The impact of HIV/AIDS on agricultural production and mainstreaming HIV/AIDS messages into agricultural extension in Uganda

Ministry of Agriculture, Animal Industry and Fisheries Uganda, 2002
Acknowledgement

This report analyses the impact of HIV/AIDS on agricultural production in the Uganda context. The study was carried out by the Ministry of Agricultural, Animal Industry and Fisheries (MAAIF) in Uganda under the aegis of FAO’s Integrated Support to Sustainable Development and Food Security Programme (IP) with funding from the Governments of Norway and Finland.

The IP would specially like to acknowledge the national consultant Narathius Asingwire, Makerere University, Department of Social Work and Social Administration, who did an excellent job analyzing the findings and compiling this report.

The IP would further like to thank Mrs Dinah Kasagaki, MAAIF, Dr. Harriet Sentubwe, MAAIF and Mr. Nathan Chelimo, Makerere University who gave supervision to the research methodology, analyzing and finalizing the report. Also acknowledged are the staff from FAO-Roma, the IP’s Programme Implementation Task Force (PITF) and in particular Dr. Kalim Qamar, Senior Technical Officer in Extension, Education and Communication Service (SDRE), who provided continuous technical backstopping. Mrs. Forough E. Olinga, IP National Training Facilitator and Mrs. Catherine Barasa, Gender and Poverty Advisor with MAAIF were to great help facilitating the process and the stakeholders’ workshops.

We also acknowledge the 15 research assistance who worked hard undertaking the interviews and data collection, namely Tom Ahimbisibwe, Loy Asiimwe, Vicent Babigumira, Wallace Bindeeba, Michael Kabinga, Harriet Kemigisha, Grace Kenyonga, Prossy Kasozi, Moses Kulaba, Pamela Kyagonza, Esther Nassonko, Joseph Okello-Atim, Ola Dale Johnson, A Semakula and Olinga Tahirih.

Lastly, but not least we would like to thank all the households who where interviewed, the stakeholders who provided important inputs on the national workshops, as well as the support and assistance from the District Agricultural Officers, District Fisheries Officers, District Veterinary Officers, District Extension Co-ordinators, office of the CAOs, Local Council Chairmen and Sub-county Extension.
# Table of contents

Acknowledgement ........................................................................................................................ 1  
Executive summary ...................................................................................................................... 3  

1. Introduction ............................................................................................................................. 4  
   Study objectives .................................................................................................................... 4  
   Background .......................................................................................................................... 4  
   Methodology ....................................................................................................................... 5  
      Study areas and sampling ............................................................................................... 5  
      Qualitative and quantitative data collection and management ...................................... 5  

2. Basic profiles of sampled households ...................................................................................... 6  
   Household activities and socio-demographic profile ............................................................. 6  
   Mortality and Causes .......................................................................................................... 6  

3. HIV/AIDS knowledge, sexual relations and practices............................................................... 8  
   Knowledge of People Living with HIV/AIDS (PLHA) ........................................................... 8  
   Causes of HIV/AIDS spread and sexual relationship ............................................................. 8  
   Socio-cultural practices that contribute to the spread of HIV/AIDS ...................................... 9  
   HIV/AIDS Prevention ......................................................................................................... 9  

4. Impact of HIV/AIDS on agriculture ....................................................................................... 10  
   4.1. Impact of HIV/AIDS on crop farming ............................................................................. 10  
      Type of crops .................................................................................................................. 10  
      Trend/pattern of agricultural production ....................................................................... 11  
      Impact of HIV/AIDS on various agricultural aspects ...................................................... 14  
      Loss of skills and knowledge/technology transfer loss .................................................. 14  
   4.2 Impact of HIV/AIDS on livestock farming ....................................................................... 16  
      Types of livestock kept ..................................................................................................... 16  
      Problems faced by livestock farmers as a result of HIV/AIDS ....................................... 16  
      Mobility and HIV/AIDS ................................................................................................. 17  
   4.3. Impact of HIV/AIDS on fishing ....................................................................................... 18  
      Household members involved in fishing ......................................................................... 18  
      Effect of HIV/AIDS on Fishing .................................................................................... 18  
      Type of Fishing Gear/Equipment ................................................................................ 19  

6. Mainstreaming HIV/AIDS messages into agricultural extension ......................................... 20  
   Information sources and preference .................................................................................... 20  
   Extension staff ..................................................................................................................... 21  

7. Recommendations ................................................................................................................. 23  
   Sensitisation of key ministry staff ..................................................................................... 23  
   Designing appropriate HIV/AIDS messages to increase agricultural production .............. 23  
   Building Capacity of Extension Workers .......................................................................... 23  
   Networking and collaboration .............................................................................................. 24  

List of references ....................................................................................................................... 24  
Acronyms .................................................................................................................................. 24
Executive summary

This study has revealed the impact of HIV/AIDS on agricultural production in Uganda. HIV/AIDS has changed the family structure with able-bodied members dying, leaving the very young ones and the elderly. As much as deaths continue, there is no doubt that the majority of the people are aware of the various modes of HIV transmission, and how one can guard against HIV infection. Behavioral change still remains a challenge, and hence messages to be streamlined into agricultural extension need to be designed in such a way that they will empower individuals to adopt safe behaviors. Thus, behavioral change can help in stemming the spread of HIV/AIDS among crop and livestock farming communities as well as in fishing communities.

Agriculture which, absorbs the biggest proportion of the workforce, and constitutes the single most source of people’s livelihood is being threatened by HIV/AIDS. The government policy of modernizing agriculture can greatly benefit from mainstreaming HIV/AIDS into agricultural extension. All households have been affected by the epidemic through time loss, labour depletion, increased burden dependency, sale of precious household property such as land and animals, all of which translate into decreased agricultural and fish production. This is suggestive of increased poverty among rural households, for HIV/AIDS threatens their basic source of survival. It is as a result of this that mainstreaming HIV/AIDS messages into agricultural extension in Uganda becomes inevitable and timely.

Extension workers interact regularly with the crop farmers, livestock farmers and the fishing folk. However, despite this regular interaction the study has revealed that extension workers are not involved in HIV/AIDS work, as it does not fall within their mandate. Also the extension workers at present lack the knowledge and skills of addressing HIV/AIDS issues since it had long been perceived as a health matter. In a way HIV/AIDS seemed to have been perceived in the agricultural sector as a health issue, but not a development issue. The proposed mainstreaming of HIV/AIDS messages into agricultural extension is recognition by the agricultural sector that the epidemic is not only a health issue, but a development issue as well.

The report is organized in six chapters based on the study objectives. Chapter One is the introduction to the study, outlining the methodology used. Chapter Two presents the basic profiles of the 313 households covered by this study. The socio-demographic characteristics of all the members in the 313 households are presented. Mortality trends in the last 10 years preceding this study are also analyzed. Chapter Three focuses on HIV/AIDS knowledge, sexual relations and practices. This Chapter is meant to aid the designing of appropriate HIV/AIDS messages to be mainstreamed into agricultural extension in Uganda. Chapter Four presents the findings on the impact of HIV/AIDS on agriculture. In this Chapter, the impact of HIV/AIDS is analyzed on the basis of 3 dominant categories of (i) crop farming, (ii) livestock farming, and (iii) fishing. Chapter Five deals with the mainstreaming HIV/AIDS messages into agricultural extension in Uganda, while Chapter six presents recommendations arising out of the study findings.
1. Introduction

Study objectives
The study constitutes the preliminary initial step towards the planned interventions by MAAIF to mainstream HIV/AIDS into agricultural extension, as well as form the basis for developing and adapting existing HIV/AIDS messages into ongoing agriculture service delivery.

The specific objectives of this impact study were:
- To assess the impact of HIV/AIDS on crop farming, livestock farming and fishing activities in selected communities in Uganda
- To find out the sources of HIV/AIDS information to farming and fishing communities, including availability of extension agents
- To establish the HIV/AIDS knowledge levels and gaps among extension agents in selected areas as well as farmers and fishing folk.

Background
Uganda’s economy is dependent on the agricultural sector, which constitutes of crop, livestock and fisheries production. The majority of Uganda’s population, just like in most other developing countries, lives in rural areas. Agriculture is the major sector of the economy, accounting for 90% of the livelihood of the people and offers 80% of employment opportunities. An estimated 2.5-3.0 million households farm on small land holding of less than 2 hectares on the average.

Population and agricultural development are closely linked. The government strategy for Agricultural Development is to achieve a macro-economic growth rate ranging between 3% to 10% per annum on a sustainable basis. The Plan for Modernisation of Agriculture (PMA) is to increase crop, livestock and fisheries production for food self-sufficiency, income and to diversify agricultural exports. It seeks to cause small holder men and women farmers to shift from subsistence to commercial-oriented production and use of improved inputs and technologies in their approaches.

While rapid population growth has in the past been considered the greatest problem in Africa, most rural communities today face high rates of HIV/AIDS epidemic that impacts negatively on the agricultural sector. The effects have been reflected in labour shortages for both farm and domestic work, especially in rural communities. We can in this respect infer that HIV/AIDS epidemic presents a major challenge for agricultural development efforts in our present time.

Considering the complexity of HIV/AIDS and the expected roles of different stakeholders in mitigating the effects of the epidemic, MAAIF intends to adopt an enhanced coordinated and collaborative strategy to contribute to the control of its spread and new infections among the farming and fishing communities. In view of this, MAAIF has, as a response to the multi-sectoral approach towards HIV/AIDS of the UAC developed a Plan of Action. This Plan of Action, which has been developed over the last five years, concentrates on training of agricultural extension staff in dealing with HIV/AIDS in farming communities. As part of the development, MAAIF has appointed an HIV/AIDS Task Force to support the focal point to the UAC with representatives from all Departments (animal resources, planning, crop production, fisheries, extension) and relevant stakeholder organizations outside the Ministry. Because HIV/AIDS is mainly seen as a health issue, funding has been more directed towards medical related organizations and interventions, leaving MAAIF with no funding for implementation of the Plan of Action. Currently, MAAIF is trying through the UAC, to access funding for implementation. Because HIV/AIDS is mainly regarded as a health related issue, little information is available on the impact of HIV/AIDS on agricultural production (crops, livestock, fisheries) in the Ugandan context. Moreover, agricultural extension staff is not equipped to deal with HIV/AIDS as part of their ongoing work in the farming and fishing communities.

In light of this background, this study aimed at assessing the impact of HIV/AIDS on agricultural production (crops, livestock, fisheries), and provide input into streamlining HIV/AIDS messages into agricultural extension. It is widely recognised that agricultural extension workers in Uganda are not equipped with knowledge, skills and logistics to deal with HIV/AIDS as part of their ongoing work in the farming and fishing communities. This, therefore, represents a gap in the efforts to modernise agriculture.
Methodology

Study areas and sampling
The study was carried out in four selected districts of Uganda, each representing one of the four regions of the country, as well as the dominant farming characteristic.

The study deliberately covered districts or areas deemed to have been greatly affected by HIV/AIDS in order to assess the impact on agricultural and fishing activities (see figure 1). In each of the district, 2 sub-counties possessing the required sampling characteristics were purposively selected in consultation with respective District officials. In the selected sub-counties, the study team worked with Local Council Chairmen and Sub-county Extension staff to identify communities that had been hard hit by HIV/AIDS and to sample the households. In each sub-county 2 parishes were selected, and from each parish, 2 villages were covered. Of the total 32 villages, 19 of them were mostly involved in crop farming, seven were characterized as fishing communities and the remaining six were involved in livestock.

In densely populated crop farming communities, at least 10 households were selected in each sampled village/community. On the other hand, 5 households were covered in sparsely populated pastoral areas. A total of 313 households, each represented by an adult member were covered by this study. Extension agents in the study districts were located and interviewed as part of the target population.

Table 1: Study districts and dominant characteristics

<table>
<thead>
<tr>
<th>Region</th>
<th>District</th>
<th>Characteristics</th>
<th>% of the 313 households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>Rakai</td>
<td>Crop farming, fishing and livestock farming</td>
<td>25.9</td>
</tr>
<tr>
<td>Eastern</td>
<td>Iganga</td>
<td>Crop farming and fishing</td>
<td>25.6</td>
</tr>
<tr>
<td>Northern</td>
<td>Lira</td>
<td>Crop farming and fishing</td>
<td>26.4</td>
</tr>
<tr>
<td>Western</td>
<td>Mbarara</td>
<td>Crop and livestock farming</td>
<td>22.4</td>
</tr>
</tbody>
</table>

Respondents were requested to voluntarily participate in the study without coercion or offering material inducement. To capture gender specific issues, sex of respondent alternated every after selected household. In addition, female-headed households were purposively covered by the study. Given the changes in the family structure as a result of HIV/AIDS, and the ramifications this has on agriculture, child-headed households were purposively covered.

Qualitative and quantitative data collection and management
This study was carried out in a participatory manner with all stakeholders involved at all stages. First, there was a stakeholders workshop held on June 22, 2001. During the workshop, participants provided vital input regarding the study design and broad areas of investigation. The designing of specific questions was as much as possible guided by the suggestions made during the workshop. A dissemination stakeholders’ workshop held in April 2002 in Entebbe and provided an opportunity for stakeholders to react to the report. Their views have also been incorporated in this final report. The study team comprised of one local consultant, three supervisors from MAAIF and Makerere University and 15 assistants for the field interviews.

The main methods of data collection, both qualitative and quantitative and included the following:
- Personal interviewing using a questionnaire, which was administered to individuals from selected households.
- Observation
- Selected PRA methods; social mapping, focus group discussions and real life cases of households that had been hard hit by HIV/AIDS.
- In-depth interviews with key informants
- Documentary review
All the filled questionnaires were verified, edited and coded. Coded questionnaires were entered into the computer using Epidemiological Information (EPI-INFO) software. The Statistical Package for the Social Sciences (SPSS) was used for further analysis to establish possible causal-effect relationship between and among certain variables.

With regard to qualitative data, the Consultant helped by the supervisors took detailed notes in the field from focus group discussions and in-depth interviews. These were processed, transcribed and analysed using thematic and content approaches. Six real-life cases of HIV/AIDS hard hit households have been presented in the report, but confidentiality purposes actual names of the respondents are not used.

2. Basic profiles of sampled households

The impact of HIV/AIDS on agricultural production or fishing activities varies from household to household depending on basic characteristics of the household. This Chapter therefore presents the study findings on the basic characteristics of sampled household as well as their socio-demographic characteristics.

Household activities and socio-demographic profile

This study covered 313 households, altogether with a total population of 1907 members (i.e., family size estimated at 6 per household). Slightly over a half of household members were female (50.8%). What is very relevant to note is that that almost a third of household members (30.9%) were aged below 10 years, which implies a heavy dependency burden. Slightly more than a fifth of the household members (21.9%) were aged between 11-17, also falling in the age bracket of children.

A majority of the households (61.2%) covered by this study were peasantry involved in crop farming. This represents the general picture of the country where majority of the population is involved in agriculture on small scale using labour intensive technologies, which are greatly vulnerable to HIV/AIDS. The other households were involved in livestock farming (17%) and fishing (21.8%).

The study findings indicate dramatic changes in the household structure and composition as a result of HIV/AIDS, which has a bearing on agricultural production. For instance, only less than a half of the sampled households (46.0%) represented what an ideal household should to be in the Ugandan context; both husband and wife alive. Almost a third of the households (30.4%) visited were headed by female adults, and in most cases widows. Over a tenth of the households (14.4%) were headed by a grandfather and 4.5% headed by both grandparents. In both instances, grandparents had taken on the care of their grandchildren whose majority of parents had died of HIV/AIDS related illnesses. As a result of HIV/AIDS, child headed households have emerged (4.2%).

Other salient features are that close to a quarter (23.0%) of all household members had never attended school, and presumably not in position to read HIV/AIDS messages in the print media. On the other hand, 38.6% of household members were attending school. This implies schools can be used as partners in disseminating HIV/AIDS messages.

Over a fifth (22.2%) of household members was “other” relatives to the head of the household, but not the spouse or child. This could imply that these were children of the deceased relatives, i.e. orphans. It is revealed that in only 40.8% of all the household members had both parents alive, while over a quarter (27.1%) of all household members had their both parents dead, and 26.4% had only a mother alive. It can be concluded that a big proportion of household members covered by this study were young orphans, which is further corroborated by the findings on mortality among studied households in the last 10 years preceding this study.

Mortality and Causes

Majority of the households (91.0%) covered by this study had lost a member in the last 10 years. Most of the deaths occurred between ages 20-35 for both sexes, but with females being slightly more than males, and relatively similar between sexes for children below 5 years. Figure 2 summarises deaths in the household by age and sex of the deceased.
The findings indicate that at below 5 years, the level of mortality between girls and boys is almost the same, but increases for females between 15-35 years. Mortality among males surpassed that of females from age 36 and above. HIV/AIDS was reported to be the major cause of death (56.5%) for household members. While natural causes accounted for 36.3% and others 4.3%.

According to study findings, in a few households (2.9%) deaths was attributed to witchcraft, which key informants indicated that this was rather a defence mechanism or denial of the inevitability as one put it:

We have people who have AIDS, but do not want to believe that they have AIDS due to fear of the inevitable and stigma. They hide behind witchcraft, which gives them some hope together with members of their families, but in the process sell off all the household property in search of a cure from witch doctors and traditional healers [Local Council Chairman, Ngara].

In terms of age, HIV/AIDS related mortality was found highest between 20 – 50 years, but more concentrated between 20-35 years old. This is the age category that is very productive, and hence could unleash adverse implications on agricultural and fishing activities. See Table 2 below.

When findings on HIV/AIDS as the reported cause of deaths are analysed by age and district, variations emerge. Rakai district where the first AIDS cases in Uganda were recognised around 1982, reported the highest number of HIV/AIDS related deaths in almost all age categories. For instance, the majority of the infant mortality due to HIV/AIDS was reported highest in Rakai district (52.6%), while 5-14 years is almost similar in all districts except Iganga, which recorded the lowest.

Although Rakai reported highest HIV/AIDS related deaths in almost all age categories, it reported lowest among those aged over 50 years, while Lira reporting the highest for the same age category.

The findings presented in this Chapter have revealed that a number of deaths have occurred in the last 10 years in almost all the households surveyed. These deaths mainly occur among societal members who constitute the bulk of the labour force. This in turn impacts on the economy, and largely on agriculture, which is the backbone of Uganda’s economy. Thus, efforts to combat the spread of HIV/AIDS, and mitigate the impact remain critical. For MAAIF to contribute to this cause by mainstreaming HIV/AIDS messages into agricultural extension, requires an understanding of current peoples’ knowledge of HIV/AIDS, sexual relations and practices, which are presented in the following Chapter.
3. HIV/AIDS knowledge, sexual relations and practices

Ever since HIV/AIDS emerged on the Ugandan scene, several studies have been conducted on people’s level of knowledge and awareness of HIV/AIDS. Also studies have been carried out on sexual behaviours and practices. In all the studies, it has been revealed that the level of HIV/AIDS knowledge and awareness for most Ugandans is high. However, given the fact that this study is to serve as input into mainstreaming HIV/AIDS messages into agricultural extension, it was deemed necessary to investigate HIV/AIDS knowledge, sexual relations and practices among the crop farming, livestock farming and fishing communities. The rationale was to come out with appropriate and specific messages per locality.

Knowledge of People Living with HIV/AIDS (PLHA)

To assess peoples’ knowledge of HIV/AIDS, study respondents were first asked whether they knew any person in their community who had AIDS, and if they had taken care of PLHA. Overall, 92.7% of the respondents had ever known a person who had AIDS in their community, while 74.8% reported to have ever taken care of a relative or household member who had HIV/AIDS. Over a half of the respondents (56.6%) had ever taken care of two or more persons with HIV/AIDS. In relation to the impact of HIV/AIDS on agriculture and fishing, it implies that majority people at one time had devoted their time to nursing and caring for PLHA instead of attending to agricultural and fishing activities.

Data generated through focus group discussions and individual interviews revealed that people in the study area distinguished a person with AIDS from one without AIDS by the commonly known symptoms. A big proportion of individual respondents (76.7%) noted that they knew symptoms/signs of AIDS. Commonly reported symptoms included:

- Unexplained loss of weight
- Skin rash
- Diarrhoea
- Constant/prolonged fevers and malaria
- Persistent dry cough
- Loss of appetite
- Tuberculosis

Causes of HIV/AIDS spread and sexual relationship

Over a half of the respondents (53.7%) reported that HIV spread was as a result of people having multiple sexual partners, amidst low usage of condom. Around one forth (27.2%) of the sample reported unfaithfulness among partners.

12.5% of the respondents cited that redundancy was a cause of HIV/AIDS spread in their communities, and 11.2% mentioned poverty. In Iganga, over a fifth (21.3%) cited poverty as a factor behind HIV/AIDS spread. In Lira, 20.7% indicated uncontrolled alcohol taking as a factor that facilitated the spread of HIV/AIDS.

The relationship between HIV/AIDS and poverty cannot be understated. Orphaned girls without care were reportedly lured into sexual relationships with older and married men for material benefits. Similarly, cases of married women having sexual relationships with men were reported to be common especially in the fishing communities. Quantitative data on sexual relations corroborate these findings.

Among the married respondents, majority (83.3%) were in monogamous relationships, while 16.6% were in polygamous marriages. Among the unmarried, almost a third (30.8%) reported having a regular sexual partner. Of these, 82.9% reported that they had a single regular partner, while 17.2% reported more than 2 partners. Of the married and those with regular sexual partners, majority (64.5%) reported having had sexual relationship outside their marriages/regular sexual relationship. A big proportion of respondents who had been involved in a sexual relationship outside marriage or regular sexual relationship were in Iganga and Rakai.

The findings are reinforced by peoples’ perceptions about their partners’ fidelity. Close to a fifth (18.0%) of married or respondents with regular sexual partners thought that their spouses/partners could have had sex with anyone else in the last 12 months preceding this study, while 42.7% were not certain. Only 39.3% of the respondents contended that their partners were faithful. Thus, the findings reveal high level of suspicion among couples, which does not
augur well for HIV prevention. In figure 3, individual perception of possible infidelity is cross-tabulated with one’s basic activity.

**Figure 3: Perceptions of infidelity by basic characteristics (in percentage %)**

![Figure 3](image)

Majority of respondents who thought that their partners/spouses could have had sex with someone else were in fishing communities. This could be possible given the type of life that prevails in fishing communities and landing sites, characterised by high mobility and a semi-urban take live.

**Socio-cultural practices that contribute to the spread of HIV/AIDS**

In this study, majority respondents did not point to widespread socio-cultural practices that facilitate the spread of HIV/AIDS except for remarrying of infected widows and widowers. But even then, it was revealed that remarrying of widows by the brother-in-law was no longer culturally mandatory as it used to be before the onset of HIV/AIDS. Nevertheless, remarriages were still taking place as reported by almost a fifth (19.2%) of the respondents. A tenth of the sample (10.5%) reported sharing of skin cutting or piercing instruments as a practice that lead to the spread of HIV/AIDS. This was much related to traditional healing practices where a single razor blade can be used on several patients to administer local medicine. Other socio-cultural practices mentioned to contribute to the spread of HIV/AIDS were polygamy (9.6%) and alcoholism (6.7%).

In relation to direct impact on agricultural production and culture, the cultural practice of observing mourning period impinged on agricultural production and fishing due to absence of labour on farmland or available for fishing. In this study, 32.0% of the household respondents revealed that they spent a week away from gardens and fishing activities if a household member passed away. In over a tenth of the households (12.0%), they spent over a week in case a household member passed away.

With regard to the loss of a community member, majority households (70.8%) spent 1-2 days without working, while for a relative who is not a family member, majority households (59.0%) spent 2-4 days without attending to their gardens.

**HIV/AIDS Prevention**

From the study findings, there is no doubt that several respondents and key informants knew the various ways of preventing and controlling the spread of HIV/AIDS. The issue is therefore not lack of knowledge on how to prevent an infection, but rather behavioural change. For instance, whereas 46.0% of all respondents reported that condom use would prevent HIV infection, only 15.3% had ever used it in their life. This has serious implications given the findings in this study where unfaithfulness/infidelity among partners seemed to be taking place. Where condom use is low, faithfulness among sexual partners is in doubt and abstinence is non-existent, HIV can spread very fast. This suggests that the messages to be designed or incorporated into agricultural extension should be able to empower the farmers and fishing folk to change risky behaviours that expose them to HIV infection. Without change in behaviour, HIV will spread unabated with devastating effects on agriculture. Even at the moment, the impact of HIV/AIDS on agriculture and fishing is noticeable in several communities in Uganda.
4. Impact of HIV/AIDS on agriculture

This Chapter presents the findings on the impact of HIV/AIDS on agricultural production. The impact of HIV/AIDS is analysed on the basis of the 3 categories (i) crop farming, (ii) livestock farming, and (iii) fishing. Most studies, which have been carried out on the impact of HIV/AIDS on the economy in general, have tended to focus on crop farming with less attention on livestock farming. In this study attempts were made to analyse the impact of HIV/AIDS on livestock farming.

The socio-economic dynamics in fishing communities unlike in crop and livestock farming communities make them more susceptible to HIV infection, and the impact of the epidemic. The impact of HIV/AIDS on fishing can, first and foremost, be appreciated by examining the basic characteristics of household members involved in fishing in the lake.

4.1. Impact of HIV/AIDS on crop farming

The impact of HIV/AIDS on the agricultural sector is quite visible in districts that have been hard hit by the epidemic. This has far reaching implications since agriculture accounts for 43% of GDP, 85% of export earning and 80% of employment. In addition, 85% of the estimated 22 million Uganda’s total population live in rural areas and depend mainly on agriculture (GoU, 2000). Since most agricultural activities take place in rural areas, where farmers mainly using labour intensive techniques live, and have been much vulnerable to HIV/AIDS, it has resulted into decline of agricultural production in general, and food production in particular. Many communities whose source of income, food and general livelihood is agriculture have registered negative growth due to HIV/AIDS. In this study, empirical data on the impact of HIV/AIDS on agricultural production is analyzed.

Type of crops

In all the 4 districts, farmers were small landholders, majority owning less than 8 acres of land, and using labour intensive techniques in their cultivation; a hoe, pang and axe. Most of the households were growing crops on small portions of land, while big portions of land were not cultivated. Most of the crops both for food and sale were labour intensive crops, most susceptible to HIV/AIDS.

Tubers such as cassava, yams, sweet potatoes etc, which seem not to be much labour intensive such as bananas (matooke) were the dominant food crops in all districts except Mbarara. Legumes such as beans, groundnuts, peas were the second dominant crops followed by cereals. In areas of Mbarara and Rakai, which are matooke growing areas, it is becoming evident that HIV/AIDS has had its toll as only less than a half of the households in respective areas reported matooke as their dominant food crop.

In the four districts, there were no marked cash crops. The food crops doubled as crops for sale, but also among few households. Most households, which, sold off crops mainly cereals (rice, millet, and maize), were in Lira and Iganga. In the districts of Mbarara and Rakai very few households had crops to sell.
As a proxy indicator of the impact of HIV/AIDS, respondents were asked whether there were certain crops, which they used to grow, but were no longer growing in the last 10 years preceding this study. Several households (64.8%) indicated that there were certain crops, which they used to grow in the past, but were no longer growing. Most of these households (i.e., over a tenth, 12.8%) had stopped growing cereals such as millet, sorghum, maize etc. The dominant reason for not growing such crops was cited to be lack of labour in almost a fifth of the sampled households (19.2%). In a few households it was as due to pests and diseases as a result of poor management, infertile soils and lack of market.

In a situation where there are small landholders, it would be expected that much if not all the land would be under cultivation in crop growing communities. However, the study findings revealed that a big proportion of the households (60.1%) had unused land or gardens that had reverted into bush due to lack of manpower. When this was cross tabulated by districts, majority of such households were in Lira (82%) and Rakai (64%) districts.

Social maps drawn by community members in Lira indicated a number of households than had been affected by HIV/AIDS related deaths, with gardens that had reverted to bush. Households with unused land that was formerly under cultivation attributed it to lack of labour, lack of money to hire labour and conversion of cultivable land into grazing pastures etc.

**Trend/pattern of agricultural production**

Household respondents were requested to comment on the household’s agricultural production in the last 10 years so as to link with possible effects of HIV/AIDS. Majority of the household respondents (76.9%) revealed that their respective households had experienced decreased agricultural production in the last 10 years.

A number of factors, all related with HIV/AIDS explain the general pattern/trend of decreased agricultural production such as depletion of labour force and increased workload due to increased dependency burden, loss of skills and knowledge, and income disruption.

Several studied households (66.9%) mentioned shortages of labour to be behind decreased agricultural production in their households. In almost a fifth of the sampled households, labour shortages were directly linked to HIV/AIDS related deaths.

Accordingly, AIDS undermines agricultural systems, affects the nutritional situation and food security of rural families. Families face declining productivity as well as loss of knowledge about indigenous farming methods and loss of assets (Focus, 2001). FAO estimates that in the 25 most-affected African countries, AIDS has killed seven million agricultural workers since 1985. It is forecasted that 16 million people will die of AIDS in the next 20 years. Labour intensive farming systems with a low level of mechanisation and agricultural input are particularly vulnerable to AIDS. Given the fact that AIDS is concentrated among the 15 – 45 years old, who are most able bodied, then agriculture suffers most in terms of production and market for the accruing products.

For women who are the main producers generally shoulder the burden of caring for the sick. This diverts their energies from agricultural production and general work that would provide income. The result is household food insecurity, declining nutrition and health. Thus, the decline in women’s contributions to agriculture, as a result of their own illness or that of family members, reduces agricultural productivity and household food security. This is especially devastating given women’s key role in the agricultural work force and in the production of most subsistence food crops.

Labour loss and depletion as a result of HIV/AIDS partly occurs due to high dependency burden, coupled with structural changes in family structure. Situations where frail grandparents are increasingly assuming roles of able-bodied persons to care for the children of their late sons and daughters are common. In such households, food production declines, and the family becomes perpetually food insecure. A household case in Ngara area, Nyakayejo illustrates the point.

**Case 1: Food Insecurity in a Grandfather Headed Household**

Paulo, a widower aged 80 years old lives in Ngara village, Nyakayejo Sub-county in Mbarara district with 5 grandchildren who are orphans aged 5,7,8, years who were left behind by his daughter and a son who died of AIDS. Paulo narrates, “I used to be self-reliant, hardworking, supplemented my little income from farming with carpentry work, but when my children died, leaving behind children and nobody else to take them up except me, my life changed. I am not only a grandfather to these children, but a father and a mother at this advanced age... I am now sick and cannot afford to dig or to do carpentry work any more after an
operation I underwent, coupled with old age. It puts me in great pain, for I don’t know what will happen to these children once I die as they all depend on me”.

The old man has a banana plantation, but the biggest part is overgrown with weed due to lack of enough manpower. Together with the orphans, they cannot carry out meaningful cultivation even though the orphans are not attending school. There has been sharp reduction in food for consumption available for the family as the old man continued narrating “even now when I am still alive, we do not have enough to eat... you can see that young one (pointing to the youngest orphan) is gloomy not because he is sick or has been punished, but because he has not eaten anything since morning”. As a coping mechanism, the household feeds on one meal (supper) a day, and take some local porridge for lunch.

The above case illustrates how HIV/AIDS has changed the family structure, with frail grandparents assuming responsibilities of “fathers and mothers”, but yet cannot meaningfully execute such roles of fending for the family. The case also points to occurrences of food insecurity among HIV/AIDS affected households and psychological trauma. When the grandparent is preoccupied with “what will happen” to his grandchildren after his death, it points to, among others, the need for psychosocial support, and deliberate programmes to help such families.

The relationship between change of family structure as a result of HIV/AIDS and reduction in agricultural production is more evident in this study as all households headed by grandparent or children themselves, reported decreased agricultural production.

Declined agricultural production and consequently food insecurity were markedly prevalent in grandparent and child headed households than in other households. A case of a grandmother headed household illustrates the trend of agricultural production in such households.

Case 2: Declined agricultural production and food insecurity in a grandmother headed household

Agellina, a widow and grandmother aged 65 years old lives in Kakuto Parish, Kigayaga village, Rakai district. In a small mud and wattle iron roofed house, lives 10 people (4 males and 6 females), 8 of whom aged below 14 years old. All the nine other members of the household are her grandchildren who were orphaned by AIDS. Agellina had produced 4 children, three of whom died of HIV/AIDS related illnesses in 1990s together with their spouses, leaving behind 9. Six of her grandchildren including the eldest who is 14 years old have dropped out of school partly due to lack of other school necessities (i.e., save for tuition, which is covered under Universal Primary Education), and to supplement the grandmother’s failing input on the small banana plantation.

The family depends on a small plantation for its food requirements and beans grown in the banana plantation. The family has some land of 2.5 acres reserved for cultivation, but can only cultivate less than an acre. According to Agellina “the family does not have labour to tend to both the plantation and the garden of beans”, and hence have been exposed to weevil and pest infestation.

The family has witnessed declined food production and consumption as well. The children playing in the courtyard looked hungry and malnourished. The grandmother in touching emotions observed, “we only have one meal a day, and also not adequate... we let the small ones first eat... a type of life that they were not used to”.

Agellina is planning to sell part of 2.5 acres of land so as to raise some income for meeting the basic necessities including food for the family.

The above case shows how changes have occurred in family structure due to HIV/AIDS and the attendant consequences of decreased agricultural production. This finding is supported by findings from secondary sources. For instance, according to UAC (March 2001), Uganda has the highest proportion of AIDS orphans in the whole world. By the end of 1999 UAC estimated that over 1.7 million children below 15 years had lost one or both parents to AIDS.

However, a dimension in the above case that did not feature in the case of Paulo in Mbarara is weevil/disease infestation due to poor management of gardens. Some of these diseases were as a result of poorly or unattended gardens/banana plantations due to labour depletion resulting from of HIV/AIDS. Some of the diseases and pests included banana steak virus mainly in Kyotera county, coffee wilt, beans bacterial, fungal and viral, sweet potato caterpillars and cassava green mites etc. Cassava mosaic which used to be a problem in most areas was reported to he on the decrease due to the introduction of new resistant/tolerant varieties from the National Agricultural Research Organization (NARO). Also in the above case, a new dimension of selling the family property such as land in order to cope with the new demands arising from HIV/AIDS emerges.
A lot of literature points to similar situations in several parts of the country that have been hard hit by HIV/AIDS. For instance, FAO (2001) summarised the impact of AIDS on a once wealthy rural agricultural community of Gwanda in Rakai district. HIV/AIDS was reported to have resulted into loss of labour, poor land use, increased pests and plant diseases, livestock decline and food insecurity. All these put together have resulted into massive poverty, and undermining of sustainable development. Apart from reduction in incomes accruing from the agricultural sector, decline in food production which, culminates into food insecurity has adverse impact on PLHA in particular. Decline in production of local foods implies that the nutritional requirements for PLHA are not met, which affects their life span.

Further, the affected and afflicted family, and the wider community feel the impact of HIV/AIDS through reduced agricultural production. Culturally, when death occurs in most parts of Uganda, community members take off time for burial and in some instance observing the mourning period i.e., not attending to their gardens. Even in majority households where a member had not died in the last 10 years, reported decreased food production.

Both quantitative and qualitative data revealed that as a result of HIV/AIDS, crop-farming households were faced with the following:

- Loss of time
- Labour shortages
- Selling household property
- Loss of knowledge and skills
- Exhaution of funds
- Land and property grabbing
- Increased dependants

It was reported in some communities in all the 4 districts that in situation of poverty, orphans and widows have been dispossessed of their properties by the relatives of the deceased father/husband. Lack of awareness of property rights, corruption and lack of money by orphans and widows pose barriers for them to seek justice. An in-depth case study of the widow, Sarah explains the point at hand.

**Case 3 - Property rights, agricultural production and food security.**

Sarah aged 39 years and living with HIV/AIDS lost her husband in May 2000 over HIV/AIDS related illness. She lives in Senkoma village, Kybe Sub-county with her 3 children; the youngest aged 3 and the oldest 12. Narrating her situation to the researcher, Sarah contends that the family used to be rich before the onset of AIDS. Together with the late husband, they struggled to put up a 3 bed-roomed permanent house after realising that they were HIV positive. The couple jointly made the bricks, but in the evening Sarah would leave for the market to trade in smoked/dried fish so as to supplement the family income. Sarah narrates that all the property that the family had was jointly worked together, although the relatives of the late husband were trying to grab the family property.

Sarah revealed that as much as the husband knew that he had HIV/AIDS, he did not make a will, despite the constant pleas of the wife. In may 2000, the husband passed away without making a will. When the husband became critically ill, with no hope to recover, her mother-in-law and sister in laws started apportioning blame on her that she was responsible for the disease that had afflicted her husband. Sarah narrated that this was to lay a back ground and a pretext for grabbing the family property upon the deaths of her husband. Indeed, when the husband passed away, during the period of mourning, the mother-in-law and her daughters succeeded in grabbing part of the family property, and disposing of her of the small banana plantation, claiming that the late son had not been given the banana plantation officially. The in-laws were now threatening to evict her, in her words; “evicting me from the very house I built with my husband”. The plantation, which was taken away from her exhibited all indications of not being attended to; overgrown weed, banana trees that were not pruned and attacked by weevils.

Sarah whose health had started failing and having lost one of the children possibly over HIV/AIDS related illness with another child very sick, found herself with no money to seek legal redress having spent all that she had on medical bills and feeding. She conceded that it was doubtful that even if she had money to seek redress in the courts of law she would succeed as she was not married legally. She tried to take the case to the local committee, but the case was yet to be put on the agenda. As she was not in a legal marriage she has met a lot of difficulties for her case to be heard by the local council, where it has been on for a while. Even if her health was not failing her, the widow has no land to cultivate and only survives on petty trading, though it can not generate much income.

The children no longer go to school due to lack of money as the little she earns is meant for covering medical bills and food. As to why she doe not take advantage of Universal Primary Education, she answered, do not have money to buy uniforms and other scholastic materials, and also children are giving a hand in looking for food for the family by hiring their labour.
Critical issues that need attention in the fight of HIV/AIDS and mitigation of its impact, which arise from the above case and which could be focused on in mainstreaming HIV/AIDS into agricultural extension include:

- Importance of making a will
- Sensitisation about widow and orphan property rights
- Types of marriage and their implications
- Implications of coping mechanisms that can impoverish the children in future such withdrawing them from school to supplement dwindling family labour.

**Impact of HIV/AIDS on various agricultural aspects**

Respondents in crop farming communities were asked to comment on the effects of HIV/AIDS in their own households as well as other households in the community. A number of agricultural aspects were formulated and view sought from respondents. The findings, which largely indicate adverse impact, are shown in Table 3.

<table>
<thead>
<tr>
<th>Aspect of crop farming</th>
<th>Effects of HIV/AIDS of farming aspects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Respondent’s household</td>
</tr>
<tr>
<td></td>
<td>Decreased %</td>
</tr>
<tr>
<td>Food crops grown</td>
<td>66.3</td>
</tr>
<tr>
<td>Cash crops grown</td>
<td>71.2</td>
</tr>
<tr>
<td>Amount of food consumed</td>
<td>52.1</td>
</tr>
<tr>
<td>Sale of agricultural produce</td>
<td>64.9</td>
</tr>
<tr>
<td>Farm labour</td>
<td>67.0</td>
</tr>
<tr>
<td>Income from crops</td>
<td>85.1</td>
</tr>
</tbody>
</table>

Both in the respondents’ households and community, the effects were adverse with income from crops being most affected. HIV/AIDS leads to income disruption and eventually cessation as able-bodied people in society succumb to the epidemic, while others have their productive time diverted from farm production to attend to the sick or burials and funerals. At the same time, household expenditures rise to meet medical bills and funeral expenses. As reported by FAO (2001), while the number of productive family members decline, the number of dependants grow. These realities endanger both short-term and long-term household food security.

**Loss of skills and knowledge/technology transfer loss**

HIV/AIDS has been documented to be eroding the skills and knowledge acquired as people die in their prime age before passing on knowledge and expertise to the next generation. The impact of HIV/AIDS on this aspect is well illustrated in a household headed by a 19-year-old male who started assuming family headship when he was around 16 years old.

**Case 4: Food Production and Security in an Orphan Headed Household**

At 19 years old, John who is an orphan residing in Nyakayojo, Mbarara District has been a family head for the last 3 years, although the family members are not his wife and children, rather his two sisters aged 17 and 14, and the young brother aged 11 years. Their father and mother died in 1996 and 1998 respectively. They stay in a small mud and wattle iron roofed house. With financial assistance from a relative, the older sister goes to a nearby secondary school as a day student. Both the young sister and brother are in primary school. After the death of their mother, John who was in secondary school stopped schooling so as to attend to his younger sisters and brother. The family owned 4.5 hectares of land where they grew basically food crops for home consumption and a little surplus for sale. In addition, they had some animals; cows and goats. The father who became ill first, and without responding to modern medication suspected the cause of his ill health to be witchcraft related resulting from a dispute with his neighbour, and hence opted for traditional treatment. To meet the exorbitant charges of the various traditional healers, he depleted all the little savings the family had. When this was not enough, he sold off the family animals as well as offering some to the traditional healers as a form of payment.
finally, he passed away in 1996 leaving the family with almost nothing. the little that was remaining was spent on an elaborate burial and funeral ceremony as he had willed.

almost two years after, the widow started developing ill health. without any source of income, the family sold off 1.5 out of 4.5 hectares of land to meet household needs including medical costs of the ailing widow and mother. in 1998, she passed away, again leaving the household more impoverished. after the death of his mother, john started selling off the remaining animals until there was none to sell, while the banana plantation and gardens had reverted into bush as much time had been spent nursing their late father and eventually their mother.

the family was facing severe shortages of food having opted to grow less labour intensive crops such as cassava. thus, apart from shortages of food, the quality of the food taken by the household had tremendously declined. john summarised the quality of food consumed, “… we are lucky that we do not have a small baby here, otherwise it would suffer from kwashiorkor as we only feed on cassava and posho unlike in the past when we had a balanced diet”. to cope with the situation, john is making bricks for sale where he spends most of his day, but still this does not generate sufficient income to cover household needs. the communal cultivation group which together with some youths in the village had formed as a way of coping with labour shortages and to increase food production collapsed after members realised that the whole venture was not profitable.

john does not know what the future holds for the family if he failed to get an income generating project that provides sufficient income unlike the brick-making project that he was involved in. he summarised the predicament:

“I do not know how I can get capital to start up some retail trading which can generate some income. If the situation remains like this we shall definitely starve more, and as funding for the tuition for my sister in secondary is not certain, she will drop out, while the youngest sister and brother will not continue with education after their primary schooling as there is no universal secondary education as yet.”

in the above case, some lessons, which can guide mainstreaming hiv/aids messages into agricultural production, are evident. these are:

¶ first, the parents died at a time when the children were very young i.e., at a time when the parents had not passed farming knowledge and skills to them.
¶ second, denials of the hiv/aids problem and attributing the condition to witchcraft depletes the family resources
¶ third, the elaborate burial and funeral ceremonies leave affected households in a difficult situation that they might not recover from
4.2 Impact of HIV/AIDS on livestock farming

Types of livestock kept
The type of animals kept by the 53 households studied included cattle, goats, sheep and pigs. Slightly over a tenth (13.2%) of the households in the pastoral communities reported to have no cattle at all as all the cows had either been sold off to meet family needs resulting from HIV/AIDS, died due to poor management or stolen after the death of able-bodied household members. The distribution of households by animal kept is shown in Figure 4.

![Figure 4: Type of animals kept](image)

In households where cows were no more, members were keeping other animals such as pigs (basically in Rakai), goats and sheep. These animals were, however, being kept in small numbers as they were the basic source of income for the household, and hence were constantly being sold off to meet family needs.

Problems faced by livestock farmers as a result of HIV/AIDS
Like in crop farming communities, livestock farmers faced a range of problems as a result of HIV/AIDS. In households that had been afflicted and affected by HIV/AIDS, the impact was severe as 17 households (32%) reported it involved uncontrollable selling of animals in order to meet the emerging needs such as medical care.

In over a quarter of the households (26.4%) reported death of livestock was attributed to lack of care and poor management practices that arise as a result of members’ sickness and death. The situation was reported to be more severe in a household where the breadwinner is having HIV/AIDS or died of related illness. The case of Maria, a widow in one of the pastoral communities of Mbarara explains the point at hand.

Case 5: Effects of HIV/AIDS on livestock farming
Maria, a young widow of 35 years, lives in a pastoral community of Katerananga in Rubaya Sub-county, Kashari county, Mbarara District. Her husband died of AIDS related illness in March 1999. She is survived by five orphans, the last being twins, born two months after the death of her husband. The twins could be infected with HIV, as they have been sickly ever since they were born, and look as if they are few months old.

Maria narrates that the family was quite prosperous before the husband fell sick and eventually died. They had several cows and a shop in the nearby Biharwe Trading Centre. As business flourished, the husband relocated to Kampala while Maria stayed behind to supervise the herdsmen who were looking after cattle. Maria says that while in Kampala, her husband entered a partnership with a businesswoman, with whom they developed a sexual relationship, and “possibly with many others”. Maria believes that it was when the late husband relocated to Kampala that he possibly got infected with HIV.

Maria and her children live in a semi-permanent house with corrugated iron sheets. Three of the children are in primary school, while the twins whose health is declining consume much of Maria’s time attending to them. At the time of her husband death, the family was left with 52 heads of cattle, which have reduced to 26 not as a result of selling but deaths due to lack of care and management. Maria cannot engage the paid herdsmen who the husband employed, as she has no money to pay, while she is confined at home looking after the small children.
Maria is attending TASO clinic in Mbarara town. She complains of having little means of survival as the source of household income i.e., cattle are getting depleted over death and sales. She laments with tears; “It is strange for a family that was once self-sustaining in crop, animals, and business, to start begging for food and money from neighbours, friends, and few relatives”.

Maria looks up in deep thoughts thinking about the future of her children, and remarks; “even if at the time of my death I leave cows and land to my children, they will be grabbed by the relatives or get stolen as the children are still young, and above all, I am very weak now to work for the family, and constantly traumatised about what will happen next to my small children”.

Apart from the above problems, livestock farmers faced other problems, which coupled with the effects of HIV/AIDS, were making the situation worse. Thieves were reported by 23 households (43%) to be on rampage, and often the victims were reported to households headed by widows or where a family head was absent.

Labour as a problem faced by cattle keepers was mentioned in over a third of all the sampled households (34.0%). However, it was only in about a tenth (9.4%) of the cattle keeping households that lack of labour was directly linked to HIV/AIDS. Instead, majority of the households (22.6%) linked labour shortages to the mandatory policy of Universal Primary Education, whereby families are obliged to send children to primary schools that would otherwise be attending to cattle.

**Mobility and HIV/AIDS**

Unlike in crop farming communities where people do not move and spend days away while cultivating, the situation is rather different in pastoral communities. This mobility can contribute to HIV infection as people might seek sexual relationships in the absence of their partners. In slightly over a quarter of the sampled pastoral households, some household members were reportedly spending several days away grazing animals without returning home especially during the dry season. Most of the household members who were engaged in grazing animals away from home were mainly men and unmarried. These findings point to challenges that can be encountered by extension staff to disseminate HIV/AIDS information and messages to the biggest proportion of males who are always away especially during the dry season, and the unmarried community members.

A riveting on the landing site, © FAO

The impact of HIV/AIDS on fishing will be covered in the next section (4.3).
4.3. Impact of HIV/AIDS on fishing

Household members involved in fishing

Majority of the 67 respondents who were involved in fishing on the lake were aged 18-30 years old (n=53, 80%), which is an age category vulnerable to HIV infection. 49.3% of the people involved in fishing were married and 46.3 had never been married.

The age and marital statuses of people involved in fishing greatly expose them to HIV infection as majority spend most of their daytime in recreation and merriment, waiting to go fishing at night. In all landing sites and fishing communities, several community members especially young men seemed to be redundant, spending most of the day in drinking sprees. In relatively stable fishing communities, fishing was combined with cultivation, and hence a sizeable proportion (29.1%) affirmed that they spent their day working in their small gardens, while night was for fishing.

In over a half (53.3%%) of the households in fishing communities, household members were reported to be spending several days away from home on fishing activities ranging from a week to over a month. This type of life involving either being away at night or spending days away from one’s home can be sexually tempting, consequently leading to the spread of HIV/AIDS. On the other hand, women not involved in fishing on the lake were reported to be involved in a number of activities, most of which exposed them to sexual advances by men such as majority selling in bars and hotels. In Table 5, 14.7% of the respondents noted that some women in the landing sites were involved in prostitution.

Table 5: Role of women in fishing communities

<table>
<thead>
<tr>
<th>Reported Role</th>
<th>%</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop farming</td>
<td>23.5</td>
<td>16</td>
</tr>
<tr>
<td>Smoking fish</td>
<td>25.0</td>
<td>17</td>
</tr>
<tr>
<td>Selling food stuffs</td>
<td>32.4</td>
<td>22</td>
</tr>
<tr>
<td>Shop attending</td>
<td>5.9</td>
<td>4</td>
</tr>
<tr>
<td>Working in bars/ hotels</td>
<td>45.6</td>
<td>31</td>
</tr>
<tr>
<td>Prostitution</td>
<td>14.7</td>
<td>10</td>
</tr>
<tr>
<td>Household related chores</td>
<td>16.2</td>
<td>11</td>
</tr>
<tr>
<td>Others</td>
<td>1.5</td>
<td>1</td>
</tr>
</tbody>
</table>

* Multiple answers allowed

The above findings were corroborated by observations by the study team in the landing sites where people lead an “urban” type of life. In such situations, intensive HIV/AIDS campaigns need to be mounted.

Effect of HIV/AIDS on Fishing

HIV/AIDS in Uganda was first identified among the fishing communities/landing sites of Lukunyu and Kasesero in Rakai district. Given the nature of the fishing activity which involves seasonal migration and a lot of mobility, it enhances the possibilities of HIV infection. In all key informant interviews, it was revealed that death among fishermen has been common in landing sites as one key informant put it:

Fishermen have died in big numbers, which has paralysed fishing... The rest migrate to other landing sites where they spread the infection or get infected. [Iganga]

On the other hand, there were general reports pointing to reduction in fish catch as a result of HIV/AIDS morbidity and mortality. Like in farming and pastoral communities, availability of labour is critical for the survival of the activity. More significantly, in fishing using traditional gear or equipment demands a lot of energy, which an infected person might not have. A key informant had this to say:

Fishing, mongering and processing are all related, and these activities are so demanding such that people infected with HIV/AIDS give up as their health starts deteriorating. AIDS hits the target group who go fishing. To make matters worse, majority of the fishermen fail to afford treatment after exhausting the little income they have saved over time on the sickness [Bwonndha Landing Site]
It was also found out that often a number of young men are employed to carry out fishing by rich individuals who own fishing equipment/gear. In the event that the employer dies, all the employees lose jobs as adduced in one focus group discussion:

When the owner of the boats and nets dies of AIDS, all his employees lose jobs... and also all the properties get lost mysteriously. Consequently the formerly employed youths if they fail to get another rich man to employ them, they end up getting involved in taking marijuana, raping girls and general thuggery, which contribute to the spread of HIV. [Male, Kasensero village]

Like in crop farming and livestock farming communities where surviving relatives take on orphans of deceased relatives, and hence affecting the agricultural production in various ways, fishing communities are also not free of such effects. A case of Abdullah in Bukagabo illustrates the point.

**Case 6: Cessation of Fishing Activity and Need for Modern Fishing Equipment.**

Abdullah aged 27 years resides in Bukagabo Landing site in Malongo Sub-county, Mayuge district. Abdullah at 27 years old is in a polygamous relationship (i.e., has 2 wives) with whom they have a number of children. Two years ago the family size witnessed an unprecedented increase. Abdullah’s brother died of AIDS leaving behind five children with their mother. The widow (Abdullah’s sister in law) for a few months after the death of her husband stayed with the children, but as life became difficult she decided to abandon the children with their uncle (Abdullah), and her whereabouts have been unknown.

Faced with the big size of the family, coupled with overwhelming household demands, Abdullah’s main source of income; fishing using traditional gear/equipment failed to generate sufficient income. He opted to leave fishing, start up some retail business, while the rest of the family members got involved in small fish processing activities such as washing fish, in exchange for token payment either in kind i.e., getting fish in turn or some little money.

Abdullah labours greatly to ensure that the family survives. He believes that if he had his personal fishing equipment especially motorised boat, he would be in position to earn sufficient income and look after the expanded family.

In the case of Abdullah fishing using traditional equipment was no longer sufficient to earn him a living and take care of his expanded family. According to a key informant, there were many fishermen who had abandoned fishing due to lack of energy required of using traditional fishing equipment or their families overwhelming the income accruing from fishing.

**Type of Fishing Gear/Equipment**

Almost all the fishing households covered in this study were using traditional fishing equipment/gear, which included local boats (without engines), baskets, buckets, hooks and spears. According to the Commissioner of Fisheries in the Ministry of Agriculture, Animal Industry and Fisheries, many of the fishermen in Uganda are undercapitalised. It is estimated that fishermen on Lake Victoria alone have 15,000 boat units, out of which 11,000 are traditional requiring muscle power to propel them. The implication here is that they cannot go into the far off waters with the small canoes. Even when the fishermen change locations and go to distant spots, they still concentrate along the shorelines. All people using traditional gear/equipment associated it with the following problems:

- Lack of durability
- Low catch
- High exposure to fatalities
- Use of excessive energy
- Exposure to thefts

Using traditional gear especially canoes is dependent on one’s health. Thus, in situation where a fisherman is faced with failing health due to HIV/AIDS, then fishing suffers.

In light of what has been noted above, it can be seen that whereas the impact of HIV/AIDS on crop farming and livestock farming can easily be discerned, that on fishing is not easy to analyze. It can generally be inferred, as applying statistical analysis is possible over a long period.
6. Mainstreaming HIV/AIDS messages into agricultural extension

The ultimate goal of this study is to lead into mainstreaming HIV/AIDS messages into agricultural extension in Uganda. In this study attempts were made to investigate the current sources of people’s messages/information on HIV/AIDS and, preferred sources. Given the critical role to be played by extension workers, this study analyzed the basic profiles of the extension staff in the four districts, their current roles and how they can be utilized to contribute towards HIV/AIDS prevention and control, and mitigation of the impact.

Information sources and preference

Majority of the respondents (87.2%; n = 272) indicated that they were getting/receiving information and messages on HIV/AIDS. Of these, 81.8% noted that they had received the information in the last 3 months preceding this study.

What is clear in this study is that extension workers emerged among the least sources of HIV/AIDS information (5.4%). The findings suggest that extension workers can play a very important role if they used the radio to disseminate HIV/AIDS messages. In all the 4 districts visited, there are FM Radio Stations, which can be utilized by the extension workers in the fight against HIV/AIDS, and mitigation of the impact. See Table 6 regarding the available services of information.

![Image of HIV/AIDS awareness-raising by TASO in Uganda, ©FAO](image)

Table 6: Available sources of information by basic activity

<table>
<thead>
<tr>
<th>Sources</th>
<th>Basic activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Crop farming %</td>
</tr>
<tr>
<td>Radio</td>
<td>71.2</td>
</tr>
<tr>
<td>Posters/ leaflets</td>
<td>5.8</td>
</tr>
<tr>
<td>Local officials</td>
<td>12.6</td>
</tr>
<tr>
<td>Extension workers</td>
<td>5.8</td>
</tr>
<tr>
<td>Television</td>
<td>3.7</td>
</tr>
<tr>
<td>Health workers</td>
<td>33.5</td>
</tr>
<tr>
<td>NGO staff</td>
<td>6.8</td>
</tr>
<tr>
<td>Friends/ peers</td>
<td>29.3</td>
</tr>
<tr>
<td>None</td>
<td>0.5</td>
</tr>
<tr>
<td>Others</td>
<td>11.0</td>
</tr>
</tbody>
</table>

Whereas extension workers were least reported as the source of information in the fishing communities, health workers as source of HIV/AIDS information were most reported by the fishing folk. The nature of settlements in fishing communities (i.e., concentrated/urban-like) makes it easier to be targeted in-group situations.

Most respondents preferred radio and health workers as their source of HIV information; 41.5% and 40.3% respectively. A tenth (10.5%) preferred extension workers as their source of HIV/AIDS information. When the information source preference was cross tabulated with basic activity of the respondents, there were slight variations...
in preferences. The radio was generally the most preferred source of information, but with the level of preference much higher among the livestock farmers, while health workers were more preferred among the fishing folk and crop farmers.

Basically, respondents preferred given sources of information due to the associated degree of accessibility or convenience, clarity, costs involved and availability. Thus, using extension staff to disseminate HIV/AIDS messages, the above factors will have to be put into account.

In general, respondents irrespective of their basic activity preferred a source that was more accessible and convenient. In this regard, the radio was more convenient to livestock farmers than other categories. It was for instance, not uncommon, to meet herdsmen in Mbarara with small portable radios. Within the fishing and crop farming communities, health workers were convenient in the sense that most of the day community members involved in fishing tend to be at home.

In almost all cases, the information that respondents had received was largely concerning control and prevention of HIV/AIDS. However, information dissemination needs to be appropriately intensified so as to result into behavioural change. On the other hand, the number of people who had received information on the relationship between the AIDS epidemic and agricultural production was much less. Only 28.4% of the respondents indicated that had at one time received HIV/AIDS information in relation to agriculture such as how to increase agricultural production in the face of labour depletion. But even then, the 28.4% percent were not specific regarding the information they had received in relation to HIV/AIDS. Just only 3.5% of the respondents indicated that they had got information on orphan and widow property rights such that in cases the relatives are to grab the household property, then the victims would seek justice.

From interviews with household members and key informants at various levels, pertinent information areas in this era of HIV/AIDS emerged. These included, but not limited to:

- Better/modern farming techniques
- Control of pests and diseases
- Marketing
- Post harvest storage
- High yielding crops
- Weed resistant crops
- Less labour intensive crops

Thus, as much as information on how to prevent/control the spread of HIV/AIDS is necessary, people require information on the above areas, which will enable them increase their agricultural or fishing production.

**Extension staff**

Extension staff can play a vital role in the fight and mitigation of HIV/AIDS impact as they interact with the majority of the population; crop farmers, livestock keepers and the fishing folk. Further, by providing correct information and making referrals to resource centres, extension staff can contribute in the mitigation of HIV/AIDS impact on agriculture. However, the number of extension workers countrywide is not sufficient to cover all the areas. Figures obtained at MAAIF, indicate that by February 2001, there were 27011 field staff, covering fisheries, crop sector and livestock.

In this study, a total of 21 extension workers (15 males and 6 females) were reached and interviewed, some of who joined the research team during data collection. 18 of 21 extension workers were married. In most cases, most of the staff had worked or served in their respective positions between 5-10 years in one place. This would suggest that such staff are more acquainted with the cultural norms of the areas, and hence would appropriately disseminate HIV messages without antagonizing the locals.

With decentralisation, districts are mandated to recruit extension staff, while the Central Government (represented by MAAIF) is in-charge of policy setting and ensuring that quality and standards are maintained.

Like all other community members, extension staff met in this study had been affected by the AIDS epidemic. All the extension workers met had either lost a relative, a family member or a friend. What was, however, common with

1 Figures were not segregated by sex, district or region
all extension workers met in this study was the recognition that HIV/AIDS had unleashed tremendous impact on agricultural production and fishing. Not only HIV/AIDS had impacted on agricultural production and fishing, but had also affected the performance of extension workers. An extension worker in Mbarara succinctly summarised the impact of HIV/AIDS on their performance:

“If you are to count the number of days one has not worked because of the burials and funerals resulting from HIV/AIDS, you will find that a lot has been lost. When you work in an area for a long time you make friends, and people come to know you so that whenever a person falls sick, you have to check on her or him as any other village mate, and when he or she dies you have to attend the burial. All these consume much of one’s time.

Apart from losing community members with whom the extension workers have interacted with, they also lose relatives all nurse their relatives as one extension worker in Lira put it:

“When my young brother went down, I spent much of my time attending to him. This did not only cost me a lot of time, but also exhausted my finances as there was nobody else to take care of him.

The above findings indicate that the extension workers also feel the impact of HIV/AIDS. In a way this can be translated into an opportunity in the mainstreaming of HIV/AIDS into agricultural extension, for the extension workers had also had personal experiences with HIV/AIDS.

In all the four districts covered by the study, all the extension workers met reported that they were not dealing with HIV/AIDS issues in their work. In most cases they perceived HIV/AIDS an issue to be dealt with by staff in the health sector. Further investigation revealed that the extension workers are not equipped with skills and knowledge to deal with HIV/AIDS. Thus, issues of HIV/AIDS were being regarded as health matters, but not agricultural. One extension worker captured it all:

“Although HIV/AIDS is a big problem, affecting agricultural production, we are not involved in any HIV/AIDS work... may be if we are trained and facilitated we can disseminate the information [Veterinary Officer in-charge of Birere Sub-county]

In mainstreaming HIV/AIDS into agricultural extension, attitude change and impressing it upon the extension staff that HIV/AIDS is not a health matter, but a development issue will be critical especially during the implementation of the PAM.

In light of PMA, aimed at eradicating poverty, the capacity of the lower governments is being built. The sub-county staff are being recruited and posted to the respective sub-counties to handle extension work. At the moment as Table 7 shows, extension workers handle issues relating to tenure systems, policy, technology options, financial and general extension work on advisory basis to the farmers, but not HIV/AIDS issues.

### Table 7: Reported roles of Extension Staff

<table>
<thead>
<tr>
<th>Sector</th>
<th>Animal Production Officers</th>
<th>Fisheries staff</th>
<th>Crop Farming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advising farmers</td>
<td>Advise farmers on livestock production</td>
<td>Collect and compile data/ fish records</td>
<td>Offer back technical support to farmers</td>
</tr>
<tr>
<td></td>
<td>Issue movement permits and handle animal related issues</td>
<td>Ensure proper sanitation in landing sites</td>
<td>Supervision and administration of low cadre staff</td>
</tr>
<tr>
<td></td>
<td>Extension work at household level</td>
<td>Enforce legal action</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Supervision and monitoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Develop programmes and plans with the sub-county officials.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control livestock movement and diseases</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Guide the sub-county, county council on technical issues</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All the above roles are ultimately meant to increase agricultural production. However, without integrating HIV/AIDS into extension work, the resulting achievements are likely to be eroded. There are already entry points for mainstreaming HIV/AIDS into agricultural extension. For instance, there are certain areas covering HIV/AIDS in the sector such as Family Life and Nutrition Programmes.
7. Recommendations

Sensitisation of key ministry staff
Mainstreaming HIV/AIDS into agricultural extension cannot succeed unless the policy environment exists. First and foremost, there is need to sensitise Ministry officials in-charge of policy making to appreciate the rationale for mainstreaming HIV/AIDS messages into agricultural extension.

Designing appropriate HIV/AIDS messages to increase agricultural production
The study has pointed to information gaps, which ought to be put in consideration when designing HIV/AIDS messages for extension workers. The messages should as much as possible bring out the link between HIV/AIDS on agricultural production, and the link between HIV/AIDS and fishing. In particular, for HIV/AIDS and agricultural production, the messages should be able to help farmers in obtaining the following:

- High yielding or improved seed varieties
- Weed resistant crops
- Non-labour intensive crops
- Plant/animal diseases or pests
- Improved farming husbandry skills
- Farming systems
- Post-harvest handling/storage of agricultural products
- Marketing or prices
- Improved livestock

Building Capacity of Extension Workers

Training: The study findings have revealed that extension workers are not involved in HIV/AIDS work, and also are not equipped with relevant knowledge and skills to take on HIV/AIDS work. Extension workers need to be trained/sensitized so as to be empowered on how to deal with HIV/AIDS issues when dealing with the target populations. This would instill confidence among the extension workers on how to introduce and deal with HIV/AIDS issues in the ongoing activities. If HIV/AIDS is to be mainstreamed into agricultural extension, extension staff capacity building will be one of the first priority areas. Thus, capacity building for extension workers has to be carried out in the first phases of mainstreaming HIV/AIDS into extension work. In particular, the following aspects need to be emphasized:

- HIV/AIDS communication and dissemination techniques
  Communication and interpersonal skills; One informant noted, “in disseminating HIV/AIDS messages, language will pose serious problems as landing sites have got people of various ethnicity, each with a different language.”
- HIV/AIDS Control and Prevention
- Opportunistic infections, and simple management
- Basic counselling techniques and psychosocial support
  Earlier it was indicated that HIV/AIDS affected families often lose morale to work as they witness the beloved members of the household deteriorating in health and eventually dying of HIV/AIDS related illnesses. This loss of morale is translated into low productivity as gardens, animals and fishing become neglected.
- Mobilisation skills
  Mobilisation skills have much to do with the timing of disseminating HIV/AIDS messages to farmers and the fishing folk. For instance, using the seasonal calendars, it becomes
- Nutritional issues for PLHA
- Blood testing procedures and concept of protected sex.
- Property rights

All the extension staff met had undergone several training workshops and seminars. However, none of the seminars and workshops was reported to have focused on HIV/AIDS. Thus, as an entry point to streamlining HIV/AIDS into agricultural extension, training of extension agents through organized workshops
Logistical Support: Currently, the extension staff is faced with problems that impinge on their performance of designated activities. To mainstream HIV/AIDS into agricultural extension will necessitate logistical support for extension agents. Although support is obtained from the mother department, there are specific logistics that are required for HIV/AIDS work. These include visual aids/materials, training manuals, stationery, and transport where not available.

Networking and collaboration
In mainstreaming HIV/AIDS into agricultural extension, IP/FAO and MAAIF have to enlist support and expertise from agencies and organizations, which are already involved in related HIV/AIDS activities. There is need to work closely with Uganda AIDS Commission (UAC) to identify potential resource agencies.

List of references
MAAIF/MFPED.

Acronyms
FAO - Food and Agriculture Organization of the United Nations
GoU - Government of Uganda
IP/FAO - Integrated Support to Sustainable Development and Food Security
Programme - FAO
LC - Local Council
MAAIF - Ministry of Agriculture, Animal Industry and Fisheries
NARO - National Agricultural Research Organization
PAM - Plan for the Modernisation of Agriculture
PLHA - People Living with HIV/AIDS
SWSA - Social Work and Social Administration
ToR - Terms of Reference
UAC - Uganda AIDS Commission
UPE - Universal Primary Education