

## The Impact of HIV/AIDS on Rural Household Welfare in Rukungiri District-Uganda

Robert Mugabe<sup>1</sup>

<sup>1</sup>Consultant/Lecturer, Uganda Management Institute P.O. Box 20131, Kampala, Uganda

**ABSTRACT:** Many able bodied household members in Rukungiri district have died of HIV/AIDS. Consequently there are many house heads (often young and married) whose partners died. This study investigated the impact of HIV/AIDS on rural household welfare in Rukungiri district. A control group approach was used. Data was collected by the use of questionnaires and empirical observation from both the affected households and unaffected households. The study aimed at finding out how HIV/AIDS has led to depletion of households' productive assets. A binary logistic regression analysis was used to establish whether there is a significant difference in the sources of income for medical expenses between the affected households and unaffected households with the aim of finding out the extent to which HIV/AIDS has led to depletion of households' productive assets and consequent deterioration in households' welfare. The study has established that HIV/AIDS has led to deterioration in the welfare of the affected households through exhaustion of savings and increased borrowing, with the end result of depletion of productive assets leaving the survivors with minimal means of survival. Productive assets commonly depleted include; land, cattle, goats, chicken, sewing machines, wheelbarrows and bicycles. However, affected households have adopted many coping strategies including those that aim at improving food security, raising and supplementing their incomes so as to maintain their expenditure patterns, and coping with loss of labour. Since emergency traditional indigenous groups are already operating in all the communities in the district acting as a source of psychosocial support to individuals and communities affected by HIV/AIDS with their activities such as assisting with burial ceremonies, communal farming, supporting sick patients, rebuilding dwellings and rehabilitating farms, supporting survivors and creating income generating activities and providing material support, the study recommends government support in collaboration with donor agencies to provide them with training in HIV/AIDS home care support and enough funds to enable them meet their requirements. Government in collaboration with NGOs operating in the area should introduce short-term training courses in the affected areas to empower the survivors with practical skills and equip them with capital that can enable them create jobs for themselves. Further, improving agricultural yields through teaching them modern farming practices, provision of free anti-retroviral therapies by the government to all the affected households, accompanied by provision of food rations for boosting nutritional requirements would reduce the depletion of productive assets of these households.

**Key Words:** HIV/AIDS, Rural Household welfare, Affected, Unaffected and depletion of household assets

### I. INTRODUCTION

HIV/AIDS is a major impoverishing force and the leading cause of death in all age groups today. It is estimated that 39 million people are already dead since the first case of HIV/AIDS was identified in 1981, most of them from Eastern and Southern Africa. Today, it is estimated that 35 million people worldwide are living with HIV/AIDS of which over two-thirds are in sub-Saharan Africa (UNAIDS, 2014).

The effect of the disease has been pervasive, affecting all socio-demographic and economic categories of the population, with considerable short and long-term ramifications. As a result, it affects labour supply in all sectors of the economy especially in the rural households where labour intensive methods of production are mainly employed. Against this scenario, the causes and consequences of the HIV/AIDS pandemic are widely associated with wider challenges to household development, such as increase in expenditure, shortage of labour force, loss of income, selling of household assets, increase in borrowing, loss of employment and decline in savings. All these leading to rural poverty.

These growing linkages between the impact of HIV/AIDS and rural household welfare constitute a formidable challenge to development policy and practice.

In Uganda and other developing countries, past studies have shown that HIV/AIDS is significantly depleting the most productive human resource, both technically in terms of skilled personnel trained at a considerable cost, and physically in terms of household labour force, which is critical to a predominantly household agricultural economy. Against this, it is apparent that HIV/AIDS is directly and indirectly causing adverse social and economic effects to a significantly large number of households (Nalwadda, 1995) cited by Tumwine (2002).

This study considered a household to be a group of people that consists of all members of one family related by blood, marriage or adoption and including also other persons such as the house-keeper or farm labourers, where appropriate, who normally live together in one house or closely related premises who cook and eat together. In certain cases it also consists of only one member living alone. It also considered welfare to mean a state of well being of the households measured in terms of basic necessities that are enjoyed by the households such as food, clothing, beddings, shelter, basic health care, education, and land as a productive asset.

## **II. RESEARCH PROBLEM**

Households face many disasters of which some call for the immediate coping mechanism to reverse the situation such as liquidating of savings accounts, borrowing from formal and informal institutions and selling some movable household assets. However, there is likelihood that HIV/AIDS as a long wave disaster has led to deterioration of households' welfare in Rukungiri district by causing permanent loss of employment. Labour is the rural households' most abundant asset. Illness due to HIV/AIDS directly affects labour benefits, leaving the household to resort to physical assets as a way to smooth consumption. This leads to depletion of productive assets such as, land, livestock, investment capital (sewing machines, bicycles, wheelbarrows), leaving households vulnerable. Little is known about the extent of the impact of HIV/AIDS on the households' physical assets.

## **III. OBJECTIVE OF THE STUDY**

The objective of the study is to investigate the impact of HIV/AIDS on rural household welfare.

### **Scope of the study**

This study was restricted to investigating the impact of HIV/AIDS on rural households welfare in Rukungiri district of western Uganda. Rukungiri district was chosen because few detailed studies (if any) have been carried out on the impact of HIV/AIDS on rural households' livelihoods.

### **The case study area**

Rukungiri district is located in southwestern Uganda, bordering the districts of Ntungamo in the east, Kabale in the south, Bushenyi in the north and Kanungu to the west. It lies at an approximate altitudinal range of about 615 metres to 1864 metres above sea level. The administrative headquarters of the district are situated in Rukungiri Town Council about 400km from Kampala, the capital city of Uganda.

It has 69,010 numbers of households. Its population density is 220 persons per sq.km. It is the 16<sup>th</sup> district with the highest population density in the country and the third in the western region. It has a total population of 308,696, of which 144,875 are males and 163,821 are females.

Rukungiri district has two counties namely; Rujumbura and Rubabo with a total of 11 sub-counties including the Town council, 77 parishes and 825 villages. Its geographical location and its physical features especially Lake Edward where fishing takes place in Rwenshama fishing village, give it a peripheral district status.

The district in general is an agricultural area employing over 90 percent of the working population. Majority of the farmers are small holders using traditional agricultural techniques and keeping some animals. It is endowed with arable land and three lakes, namely; Edward, Kimbugu and Gambunda. But it is Lake Edward where many people fish for both food and trade. Crops like coffee, banana, Irish potatoes, tobacco, sorghum, beans, maize and groundnuts are the core crops for household incomes and food.

### **The problem of HIV/AIDS in Rukungiri district**

Much as Uganda is regarded as a success story in reducing the sero-prevalence rate from 30.5 percent in 1990's to 6.1 percent in 2004, in Rukungiri district, according to District Director of Health Services, the infection rate is still high. In the age category of less than 15 years, 14.6 percent of males are infected, while 17 percent of the females are infected. In the age category of 15-24 years, 37.5 percent of males are infected by HIV/AIDS, while 40 percent of females are infected. In the age category of 25-49 years, 40.3 of males are infected, while 45 percent of females are infected. In the category of 50 years and above, 32.4 percent males are

infected, while 24.1 percent of females are infected, making an overall HIV/AIDS sero-prevalence in the district as 30.4 percent, which is far higher than the national average (District profile report, 2004).

HIV/AIDS is by far much more than just a medical problem. Its effects extend to social, economic and political aspects of life. Economically, HIV/AIDS problem affects mainly the productive age. This results into a vicious cycle of poverty with low productivity and low income, because when people contract the HIV/AIDS, they fall sick such that they are no longer as productive as before. They end up getting less income and therefore cannot get enough medical care, which further leads to even lower productivity, and the cycle continues. The HIV/AIDS scourge has also caused re-allocation of resources from economically viable projects to HIV/AIDS prevention and care.

#### **Poverty situation in households that lost their household heads in the district**

Poverty is reflected in the form of lack of basic necessities such as access to health units, good shelter, enough food, sufficient clothing, access to land, agricultural inputs, seeds and tools, inability to take children to schools and lack of security (LWF, 2000).

In devoting more time to taking care of sick person, land becomes over grown with weeds, coffee and banana plantations are left unattended. While the family's food supplies and incomes are falling, the need for money increases, especially to pay for medical treatment. To obtain cash, family savings are exhausted, family possessions for example livestock, furniture and even land are sold. This disables the households from meeting the basic necessities of life, leading to deterioration in their welfare.

Mention is also made of poverty in terms of educational needs. There is widespread lack of school-fees especially at the secondary level. There is also a failure to meet other school requirements like uniforms and building funds, making it hard for orphans to benefit from Universal Primary education and Universal secondary education that have been introduced by the government.

### **IV. LITERATURE REVIEW**

#### **HIV/AIDS and Household welfare**

The detrimental impact that HIV/AIDS has on rural households productive capacity is felt in many ways. First, household labour quality and quantity are reduced initially in terms of productivity when the HIV/AIDS-infected person is ill, and later the supply of labour falls with the death of that person. Moreover, the probability that more than one adult per family being infected is high, given the heterosexual nature through which HIV/AIDS is transmitted, it affects negatively the levels of incomes in the household. A compound factor is that infection rates are higher among women who account for 70 percent of the agricultural labour force and 80 percent of food production. In addition, other household members will devote productive time to caring for the sick persons and traditional mourning customs, which can take a minimum of 40 days for some family members. This can adversely affect labour availability (UNAIDS, 2000).

Secondly illness of household members, means suffering loss of productive labour, loss of income, loss of food reserves, savings and assets which are diverted to meet healthcare and funeral costs. Additionally, educational opportunities are reduced, as children are withdrawn from school to care for the sick or to do odd jobs for extra income. Reduced levels of nutrition have been found in poor households (Tumwine et al, 2002).

Studies conducted by Tibaijuka (1997) and Rugalama (1998) in Tanzania, show that households that did not have enough income to buy food or to pay for healthcare, funeral expenses or education costs, sold assets in response to the crises although the amount and type of assets so disposed vary across households. The range of assets most commonly sold include; cattle, bicycles, chicken, furniture, carpentry tools, radios and wheelbarrows. However, in Chiang Mai, Thailand, 41 percent of households affected by HIV/AIDS reported having sold land. Once relieved of productive assets, the chances diminish that households can recover and rebuild their livelihoods. This leads to the threat of a terminal slide towards destitution and collapse. It is also noted that HIV/AIDS pushes people deeper into poverty as households lose their breadwinners, livelihoods are compromised and savings are consumed by the cost of health care and funerals.

Research shows that in two-thirds of Zambian families where the father died, monthly disposable income fell by more than 80 percent (UNAIDS, 2001). A study of three countries; Burkina Faso, Rwanda and Uganda, has calculated that HIV/AIDS will increase the percentage of people living in extreme poverty from 45 percent in 2000 to 51 percent in 2015 (UNAIDS, 2002). From all these studies, one concludes that HIV/AIDS epidemic has caused catastrophes in households' welfare and the crisis continues.

Women are also invariably left bearing even bigger burdens as workers, caregivers, educators and mothers. At the same time, their legal, social and political status often leave them more vulnerable to HIV/AIDS (UNAIDS, 2002).

HIV/AIDS has increased a number of orphans who are denied a chance of attending schools. A study carried out in Kampala, found that 47 percent of households with orphans did not have enough money to send the children to school, while only 10 percent of households without orphans did not have enough money (Muller

and Abbas, 1990). The increasing number of HIV/AIDS orphans means that soon their needs will be beyond the capacity of the surviving guardians (TRAMADEC, 1993).

According to Booyesen (2002), the incidence, depth and severity of poverty are relatively worse amongst households affected with HIV/AIDS, especially, those that have suffered illness or death in the recent past. The intensity of income mobility increases as the probability of households being affected by illness or death increases. Affected households, particularly those facing a greater burden of morbidity or mortality, are more likely to experience variations in income and to experience chronic poverty. Not only conventional determinants of poverty (human capital, access to labour market and physical capital), but also HIV/AIDS-related determinants (mortality and orphaned crisis) play a role in explaining why some households remain poor while other households are upwardly mobile and can escape poverty. Poverty, moreover, is likely to deepen as the epidemic takes its course.

The impact of HIV/AIDS combine to create a vicious cycle of poverty in which affected households are caught up. As adult members of the households become seriously sick, they are forced to give up their jobs leading to a fall in their income.

To cope with the change in income and the need to spend more on healthcare, children are often taken from school to assist in caring for the sick or to work so as to contribute to household income. Because expenditure on food comes under pressure, malnutrition often results, while access to other basic needs such as health care, housing and sanitation are also threatened. Consequently, the opportunities for children's physical and mental development are impaired. This acts to further reduce the resistance of household members and children (particularly those that may also be infected) to opportunistic infections, given lower levels of immunity and knowledge, which in turn leads to increased mortality (World Bank, 1998; Bonnel, 2000 and Wekesa, 2000).

Households headed by HIV/AIDS widows are also particularly vulnerable, because women have limited economic opportunities and traditional norms and customs may see them severed from their extended family and denied access to an inheritance (UNDP, 1998).

## **V. METHODOLOGY**

### **Study design**

The study took a cross sectional design that included people from two different categories of households: the affected households and unaffected households. Unaffected households were used in comparative analysis. Both qualitative and quantitative methods of data collection and analysis were used. Information was collected on nature and form of effects of HIV/AIDS on rural household welfare, how households are coping and surviving in the face of the scourge.

### **Study Area**

The study was conducted in Rujumbura County in Rukungiri district of Western Uganda. However, due to resource constraints, the whole county was not effectively covered. Out of seven sub-counties, only four were covered that is Kayunga, Nyakagyeme, Bugangari and Town Council. This is because according to district HIV/AIDS report (2000), these sub-counties are the most affected by HIV/AIDS.

### **Study Population**

The population of the study included 80 households as key study respondents, 5 local leaders, 5 district administrators, 5 non-governmental organizations (NGOs), 5 community-based organizations operating in the area as key informants. Purposive sampling technique was used to select the required sampling frame in each category and then simple random sampling was used to select the required sample size.

### **Sample Selection**

The study households were purposively selected and comprised of two categories of members of households; the affected by HIV/AIDS and unaffected neighbouring households. Affected household for this study is defined as all residents (members) of a dwelling in which at least one member is known to have HIV/AIDS at the start of the study, or to have had HIV/AIDS and/or have died. Affected households were got by identifying HIV/AIDS-infected individuals obtaining care from the local HIV/AIDS information centers (main community-based HIV/AIDS counseling and testing services). Eighty respondents were selected from the categories of affected households and unaffected households using simple random sampling technique.

### **Data Collection**

The study combined both qualitative and quantitative data collection techniques. Participatory rural appraisal tools were used to collect data. These include focus group discussion, interviews and administered questionnaire.

### Focus Group Discussion (FGD)

Three separate FGDs for women, men, and youth were organized to explore issues concerning HIV/AIDS epidemic and households' coping mechanisms. These provided diversified perceptions and opinions about the topic, generated information about households' structures (household dissolution, household mortality), economic changes (in school attendance, incomes and expenditures, savings and debts), household coping mechanisms, source of resilience and what people have relied on to make a living when struck by HIV/AIDS-linked death.

### Questionnaires

Structured questionnaires were used to collect data from respondents after pre-testing them to check for their validity and reliability. The questionnaires for both the affected households and unaffected households were the same. One would only answer the relevant questions. Pre-testing the questionnaire was very helpful in determining whether the households who were going to be interviewed would understand the kind of questions put to them, and it also helped to know the kind of items to expect to find in their homes, such that the questionnaire was not over ambitious.

### Interviewing

An interview schedule was used to collect information from the key informants that included local leaders, district administrators, NGOs and community-based organizations operating in the area. These provided the general information on the magnitude of HIV/AIDS morbidity and mortality in the area, how HIV/AIDS has affected the households' incomes, expenditure on healthcare, and the coping mechanisms/livelihood strategies adopted by the households.

### Observations

The physical assets of the affected and unaffected households were observed.

### Secondary data

The information on the magnitude of HIV/AIDS mortality, demographic structure, HIV/AIDS and household welfare were obtained from documents and records. This supplemented the findings of the study.

### Data Analysis

Both qualitative and quantitative techniques were used. Survey questionnaires were edited before leaving the field in order to ensure consistency among the answers given. The edited data were classified into meaningful categories and then coded. Data were analysed using STATA package.

The impact of HIV/AIDS on household welfare was analyzed using logistic regression analysis. In a household where breadwinner falls sick, there is permanent loss of employment, which leads to loss of income and the alternative source could be exhaustion of savings or constant selling household assets, which were fitted in a logistic regression equation by assigning 1 and 0 to the dependent variable. Multivariate determinants were used because of dichotomous outcome of the variable indicating the source of income for household expenditure which can be either from household savings or from depleting household assets. In a logistic regression model, we assign the probability  $p$ ; the household uses savings as the source of income to meet the house expenditures given by;

$$p = \frac{e^z}{1 + e^z} \text{-----(1)}$$

Therefore, the probability of household depleting household assets as a source of income to meet the household expenditures is;

$$1 - p = \frac{1}{1 + e^z} \text{-----(2) D}$$

Dividing equation (1) by (2), we obtain

$$\frac{p}{1 - p} = e^z \text{-----(3) T}$$

Taking the natural log both sides, we obtain

$$\ln\left(\frac{p}{1 - p}\right) = z, \text{ Where } z = X\beta + \varepsilon$$

$$\ln\left(\frac{p}{1 - p}\right) = X\beta + \varepsilon$$

Where  $X$  is a vector comprising of explanatory variables,  $\varepsilon$  is a vector of the error term.

$\ln\left(\frac{P}{1-p}\right)$  Is log of the odds ratio.

The estimated odds ratio was used to estimate the relative likelihood of occurrence of effect tested at 95 percent confidence interval. The marginal effects were used to find out the rate of change of probability of the occurrence of dependent variable per unit change in the independent variable.

### **Ethical considerations**

The study being so sensitive, I sought permission and research clearance letter from Uganda National Council of Science and Technology (UNSCT) a body responsible for ethical clearance in Uganda as well an introductory letter from the Ministry of Health (MOH) which introduced me to the study sites to identify contact persons, key informants and appropriate stakeholders to participate in the study. In the study process, participants and other several research ethical issues were treated in accordance with research ethical guidelines of the UNSCT and MOH. For trust and confidence building to respondents, all rights and dignity of study participants, together with their personal experiences and any information offered for the study were respected and treated with confidentiality.

## **VI. RESULTS AND DISCUSSION**

### **HIV/AIDS and the main areas of household expenditure**

There was a need to establish the main areas of households' expenditure to ascertain the items that determine the households' welfare. This would help us determine whether HIV/AIDS has any effect on households' expenditure patterns and how this affects their welfare. Table 1 shows this.

**Table 1: Main areas of household's expenditure**

Areas of expenditure	Affected	Percent	Unaffected	Percent	Total	Percent
Health	50	26.9	30	16.8	80	21.9
Education	25	13.4	45	25.1	70	19.2
Food	35	18.8	35	19.6	70	19.2
Transport	35	18.8	20	11.1	55	15.1
Hired labour	10	5.4	2	1.1	12	3.3
Recreation	0	0.0	3	1.7	3	0.8
Clothing	30	16.1	40	22.3	70	19.2
Others	1	0.5	4	2.2	5	1.4
Total	186	100	179	100	365	100

**Source: Survey**

Table 1 shows that majority of the households spend their substantial amount of their income on healthcare, being 21.9 percent of all households' expenditures, followed by expenditure on food, clothing, education at 19.2 percent each, followed by transport at 15.1 percent. In the affected households, healthcare constitutes the major expenditure at 26.9 percent as compared to expenditure on it by unaffected households at 16.8 percent. Expenditure on education takes 13.4 percent of the income of affected households as compared to 25.1 percent of the unaffected. Expenditure on transport also takes a substantial amount of income in affected households at 18.8 percent as compared to 11.1 percent of the unaffected households. Whereas there was use of hired labour in affected households that constitute 3.4 percent of households, only 1.1 percent expenditure on hired labour was identified in the unaffected households.

The reason for increase in health expenditure in affected households is mainly as a result of sickness created by opportunistic infection due to HIV/AIDS weakening the immune system of the body. Therefore such expenditure cannot be attributed to improvement in welfare status of an individual.

The study also discovered that increase in expenditure is as a result of continuous transportation of patients to health-centers for treatment of opportunistic infections in the affected households. It was also discovered that affected households resort to hired labour because an HIV/AIDS patient who is already bedridden needs maximum attention. This reduces the labour force that should have been used in the gardens.

No recreational activities were identified in affected households yet in unaffected households, 1.7 percent of their expenditures are spent on recreational activities. This shows that unaffected households enjoy a better welfare as compared to affected households.

### Distribution of the dead by sex and causes of death

The major causes of death in the households were identified. This was to find out the extent to which HIV/AIDS has claimed lives of individuals. This would help us in determining how HIV/AIDS is depleting the productive labour force in households and how this is related to welfare. Table 2 shows this.

**Table 2: Causes and death distribution by sex**

Sex	Male	Percent	Female	Percent	Total	Percent
<b>Cause of death</b>						
HIV/AIDS	47	56.7	36	43.3	83	62.4
Malaria	19	51.4	18	48.6	37	27.8
Others	5	38.5	8	61.5	13	9.8
<b>Total</b>	<b>71</b>	<b>5.4</b>	<b>62</b>	<b>46.6</b>	<b>133</b>	<b>100</b>

Source: Survey

Table 2 shows that 62.4 percent of deaths experienced in households are caused by HIV/AIDS, followed by malaria at 27.8 percent while other causes constitute only 9.8 Percent.

In the sex category, 56.7 percent of males have died of HIV/AIDS as compared to 43.3 percent of females. The reason for this could be that men who cannot abstain from sex and yet work far away from their homes tends to sleep with other women thereby increasing the chances of contracting HIV/AIDS. It was also discovered that males die of malaria more at 51.4 percent as compared to their counterpart females at 48.6 percent.

The study found out that in some households where HIV/AIDS has claimed husbands, all household assets including land were sold off to get money for treatment, leaving widows and children with minimal means of survival. On the other hand, households where HIV/AIDS has claimed a wife less household assets are depleted. This shows that men claim ownership of household assets and care for themselves more than their wives and children.

### HIV/AIDS and the sources of income for healthcare treatment

The study sought to establish the sources of household income for healthcare treatment. This was to help find out whether there is significant difference in the sources of expenditure between the affected households and unaffected ones which would in turn help us determine the extent of HIV/AIDS impact on households expenditure patterns. Table 3 shows this.

**Table 3: HIV/AIDS on the source of income for health care treatment**

Source of medical care	Affected	Percent	Unaffected	Percent	Total	Percent
Savings	19	19.2	22	47.8	41	29.3
Borrowing	26	26.3	5	10.9	31	22.1
Sell of goats	5	5.1	8	17.4	13	9.3
Sell of cattle	20	20.1	5	10.9	25	17.9
Sell of land	28	28.3	1	2.2	29	20.7
Others	1	1.0	0	0.0	1	0.7
<b>Total</b>	<b>99</b>	<b>4100</b>	<b>46</b>	<b>100</b>	<b>140</b>	<b>100</b>

Source: Survey

Table 3 shows that majority of households used their main sources of income on medical treatment from savings being 29.3 percent, followed by borrowing at 22.1 percent, followed by sell of land at 20.7 percent and sell of cattle at 17.9 percent.

In the affected households, 28.3 percent meet their healthcare expenditures by selling land as compared to 2.2 percent in the unaffected households. This is followed by borrowing at 26.3 percent as compared to 10.9 percent in the unaffected households, then by sell of cattle at 20.1 percent as compared to 10.9 percent in the unaffected households. However, in the unaffected households, most of the healthcare expenditures are met through their savings being 47.8 percent as compared to 19.2 percent in the affected households.

In the affected households, HIV/AIDS has depleted the productive assets especially land which is the most productive asset sustaining the livelihoods of the rural population. The reason for this phenomenon could be that HIV/AIDS necessitates continuous expenditure to treat opportunistic infections as the immunity declines when somebody is infected with HIV.

It should also be noted that when a bread-winner falls sick of HIV/AIDS, he or she can no longer be able to continue working and therefore, this creates permanent loss of jobs that impairs the household source of survival. In the effort of sustaining their livelihoods, they embark on borrowing from formal and informal institutions, from friends and other sources. So in an effort to meet the burden of debts, accompanied by

increasing expenditure on health care and meeting livelihood necessities, the productive assets are depleted. Yet depletion of productive assets where there are no chances of replacing them, leads to deterioration in the households welfare.

### HIV/AIDS and the pattern of Asset holdings

The assets owned by various households were also analyzed by category to find out the present quantity and the depleted quantity of both affected and unaffected households. This would help us find out whether HIV/AIDS has had any effect on asset holdings or not and this would in turn help us to find out the extent to which HIV/AIDS has affected households welfare. Table 4 shows this.

**Table 4: The pattern of Asset holdings**

Asset	Affected				Un affected				Total			
	Present Qty	%age	Depleted	%age	Present Qty	%	Depleted	%	Present Qty	%age	Depleted	%age
Land (Acres)	140.74	31.5	73.5	16.5	223.5	50.0	9	2.0	364.24	81.5	82.5	18.5
Iron roofed houses	46	48.9	0	0.0	48	51.1	0	0.0	94	100.0	0	0.0
Bicycles	12	36.4	5	15.5	16	48.5	0	0.0	28	84.8	5	15.2
Cattle	81	27.8	69	23.7	125	43	16	5.5	206	70.8	85	29.2
Goats	59	21.4	86	31.2	118	42.8	13	3.7	177	64.1	99	35.9
Chicken	60	24.8	80	33.1	86	35.5	16	6.6	146	60.3	96	39.7
Foam mattress	115	41.2	10.0	3.6	154	55.2	0	0.0	269	96.4	10	3.6
Blankets	102	37.5	0	0.0	170	62.5	0	0.0	272	100	0	0.0
Beds	87	40.3	0	0.0	129	59.7	0	0.0	216	100	0	0.0
Chairs	17	14.4	4	3.4	97	82.2	0	0.0	114	96.6	4	3.4
Tables	21	34.4	5	8.2	35	57.4	0	0.0	56	91.8	5	8.2
Sewing machine	1	12.5	3	37.5	4	50.0	0	0.0	5	62.5	3	37.5
Wheel barrows	3	23.1	1	7.7	9	69.2	0	0.0	12	92.3	1	7.7
Sauce pans	175	38.2	0	0.0	283	61.8	0	0.0	458	100	0	0.0
Radio	29	35.4	10	12.2	43	52.4	0	0.0	72	87.8	10	12.2

Source: Survey

From the table (4) it can be seen that the present quantity of land was 364.24 acres of the total land owned by all households while 82.5 acres were depleted which constituted 18.5 percent.

In the affected households, 140.74 acres of land were presently owned being 31.5 percent and 73.5 acres were depleted being 16.5 percent. In the unaffected households, 223.5 acres were presently owned being 50 percent of all land owned by both affected and unaffected while only 9 acres were depleted being 2 percent. This therefore indicates that HIV/AIDS could be one of the major factors leading to depletion of land and yet land is the major productive asset in the rural areas. This therefore means that as the intensity of HIV/AIDS increases, land as a means of survival is likely to be depleted completely and this is likely to negatively affect the livelihoods of households.

Both the affected and unaffected households had iron-roofed houses though there was slight difference with 48.9 percent being owned by the affected and 51.1 percent being owned by unaffected households.

The easiest means of transport in the rural area of study was a bicycle, yet only 36.4 percent of the affected households had them while 15.5 percent of them had been sold off compared to unaffected households where 48.5 percent had bicycles and none of them had been sold off.

In terms of cattle, goats and chicken, the present quantities owned by affected households were 27.8 percent, 21.4 percent and 24.8 percent respectively as compared to 43 percent, 42.8 percent and 35.5 percent respectively present quantities owned by unaffected households.

Regarding beddings, like mattresses, blankets, and beds, still the unaffected households had more at 55.2 percent, 62.5 percent and 59.7 percent respectively as compared to 41.2 percent, 37.5 percent and 40.3 percent respectively for the affected households. And in terms of other household items like tables, chairs, saucepans and radios, still the unaffected households had more at 57.4 percent, 82.2 percent, 61.8 percent and 52.4 percent as compared to those owned by affected households at 34.4 percent, 14.4 percent, 38.2 percent and 35.4 percent respectively.



Other items considered as productive assets were sewing machines and wheelbarrows. In the affected households, only one sewing machine was still unsold being 12.5 percent and three were sold off being 37.5 percent. Three wheelbarrows were still presently owned being 23.1 percent while one had been sold being 7.7 percent. In the unaffected households, four sewing machines were still presently owned being 50 percent and none had been sold. It was also noted that nine wheelbarrows were recorded in the unaffected households being 69.2 percent of all the wheelbarrows owned by households and none had been sold.

The study discovered that the unaffected households buy most of the assets that have been sold by the affected households. This means HIV/AIDS has led to re-allocation of productive assets from affected households to unaffected households. Unfortunately, this has led to improvement in the welfare of unaffected households and deterioration in the welfare of affected households.

### Results of binary logistic regression analysis

Exhaustion of household savings and depletion of productive assets as a source of income to cater for the needs of households' expenditures with; sex of household head, HIV/AIDS status of a household head, number of children attending school and length of sickness of a household head were fitted in the logistic equation. Results are in tables 5.10 and 5.11. The table shows the logistic regression coefficients expressed as odds ratios to show the likelihood of the source of households' expenditures by each selected variable.

It should be noted that the effect caused by the presence of HIV/AIDS in the households is an added effect to what already existed before the coming of HIV/AIDS. Therefore, from the logistic regression analysis, whether the effect due to HIV/AIDS is greater or less, it remains an added effect, which increases the suffering of the affected households. The elicited responses are presented in table 5.

**Table 5: Likelihood of source of household expenditures due to selected variables**

Source	Odds ratio	Std. Err	z	p >  z	(95% conf. Interval)	
Sex	.9626156	.7317973	-.05	.960	.2169474	4.271213
HIV status	.123582	.0149177	-.364	.000	.00116	.1316587
Children in school	1.001801	.2177921	.01	.993	.6542289	1.534028
Length of sickness	1.015652	.0183758	.86	.391	.9802673	1.52314

Source: Survey

Table 5 shows that HIV/AIDS as cause for exhausting households' savings and depletion of productive assets was found to be highly significant at 0.05. HIV/AIDS was more likely to affect household expenditure than any other variable. The results show that the odds of exhausting the source of income for households' expenditure increases with a household head that gets infected by 0.12.

The marginal effects for each of the selected variables were also computed to find the rate of change of the probability of exhausting the source of income in a household with respect to each of the independent variable. Table 6 shows this.

**Table 6: Marginal effects after logit**

Variable	dy/dx	Std. Err	z	p >  z	(95% C.I)		x
Sex	-.0067294	.76022	-.01	.993	-1.49673	1.48327	.4125
HIV status	-.6963534	1.20711	-.58	.564	-3.06225	1.66954	.5
Children in school	.0003184	.003846	.01	.993	-.075071	.075707	2.937
Length of sickness	.002748	.00331	.83	.406	-.003733	.009229	22.32

Source: Survey

Table 6 shows that a unit change in HIV/AIDS infection leads to a decrease of 0.5 in the probability of retaining the source of income to maintain the households' expenditure.

This shows that as the gravity of HIV/AIDS increases in a household, savings are exhausted and the only alternative that remains available is the sell of productive assets that eventually lead to their depletion. And depletion of productive assets where there are no chances of replacing them has been responsible for deterioration of households' welfare in the affected households.

### Coping mechanism of households affected by HIV/AIDS in the district

Households affected by HIV/AIDS have adopted many coping strategies. One of the strategies is aiming at improving food security. Under this strategy, households substitute cheaper commodities such as porridge instead of bread and they postpone some meals consumed in a day. They have also reduced consumption of the items that are used to sustain their daily lives. Some households have decided to reduce the

number of people by sending some children to their relatives. Those without relatives or in cases where relatives are incapable of taking on extra childcare, children are forced to find their own survival elsewhere, leading many to become destitute.

Households have also adopted strategies aimed at rising and supplementing their incomes so as to maintain their expenditure patterns. As a result, they have exhausted their savings and accumulated a lot of debts from formal and informal institutions. Others have migrated in search for new jobs having sold their productive assets.

In an effort of coping with loss of labour when a member of the household falls sick, children are withdrawn from schools. Although children are not directly involved in care provision, they are involved indirectly by fulfilling mother's and father's roles in some domestic and agricultural activities such as harvesting crops, preparing food for the rest of the households, gathering of food, tending livestock and running errands.

Emotionally, some affected people have formed drama groups with the assistance of NGOs operating in the area to sensitize their communities to the dangers of HIV/AIDS but at the same time using the drama to mobilize income for their survival.

Spiritually, some affected members in the households have decided to join Born Again churches in the area by surrendering their lives to Jesus Christ with hope and faith of getting healed. This has created psychological satisfaction and comfort with the belief that they are healed of the disease.

The district has managed to cope with the problem in various ways. It has set up mitigation interventions, which are basically geared towards improving the lives of HIV/AIDS patients. Under the auspices of AIDS Information centre, HIV/AIDS testing and counseling facilities have been established in all major government health units within the district and the distribution of free ant-retroviral drugs. Some of the NGOs are also offering HIV/AIDS testing and counseling services, others have set up some income-generating activities like agricultural support programmes, youth skills training and micro-finance projects.

However, the universal awareness of HIV/AIDS transmission and the major preventive modes, the intensive health education, condom supply, HIV/AIDS sero-testing and counseling, HIV/AIDS-associated risky behaviours are still high. This coupled with the fact that HIV/AIDS has no cure or vaccine up to now, and the existing anti-retroviral drugs being unaffordable to the district population, the disease still poses a great challenge to the district and to the country as a whole.

## **VII. CONCLUSIONS AND POLICY RECOMMENDATIONS**

### **Conclusions**

Many able bodied household members in Rukungiri district have died of HIV/AIDS. One consequence of this has been the existence of many young widows and widowers. In the affected households, deterioration in the welfare was more noticed as compared to unaffected households. The objective of the study was to investigate the impact of HIV/AIDS on rural household welfare.

HIV/AIDS as a long wave disaster has led not only to permanent loss of jobs especially where the breadwinner falls sick and eventually dies but also to exhaustion of savings, increase in borrowing and eventually the depletion of productive assets leaving the survivors with no means of survival. Productive assets commonly depleted include, land, cattle, goats, chicken, sewing machines, wheelbarrows and bicycles.

Many children in the affected households were not attending school. This is because as the breadwinner falls sick, there is loss of permanent employment that creates sudden fall in income. This calls for the adjustment in the expenditure patterns that leads to withdrawal of children from schools. This is likely to create deterioration of their welfare in the future since their survival remains uncertain. In the unaffected households, many children were found to be attending school an indication that the future of these children is bright holding other factors constant as compared to those children from the affected households.

The health and living conditions of the affected households were also seen to be deteriorating. The numbers of households were not able to meet their medical expenses especially for treating opportunistic infections brought about by HIV/AIDS infection as well as sustainably buy the HIV and AIDS prolonging drugs. The situation worsens after exhausting their savings and selling their productive assets including land that provides food to households which has reduced the nutritional status of the affected households. However, the study revealed that the unaffected households are improving their welfare by buying the assets from the affected households who pay them less than the market price because of desperate, lack of money to cater for their needs at home. This has led to re-allocation of resources in favour of unaffected households and against affected households.

In the rural area of study, the means of transport is a bicycle, but in the affected households, most of them had been sold off. Land is the most productive asset in rural areas sustaining the livelihoods of many households, but in the affected households, it is being sold off as an alternative source of income having exhausted other assets such as cattle, goats, chicken, radios and others. However, the study discovered that asset

holding in the unaffected households is increasing because they are the ones buying those of the affected households.

### **Policy Recommendation**

#### **Existence of traditional indigenous groups**

Many organizations have been formed as a major emergency source of support to the people affected by HIV/AIDS in communities. They include; religious based hospitals, Aids Widows and Orphans Family Support and other traditional indigenous groups at micro level particularly the numerous local saving clubs, burial societies, grain saving schemes and labour sharing schemes ( Tumwine, 2001 and Namusisi, 2003). These play a major role of helping households cope with the impact of HIV/AIDS. The major activities done by these emergency associations include; assisting with burial ceremonies, communal farming, supporting sick patients, rebuilding dwellings and rehabilitating farms, supporting the survivors and creation of income generating activities, as well as providing material support such as salt, soap, paraffin, food, blankets, clothing and other household necessities. Much as these informal groups are taken as source of psychosocial support, they still lack the capacity to deliver their services efficiently. Therefore the government in collaboration with donor agencies should strengthen their capacities by providing them with training in HIV/AIDS advocacy and home care support as well as providing them with enough funds to meet the requirements of their activities.

#### **Improving on agricultural yields**

Given the fact that agriculture is the backbone of this country, a lot of emphasis is needed to improve on welfare of the rural farmers. Most of the households interviewed admitted that they depend on peasant farming for survival. However, much as the government is undertaking the policy of modernizing agriculture, little progress is on the ground so far. The government should employ extension workers who should be moving into villages to mobilize households teaching them modern methods of agriculture. This should be accompanied by provision of better inputs like improved seeds, providing them with hoes and teaching them technologies that make optimal use of available resources, given labour and capital constraints. This is likely to improve productivity that will lead to improvement in the incomes of the affected households when they sell the surplus output and eventually these households can begin enjoying a better life.

#### **Creation of jobs**

Government in collaboration with NGOs operating in the area should introduce short-term training courses in the affected areas to empower the survivors with practical skills and equip them with capital that can enable them create jobs for themselves for the generation of income. For example, those who are taught tailoring could be provided with sewing machines and those who are taught carpentry could be provided with the necessary tools, those taught in handicrafts, bee-keeping, poultry farming and pig-farming could be assisted by providing them with initial capital and then later they can always access small loans from NGOs and micro-finance institutions for re-capitalizing their businesses. Also government and other development partners operating in the area should encourage households to form cooperatives that would help them market their products as well as using them for information dissemination in addition to using them to access loans from lending institutions. This would strengthen the productive capacity of the affected households which would enable them earn enough income, and sustain their livelihoods.

#### **Health care provision**

The study found that HIV/AIDS has led to depletion of households' most productive assets and subsequent depletion of productive assets has led to deterioration of household welfare. Most of these assets are sold to raise money in order to meet the expenses for medical treatment especially treating opportunistic infections due to immune suppression caused by HIV/AIDS infection. Since the government of Uganda is among the selected countries benefiting from the Global Fund for HIV/AIDS, it should build the capacity to ensure that free anti-retroviral therapy (ARVs) are distributed to all infected individuals. This should be accompanied by provision of food rations that supplement nutritional requirements to patients. This will reduce on demand for more money for treatment and will save the depletion of productive assets. However, this policy should be accompanied by massive sensitization of the general public on the dangers of getting infected with HIV such that individuals and communities do not become reckless knowing that when they get infected the government would cater for them such that they live longer. That means the policy should be adopted without over-stretching the government's budget such that even if Global Fund ceases, the exercise should remain within the reach of government.

### **Strengthening free education**

The government of Uganda is already providing free education at primary and secondary levels by meeting the cost for school-fees, building classroom blocks, supplying scholastic materials such as textbooks, laboratory equipments as well as paying teachers, yet there is high drop-out rate especially children from affected households. Therefore the study recommends the provision of school uniform, books, pens and other school requirements as well as provision of free lunch in addition to what it is already available. This will retain the children from the affected households in schools and ensure they enjoy the same benefits enjoyed by children from unaffected households.

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