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ECOGEN CASE STUDY SERIES

Pockets of Poverty: Linking Water, Health, and
Gender-Based Responsibilities
in South Kamwango

Elizabeth Oduor-Noah
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I. Introduction

South Nyanza, Kenya's fourth most populous district, suffers severe problems in health, nutrition, and water quality. This case study explores these problems in South Kamwango, a small community in South Nyanza. South Kamwango's climate, soils, water, and vegetation have the potential for strong agricultural production and development. Yet, despite a good resource base, South Kamwango's levels of production are low; water quality is poor; infant mortality is high; health problems are enormous; and community institutions are fragmented.

South Nyanza offers an opportunity to explore men's and women's roles in securing a livelihood and sustaining the family within the context of severe problems in health and nutrition which are reflected in statistics on child health and mortality. Some of these problems relate closely to the circumstances in which women of that district find themselves. They face constraints deriving from polygamy, early marriages, high birth rates, and their children's chronic disease, malnourishment, and ill health. Women are the primary care providers, responsible for the health of young children. Throughout much of this district, women face acute difficulties in securing the health and well-being of their families, particularly for children under five years of age.

Efforts to foster sustainable development demand understanding of these constraints. It is necessary to explore not only the particularities of the environment, but also the gender-based division of labor, and the

competing demands on women's time and resources. Their domestic, cultural, and economic obligations must be ascertained, as well as their access to the resources to meet them. Finally, it is essential to consider the policy interventions which will enable women to assure the well-being of the members of their households.

This case study reveals that particular attention to gender, assuring sensitivity to both men's and women's roles, perspectives, and responsibilities, can suggest development approaches which will strengthen capacities of households and community institutions to address the problems they face. Further, program and project analysis which incorporates a gender perspective increases the likelihood that communities will organize and act on issues of environmental degradation, resource management, and health.

South Nyanza, situated in the southwest corner of Kenya, is bordered to the south by Tanzania, and to the west by Lake Victoria. Settled by Kenya's Luo peoples, South Nyanza has a population of 1,400,000. One of Kenya's poorest districts, it has the nation's highest rates of early childhood (birth to two years) mortality (Youri, 1989:56).

South Kamwango Sublocation, an area of 15 square kilometers with 200 households and a total population of 3825, is small both in population and in size. It is located two kilometers from a tarmac road and about 10 kilometers from the division headquarters at Rongo.

South Kamwango falls within Kenya's Agro-Ecological Zone III, characterized by fertile agricultural land and reliable rainfall. It is an area with high potential for resource development, endowed with a good climate and suitable environment for productive economic activities, especially for agricultural and livestock development. Yet people are poor; disease is rampant; and productivity of land and labor is low.

South Kamwango was selected for this study, in part, because it is a puzzle. It has some intractable problems which, over the years since independence, seem to be getting worse rather than better, while nearby communities are showing signs of development. Poor health and low productivity persist in South Kamwango when, to the north, in an adjacent location, people are emerging from conditions of deprivation, and to the southeast in the next district, they are thriving. The community appears to be a "**pocket of poverty**," a phenomenon existing not only in Kenya, but in other parts of Africa as well.

The District Officer of Rongo Division, Mr. Kiama Gachanja, invited the research team from Kenya's National Environment Secretariat and Clark University to select South Kamwango Sublocation for the case study. He requested the team to consider the issues confronting not one of his progressive sublocations, but one of those lagging behind. In discussions, Mr. Gachanja indicated that South Kamwango was a community with comparatively inactive organizations. There were problems; people were having difficulty coping; the institutional infrastructure was fragile. As District Officer, he was eager for insights and observations on ways to strengthen this community, its institutions, and the processes of development. Thus, in late 1990, the research team set out to explore the puzzle of

South Kamwango. Research in this sublocation provides an opportunity to consider:

- * a community regarded as a "pocket of poverty" where, despite a strong natural resource base, poverty persists;
- * the underlying social, political, and economic factors which encourage or hamper the capacities of community groups to respond to changing resource and ecological conditions;
- * the range of resource issues confronting South Kamwango and the ways in which households and community organizations are addressing them;
- * the interactions of gender-based responsibilities, health and environmental problems within this community.

This case study examines the struggles of the people of South Kamwango to manage the particularities of their local environment and production system, and to come to terms with political and social constraints on that system. It considers socio-economic conditions within South Kamwango and ways South Kamwango is linked with economic and political systems beyond its borders. It offers insights into gender roles within households and community, and interactive processes involving the environment, specific resources, family welfare, and broad economic and political systems within which local communities exist. Exploring these issues provides insights relevant to understanding South Kamwango's severe environmental and health problems as they relate to questions of resource access, community institutions and gender.

This case study explores South Kamwango's particular mix of resource issues, health concerns, gender-determined roles, and the capacity of local community institutions to deal with the problems. The case focuses on:

- * the effect of **women's access to resources** on family well-being, particularly in health and nutrition;
- * the impact of **gender roles** on management of natural resources at household and community levels;
- * **community responses** to changing resource conditions and opportunities;
- * the **impact of these responses** on food production and rural livelihoods;
- * the **relevance of the findings to policy making** for the benefit of rural communities and the sustainable management of resources.

II. Principal Findings

Research in South Kamwango elicited five major findings. First, respondents in almost every household interview named **health as their critical household problem**. Measles, malaria, tetanus, polio, nutritional conditions such as marasmus and kwashiorkor, skin diseases, acute respiratory infections, diarrheal diseases, and intestinal worms are among those mentioned or for which there was evidence. Infant mortality is high averaging 25 to 33% per mother; occasionally it is as high as 66% or even 90%. Poor health conditions were evident in virtually every household, particularly in the one to five age group. Most of the common diseases derive from a lack of potable and safe water, inadequate environmental sanitation, insufficient protection through inoculations, and malnutrition. All of these causes fall within the purview of women's responsibilities. The nexus of gender roles, water, nutrition, and health, particularly child health, is evident.

Second, women's roles involve high levels of skill and entrepreneurship at small-scale trading, primarily of foodstuffs and produce. However, they have **inadequate knowledge on a variety of important health and nutrition-related topics**. Most women can effectively describe the symptoms of the diseases which affect their children. However, few seem to link causes, such as unclean water, and the consequences in the form of disease. As the headmaster of one school emphasized, "Most parents are very ignorant on health matters." Most are also uninformed on matters of

nutrition and water quality under current conditions of land use, food supply, and water management. This is particularly the case for younger age groups. Older women seemed to have relevant traditional knowledge on balanced diets and basic herbal remedies.

Third, **many households face increasing pressures in their struggle to meet cash needs**. Until recently, the vast majority of farmers grew sugar cane as their major cash crop. Sugar cane was the primary commodity through which South Kamwango was linked into the cash economy. In 1989, production of sugar cane in South Kamwango was prohibited. While the factors underlying this decision are complex, the decision has resulted in hardship for many households, escalating the struggle of local residents to meet cash needs. The policy has had an impact on the allocation of labor of both men and women in the community. Although a few households still produce sugar cane, most have complied with the policy by burning the cane and are searching for alternative crops which will provide them with a source of cash income.

Fourth, **community institutions in this locality are fragile**. Five primary schools serve the population of the sublocation. There is no secondary school. Three Catholic congregations, three Seventh Day Adventist congregations, one Legio Maria, and three sects have membership within this sublocation. With the exception of the Catholics, none of these congregations has buildings or any infrastructure. Although six

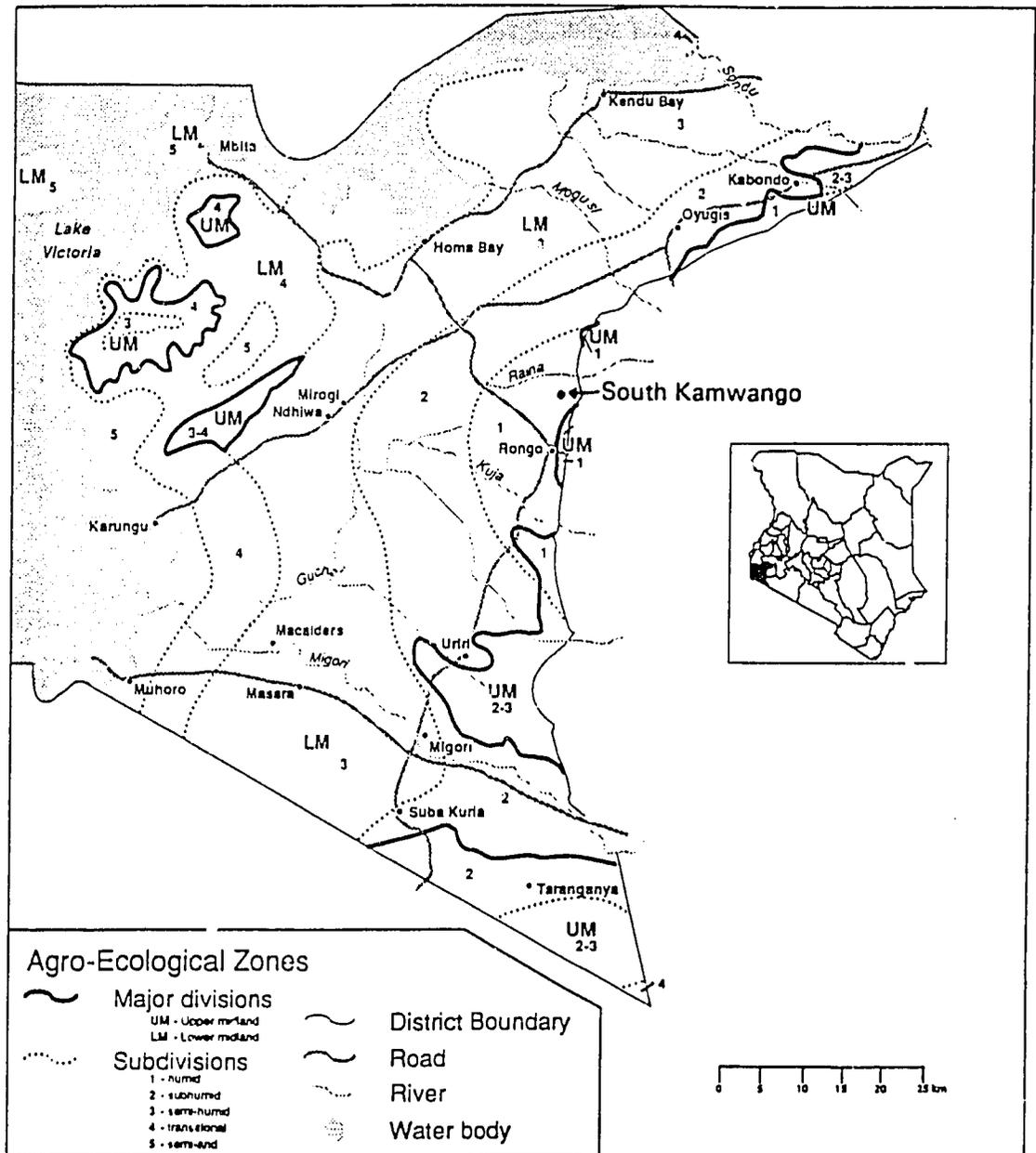
women's groups theoretically exist within the sublocation, only two are modestly active. The others are "just getting started" and do not have a clear membership or set of activities. Overall, South Kamwango is characterized by an absence of community efforts for development. Furthermore, there appeared a general reluctance among respondents to consider issues at the community level.

The fifth finding, which relates to **leadership approaches and vision** within the community, reveals that issues of political accountability, community mobilization, and public awareness are just beginning to emerge. The District Officer for Rongo Division is encouraging the leadership for all of North Kamagambo Location (in which South Kamwango is located) to adopt a development-oriented style. This includes a more participatory approach to development, involving efforts to engage all members of the community -

both men and women - in addressing community problems and in seeking both the vision and the accountability of those who lead them.

South Kamwango Sublocation is, in brief, a community with enormous potential as well as enormous problems. Its people are acutely aware of many of the problems. They are only beginning to identify alternatives and solutions. The five principal findings of this case study point to the critical, yet often overlooked, roles of women in establishing the conditions under which sustainable development can emerge in South Kamwango and in other communities like it, not only in South Nyanza but in other parts of Africa as well. The findings also underscore the importance of nurturing community organizations which can become focal points for community action in addressing environmental, resource, and health problems. Women, as well as men, are central to this venture.

Figure 1. South Nyanza District



Source: Jaetzold and Schmidt, 1983.

III. Methodology

The research team addressed four broad questions which incorporate a focused interest in health, nutrition, water, and agriculture:

- 1) What is happening to the resource base in this community?
- 2) How are these changes affecting men's and women's use of resources, access, and tenure at household and community levels?
- 3) How are people coping with or adapting to these changes?
- 4) What policies would assist communities like South Kamwango to address the problems which face them, including those emanating from the larger political and economic systems of which they are a part?

Methodologies included:

Household Interviews

Four members of the research team, accompanied by guide/interpreters from the area, conducted household interviews at geographically dispersed points throughout the sublocation. The team interviewed 60 households or 30 per cent of the 200 households. Although the team interviewed both men and women,

the majority of interviews were with the responsible adult woman of the household. From the interviews the team was able to gain a clear picture of the conditions and problems confronting the households in South Kamwango.

Key Informants

Second, the team interviewed officials at the division level, the Assistant Chief, extension officers, headmasters, the chairs of the women's groups, and others who might be considered key informants, in order to obtain their insights on central issues, constraints, and opportunities for the sublocation.

Survey

Third, the team conducted a formal survey of adults in the community. This survey was administered to 100 adults from households which had not participated in the household interviews. The survey covered topics such as cash contributions to the household, hiring of labor to work on the farm, group membership, and specific agricultural knowledge. The survey includes some questions similar to those used in the household interviews. Each thus serves as a check on the reliability of the other. The survey, however, broadens the scope of our knowledge base and gives a numerical precision to our findings.

Group Discussion

Finally, the team participated in a group meeting of approximately 50 people called by the Assistant Chief to exchange views on such topics as health, water, schools, sources of income, family planning, food production, and trees.

TERMS

changa'a - the locally brewed beer

cockerel - a high quality cock used for breeding purposes

debe - a container holding approximately 5 gallons

grade cow - imported breeds such as Holsteins

Grameen Bank - a bank, established originally in Bangladesh, for the purpose of providing credit to the landless and near landless and using group structure and collective action to assure repayment (i.e. the groups's good name as collateral).

groundnuts - peanuts

jaggary - a solid form of molasses which is the central ingredient for brewing changa'a

jembe - a short-handle hoe

jua kali - the informal sector or any informal, self-generated enterprise

KANU - Kenya Africa National Union, the ruling political party of Kenya

Mandeleo ya Wanawake - the national umbrella women's organization of Kenya

omena - a small sardine-like fish

shamba - farm, usually refers to a smallholding; also used to refer to croplands and specific plots..

striga - a weed common in Western Kenya and exceedingly harmful to crops

IV. Community Profile

The Resource Base

Land

South Kamwango is located two kilometers from the tarmac road connecting two towns, Kisii and Rongo. It is one of the sublocations of North Kamagambo Location in Rongo Division, just inside South Nyanza's border with Kisii District.

For the Luo of South Nyanza, land is the most important and treasured property a man can bequeath to his sons. As the head of household, a man holds all the property in trust for the family. When he dies his widow manages the property until her sons are mature enough to share it among themselves. Should the husband in a polygamous marriage die, the wives share the property and hold it in trust for their sons. Daughters do not have any right to inherit land from their fathers. Customary inheritance laws bestow this right only on male progeny. It is assumed that daughters will marry and have usufruct rights within their new households.

Thus, since rights to and control over land and other property are still dictated by traditional/customary laws, women do not usually inherit land. As polygamous households and a rapidly growing population begin to feel land pressures, questions of ownership and control, including that by women, become increasingly important.

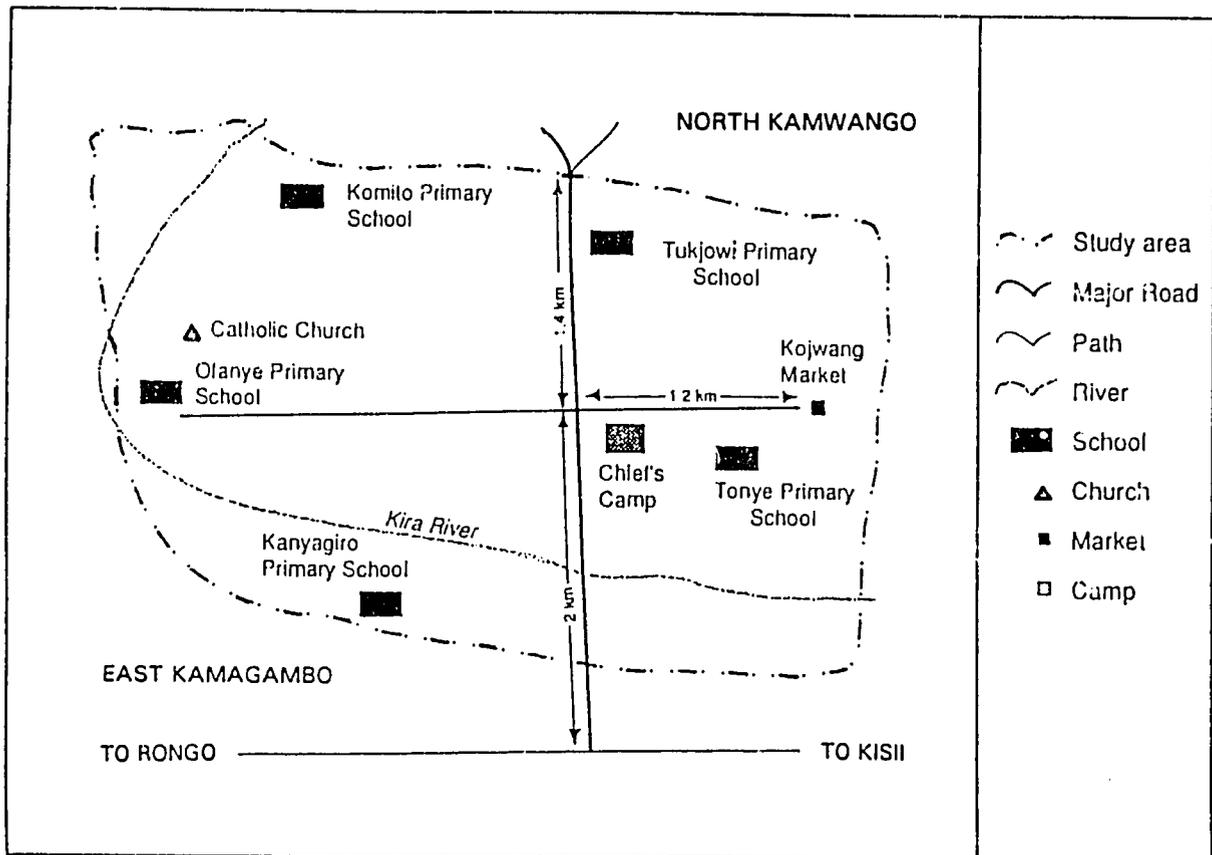
Water

Water quality is the central resource issue in this sublocation. Groundwater is an important supply for domestic use. Most households either own or have convenient access to hand dug wells and to boreholes. There was no evidence of roof catchment systems. The highly polluted Kira River is an important source of water. While the quantity is sufficient, the quality of all water is poor. Most of the wells are not protected; the river is polluted, and ground water is contaminated by domestic, agricultural, and/or municipal waste.

Forests

The sublocation has no forest reserves. A few farmers have casually maintained woodlots. Most households have Eucalyptus trees which are grown for income-generating purposes. There are scattered Grevillea trees, in addition to the Eucalyptus "gum" tree. The latter are sold for use as building poles. Although people identify fuelwood as a growing problem, particularly during the wet season, the sublocation has no significant tree planting activities. Bushes, shrubs, and maize stalks from the farms are the primary sources of fuelwood. In general, the afforestation effort seems sparse and scattered. One women's group had planted seedlings but had not distributed them in time to avoid excessive crowding of the roots.

Figure 2. Map of South Kamwango Sublocation



Agriculture and Livestock

South Kamwango has a medium to high potential for agricultural production. It is endowed with fertile, loamy soils and offers good prospects for the cultivation of a wide variety of both cash and food crops, although the potential has not been fully utilized. Black cotton soils characterizing parts of the sublocation are prone to waterlogging. Overall, the area does not experience severe soil erosion.

Most of the farmers cultivate small-holdings of four to six hectares with mixed subsistence farming commonly practiced. Maize, sorghum, beans, millet, and sweet potatoes are widely grown as food crops. At the present time there are no major cash crops. The good climate supports two growing seasons a year, with potential for introducing new cash crops such as Robusta coffee, tea and tobacco.

The potential for high yields which will meet family needs is great, yet many households reported a food deficit of approximately two months per year. This appears to result from insufficient utilization of the land for food production, and a shortage of labor at critical points in the agricultural cycle given the gender-based responsibilities for agricultural production. Holdings are adequate, but it is difficult for a woman to cultivate more than one hectare of maize under current labor and technological inputs. With large families, there is a disjuncture between the productivity of the woman's labor for subsistence production and the needs of the household.

According to the agricultural extension agent, the trends in agriculture show improvement towards food self-sufficiency. Many farmers have some knowledge of extension and are practicing recommended agricultural methods which include use of fertilizers, and improved seeds and cultivars. On the other hand,

With large families, there is a disjuncture between the productivity of the woman's labor for subsistence production and the needs of the household.

many women respondents believe the fertility of the soil is declining, and they express a need for more agricultural advice from the extension agents. They agree that a major problem affecting food production in the sublocation is the spread of the "striga" weed which attacks maize and sorghum, the area's major cereal crops.

The extension agent underscores the strong potential for market gardens. This potential is further enhanced by the low incidence of crop pests and crop diseases. Moreover, since the erodability of the soils is low, production costs per unit area are minimal. The possibilities for market gardens have not yet been tapped.

Livestock rearing is practiced at moderate levels. Many households have five or six head of the indigenous Zebu cattle. Disease is the major problem faced by those rearing cattle. East Coast Fever (ECF) and Trypanosomiasis are the two most common diseases. There are no cattle dips in the whole of North Kamaganbo Location. Grade cattle cannot survive without protection from these diseases, and the few grade cattle found in South Kamwango are sprayed with hand sprayers rather than dipped.

One women's group in South Kamwango is involved in an experiment managing a dairy cow. This group is the first in the community to practice zero-grazing, where the group grows the forage and brings it to the cattle pen. As dairy cows can do well in this

area, extension officers hope that this project will serve as an example to other farmers.

The People

In South Kamwango, as in other Luo communities, the family system is patrilineal, and the senior male has final authority over the home regarding all decisions. Polygamous marriages are commonplace. Figures for the District indicate that 40% of currently married women have one or more co-wives and 25% of young men (15 - 24 years) are in polygamous unions (Youri, 1989:58). Women are dependent upon their fathers until they marry after which they are the responsibility of their husband.

In South Kamwango, our data suggest that virtually all of the households are polygamous with anywhere from two to five co-wives. Male status and prestige relate to the capacity to support more than one wife. A man's status rises with increases in the productivity of his wives and the number of children they bear. The value, for a man, in having more than one wife became evident in a meeting when the research team was informed, "He who has only one wife will not be heard in the public meetings!" (participant, village meeting, October 26, 1990). Such a person will not command authority and respect in South Kamwango.

In polygamous households, the decision-making power of the women is concentrated in the senior wife.

A man's status rises with increases in the productivity of his wives and the number of children they bear.

She initiates the agricultural cycle, settles disputes between other women and is always the first to be consulted on domestic issues. There is a strict division of labor in the households. Women do all the preparation and cooking of meals, rearing children, and looking after immediate household needs like water and fuelwood. They are also involved in economic activities on a gender-specific basis (Okeyo, 1980; Hay and Stichter, 1984).

For the women in South Nyanza, early marriage is common. The average age is 16 to 18 years. District records indicate that 25% of all ever married women were married before their 15th birthday, and 66% of ever married women did so before their 18th birthday. Current data from South Kamwango suggest that the cultural inclination toward early marriage continues. One headmaster lamented that a 13 year-old had just left school to marry. A number of young women of 17 or 18, who had been married for several years and had borne children, were among the junior wives in the households interviewed by the research team.

The birth rate in South Nyanza is high, with a total fertility rate of 8.2. One out of every three women has given birth to six or more children (Youri, 1989:58). Of the households interviewed by the research team, middle-aged women had, on average, six or seven living children and had lost two or three. However, the specific variations defy imagination. One respondent had lost, before they reached the age of five, 15 out of 16 children she had borne. Another had borne 15 of whom five had survived. Several young women had lost their first two babies either at birth or as infants, and were expecting their third. Households in South Kamwango bear out South Nyanza's position as the district with the highest infant mortality rate (IMR) in the country. Most of the households we visited had lost two or three children to early childhood diseases, malaria or complications arising from malnutrition.

In many ways, the women sharing a polygamous household in South Kamwango are supportive of one another. Yet, interviews revealed keen competition among co-wives as they vie for cash income, for educational opportunities for their children, and for benefits which the husband may bring to the household from the outside world. This competition occurs under conditions of increasing scarcity. In general, each wife separately maintains her own fields, granary, trading activities, purse, hearth, and children.

These facts regarding polygamy and patriarchy, early marriage, high birth rates, and high infant mortality are critical socio-cultural dimensions shaping

women's responsibilities in this rural community. They also shape the capacities of women, as primary care providers, to respond to essential environmental and health issues.

Polygamy, patriarchy, early marriage, high birth rates, and high infant mortality shape the capacities of women, as primary care providers, to respond to essential environmental and health issues.

V. Who Lives in South Kamwango: Portraits of Household Structures and Circumstances

Although there are no wealthy families in South Kamwango, as in any community, economic stratification exists. Health problems, infant mortality, and low levels of productivity affect everyone. Yet, some households are better off than others, and some are extremely poor with few options for improving their material conditions. Households in South Kamwango are divided very broadly into:

- * the relatively prosperous families within the local context, of which there are few;
- * the average households for that sublocation;
- * those which are very poor by South Kamwango definitions.

The more prosperous homes are characterized by a sturdy house in good repair with a metal roof, several cattle, perhaps even a grade cow, furniture, the capacity to hire laborers, and a non-agricultural source of cash income. Approximately 20 per cent of the households have a family member with regular employment providing a monthly income. More than half of them are teachers.

In this community, families of average socio-economic standing have adequate land to meet the needs of the household, and keep a few cattle. For cash, they depend on limited returns from sale of some crops, from casual labor, or from trading which the women

undertake. Usually, they are able to hire an ox and plow to prepare the land for cultivation. Often, they must buy food at the end of the season. There is no money available for expenditures such as secondary school fees for one of the children.

The poorest households support large numbers of people on two or less hectares without a major source of outside income. They are unable to keep cattle, cannot afford to hire oxen and plow, and therefore have to dig the land with hoes. They may, in the South Kamwango context, be suffering particularly from the prohibition of sugar cane cultivation.

Health problems, infant mortality, and low levels of productivity affect everyone. Yet, some households are better off than others, and some are extremely poor with few options for improving their material conditions.

Doing Well in South Kamwango

Cyprosa is a widow about 70 years old. She married just before World War II and bore five children of whom four are living. Two sons work outside the community, and their wives and children stay in the compound. One son died and his two widows with

their children also live there. There are a total of 13 grandchildren in residence. Two grandchildren died several years ago, one from malaria, the other from measles.

The main house is well finished with plaster walls and an iron sheet roof. There is a pit latrine. Flowers around the compound provide evidence of care and attention to both house and grounds. However, an open, shallow well on the land is unprotected.

The family has 11 acres. Every adult woman in the household has her own maize plot; they grow groundnuts, beans, sorghum, and bananas as well. "The food is sufficient for the family," Cyprosa says, "if we do not donate to the needy." They use fertilizer and hire an ox and plow for preparing the soil for planting. While she herself is "uneducated," Cyprosa proclaims vigorously, "Ignorance is why we are behind."

In the past the family sold sugar cane for cash income. This is no longer an option, and Cyprosa wants to learn how to increase food production in order to have more produce for sale. With the income she would hire workers in order to continue expanding agricultural production. Thus, she is trying to refocus the household on new sources of income from agriculture. Meanwhile, a son employed in Moyale provides financial support which is used for school fees.

An Average Household in South Kamwango

Serafina and Salima are co-wives, each managing her own household within the larger family compound. They are approximately 50 years old. Currently living in the household are the husband, two co-wives, five sons, four daughters-in-law and 12 grandchildren. Three daughters are married and living elsewhere; two sons work outside the district.

Of the 11 children Serafina has borne, six have died. Of the 10 Salima has borne, five have died. All deaths occurred before the age of three. They attribute the deaths to kwashiorkor, tetanus, malaria, measles, and witchcraft. It is evident that the grandchildren are suffering from malnutrition and respiratory infections.

Each co-wife cultivates her own shamba with the help of her daughters-in-law. The sons do all the plowing together and help with building, tending cattle, and digging. The daughters-in-law weed, fetch water and firewood, wash clothes, sweep the compound, cook and care for children. The whole family participates in planting, but the co-wives do the harvesting. Their crops are maize, millet, groundnuts, beans, potatoes, and fruits primarily for home consumption. Fruits include papayas, pineapples, mangoes, and bananas. They used to grow sugar cane, but the land is now idle. The household has seven cows (the local breed), which are tended by the husband.

Of the 11 children Serafina has borne, six have died. Of the 10 Salima has borne, five have died. All deaths occurred before the age of three. They attribute the deaths to kwashiorkor, tetanus, malaria, measles, and witchcraft.

Insufficient cash is an urgent problem since they have to buy food at the end of the season for the large household. Since sugar cane cultivation is no longer an option, the family has three avenues for acquiring cash. The co-wives sell bananas; their husband does casual labor, and their sons occasionally send money.

A Poor Household in South Kamwango

Kazia was married in 1965 and moved to the present four-acre farm twelve years ago from another shamba within the sublocation. Each of the three co-wives, has a small home with mud walls and a thatch roof. The houses are all in need of repair. The household has only one small granary. There is no latrine, and the wives do not see the need for one, despite the small size of the shamba and the presence of 12 people, five adults and seven children. None of the adults has regular employment.

Decisions about what is grown and sold are made by Kazia's husband. The farm work is shared by all the adults, using only jembes or hoes. They do not own or hire an ox and plow. Before the ban on sugar cane they had one acre of their land in sugar cane which they cultivated to make jaggary to sell. Jaggary is the central ingredient for brewing changa'a, the local beer. They sorely miss this source of income. Now they sell small amounts of maize and beans to earn a little income, but this does not mean they have a surplus of food. They have to buy food for about one month of the year.

The family has an unprotected well on their land. The water is not boiled despite its muddy color. Several children of the three co-wives have died of

Several children of the three co-wives have died of various diseases but they do not associate the illnesses with possible contamination of the water from an unprotected well.

various diseases but they do not associate the illnesses with possible contamination of the water.

The lack of firewood which they can collect from their own land is a great problem. Often they use maize stalks, and in the past they used sugar cane stems. They have planted a few tree seedlings which they obtained free of charge from the Ministry of Agriculture nursery at Rongo, but they do not envision these trees as the answer to their increasingly serious firewood shortage. This shortage is a deterrent to boiling water to purify it for drinking.

Members of this household cite the lack of a strong cash crop as a second critical problem. The family would like the establishment of a sugar cane subfactory nearby which would purchase their sugar cane and create local employment. They believe that sugar cane can bring a good profit, if suitable arrangements for processing can be found.

VI. Livelihood Systems and Gender Roles

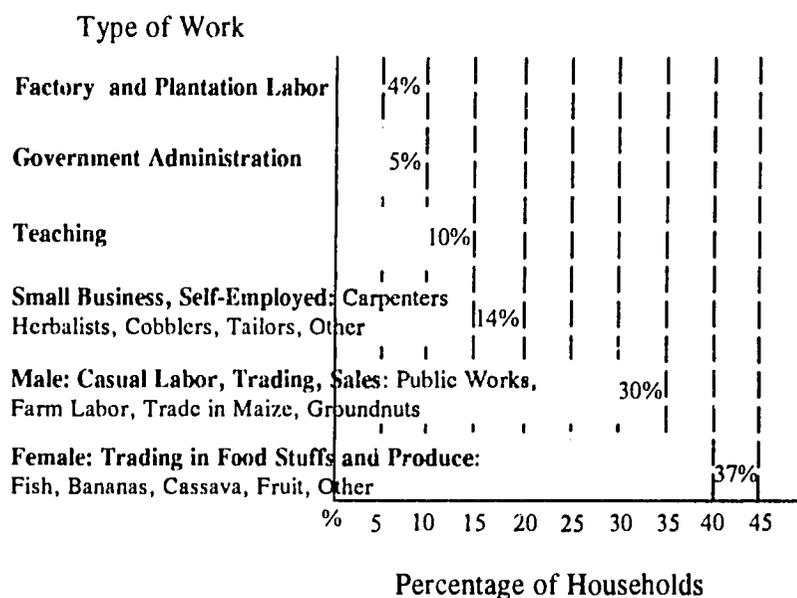
Of the 3825 people residing in South Kamwango in late 1990, 1798 were male and 2027 were female. In approximately 19 per cent of the households, there is a family member who works outside the community. Of these, nearly half are teachers, usually employed in primary schools within the district. The remainder are divided between those holding positions within the local government administration (including police and clerical workers), and those who work as factory laborers, usually in tea or sisal outside the district. Most residents are involved in agriculture and petty trading. The men seek casual labor on public works, if and when it becomes available. Some men and a few women engage in small business. See Table 1.

In general South Kamwango has fertile land. Most households have five to six hectares and plentiful water. Despite fertile soils and adequate water, labor and land have low levels of productivity. Yields and, hence, options for sale of produce are limited by "hoe" technology, inadequate resources for inputs, and insufficient labor for managing more intensive agriculture or the cultivation of more fields.

Currently, most households are meeting only their most urgent cash needs through small sales of groundnuts or maize, and with clever trading on the

part of women in small-scale commodities such as fish and bananas. One relatively prosperous household had half an acre planted in groundnuts. In a good year that half acre could yield 60 tins or about one and one-half bags of nuts. Prices per tin vary from Ksh 27 to Ksh 50. The maximum income from the groundnuts for this household would be Ksh 3000 or US\$115. Several households had as much as one and one-half to two acres in groundnuts. Women indicated that groundnut cultivation is highly labor-intensive and that its profits come at considerable cost.

Table 1
Primary Source of Household Income in South Kamwango



Because of the rising cost of living, entrepreneurship and trading activities are increasing. These activities involve both men and women. Women tend to trade in fish, bananas and other agricultural produce to earn extra income. Men, besides seeking casual labor, trade in different products, particularly cattle and lumber or poles. With rapid increases in population, the size of the agricultural holdings per household in South Kamwango will diminish over the next generation. Off-farm activities will be extremely important for future sources of income and employment. At present, however, there is much which can be done to improve both utilization and yields within the current cultivation patterns in South Kamwango.

Overall, most respondents expressed views varying from resignation to despair on the question of cash income. They specify that their biggest problem in relation to land and other resource use stems from government restrictions on growing sugar cane and their inability to find a suitable crop to replace it as a source of cash income.

Yields and, hence, options for sale of produce are limited by "hoe" technology, inadequate resources for inputs, and insufficient labor for managing more intensive agriculture or the cultivation of more fields.

Cash Income and the Changing Role of Sugar Cane

Until recently, sugar cane was widely cultivated as a cash crop. However, in 1989, the Government prohibited sugar cane production in this sublocation. Mr. Gachanja, District Officer for Rongo Division, noted three reasons for the restriction. First, most of

the farmers in South Kamwango were non-contract cane farmers. That is, they did not have a contract with a factory for production of cane. The only processing plant in the district does not have sufficient capacity to accommodate non-contract farmers. To be a contract farmer, one needs to be within a specified radius of the factory, and South Kamwango did not fall within the limit. Because of the distance to the factory and the difficulties of assuring that the cane would be purchased by the factory, most farmers in South Kamwango sold their cane locally for use in making jaggary, the major ingredient for home-brewed beer.

The second reason Mr. Gachanja cited for the Government ban on sugar cane cultivation was the increase in production and consumption of the local brew in South Kamwango. Brewing liquor is an illegal activity. The community's widespread reliance on jaggary production from the sugar cane grown, as well as the significant increase in beer production and consumption in this area, were factors contributing to the Government's decision to prohibit the production of sugar cane in this sublocation.

Third, it was widely believed that households in the community were growing sugar at the expense of food crops. Government extensionists wished to discourage sugar cane production and encourage cultivation of nutritional food crops.

Respondents to the household interviews registered keen dismay over the prohibition on sugar cane cultivation as it prevented access to a significant source of income. Most were complying, but they articulated a desperate need for an alternative cash crop, and were discouraged about the prospects of finding a good one.

A small number of farmers grow coffee, though without much enthusiasm, since the coffee factory is extremely late with returns from coffee sales. There is

some progress in expanding coffee production as an alternative cash crop, but this effort is marginal. Given the cooperative's pattern of late payments, few of those who have given up their sugar cane wish to take up coffee growing. In fact, one woman stated that she had pulled up her coffee trees since payment was such a problem, and she is now using the land for maize. Bananas and groundnuts are minor cash crops produced and managed by women and are widely grown in the sublocation.

Evidence from South Kamwango does not support the view that households were growing sugar cane instead of food crops. There are two dimensions of this issue: allocation of fields and labor time. Sugar cane is a man's crop and food crops are women's responsibility. Household interviews and surveys indicate that sugar cane and food crops were not competing with one another for labor time. This finding is corroborated by the Kennedy and Cogill study of the impact of sugar cane production on women's income, time allocation, and child care practices (1988).

On some of the smaller holdings, however, there may well have been decisions to remove land from food cultivation and place it in sugar production, using the proceeds to purchase food and other household needs. It is clear that some of the households which are no longer planting sugar cane are seeking alternatives. In a few cases these are non-edible crops (tea and coffee); in others they are food crops, particularly maize and groundnuts. If the Government mounts a major effort to introduce tea and coffee production, it will alleviate local concerns for ways to address cash needs. However, its important objective of increasing the nutritional status of families will not be met by substituting tea and coffee for sugar cane.

Ironically, the prohibition of sugar cane production has had some unanticipated impacts on women's

responsibilities. The first concerns the production of maize and groundnuts. Since these crops are usually cultivated by women, their substitution for sugar cane (a man's crop) has inevitably increased women's agricultural responsibilities.

Second, cane sales were the major source of income for many households. Now that this is no longer the case, many women find it necessary to increase both the time spent trading and the quantities of produce sold in order to help meet the household's cash needs which are no longer met through sugar cane production. The household interviews suggest that the immediate pressures for cash have caused women to increase time and labor allocations for small-scale trading. The intensification of this activity puts pressures on time and labor allocations for agriculture and child care. Thus, the ban on sugar cane cultivation appears to have an immediate detrimental effect on family nutrition, child welfare, and women's workloads. Residents of South Kamwango hope that these pressures will be short-lived as the Government activates agricultural extension services and other programs for the community.

Households: Women's Economic Activities

In South Kamwango, women's primary economic activities are agriculture and petty trading. Many women are involved in trading on several market days

The household interviews suggest that the immediate pressures for cash have caused women to increase time and labor allocations for small-scale trading putting pressure on time and labor availability for agriculture and child care

per week to earn income for the family. Besides selling produce from their own farms, women buy commodities, such as fish, in the nearby town of Rongo, and sell them in the smaller markets near their homes. Alternatively, they may purchase bananas from neighbors and take them to town to sell there at a small profit. Several respondents buy bananas from neighbors, divide them into small bunches and go to Rongo twice a week to sell them. Returns for such activity are approximately Ksh 25 (\$1.00) per week after deductions for the cost of the bananas.

One enterprising woman goes once or twice a week to Rongo to purchase omena, a fish similar to sardines, which she then sells in the local community on a daily basis. On her last trip she had bought 20 kilos of fish for Ksh 100, which she divided into small dishes and then sold for Ksh 2 or 3 per dish. A kilo of fish sold in this manner yields Ksh 20 per kilo, and thus her returns are Ksh 400 with a profit of Ksh 300 (\$12.00). Normally she cannot sell more than 3 kilos per day. Whereas a woman working as an unskilled agricultural laborer might earn between Ksh 5 and Ksh 15 per day for weeding, this woman earns at least Ksh 45 per day through petty trading. Her income is extremely important to the household, as they had previously relied heavily on income from sugar cane and jaggary production. The pressures on this woman were clear. With five young children showing strong evidence of nutritional deficiencies, this mother was keenly concerned about both their health and the family need for income.

Outside their domestic duties, women in South Kamwango are also involved in the agricultural cycle especially during planting, weeding and harvesting periods. Female children and relatives in the home carry out tasks similar to those of the wives. However, the decisions on what crops are to be cultivated are made by the man. In one typical situation, two co-

wives reported that they do their agricultural work separately, each on her own plot. They grow the same things, primarily food for the family and a small amount of produce for sale. Each grows groundnuts, and they give the profits from that crop to their husband. They keep the returns on the bananas for themselves. Clearly the choice of new cash crops is key in regard to the gender division of benefits and costs.

Households: Men's Economic Activities

Men have authority and economic control over the home. On the farm, male family members make the key decisions on crops and prepare the land which may involve hiring oxen and plow or doing the actual plowing with hand tools. Traditionally the men also herd the cattle and make decisions where cash transactions involving cattle are concerned. Men often seek work outside the farm as casual laborers.

Until recently, many men in South Kamwango have grown sugar cane. Given difficulties associated with use of the sugar factory, noted earlier, most of the cane grown in South Kamwango in the past has been converted into jaggary for use in making chang'a. With half an acre of sugar cane a man could earn Ksh 5000 (US\$200) after processing it into jaggary. This would represent less than 20 days of labor. Expenses would be 1) hiring oxen for milling; 2) hiring a laborer to assist with making the jaggary.

A debe container of sugar cane processed into jaggary (a molasses-like substance) makes five or six jaggary containers which are sold for Ksh 4. Thus the farmer can earn Ksh 20 to 24 per debe. The cost of milling is Ksh 3 per debe, and a team of oxen can grind 15 debes per day at a total cost of Ksh 45. A laborer to assist with the process of boiling the cane earns Ksh 10

per day. Thus returns could be 75 to 90 jaggary containers or Ksh 300 to 360 (US\$12-\$14) for a day's work. After expenses are deducted, the farmer may earn from Ksh 255 to Ksh 315 for a day's jaggary making. Thus returns are substantially higher than those for casual labor or small-scale trading.

Many households were involved in growing sugar cane and making jaggary. The prohibition on this crop, without the substitution of another cash crop, has had a

significant negative impact not only on household cash income, but also on both male and female economic activities. It has left men struggling to find alternative agricultural or non-farm work. It has pushed women toward more active trading and sales of their agricultural products, some of which are needed by the family. Both men and women are discouraged over the prohibition on sugar cane production. Many are eager to explore alternative crops with some assistance from the Government.

VII. Community Responses to Changing Resource Conditions

Context

Responsibility for planning and implementing Kenya's rural development shifted to the districts over five years ago in order to enable rural communities to make decisions on their priorities in regard to development projects. The policy, "District Focus for Rural Development," assumes a complementary relationship among the Ministries, with their different sectoral approaches to addressing local needs (Government of Kenya, 1990). The objective of shifting increased responsibility to the districts is to broaden the base of rural development and encourage local initiatives in order to improve problem identification, resource mobilization, project design and implementation. A well organized institutional structure at the grassroots level is required to facilitate any kind of project activity.

Local Institutions in South Kamwango

Government: Pressures on a Slim Infrastructure

The Government is the most important institutional actor in South Kamwango, whether in terms of direct administration or various extension services. South Kamwango was created as a separate sublocation only in 1986. Thus, Assistant Chief Charles Omburo is relatively new in his position, and, at the time of the research, had been in office for only three years. At that time, he was still in the process of consolidating

his authority. Clearly committed to fostering development in the area and to raising the socio-economic standards of the residents of South Kamwango, he faces the challenge of rallying support from all segments and factions of the community.

A Sublocation Development Committee, chaired by the Assistant Chief, consists of members of the community, among them extension agents, elders, and teachers. This committee's mandate is to discuss matters of social and economic importance pertaining to the sublocation. However, its potential is yet to be realized. It is semi-dormant and rarely meets.

Leadership questions, issues of accountability, capacity to mobilize the public, and ways to encourage a "development-conscious" community are of paramount importance in South Kamwango. The role of the Assistant Chief is central to addressing these issues. His relationship to the Chief of the Location is an important element of local leadership since the needs of the sublocation must ultimately be incorporated into

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the overall planning efforts of the entire location of North Kamagambo. It is evident that leaders in the sublocation are still grappling with building a strong and effective base. The issues they face demand imagination, conscientious leadership, and vision.

NGOs, Churches, and Schools: Limited Operations

Two non-governmental organizations have limited activities in the community. The Catholic Diocese of Kisii provides maternal, child health, and family planning services through a mobile clinic which comes twice a month to the sublocation. CARE-Kenya has funded a small agroforestry program through the Ofwanga Women's Group. The Government's Lake Basin Development Authority (LBDA), a semi-autonomous agency involved in the provision of rural water supply, has built a protected well in the sublocation at the site of the mobile clinic.

There are ten church congregations in the sublocation, although there are no church buildings. A Catholic church is under construction. Three congregations are Catholic; three are Seventh Day Adventist (SDA); and the remaining four belong to smaller sects. All but the Catholic Church confine their activities to religious concerns. Not only does the Catholic Church support the clinic, it also helps support several schools. One Catholic parish sponsors a group of men and women who carry out some fund raising activities for the church.

The Sublocation has three primary schools with a total student population of slightly over 1000 pupils. There are no secondary schools; nor are there nursery schools. All the primary schools are semi-permanent structures. They are not well maintained and have inadequate water and sanitation facilities. All the

schools are teaching some resource management awareness through tree planting activities despite the difficulties in procuring seeds.

Women's Groups: Nascent Organizations and Scarce Resources

Six women's groups in South Kamwango range "on the books" from 10 to 43 members. All the groups have been started under the umbrella of KANU Maendeleo ya Wanawake Organization, the national women's organization which recently was re-established under the aegis of the Kenya Africa National Union (KANU). The main objectives of the South Kamwango groups are to generate income and improve the welfare of the members' families, although many of the members are not clear how to go about accomplishing these goals. In addition to these objectives, the women view their groups as fora where they can exchange views freely and gain knowledge on various kinds of development issues.

The women's groups were started in 1987-1988, just after the sublocation's reorganization, as part of the Government's efforts to encourage local development in that community. Of the six, three are still in an early organizational stage. Activities include a zero-grazing scheme for grade cattle, a tree nursery, and a bee-keeping scheme which is just being launched. Two groups discontinued their tree nurseries because the women felt that they were not generating sufficient income to justify the effort. At the time of the survey, these groups had not decided on their next activity.

Ofwanga Women's group has the zero-grazing and tree nursery projects. Under a zero-grazing scheme, the animals are kept in a stall or enclosure and fodder is provided for them. In regions where cattle diseases are widespread, this is the preferred management for grade

cattle, which are excellent milk producers but are highly susceptible to disease. A women's group qualifies for a grade cow if it is able to construct a shed for the cow and plant an acre of napier grass. The women in this group have done so and are now caring for a grade cow. The group has received instruction on fodder growing and management, and it is benefitting from regular extension advice from the Government and from CARE-Kenya. The Ofwanga Women's Group is now in a position to raise funds through milk sales and to serve as a demonstration of zero-grazing techniques for a community which has the potential for engaging in improved dairy farming. Zero-grazing projects are widely encouraged by the political and administrative leaders in Rongo Division. In fact, the Member of Parliament for the area has supported this particular zero-grazing scheme of the Ofwanga Women's Group.

The Tonye Women's Group with 43 members (35 women and eight men) maintains a nursery through which members sell a variety of seedlings, drawing on advice from the Government and from CARE. They plan to undertake a zero-grazing project, have rented land under a four-year agreement, planted the napier grass, and are building the cow shed. This group rotates labor working collectively for its members on each of their farms. Occasionally the group works for non-members for a fee. It maintains a bank account, and has plans for future investment in a building in Rongo. The chairperson and inspiration behind this group is a woman who is a teacher in a primary school in South Kamwango.

Aside from the members of the Ofwanga and the Tonye Women's Groups, most of the women of South Kamwango are not enthusiastic about participation in

women's groups. They are constrained from activities outside the home by time commitments and workload. In addition, they are not convinced of the potential roles and benefits of belonging to such groups. These conditions, combined with difficulties the groups face in procuring capital for initiating projects, have led to a lack of motivation for group activities among the women. With a few exceptions, the women have not benefitted from systematic training that could enable them to make good project choices for generating income.

Many women are not enthusiastic about participation in women's groups. They are constrained from activities outside the home by time commitments and workload, and are not convinced of the potential benefits of belonging to such groups.

Moreover, most of the women of South Kamwango have very little or no formal education. A leader in one of the women's groups summarizes this situation, "The level of education is so low in South Kamwango that it is the biggest drawback in raising awareness and knowledge levels of the women."

Interestingly, most of the women who are active leaders in the South Kamwango groups are resident in the sublocation by virtue of marriage or have been assigned to the sublocation through the educational service. Thus, they have broader experience, higher educational levels, and a capacity to imagine conditions which are different from what exists within South Kamwango.

VIII. Trends in South Kamwango

Demographic Trends

South Kamwango is beginning to experience pressures on resources related to rapid population growth. It is commonplace to find households where there are two or three wives each with four or five living children. Some people recognize and can articulate the impact of these statistics on their own families. They recognize the troubles their children will have in obtaining sufficient land for cultivation; they lament their inability to provide secondary education for their own children. One man asserted, "If I had money, I would rather educate one and leave five home to starve" (participant, group meeting, October 26, 1990). While he may have overstated the case, his awareness of the desperate need to provide a new avenue out of poverty was acute.

Overall, South Nyanza's population is young. Those age 15 years and below constitute about 50% of the entire population. As a result, the dependency ratio is high. Although awareness of family planning is high with 85% of the adult population familiar with the concept, the acceptance rate is only 5% (Youri, 1989).

The increase in population and continuing inclination for large, polygamous families are leading to a reduction in the available, cultivable land per household. For most households in South Kamwango, this is not yet a critical issue. Many respondents, however, face daily pressures on other natural resources, par-

ticularly fuelwood. While few are systematically responding to the impact of fuelwood shortages and increased time involved in gathering firewood, they are aware of the toll on their time and energies.

The overall effects of population increase on resources are well understood, yet this understanding, under present circumstances, does not necessarily shape household decisions on family size. At the group discussion, several women and older men spoke in favor of family planning and limiting family size. Several younger men opposed it. "How," one asked, "can we have family planning when so many of our children die?" It is clear that questions of population growth can be examined only in the context of South Kamwango's health and its extraordinarily high infant mortality rates. Table 2 indicates the extent of child mortality in South Kamwango.

Trends in Health and Sanitation

The continuing presence of severe, environmentally-related health problems is one of the most significant issues for South Kamwango. The widespread and commonplace assortment of diseases can be attributed to several factors. The water is sufficient but the quality is poor. Rare is the family which has either a protected well or which boils its drinking water. The Kira River which runs through the sublocation, and which is used by many households to provide drinking water, is seriously polluted. Furthermore, there are

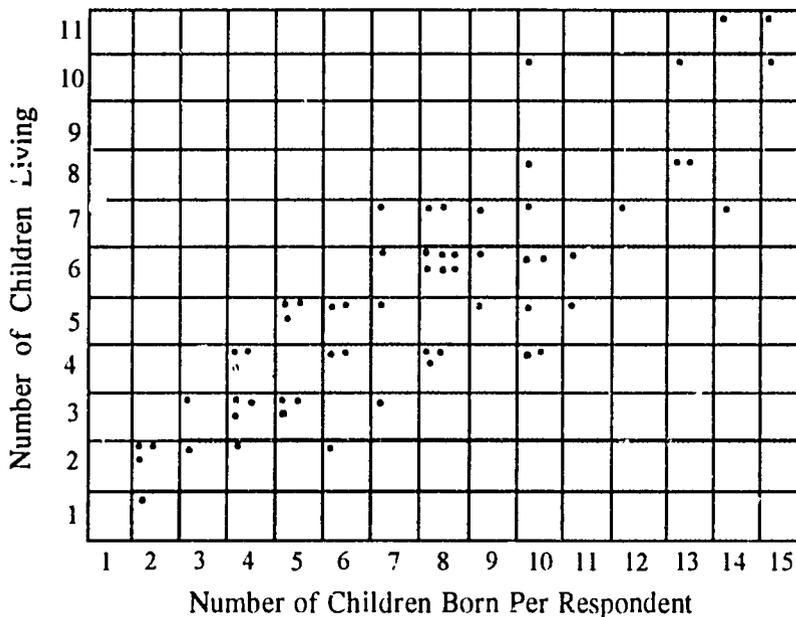
low levels of sanitation. Fewer than half the households have a latrine; groundwater levels are high, and the opportunities for the spread of disease are evident. Obeng, a leading expert on African freshwater ecosystems, states, "The incidence of diarrhoeal and other diseases is greatly increased by the use of contaminated water for drinking and bathing, together with insufficient education on environmental sanitation and hygiene" (1990:5). South Kamwango households provide supporting evidence.

The poor health status of the community, especially children, is caused largely by factors that are preventable. Most children die from immunizable diseases like measles, despite the fact that there is a health outreach facility available twice a month. One respondent asserted:

Some men spoke in favor of family planning and limiting family size. Several younger men opposed it. "How," one asked, "can we have family planning when so many of our children die?"

"These days children are dying from measles because of the mother's ignorance. Women do not follow through on immunization. They do not understand the preventative aspects of inoculations. Even the Women's Guild of the Catholic Church has met to discuss this issue."

Table 2
Births and Child Survival in South Kamwango



• = 1 Household N = 60

Only those households in unshaded squares have not had children die before the age of five (20% of Total). All households in shaded squares have lost one or more children before the age of 5.

The survey suggests that more than half the deaths of children under five are related to measles and its complications. These are usually secondary pneumonia in children less than two years old as well as postinfection encephalitis. Measles is a severe disease among malnourished children (Gordon, 1965:146). Table 3 indicates respondent perceptions of the causes of deaths of children under five within their own family. On average, each mother has lost 2.2 children; the range in the survey varied from none to six.

Malnutrition in the form of marasmus kwashiorkor, and various vitamin deficiencies, has reached epidemic levels, but most mothers do not associate conditions caused by malnutrition with

poor diet. They have lost access to and knowledge of several important wild green vegetables that are sources of vitamin A. Similarly, they do not relate the increasing numbers of stomach ailments and skin infections to the quality of water. Nor do people link these problems to general health status and levels of sanitation. Measures which would improve family health, such as boiling drinking water, are not undertaken because the women have no basis for understanding a cause-effect relationship between water quality and health and because, in some instances, firewood is in short supply. In one typical household, the respondent said,

“Our water is not good. It has worms. We use a sieve, but we do not boil it. We dug a latrine, but we do not like to use it. A lot of mosquitoes collect in the hole. We have serious problems with malaria, but we do not know what brings it . . . My son died from stomach problems.”

Child rearing and child care are the exclusive domain of the woman. The status of children in the sublocation reflects the nature of women’s knowledge regarding nutrition and disease. The household interviews revealed that most mothers have some knowledge of the nature of diseases, but do not conceptualize the cause and effect relationship of environmental conditions and their children’s health problems. There is very low awareness of the new constellation of hygiene, nutrition, and sanitation factors, and their relationship to environmental quality, settlement, and land use. Repetto reminds us of the importance of women’s

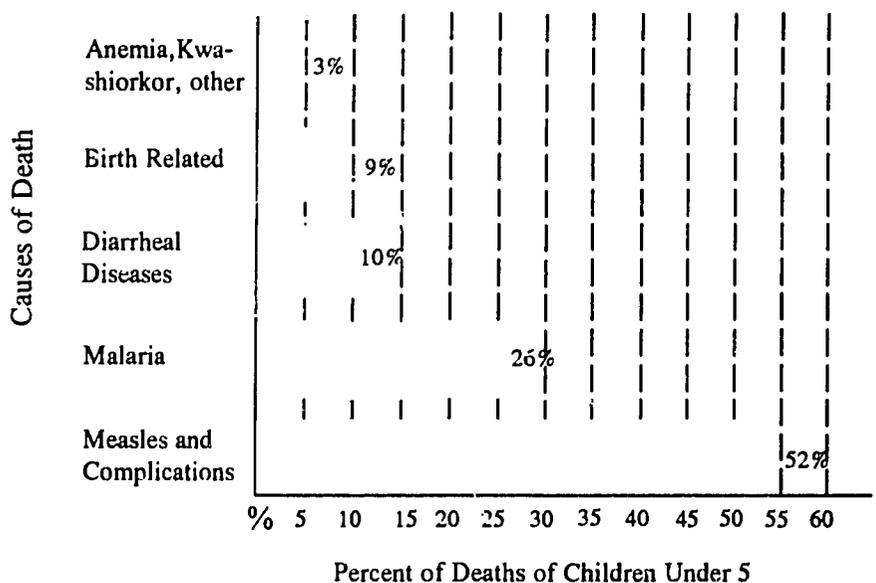
In a rapidly changing physical environment, most women have no basis for understanding a cause-effect relationship among land use, sanitation, water quality, and health.

knowledge on these and other issues. He states:

“Where rapid gains in reducing mortality have been achieved, improvement in the educational and social status of women has been a key. The mother is the basic health worker in all societies” (1985:149).

Apart from problems caused by specific environmental conditions, there are notable changes in lifestyles, especially dietary patterns, which are having

Table 3
South Kamwango Respondent Perceptions of Causes of Mortality of Their Own Children Who Have Died Before the Age of Five



Many respondents made two observations: 1) diets have become less varied and nutritious in recent decades; and 2) health, particularly of children, has deteriorated noticeably in recent years.

a detrimental impact on health. Many respondents made two observations: 1) diets have become less varied and nutritious in recent decades; and 2) health, particularly of children, has deteriorated noticeably in recent years. Indigenous foods which at one time provided essential nutrients, have been discarded in favour of less nutritious foods. Specifically, maize is now the staple food, serving as the central element in children's diets from an early age, and does not provide them with the nutrients they need. Few residents of South Kamwango are using indigenous vegetables. They do not like them and claim they are too bitter. In addition, previously people cooked with milk, but they no longer do so since they keep few cattle.

Malnutrition contributes to the high levels of infant mortality in South Kamwango. As noted earlier, infant mortality rates (IMR) in South Nyanza district are the highest in the country (130-160/1000). Most deaths of children between the age of 0 and 3 years are caused by immunizable childhood diseases, by dehydration from diarrhea, and by complications from severe malnutrition. Despite the availability of health services, most people are openly ambivalent about using them. One woman stated emphatically, "A hospital injection means that children die easily; when they are treated with traditional medicine, they usually survive" (respondent, South Kamwango, 1990). Many prefer to adhere to traditional beliefs and practices in dealing with their health problems.

Thus, there is an urgent need to increase women's understanding of the nature and origins of many illnesses and thereby to improve both their willingness and capacity to address the root causes of these problems. Knowledge about matters of health, sanitation, and nutrition should be central to the lives of women in South Kamwango. At present, trends in these areas are negative. If sustainable development is to take place in South Kamwango, reversing these trends in health, nutrition, and sanitation is essential.

Trends in Conceptualizing the Community

Thinking about the Community and Long Term Change

The pace of development in a community is affected by the ways in which community-wide issues are understood. During the interviews, it was quite clear that many individuals do not have a clear sense of community-wide problems or possible solutions. They identified household concerns and personal problems but simply did not recognize options for dealing with their concerns at the community level. They had difficulty or were unwilling to think about the potential of community-managed development over time and the impact such changes might have on their community and on their own household.

In some instances, this perspective seemed to derive from the respondent's relative inexperience in dealing with affairs beyond the immediate household. In others, it related to direct observation of project achievements within the community. For example, provision of the mobile clinic has not done much to decrease the community's chronic morbidity. Or, in another illustration, the work of the agricultural extension service is not linked to awareness of improved incomes and nutritional status of South Kamwango

residents and is regarded as a relatively isolated government activity.

Respondent reluctance or inability to consider possibilities for and benefits of long-term community-managed changes may arise from personal inexperience or from the jaded cynicism of involvement with fruitless community-level activities. Whatever their source, these attitudes demand vision and leadership at the community level. Only then are people likely to look beyond the concerns of the moment to explore long-term solutions to problems.

The Role of Education and New Opportunities

Education and training of various sorts can offer new opportunities to those who take advantage of them. In South Kamwango there has been a positive response to agricultural extension services, particularly in the use of organic manure and hybrid seeds. Many households have received extension advice on management of the striga weed. The introduction of the zero-grazing project through the Ofwanga Women's group is having a demonstrable impact on the community, and several farmers have indicated interest in owning a grade cow. Women's groups are also targeted for a proposed cockerel exchange program which is currently being publicized in the sublocation. Thus, there are important areas in which local residents respond to new ideas and practices. Agricultural practices are among them.

Sometimes, however, there is a resistance to new ideas. For example, many people in South Kamwango believe that a child will grow up to be strong only if he or she contracts measles. Given that 20% of the children do not see their 5th birthday and that it is possible to prevent measles through an inoculation obtainable at a nearby clinic, this belief seems surprisingly persistent and counter-productive.

Whereas people respond to innovations in agriculture, the areas of health and environmental management seem to be more intractable. This may be, in part, because complex behavioral changes are required if the transmission cycles of water-related diseases are to be broken (Cox and Annis, 1988:68). Even if the household has clean drinking water - and most in South Kamwango do not - the fecal-oral pathogens that cause many water-borne diseases may still be ingested if hands and dishes are not clean. In the case of South Kamwango, scarcity, distance, and expense are not issues, but the acquisition of pure drinking water and the use of water for improved hygiene and sanitation are. These depend on information, health education, and motivation.

Receptivity to learning new ways relates, in some measure, to levels of education, to attitudes of inquiry obtained through education, and to the usefulness of the knowledge to be acquired. It also relates to cultural attitudes which change slowly. As noted by one woman, levels of education are indeed low. Few middle-aged women have completed more than Standard Three; most have no education. Many younger women have completed up to Standard Six or Seven. For older men, typically the standard reached is Four or Five, and for younger men, Six or Seven. The schools of South Kamwango are hard-pressed; drop-out rates are high.

Increasingly, education is perceived as a way out of poverty, yet the difficulties of providing that education seem nearly insurmountable. Meanwhile, the lack of knowledge on current conditions of nutrition, sanitation, and disease is apparent. Also apparent are wide-ranging problems which focus people so much on a difficult present that it is nearly impossible for them to design a different future.

IX. Opportunities for Action for Government, NGOs, and International Agencies

As a "pocket of poverty," South Kamwango yields some surprises. The acute health problems typical of most households are staggering. There are important issues concerning leadership and accountability within the community. Although the ban on sugarcane production may, in the absence of a sugar cane factory, have some long-term benefits, it is causing short-term stress by eliminating the key source of cash income for most households. On the other hand, the area's agricultural potential and the entrepreneurial skills of many of the local residents are noteworthy.

Despite the agricultural potential and the efforts of local people, the level of poverty is high. Most residents emphasize that the restrictions on sugar cane production combined with a rapidly rising cost of living have rendered them unable to meet their requirements for basic needs. Their economic activities are small-scale and generate meagre incomes. Furthermore, a lack of awareness on some critical issues in health and sanitation, along with motivation to do something about them, seem to be the biggest stumbling blocks to change.

What, then, in the way of development assistance, would be useful for the people of South Kamwango? Some residents of South Kamwango are simply overwhelmed by the exigencies of everyday life and too encumbered to attempt to improve them. Others are grappling with the significance of changes in their lives and just beginning to think about solutions. Sometimes people perceive a problem but do not yet

relate it to a given set of causes. In this context, what can the Government of Kenya, NGOs, and international agencies do for South Kamwango?

The Kenyan Government

The Kenyan Government has a number of policies designed to support rural communities. There is a broad mandate for participation and rural mobilization in the current (1989-1992) five year plan, *Participation for Progress* and in the District Focus for Rural Development Strategy which emphasizes decentralized planning. Yet, communities like South Kamwango may not be prepared for participation as institutional infrastructure and participatory mechanisms are minimal. Where others may be ready and eager to heed the call of "Harambee" (self-help) or "Nyayo", (following the President's footsteps), it is not easy for South Kamwango given levels of knowledge and lack of organizational infrastructure. For this community, and others like it which have become "pockets of poverty," the Government can explore a variety of options.

Options for the Government of Kenya:

1. Recognize that **pockets of particular deprivation** and poverty can and do exist and direct special resources to assist these communities;
2. Note the harsh consequences of prohibiting a crop which people are accustomed to growing for sale and proceed with urgency to **introduce new**

crops into any community where that has occurred;

3. Encourage **food self-sufficiency** at the household level based on fuller utilization of land and labor. Communities in agro-ecological zone III, with population densities similar to South Kamwango need not suffer from food shortages. A substantial effort is needed to bring more inputs of labor, land, and technical knowledge into food production. Inputs should be directed toward women farmers and modifying the traditional gender-based division of labor which prevents men and boys, even if they have time available, from joining in many tasks related to food production;

4. Stress the selection of **development-oriented leaders** at the local level, accountable to the men and women of the community, and strengthen the emerging, yet fragile, local groups and organizations;

5. Introduce a major effort in the area of **health education**. Central to promoting sustainable development in communities such as South Kamwango is the capacity to improve overall health conditions. Health education should be introduced at the earliest stages in primary schools, and involve knowledge of nutrition, sanitation, and environmentally-caused diseases, combining "tradi-

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tional" knowledge with national and international sources of information and understanding;

Non-Governmental Organizations

At a public meeting, local community members identified their most critical problems: inadequate sources of income, poor health, polluted water, limited institutional capacity, low food productivity, insufficient fuelwood, and a lack of knowledge in a variety of areas. NGOs with highly specific mandates, such as the Kenya Water and Health Organization (KWAHO) or others with a more generalized approach (CARE) could readily find a niche in this community where their efforts would be valuable, productive, and appreciated. NGO's might explore alternatives in South Kamwango, such as:

1. Introduce a program of public education on **child health** which relates the causes of childhood diseases and morbidity to the appropriate preventative measures. Such a program should be targeted to both men and women, with particular attention to women as the responsible parties for child care.

2. Introduce information and technologies related to improved **environmental sanitation**, including such matters as use of latrines, disposal of rubbish, boiling drinking water, and mosquito control. Obeng notes: "The safe management of human waste keeps pathogens away from people and simple practices contribute to the prevention of infection. Water and its sensible use are crucial to health security in rural communities" (1991:17);

3. Explore with women ways in which their **children may be securely cared for** while they work. For most women, responsibilities involve days in the fields or at markets engaging in entrepreneurial

activities (two or three times a week or more) away from the home;

4. Explore options for “jua-kali” or **small-scale enterprise in the informal sector** for both men and women as an important supplement to very limited cash incomes;

5. Anticipate a growing need for **fuelwood** and the possibilities of using trees to provide a source of cash income as well as fodder, fuel, and food. In this community where water is plentiful and soil is good, a systematic effort to select and plant a variety of trees could be a valuable asset to the household;

6. **Support fledgling local institutions** which are beginning to address community issues. These institutions need encouragement and may eventually benefit from new kinds of resources, such as opportunities afforded by a grassroots development approach to credit like the Grameen Bank in Bangladesh. Strengthening of institutions working in the sublocation as well as collaborative efforts between different development agencies will greatly influence the pace and content of development as a whole.

International Agencies

It is difficult for an international agency to consider dealing with “pockets of poverty.” However, some of the attributes of a place like South Kamwango are found elsewhere, and some of the capacities of large agencies could ultimately benefit these rural communities and the women and men in them.

International agencies can consider the following options:

1. Pursue all possible means to further **research on Africa’s agricultural commodities** with a high level of expertise devoted to identifying and/or developing cultivars suited to particular landscapes (Rocheleau, 1991). The potential for agricultural development in this community remains high. The favorable climate and good soils need to be fully exploited in order to improve food security as well as health, not only in South Kamwango, but in the district and elsewhere in Africa.

2. Support NGOs which are using **participatory methods and engaging both men and women in the development process**. Methodologies such as Participatory Rural Appraisal (PRA) may help communities like South Kamwango to focus their thinking and produce a community framework for development. It may help them “design” their future. NGOs working on issues such as water, health, and afforestation can play a critical role in helping work toward sustainable development.

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3. Build support for **child survival and development programs**. Crossette (1992:1) notes, “Despite the efforts of governments, foreign aid agencies and international bodies like the World Health Organization and UNICEF, a third of the 126 million children born each year in the developing world are malnourished from birth and therefore susceptible to childhood illnesses like measles, whooping cough, respiratory infections, and

diarrheal disorders." International agencies can support intensified efforts to provide information and resources to improve child health and nutrition and, therefore child survival.

South Kamwango is neither isolated nor remote, yet the benefits of development seem to have passed it by. As one respondent said, "We have not yet seen the fruits of independence." This community's problems are aggravated by:

- * insufficient attention to the knowledge, resources, awareness, time constraints, and motivation of women as the primary family caretakers in the areas of health, sanitation, and nutrition;

- * the pressures of poverty, intensified by the

larger political and economic systems in which South Kamwango finds unfavorable terms of exchange and costly requirements for entry and access as reflected in certain agricultural policies;

- * conditions shaped by impure water and poor sanitation leading to high child mortality, and other harmful demographic and health trends;

- * fragile institutions which are just beginning to address community-wide issues.

Men and women of South Kamwango face extraordinary challenges. They need resources for addressing them. They also need information, organization, and a catalyst for action. Dislodging the intertwined roots of poverty and those of poor health is the task ahead.

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