back of the researchers' minds. Efforts were made to get as thorough an understanding of the Mwamgongo community as possible before the PRA exercise was begun. The comprehensive experience of the local collaborators, gained during many years of fishing, agricultural and forestry extension work in this part of Kigoma District, was a useful resource in this respect. For example, the familiarity, trust, and rapport built by the two TACARE counterparts with the people of Mwamgongo put us in a privileged position to understand this society in the rather short period of stay in the village. Moreover, the resulting data has been evaluated at least twice during focused group discussions and key informant interviews in the village, providing triangulation, and much of the qualitative data and agricultural information from the interviews have been corroborated with data from available documentary sources.

3 STUDY AREA

3.1 Location and history

Mwamgongo is one of many lakeshore villages in Kigoma Rural District, and is situated between Kigoma Municipality and the border with Burundi. It is bordered by Bugamba village to the north, Kalinzi, Mkongolo, Chankele, Bubango and Mgaraganza villages to the east, and Mtanga village to the south. Within the village are into eight *vitongoji* (sub-villages), namely Busoro, Buseke, Nyandiga, Kashoko, Mpemba, Mgazo, Kamasa and Gombe. The GSNP, which lies to the south of the settled area, is included in the village.

According to village records the population is 6,783, distributed in 582 households. The ethnic composition reflects the fluidity which has prevailed in this border region as a result of cross-border trade, fishing, and political conflicts in neighbouring Burundi and Congo, and the dominant Ha make up only 60% of the population, with the rest comprising of Bwali from Congo (30%) and Rundi from Burundi (10%).

Mwamgongo is a very old village, perhaps established as early as the 19th Century under the historical name of *Nyabusho-ya-Mwamgongo*. Until 1962, when the chiefship was abolished, the village was the headquarters of Mtemi Ryugwe's chiefship, which stretched from the River Msala in Kagunga on the border with Burundi to Berionge-ya-Kigoma in the south.

Historically the area was sparsely populated with scattered settlements, and it was only after 1947 when the Gombe Stream Game Reserve was gazetted and its human population displaced that the village of Mwamgongo grew and acquired its present structure. As most of the settlers were fishermen, the settlements became concentrated along the lakeshore.

The process of population concentration was intensified during the Villagisation Programme of the 1974-6 (code-named *Operation Kigoma*) when people from Kalinzi, Mgaraganza, and other nearby villages settled on the periphery of Mwamgongo. As the immigrants were often poor their settlement in the periphery causes the social map of the village to reflect its physical structure, with the long established well-off households occupying the lower areas along the lakeshore and the core of the village, while first the less well-off and then the poor fan off up the hills in concentric semi-circles. Today it is recent arrivals from Burundi who are furthest out on the social and physical map.

Historically, houses were built from poles cut in the forests of the surrounding hills and the Gombe Stream Game Reserve. Today, however, most houses are made of mud bricks, although this is said to be a comparatively recent development associated with the coming of Arab merchants and European colonial masters. In very recent times, decreasing supplies of building poles have hastened this change.

3.2 Geophysical characteristics

The village is situated on a small bay in the valley of the River Ngonya. It is edged by sharply rising hills in the north, east, and south, and divided in two by the river, which provides it with water for domestic use. Other smaller rivers include the Mitumba, the Rutanda, the Kakombe, the Kahama and the Bwavi, all of which are in the GSNP in the southern part of the village.

The village lies in a semi-humid belt which receives between 900-1000 mm of rain. Rainfall is unimodal, falling heavily between October and April. There is very little rain during the other months of the year. The soils are principally loams interlaced with sandy clay loams immediately beside the lake. Judging by the composition of the conserved vegetation in the GSNP, the indigenous vegetation was probably *miombo* woodland, mainly comprised of *Brachystegia speciformis*. Much of this vegetation is, however, no longer visible in the village as it has been cleared for agriculture, settlements, and the growth of exotic trees such as mangoes, oil palms, coconut and *Senna siamea* (*mijohoro*).

3.3 Social infrastructure

3.3.1 Education

The village has one primary school with an enrolment of 453 pupils, 46% of which is female. The school has problems of shortage of teachers; at the time of this study there were only six, resulting in very large class sizes. It has also a problem with student dropout. Although the household interview data demonstrate that many (69%) of the respondents had gone through primary school, the focus group discussions revealed that a considerable number of the respondents had not finished the required seven years of study. The school teacher estimated that 50 pupils from every intake dropped out before finishing the seven years of primary education as a result of lack of school fees, household demand of labour for fishing, and Islamic demands on the youth to attend *madrasat*. Hence, only a negligible percentage of the students who finished primary education went through to secondary school (Robert Yared, pers. comm.). Educational levels are, therefore, low, and those of women lower than those of men, although those of the youth are higher than those of their parents.

3.3.2 Health and sanitation

The people of Mwamgongo have access to a sizeable health centre, which is the Ward referral centre. However, its services are not satisfactory. It has only four members of staff: a nurse-in-charge; a MCHA; a nursing assistant; and a health assistant for a catchment of approximately 24,000 people. There is also not enough medicine, as it depends entirely on a monthly yellow kit, and no operating facilities. It is for these shortcomings that although all the respondent households visit the centre for treatment first, more than a half (64%) are then referred to the Maweni Regional Hospital in Kigoma.

According to the household interview data the most prevalent diseases in Mwamgongo are bilharzia (64%) and diarrhoea (64%), followed by malaria (42%) and cholera (19%). The Health Centre records, however, list the ten most prevalent complaints as malaria, diarrhoea and dysentery, intestinal worms, pneumonia, anaemia, wounds, eye infections, asthma, STDs, and skin conditions. Most of the more common complaints result from poor sanitation, which is a major problem.

Generally, health education is provided to mothers who attend clinics, and according to the interview data, 97% of households have access to health education services. However, as noted elsewhere along the lake (Mung'ong'o (Ed), 1997ab) such knowledge fails to reach men, as they do not accompany their spouses to health centre. Thus, although more than 90% of the households were recorded to have pit latrines, they are not always used, and many people defecate in the lake and on the beach. Women in particular were observed bathing and washing clothes and dishes in the river from which drinking water is taken. Most households (97%) do not boil their drinking water, ostensibly due to shortage of fuelwood, and the belief that boiled water does not taste good (Nurse i/c., pers. comm.). Lack of access to safe drinking water was ranked as the most serious problem in the village. In the absence of a technical solution (borehole, well, etc.), special efforts need to be made by health educators to reach all groups of people in ways which are effective.

3.3.3 Religious institutions

The village is an overwhelmingly Moslem community (92%), hence Islamic institutions dominate. There are six mosques, five pre-school *madrasats*, and four full-fledged *madrasats*. Islam was first introduced to the village almost 100 years ago by Arab merchants (R.A. Ramadhani, pers. comm.), and has flourished. Christianity is still in its infancy, with the Roman Catholic and Pentecostal churches operating in makeshift buildings and drawing their believers from among the Burundian and Congolese immigrants.

4 RESULTS

4.1 Structural distribution of well-being

4.1.1 *The well-off*

In section 2.1 we saw that this group is composed of households with more than one engine-powered catamaran, more than one engine-powered transport boat, or a *duka* with a capital of 1.5 million TSh. A household with a combination of a catamaran and a *duka*, or a transport boat and a *duka* was considered more well-off than the one with only one of the three assets, as the former's income generating capacity was diversified and constant, while the latter was seasonal. Another important feature that further distinguishes this group from the others is the size of the family labour force these households command. During this study it was observed, for example, that the head of one of the most well-off households in the villages has four wives, more than thirty children, and several other siblings and relatives living in his compound. As fishing and farming, the main systems of production in the village, are highly labour intensive, and the distribution of the means of production, particularly in fishing, is highly skewed, such a pattern of labour distribution inevitably puts this group in a very advantageous socio-economic position. Furthermore, once a household has attained a certain level of prosperity, it is able to draw in and support more extended family members, and thus expand further.

It has been hypothesised that the economic position of a social group in society determines to a certain extent the amount of political power which can be accessed by individuals of that social group; that economic power is a prerequisite for a particular social group's ascendance to political power (Mung'ong'o, 1995:46-47). Data from this study suggests that there is a positive relationship between economic power and political power. For example, during the period of the study the tenure of the village government expired, and its members resigned to allow for elections. It was observed that the out-going chairman and other powerful members of his government (all of whom had applied for re-election) all belonged to the well-off and/or relatively well-off groups.

This group is the smallest in the village, comprising only six households (1%). This suggests the existence of both multidirectional and centripetal mobility of households between socio-economic groups. A multidirectional mobility involves opposing movements of individual households between the socio-economic groups which cancel each other out, i.e., a simultaneous rise of poorer households and a fall in the fortunes of some of the wealthier ones due to changes in state policies, fluctuations of weather, and changing terms of trade between rural and urban centres, or between nations. At the same time there is also a centripetal movement of households in relation to the median wealth in society. In this case the abolition of chiefship in 1962, the Villagisation Programme of the 1970s, the banning of beach seining, and the changing political situations in Burundi and Congo during the 1990s may have facilitated the fall of some of the wealthier households and generally pulled down the economic fortunes of Mwamgongo. This proposition merits further investigation.

One reason for the extremely small size of this group is that some households in this wealth group chose to reinvest outside the natural resources sector (fishing and farming) in businesses such as shops or garages, or in real estate, and are thus able move out of the village to Kigoma and beyond. A considerable number of well-off households are said to have done this, and moved to inland urban centres such as Kahama, Shinyanga and even Dar es Salaam (Baharia, pers. comm.).

4.1.2 The relatively well-off

The relatively well-off (*Wenye uwezo kiasi*) group is a bigger than the well-off group, but still only comprises 30 households (5%). This group owns paddle catamarans, paddle boats, and some *duka* worth less than 500,000 TSh. Fish traders operating with capital of 100,000 to 200,000 TSh were also included in this group. This group is a disparate entity embracing a broad spectrum of households from those who are almost in the well-off group to those are in the relatively poor group. A general feature of this group, however, is that households are the next largest in size, with those at the upper end of the spectrum generally larger than average, and those at the lower end smaller.

4.1.3 The relatively poor

The relatively poor (*Wasio na uwezo kiasi*) are the largest group, comprising 300 households (52%). They cultivate less than half an acre of cassava for subsistence, and perhaps have a few shoats or chickens, but do not have a secure food supply throughout the year. For survival they depend on selling their labour (*kibarua*) on other people's catamarans/boats/*shambas*.

4.1.4 The poorest of the poor

This group forms the lowest social stratum but is the second largest in the village, comprising 246 households (42%). They have none of the assets listed under the previous three groups, and are insecure in food supply, have poor shelter and clothing, and little hope in life. Households headed by women, or unemployed youths, or those made up of elderly people only are included in this group; begging is a major survival strategy.

4.2 Household characteristics

4.2.1 Type of households

In Tanzania it is normal to find rural households headed by men, if not the husband, then a close kin: a son; a brother; or an uncle. In Mwamgongo 92% of households interviewed were headed by men. The few female household heads are widows or divorcées. Interestingly for a predominantly Moslem community, only 19% of households are polygynous, perhaps as a result of the very unequal distribution of wealth.

4.2.2 Household size and composition

Household size varies depending on the type of household, although the overall average from the statistics provided by the village government (section 3.1) is 11.7, which is large. They are largest in well-off households where polygyny, extended families, and bonded labour arrangements are the norm. The poorest households are the smallest, ranging between two and six people, with an average of only three.

4.2.3 Dependence ratios

A dependence ratio is the total number of dependant children, elderly and disabled people in a household divided by the number of able bodied adults who form the labour force. On average the ratio is 1.3:1, which is low, but it varies amongst social groups, being lowest in the more well-off group and highest in the poorest.

4.3 Livelihood activities

4.3.1 Fishing

Fishing is the most important economic activity in the village, and 86% of households interviewed were involved as fishermen, fish processors, or fish traders. The main gears are lift nets used from catamarans (*kipe*) used offshore to catch *Stolothrissa tanganicae* (*dagaa*) and/or *Lates stappersii* (*migebuka*), used by 94% of fishermen sampled, beach seines (*kokoro* or *kimori*) used to catch *S. tanganicae* and other inshore fish (25%), and lines (*kachinga* or *ndoanao*) (13%). Gillnets (*makila*) are not common because the habitat is not suitable.

Lift net fishing was introduced to the area by Congolese and Burundian fishermen two decades ago, and even today, of 25 catamarans based in the village, 14 are owned by Congolese or Burundians following fish stocks and/or fleeing war in their home countries. Lift net fishing is very capital intensive (at least 4.5 million TSh for a complete set of gear), and, because in Mwamgongo most catamarans are powered by outboard engines, also has high running costs, and thus only a few well-off households are able to own and operate gear (see section 4.1). However, it is very lucrative, as well as relatively sustainable and environmentally friendly. Four to eight fishermen work a catamaran with four lamps. Fishing is carried out year round, although with a marked peak between October and April and a slacker period between May and July as the fish move to great depths to escape the cool waters which lie on the surface at this time. Fishing is done every night except for the nine nights around the full moon. Two to three hauls are made per night. As well *Lates stappersii* and *Stolothrissa tanganicae*, *Lates mariae* (*sangala*) are also often caught.

Beach seines are used to catch sardines (Clupeids) and other inshore fish at night. Two boats are used, one carrying the net and the net-pullers, and the other, which is smaller, carrying one man who looks for the schools of sardines. When the latter sights a school he calls the crew of the bigger boat to come and set the net. The main problem with beach seining is thought to be destruction of fish habitats and breeding grounds by dredging. In addition, many fishermen use nets with very small meshes which catch juvenile as well as mature fish. Beach seines have therefore recently been banned throughout Tanzania, including the Tanzanian portion of Lake Tanganyika. However, lack of resources on the part of the Fisheries Department to enforce the ban, and lack of alternatives on the part of fishermen has meant that they are still very widely used, albeit illegally. The only exception is along the shore of the GSNP adjacent to Mwamgongo, where TANAPA staff vigorously enforce the national law; ironically, this is more in the interests of protecting the terrestrial resources of the park, which were threatened by the presence of large numbers of fishermen camped on the beaches, than in the interests of protecting aquatic resources.

Before the ban, beach seining usually only involved one haul per day, suggesting that the fishing grounds were still fairly rich. Informants were anxious to emphasise the negative effects of the ban, and attributed the past wealth of the village to beach seining. Before the ban 20 seines were in use in the area, each employing 12 net pullers, and using the services of ten light boat operators, and although some seines are still used illegally outside the park, a large number of these fishermen are now unemployed.

Line fishing has increased in importance as a result of the beach seine ban, and there are now about 20 boats in the village which jig for large, mature *Lates stappersii* offshore. The catch is partially consumed, although a surplus is sold, and can fetch up to 5,000 TSh. The lines are 100-150m long with approximately 60 hooks. Two fishermen work from a small paddled canoe, often with a sail, usually in the mornings, but sometimes in the late afternoons as well.

The catches landed fall into three main groups. The littoral fish caught by the beach seines are normally sold fresh on the beach for local consumption. The sardines are spread on *mbuga* – specially prepared 10 x 20m areas on the beach – to dry, usually by women and children, who are paid a bucketful of for their work. The *mbuga* belong to individual households, which rent them out at 500 TSh per sack of sardines dried. *Lates stappersii* are sold fresh by the fishermen to processors who smoke them. Wood for this must be purchased from women from the surrounding villages who bring it to Mwamgongo, selling a headload for 500 to 2,000 TSh. The processed fish is then sold to traders who transport it to local markets in the interior, or big fish markets in Kigoma and Rumonge in Burundi.

Fishing involves a cross section of the community from gear owners to hired fishermen. Terms of employment are negotiable and temporary, but generally for an engine powered catamaran, one third of the proceed goes to cover the running costs, on third is kept by the gear owner, and the remaining third is divided amongst the crew, whereas for paddled boats, half is kept by the gear owner, and half divided amongst the crew. There are also those who process and trade fish. Processing (*kusoloza*) involves cleaning, sun drying, etc., and is usually undertaken by women, who are usually paid in kind. Middlemen buy the processed product and transport it to markets far and wide.

4.3.2 Agriculture and livestock

Crop cultivation is second to fishing as an economic activity, in part because good flat land is very limited. Only 56% of households interviewed farm, mostly cassava (100% of farming households). Other crops are beans (90%), oil palms (50%), maize (25%), and sweet potatoes (15%). A few individuals are experimenting with coffee. Cultivated land is inherited (65%), bought (25%), or rented (10%), except for new field cleared on the steep slopes surrounding the village. Fields are very small, with half cultivating only one to two acres, and productivity is very low due to lack of extension services (100%), lack of management (90%), and land degradation (45%), with the majority (90%) of those farming producing less than seven bags of cassava per year, and 40% producing less than four bags. Erosion on the steep hillsides is a major problem, and landslide scars could be seen, but there did appear to be any terracing or other measures taken to control it.

Food must be bought from other villages, and 90% of households reported food purchases as a major expenditure priority, but this is difficult for the poorest, and 38% of households have food security problems.

Levels of livestock ownership are low, and village leaders indicated that there were only about 25 cattle and 400 shoats in the village. Interview data show that about a third (31%) of households keep goats and/or chicken and geese. Those who do tend to keep five or fewer goats, and about 15 chicken and/or geese.

4.3.3 Others

Other economic activities include running shops, kiosks, or market stalls, or restaurants, or selling cooked snack foods such as *mandazi* (donuts) on the beach or on the streets, which is often undertaken by children. The shops and restaurants are fairly small and sell basic household items and traditional local meals, respectively. Women embroider colourful bedsheets, which can fetch up to 20,000 TSh, but require investment in the plain sheet and embroidery thread. Other handcrafts include mats, etc.

The village has more than 280 hectares of land under oil palms, and a significant number (20%) of women are involved in producing oil. They buy the fruits from the owners of the trees and extract the oil in locally made hand-turned presses, which must be rented from their owners (usually paid for in kind) (Zabibu Mpologomi, pers. comm.). Women often work cooperatively in this, as it cannot be done alone. In Kigoma the red mesocarp oil sells for 400 TSh per litre, while the white kernel oil sells for 600 TSh per litre, or more (Sanze, pers. comm.).

A small number of people have formal salaried employment in the park or other government departments.

4.4 Labour use and availability

In Tanzania most households depend on the labour force available within the household. When demand exceeds supply they resort to communal labour such as work parties (Mung'ong'o, 1995:107). In Mwamgongo family labour is still depended upon for both agriculture and fishing. However, in times of crisis in farming, such as during the weeding and harvesting periods, *kibarua* (hired labour) is preferred to work parties. This would suggest that people in fishing villages such as Mwamgongo people are becoming more individualistic in their attitude to economic production, and that the labour of relatives has acquired monetary value and can no longer be freely called upon as social capital. During the wet season female labour is used primarily in cultivation, while male labour is used in fishing. During the dry season female labour shifts to fish processing, fish trading and/or palm oil production.

Households with fishing gear normally use their youths as hands. When that labour force is not enough outsiders are also hired. Hence, during the fishing season many youths drop out of school.

4.5 Access to financial resources

The basic sources of livelihoods for the people of Mwamgongo are the lake and the land, and every member of the community has the birthright to exploit these resources to the best of his or her ability. However, there are few institutions offering credit or development assistance. The TACARE Project has initiated a Savings and Credit Scheme, which is supported by a fulltime Community Development Officer, and also offers grants to help suitably qualified girls attend secondary school. In addition, they support a village tree seedling nursery and provide agricultural extension services, particularly with respect to oil palm cultivation. The GSNP has assisted with materials for the school through its Community Conservation Service.

4.6 Use of natural resources

Apart from the lake and the land, the most important natural resource is wood, used for fuel (78%) as well as for poles, timber, and charcoal production. Other than those in the GSNP, the surrounding hills have been almost completely denuded of tree cover, and the village is not self sufficient in wood, which is brought in by women from villages above the escarpment for sale to the better off and to men who smoke fish. Tree planting was cited by many (50%) as a solution shortages of fuelwood and building materials, but it seems that few have come forward to utilise the seedlings raised in the TACARE nursery; the reasons for this could not be determined.

4.7 Gender relationships

4.7.1 Women's labour and time use

Apart from the biological roles of motherhood, women in the village spend their time provisioning for their families, fetching water, cooking, cleaning the house, etc.. Much time is also spent outside the house doing agricultural work, petty business (*kusoloza*, fish processing, palm oil processing, etc.), and attending to community development activities. Collecting fuelwood currently takes between eight and nine hours, and thus when the need arises a whole day is set aside for this.

The most important problems listed by women during themed focus group discussions were all related to family provisioning, and included lack of safe drinking water, lack of a grinding mill, scarcity of fuelwood, low farm productivity, and low non-farm income generation capacity. Other problems included problems in transporting women with complications in childbirth to the hospital in Kigoma.

4.7.2 Women's control of resources, income and decision-making processes

In the tradition of the Ha the man controls all household resources and income generated, and generally (84%) is the main decision maker, even where the woman's contribution to the household economy is half or more.

Women's awareness of gender issues is relatively high, and during themed focus group discussions they suggested that in order to resolve the problems listed above, they should fight for more representation in the village government and in other leadership positions.

5 CONCLUSION

5.1 Incidence of poverty and beach seining

Mwamgongo appears to be a relatively prosperous village, and people are proud of the fact that they have managed to send 30 people to Mecca for the Hajj, apparently more than any other village in Kigoma Region. More than half (56%) of the houses have corrugated iron sheet roofs, and people are generally well dressed and energetic. However, wealth is very unevenly distributed, and for large sectors of the population, survival is a struggle.

Many individuals blame the recent decline in the village's fortune on the enforcement of the ban on beach seining, and although some continue to use them illegally outside the GSNP, many households have lost their main source of livelihoods, as beach seining employs a large number of people. Unfavourable topography and the presence of the GSNP prevent agricultural expansion and diversification, and much suffering is very real.

However, the economies of lakeshore villages, particularly in the north of the lake, are vulnerable to the effects of regional circumstances beyond their control, particularly conflict and insecurity in Burundi and Congo. These effects are complex and dynamic, and affect different individuals as well as communities differently. For example, small or medium scale traders in the northern part of the lake who traditionally exported fish to Burundi and Congo see their fortunes decline when these markets become difficult to access. At the same time, however, there is informal evidence to suggest that some very large scale traders prepared to take the higher risks of trade in unstable conditions are involved in a very lucrative trade in fish, particularly to Burundi, where the lake was closed to fishing for much of 1999, further exacerbating the differences between rich and poor.

Informal evidence also indicates that while economic sanctions were imposed against Burundi, smuggling may have been a profitable activity for some, an opportunity now no longer available. Changes in the nature of marketing of fish and other goods (smuggling) have been going on in tandem with the implementation of the ban on beach seining, and it is difficult to extract the relative impacts of each.

Schemes which support the marketing of fish and fish products within more stable and thus more accessible national markets should be supported to buffer communities such as Mwamgongo from the effects of such regional circumstances; this could include icing of fresh fish. Similarly, improved processing of palm oil could yield a higher value product which could be more widely marketed, potentially improving incomes. However, it has been documented that when cottage industries are improved, they often change ownership, with the poor losing out, and thus special safeguards for the poor women currently engaged in this activity must also be put in place.

5.2 Need for improved health education

Most of the more common medical complaints suffered in the village result from poor sanitation. Most households have pit latrines, and people appear to know that drinking unboiled water is risky, but do not act on this knowledge. Further investigation into the reasons for these behaviours is required to help health educators reach all groups of people in ways which are effective. Of particular interest are the roles of religion (cleanliness is typically of prime concern in Islamic communities), unequal gender relations, and local leadership and village governance.

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APPENDIX A ITINERARY

Monday, 25th October, 1999

- arrival of Mr. Tarimo in Kigoma
- preparation of guidelines
- team training
- preparation of detailed work plan
- preparation for field trip (food, accommodation, etc.)

Tuesday, 26th October, 1999

- travel to Mwangongo
- community/introductory meetings
- themed group meetings
- identification of key informants
- transect walks

Wednesday, 27th October, 1999

- household interviews

Thursday, 28th October, 1999

- household interviews
- key informant interviews
- travel to Kigoma

Friday, 29th October, 1999.

- data review

Saturday, 30th October - Sunday, 31st October, 1999

- data analysis
- report writing

Monday, 1st November, 1999

- stratification and identification of future study sites
- Dr. Mung'ong'o and Mr. Tarimo depart for Dar es Salaam

APPENDIX B PEOPLE MET

The following list contains names of officials and key informants met at Mwamgongo. It also includes names of elders, women and ordinary villagers of all ages who participated in the various themed focus group discussions, wealth ranking and map drawing exercises. For ethical reasons we have not included the names of those who participated in the households interviews.

The District Councillor	
Mr. B.A. Makusanya	Village Executive Officer
Mzee Msakozi	Village Elder
Mzee Misozi Ramadhani	Village Elder
Mzee Ibrahim Kasakula	Village Elder
Mzee Baharia	Village Elder
Mr. Seif Ally	Village Elder
Mr. Robert Yared	School Teacher
Mr. Ramadhani A. Ramadhani	Village Sheikh
Mr. Juma Hatibu	Fisheries Officer
Mr. Bahati Hamisi	Villager
Mr. Bamu Maulid	Villager
Mr. Iddi Saidi	Villager
Mr. Khalid Shabani	Villager
Mr. Majaliwa Hussein	Villager
Mr. Miro Kasoma	Villager
Mr. Moshi Seif	Villager
Mr. Sakubu Rajabu	Villager
Mr. Yahaya Bulindwi	Villager
Mr. Yahaya Iddi	Villager
Mr. Zuberi	Villager
Ms. Asha Ibrahim Kinyago	Village Woman
Ms. Fitina Mabuha	Village Woman
Ms. Stumai Kheri	Village Woman
Ms. Joharia Mrisho	Village Woman
Ms. Mariam Saidi	Village Woman
Ms. Mariam Iddi	Village Woman
Ms. Remi Zuberi	Village Woman
Ms. Pili Amani	Village Woman
Ms. Kusiwa Jaffari	Village Woman
Ms. Amisa Omari	Village Woman
Ms. Halima Filipo	Village Woman
Ms. Pili Hayeshi	Village Woman
Ms. Anatoria Laksoni	Village Woman
Ms. Halima Issa	Village Woman
Ms. Hakidumu Hussein	Village Woman
Ms. Zabibu Mpologomi	Village Woman
Ms. Fatuma Issa	Village Woman
Ms. Zawadi Hamisi	Village Woman
Ms. Fitina Magulu	Village Woman
Ms. Zaina Haruna	Village Woman
Ms. Mwamini Mrisho	Village Woman
Ms. Sijapata Malilo	Village Woman

APPENDIX C HOUSEHOLD INTERVIEW GUIDELINES

Start by introducing yourself, and asking the people if they are willing to participate under conditions of strict anonymity. They need not answer anything they don't want to, but we hope that if they provide us with good information, we can help them to solve some of their problems appropriately. But, until we do a survey, we can't do anything. We are outsiders, who know little or nothing about their lives; they are the experts, and we would like the opportunity to learn from them.

Date:

Start time:

Your name and the name of any other team members with you.

A: OBSERVATION (just look!)

- Describe the house: the walls, the roof, the floor, the door, the windows, the furnishings. How many rooms can you see?
- What other buildings can you see (latrines, food stores, animal shelters)?
- Can you see where they do the cooking?
- Is the area clean, well looked after? Can you see a rubbish pit?
- Is there electricity, or a generator, or a car battery?
- Are there any luxury consumer items (radio, cassette player, television)?
- Who is there? How are they dressed? What's going on?

B: THE HOUSEHOLD

- Who lives there? For each person try to find out how they are related to the head of the household, their age (approximate), their sex, their level of education, their main occupation (include all children and babies too). For each adult man, how many wives does he have?
- How does each person contribute to the well being of the household? Do they bring in food, or money, or provide some form of domestic or other labour? Are there seasonal variations?
- Who is the head of the household? Who is the main interview respondent? Who is responsible for bringing in the largest part of the food the household eats? Who brings in most of the money? Who makes decisions about how the household is managed? Who makes decisions about household expenditure?
- Is there anyone else there (during the interview)? Who? What are they doing?
- For the members of the household, try to find out their ethnic background.
- Where was the respondent born? If not here, when did he/she come here? Why? Does he/she think he/she will stay here in the future?
- Is this the only home, or is there another (or more than one)? If so, where? Who lives there? Why? Why do the rest live here? Which is the primary one? Do they move seasonally, or do they live here full time?
- Is the house owned, or rented, or what?
- Are they religious? Of what denomination?

C: THE HOUSEHOLD ECONOMY

- What is the staple food? Who is responsible for bringing it in?
- What other foods do they eat? Who is responsible for bringing these in?
- How often do they eat fish? Any preferred species? How much is eaten in a week? Who is responsible for bringing it in? Are there seasonal variations?
- How often do they eat meat? What type commonly used? Who is responsible for bringing it in? Are there seasonal variations?
- Do members of the household exchange goods with others (e.g., fish, other foods, wood, etc.)? Do they provide services (do work) for which they are paid in kind (i.e., not money)? Who does what? What do they gain from it? Are there seasonal variations?
- What are the main income (money) generating activities undertaken by the members of the household? Who does what? What do they gain from it (approximately)? Are there seasonal variations?
- What are the main household expenses? How much are they (approximately)? Are there seasonal variations?
- Is there enough to manage? If yes, what do they do with any surplus? If no, how do they survive?
- If they had little more money, what would they do with it?
- Do they own any productive assets (fishing gear, farm land, means of transport (bicycle/car/lorry/passenger boat), small businesses (kiosk/shop/bar/restaurant/hotel), land for rent, rooms for rent, grinding mill, sewing machine, etc.)? Who owns them?

D: FARMING & ANIMAL HUSBANDRY

- What subsistence crops do they grow? What cash crops? For each crop, who is involved? Are they helped by anyone else? When is the busy season? How much time do they spend working during the different seasons? Where are the fields? What area is cultivated (approximately)? How much is produced (approximately)? Does the crop need treating or processing? If the crop (or a part of it) is sold, how much does it bring in (approximately)? Where is it sold? By whom? To whom? How is it transported? What are the problems? What are possible solutions?
- Are the fields owned? By whom (male or female)? How were they acquired? Or rented? From whom? How much does this cost?
- Is the soil fertile? Is it managed in any way?
- Is erosion a problem? If so, are any measures taken to combat it?

- What kinds of animals do they keep? For each type of animal, how many are there? Where are the animals kept/grazed/watered? Who is involved in rearing them? Are they helped by anyone else? Is there a busy season? How much time do they spend working during the different seasons? What is their production rate (approximately) (include milk, eggs, etc.)? If some are sold, how much does this bring in (approximately)? When are they sold? Where? By whom? To whom? How are they transported? What are the problems? What are possible solutions?
- Do they have any interaction with the Dept of Agriculture, or any other institutions or extension services?

E: FISHING

- What methods of fishing are undertaken by the members of the household? For each method, who is involved? Who do they fish with? Do they own any of the gear? If so, how was it acquired? What is the arrangement between the gear owner(s) and the crew? Is there a busy season? How much time do they spend working during the different seasons? From where, and where do they fish? What types of fish do they catch? What do they do with the fish when they are landed? What do they gain from it (fish/money) (approx.)? What are the arrangements between the fishermen and the people to whom they sell their fish?
- What are the major problems? What are possible solutions?
- What interaction do they have with the Department of Fisheries, or any other institution or organisation?

F: FISH PROCESSING & TRADING

- What types of fish are processed? How? For each type of processing, who is involved? Is there a busy season? How much time do they spend working during the different seasons? How do they obtain the fish? What are the expenses (purchase of fresh fish, purchase of salt, rental of drying grounds, purchase of wood for smoking, construction of ovens for smoking, etc.) (approximately)? How much to they process? What do they gain (approximately)? What is the arrangement with regard to drying grounds? What do they do with the fish once they are processed? What are the arrangements between the processors and the people to whom they sell the fish?
- What is the arrangement with regard to wood for smoking? What wood species is preferred? How much is used (approximately)? Where does it come from?
- What are the major problems in fish processing? What are possible solutions?

- What types of fish are traded? For each type, who is involved? Is there a busy season? How much time do they spend working during the different seasons? How do they obtain the fish? What are the approximate expenses involved in purchasing of fish, transportation, etc.? Where do they sell the fish? To whom? What is the arrangement with regard to transport? What is the final destination of the fish? How much do they trade? What do they gain (approximately)?
- What are the major problems in the trade? What are possible solutions?

G: OTHER ECONOMIC ACTIVITIES (be flexible!)

- What other economic activities are people engaged into? For each activity, who is involved? Do they work with others? Is there a busy season? How much time do they spend working during the different seasons? What raw materials are needed? Where do these come from? What are the expenses (approximately)? How much do they sell? What do they gain (approximately)? Who buys the goods or services? What are the problems? What are possible solutions?

(this might include formal sector salaried employment, informal sector paid employment (e.g., as a hired farm labourer, domestic servant (housegirl/boy, askari)) a waiter or waitress in a restaurant or bar, a shop assistant, etc.), casual labour (fish porter, messenger, etc.), collection and sale of a natural resource (fuelwood, timber, thatching grass, traditional/herbal medicines, honey, etc.), fabrication and sale (or repair) of locally manufactured items (boats, nets, furniture, charcoal, clothes, baskets, etc.), trade, shopkeeping, kiosk "keeping", production and sale of local beers or spirits, preparation and sale of cooked food, laundry, rental of farm land, fish drying grounds, houses, rooms, etc., provision of transport services, grinding of maize, sale of services (mechanic, hairdresser), etc.).

H: USE OF NATURAL RESOURCES

- For fuelwood: How much is needed and collected in a week? Who is involved in collecting it? From where? How much time does this take? Are there seasonal variations? If it is sold or traded, what do they gain? If it is bought, how much does this cost? What are the problems? What are possible solutions?
- For timber: How much timber is produced in a year? What tree species are commonly used? Where do they come from? How much is sold? Where? Who sells? Who buys? What do they gain (approximately)?
- For poles for house construction: How much is produced in a year? What tree species are commonly used? Where do they come from? How much is sold? Where? Who sells? Who buys? What do they gain (approximately)?
- For thatching grass/grass for making baskets/mats, etc., traditional/herbal medicines, wild food plants, mushrooms, honey, wild animals or birds, insects, etc: Who is involved in collecting them? Who processes or transforms them? Who consumes them?
- Have they planted any trees? Why/why not? Who is involved? What types are planted? How many? How are they doing? What are the problems? What are possible solutions?
- Do they have any interaction with the Department of Forestry, or any other institution or organisation?
- What is the relationship between the community and the GSNP? Any conflicts? How are they resolved?

I: HEALTH & SANITATION

- What are the main health problems? What do they do when someone falls sick?
- Have the children been vaccinated?
- Have there been any deaths in the family? Who? When? How? How old were they?
- For each adult woman, how many (living) children does she have? Were there others who died? Has she had any miscarriages or still births?
- Where does their drinking water come from? Who is involved in collecting it? How long does this take? Do they treat it?
- Is there a pit latrine? Who is responsible for maintenance and hygiene?
- What happens to rubbish?
- Do they have any interaction with the Department of Health, or any other institution or organisation?

Do they have any questions of you? Are there other topics they consider important which you haven't covered?

End time:

Interviewer's comments: Was the respondent interested, talkative, open, friendly, or not?

Remember

- These are just guidelines. Feel free to talk about whatever your respondent is most interested in (make up questions as you go along), and skip over what he/she is not interested in; if it's not interesting to your respondent, it's not important.
- Keep in mind your five helpers: **Who? When? Where? How? Why?**
- Try to get a conversational flow going; don't rush. Fewer high quality, in-depth interviews are better than many inaccurate or superficial ones.
- Be polite; use positive body language (eye contact, smiles) to show that you're interested and encourage your respondent.
- **Look:** record your own observations, but remember to note them as such.
- **Listen:** don't interrupt, and never argue. Don't put your own words into your respondent's mouth; ask open questions ("Tell me about..."), and always record your respondent's ideas (even if you think they're mistaken).
- **Write it down:** make a note of everything at the time. Paper is one of the cheapest parts of the survey, and information can always be discarded later, but only if you've got it.