Baseline survey report

The impacts of HIV/AIDS on the agricultural sector and rural livelihoods in Northern Namibia

Namibia, October, 2003

Africa Institutional Management Services (AIMS)

Food and Agriculture Organization of the United Nations

IP
Integrated Support to Sustainable Development and Food Security Programme

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Integrated Support to Sustainable Development and Food Security Programme (IP)
Food and Agriculture Organization of the United Nations (FAO)
Viale delle Terme di Caracalla, 00100 Rome, Italy
Tel: (+39) 06 570 56751 / 06 570 54008, Fax: (+39) 0657052004
Email: Integrated-Programme@fao.org , Internet: http://www.fao.org/sd/ip
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Thanks to the **enumerators and pilot communities**, whose active participation made it possible to obtain the results of this survey.

Acronyms

AIMS	Africa Institutional Management Services
EPZ	economic processing zone
FGD	focus group discussion
GDP	gross domestic product
HH	household
MAWRD	Ministry of Agriculture, Water and Rural Development
NDP	National Development Plan
NGO	non-governmental organization
NPC	National Planning Commission
NPRAP	National Poverty Reduction Action Plan
PITF	Programme Implementation Task Force
PRCA	Participatory Rural Communication Appraisal
PRS	Poverty Reduction Strategy
SEAGA	Socio-Economic and Gender Analysis
SPSS	Statistical Package for Social Sciences
TKMOAS	Tate Kalunga Mweneka Omukithi wo AIDS Moshilongo Shetu
UNDP	United Nations Development Programme

Executive summary

This study is part of an FAO Integrated Support to Sustainable Development and Food Security Programme (IP) regional initiative involving Namibia, Uganda and Zambia. The aim of the initiative was to gather disaggregated statistical information on the impacts that HIV/AIDS has on agricultural production and food security within the broader context of other constraints.

About three-quarters of Namibia's population live in rural areas, and 70 percent are employed in agriculture, even though this sector accounts for only 9 percent of GDP and 14 percent of exports. Although the country has a relatively high average per capita income, the income inequality between rich and poor is one of the highest in the world, and about 40 percent of Namibians live below the poverty line and have no access to potable water. It is estimated that more than 20 percent of the country's sexually active population is HIV-positive.

The overall purpose of this study was to collect information and data that would improve the knowledge and understanding of HIV/AIDS' impacts on rural households and communities in Namibia. This was achieved through a desk review of the existing relevant literature and through qualitative and quantitative surveys of selected sample communities from the country's Ohangwena region. Both of these surveys focused in particular on gender and youth issues and used an interdisciplinary approach to define precisely how the impacts of the HIV/AIDS pandemic contribute to poverty. The study also sought to devise strategies for mitigating those impacts.

Among other impacts, rural households that have experienced HIV/AIDS-related illness and death have lost time and labour availability, agricultural knowledge and skills, land and property, and funds for improving production. At the same time, their dependency burden has increased. In some cases, the loss of adult labour has forced families to withdraw older children from school to care for younger siblings and/or help in food production. The resulting decrease in education levels will continue to perpetuate the cycle of poverty across generations. Female-headed households (and, increasingly, youth-headed ones) typically have less access to such productive resources as labour, technology, credit and land. Thus, these families constitute the poorest of the poor rural families in Namibia.

The following are some of the main negative outcomes of HIV/AIDS' impact on agriculture and rural communities in Namibia:

- The loss of knowledge is adversely affecting the uptake of improved farming practices.
- Household members are diversifying their sources of income. More and more young people are migrating to seek jobs outside the area, while all household members are looking for off-farm activities, either as waged workers or in self-employment.
- Gender roles and relations have changed, especially as they affect women. Women are spending more time looking after the sick, and less time on their productive activities, many of which are now done by children. Men, on the other hand, have not significantly changed their allocation of time.
- Reduced household labour availability, declining crop productivity and yields, the sale or loss of assets, and increasing demands on household financial resources are all contributing to greater poverty. This has implications on food security, people's susceptibility to HIV/AIDS, and communities' resilience to the negative impacts of other phenomena.
- Poverty and increased numbers of dependants are preventing households from obtaining appropriate, n nutritious foods. HIV/AIDS-affected households' increased food insecurity is forcing them to depend more on relatives for help, and this is damaging their sense of dignity and self-respect.
- Most support comes from civil society organizations providing health-related support for HIV/AIDS prevention, care and counselling, and from government institutions providing or carrying out social safety net programmes.

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The setting

This study is part of an FAO Integrated Support to Sustainable Development and Food Security Programme (IP) regional initiative involving Namibia, Uganda and Zambia. The aim of the initiative was to gather disaggregated quantitative and qualitative information on the impacts that HIV/AIDS has on agricultural production and food security within the broader context of other constraints. Based on this information appropriate response strategies and activities will be developed.

Poverty in Namibia

Namibia is the most arid country in sub-Saharan Africa, with a mean annual rainfall of about 270 mm. The population is about 1.83 million and is growing at an average of about 2.6 percent per year (NPC, 2002). About three-quarters of these people live in rural areas. Namibia's economy is dominated by four sectors – mining, government, trade and agriculture – while the fisheries and tourism sectors are also contributing increasing amounts. Mining accounts for about 30 percent of gross domestic product (GDP) and more than 75 percent of total exports. Agriculture is the largest employer and supports (directly or indirectly) about 70 percent of the population, but accounts for only 9 percent of GDP and 14 percent of exports (**Sweet, 1998; IFAD, 1997**).

Thanks to its rich natural resources, Namibia has a relatively high per capita income, which classifies it as a low middle-income country. However, there is a massive contrast between the rich and the poor, as highlighted by the GINI-coefficient.[1] The United Nations Development Programme (UNDP) Human Development Report for 1998 indicated that Namibia has a GINI-coefficient of 0.67 – the highest recorded for any country in the world. About 40 percent of Namibian households live below the poverty line and have no access to potable water, and one out of five Namibians can be classified as poor in terms of income, literacy and health. The poorest population groups are the San, Rukavango and Oshiwambo peoples and those living in the regions of Ohangwena, Omaheke and Okavango, where the poverty rate reaches as much as 60 percent. The best off are Namibia's English-, German-, Afrikaans- and Tswana-speaking people with a poverty rate of less than 10 percent. Regional poverty rates vary from a high of 31.8 percent in Ohangwena region to a low of 9 6 percent in Khomas region.

Although the causes of poverty are complex, access to productive assets is known to be a major determinant of households' vulnerability. Some 44 percent of Namibia's total land surface is in the hands of 4 076 farmers, who own 6 403 commercial farms with an average area of more than 5 884 ha each. Communal land constitutes 41 percent of the total and is often of poorer quality, but has to support about 95 percent of the nation's farming population. Poverty has a particularly strong impact on subsistence farmers in the north and northeastern parts of the country, and is also rife among farm and domestic workers, the elderly, people with disabilities, young people and recent migrants into marginalized urban areas. Female-headed households are more prone to poverty than male-headed ones because cultural and social conditions in Namibian society maintain women's unequal status, especially in terms of entitlement to resources and access to decision-making.

The poverty–HIV/AIDS interlinkage

Namibia's already serious poverty situation has been compounded by the HIV/AIDS pandemic and the continued prevalence of other diseases such as malaria and tuberculosis. Despite progress in the fight against HIV/AIDS, the country remains vulnerable, and data indicate that an estimated 22.5 percent of the sexually active adult population is HIV-positive (FAO, 2001; UNAIDS, 2002). This puts it among the four worst-hit countries in the world. The disease was first detected in Namibia in the mid-1980s and today most of the nearly 230 000 infected people are parents in the productive labour force (200 000 people in the 15 to 49 years age group are infected). HIV/AIDS has become the leading cause of death in Namibia (NSP, 1999; UNAIDS, 2002). Overall life expectancy at birth was

[1] The GINI coefficient measures the income inequality within a society. A value of zero indicates absolute equality and a value of one absolute inequality.

estimated at 52.4 years in 1998 (NPRAP, 2001), but is currently estimated to be about 45 years (UNAIDS, 2002) and is expected to drop to just over 40 years by 2005 (MHSS, 2001).

It has been projected that Namibia's agricultural labour force will decline as a result of AIDS by as much as 26 percent for the period 1985 to 2020. This is the highest such projection for the nine hardest-hit African countries (Qamar, 2001). A report, prepared by the Social Impact Assessment and Policy Analysis Corporation (SIAPAC, 2000) indicated that the number of AIDS orphans in Namibia had grown astronomically since 1995, when a few thousand children were orphaned, to about 45 000 in 2001 (SIAPAC, 2002). This figure is projected to reach as much as 190 000 children by 2021. The same report also indicated that the important family relations and co-dependencies of orphans have been disrupted by HIV/AIDS. The hardship that orphans experience during their early years influences their emotional and physical development and socialization, which may have serious economic and psychological impacts on their adult life. The trend of children growing up without one or both of their parents is expected to have a negative effect on future generations of Namibians.

The SIAPAC study further reported that for up to one-third of all households the impact of HIV/AIDS results in a transition from poverty to destitution, as economic problems lead to food insecurity and difficulties with shelter and basic material needs.

A good deal of research into the impacts of HIV/AIDS has been conducted in Namibia, and much is known about the social, educational and health dimensions of the pandemic. In response, the Government of Namibia, the donor community, non-governmental organizations (NGOs) and CBOs have turned their attention to the prevention and mitigation of some of the consequences of this devastating disease.

Research findings and anecdotal evidence indicate that in addition to lost labour the negative impacts of the HIV/AIDS pandemic have significant repercussions on: gender and youth issues, in terms of changing roles and responsibilities as well as differential access to credit, land, information and appropriate technologies; natural resource management and conservation issues, in terms of poor land use, increased pests and diseases, livestock decline, loss of local indigenous knowledge about natural resources, and loss of environmental information management; and household food security, which is endangered (FAO, 1999; Engh, Stloukal and du Guerny, 2000; Topouzis and du Guerny, 1999). Some of the more specific problems relating to HIV/AIDS, agricultural production and food security include a decrease in the frequency of extension agents' visits to farmers, declining participation rates in community organizations, increased health care costs for rural families and more frequent sales of livestock to cover medical expenses (FAO, 2001).

However, it is still unclear precisely how these impacts have occurred and, more important, precisely what coping mechanisms are already in use or could be introduced to increase agricultural productivity and household food security and decrease vulnerability to HIV/AIDS. Suggestions for such coping mechanisms have been made in some recent studies (FAO, 1999; Topouzis and du Guerny, 1999; Engh, Stloukal and du Guerny, 2000). A further complication arises from the fact that relevant quantitative data are very rarely disaggregated by type of household in Namibia (i.e. joint-, female-, male-, orphan- or grandparent-headed). Thus, the differences in agricultural productivity and household food security among these different types of social groupings – and their different needs and constraints – are unclear (although FAO, 1999 gives indications of some of these distinctions).

The government response

Because poverty has such a devastating effect on agriculture, the Namibian government gives this sector great importance in the Poverty Reduction Strategy (PRS) it developed and approved in 1998. Implementation of the PRS aims to strengthen and diversify the agricultural base on which many poor and rural communities rely through measures that diversify and improve agricultural production, thereby making individual and family livelihoods more resilient to seasonal, environmental and economic changes. However, the annual GDP growth of 3.5 percent is not enough to generate

employment and reduce poverty in the face of continuing population growth. The first National Development Plan (NDP1, 1995–2000) and the Countries Cooperation Framework (1997–2001) also highlighted poverty reduction as one of the thematic areas for support.

Namibia is committed to implementing the PRS and has drafted a National Poverty Reduction Action Plan (NPRAP, 2001) with the cooperation of all relevant ministries. In accordance with NDP2 (2001–2005) and the Namibia Public Investment Plan (NPRAP, 2001), the NPRAP identifies programmes, projects and services that focus on poverty reduction over a five-year period. It recognizes poverty as a cross-cutting phenomenon, requiring a multidisciplinary approach, participation and gender mainstreaming. The National Planning Commission (NPC) is in the process of establishing a structure that will be responsible for NPRAP monitoring and follow-up. Since most poor rural communities remain reliant on agriculture, the PRS proposes the diversification of the agriculture sector as one of three main areas from which income can be generated.

The Namibian Government is also committed to eradicating poverty by addressing the negative impacts of HIV/AIDS on the agriculture sector. This is a very significant problem because the livelihoods of at least 70 percent of the population are based on agriculture, while agricultural production is already characterized by low outputs caused by poor soil, erratic rainfall and drought. HIV/AIDS was not specifically addressed in the PRS, although the NPRAP recognizes that the pandemic has social and economic costs related to the loss of productivity, and the government is attempting to address this emerging issue. The Ministry of Agriculture, Water and Rural Development (MAWRD) has developed a generic strategy for mitigating the negative impacts of HIV/AIDS on agriculture (NSP, 1999), which supports the government's NPRAP, NSP and other policy commitments to eradicate poverty and increase smallholder income by addressing the negative impacts of HIV/AIDS on agricultural production and food security.

A multi-sectoral committee was set up to facilitate the development of the second National Strategic Plan on HIV/AIDS 1999 - 2004, with a purpose that all public and private sectors should have clear and focused goals, objectives and strategies. All sectors are obliged to budget, initiate and integrate activities that address HIV/AIDS. The agriculture and rural development sector, however, fails to mention the impacts that the epidemic has on the food security of rural populations.

The survey

Purpose and objectives

The overall purpose of the study was to collect information and data that would improve the knowledge and understanding of HIV/AIDS' impacts on rural households and communities in Namibia. This was achieved through a desk review of the existing relevant literature and through qualitative and quantitative surveys of selected sample communities from the country's Ohangwena region. Both of these surveys focused in particular on gender and youth issues and used an interdisciplinary approach to define precisely how the impacts of the HIV/AIDS pandemic contribute to poverty. The study then sought to devise strategies for mitigating those impacts. This research is a continuation of some of the IP Phase I activities, including the testing and adaptation of the Socio-Economic and Gender Analysis (SEAGA) Technical Guide on Household Resource Management.

Methodology

Stakeholders and representatives from FAO headquarters met in the summer of 2002 to discuss the key areas for investigation and to design questionnaires for both the quantitative and qualitative surveys. Enumerators and supervisors were then trained in how to use these and other tools to gather the information required. They were also trained in aspects of participatory rural appraisal (PRA) and SEAGA.

The quantitative survey included sections on household demography, agricultural landholdings, crop husbandry, land preparation methods, farm equipment, animal husbandry, household members' involvement in on- and off-farm activities, sources of income/expenditure, illness and death in the household, labour constraints, how households cover medical and funeral expenses, and food security and nutrition status. Respondents replied to specific questions that compared their conditions in the most recent cropping season (2001/2002) with those of the "past cropping season". For HIV/AIDS-affected households, the past cropping season was the one prior to disease outbreak, while for unaffected households it was the 1996/1997 season. Some 514 households were sampled from villages in each of the study region's three health districts – Engela, Eenhana and Okongo – by 13 enumerators and two supervisors.

The qualitative survey used community meetings, focus group discussions (FDGs) and household interviews to collect information on the loss of agricultural knowledge, access to rural institutions and community structures, household food security and nutrition, gender divisions of labour, and cross-cutting issues (HIV/AIDS, poverty, gender, drought, etc.). Annex 1 lists the main tools used in the qualitative survey, which involved 150 people from Ohalushu, Endola and Odibo villages and six facilitators.

Sampling strategy

Households for the quantitative survey were randomly selected from a purposive sample. Quantitative data were collected over a period of three weeks through interviews at respondents' homes. Permission to conduct interviews was sought through Regional Council meetings, and Regional Councillors helped to select the survey enumerators and publicized the study in their regions, which helped to ensure community participation in the project. The six facilitators for the qualitative survey were local unemployed young people, some of whom had already taken part in the quantitative survey and who were familiar with data collection methodologies.

Unaffected households are defined as those where no family member has died of, or is suffering from, HIV/AIDS-related diseases or illness, and 54% of survey households reported being in this category. About 46% of the households have lost at least one member to HIV/AIDS and/or have at least one

member living with frequent or long HIV/AIDS-related illness. These households are considered *affected households* (table 1).

Table 1: Samples selection for each health district and household types.

		Engela	Eenhana	Okongo	Total
Unaffected households		163	75	38	**276**
Total affected households		182	37	19	**238**
	Widow affected	25	2	5	**32**
	Orphan fostering	71	23	13	**107**
	Youth-headed	15	3	0	**18**
	Other	71	9	1	**81**
Total sampled households		**345**	**112**	**57**	**514**
Total population		158 698	47 523	21 507	227 728

The 238 affected households can be broken down into several subgroups:

- *Orphan-fostering households* are primarily headed by grandparents (usually grandmothers) who are looking after grandchildren who have been orphaned as a result of HIV/AIDS. This group also includes a smaller proportion of households where uncles and aunts (and occasionally other family members) are looking after orphans.
- *Widow-affected* is a household in which the husband has died of HIV/AIDS related causes. Of the total affected households, 13% belonged to this group.
- 18 household were considered to be *orphan headed*. These households had lost both parents and are headed by one of the children (usually the eldest son).
- *Other affected households* comprise two main types: those looking after family members who are ill owing to HIV/AIDS, and those that have lost family members but are not in any of the other vulnerable subgroups (e.g. those that have lost wives, nephews/nieces or uncles/aunts).

In the results presented, reference is also made to female- or male-headed households, which are households in which a female or male (irrespective of health or impact status) is the head of the family.

As well as HIV/AIDS, this study also considered other related causes of long illness and death, such as tuberculosis, chronic and persistent diarrhoea, chronic pneumonia and malaria. The reason for this was that some affected households avoid the stigma attached to HIV/AIDS by reporting these diseases as the cause of household members' death. In any case, these causes of death also usually involve long periods of care that can have devastating effects on agricultural productivity, labour and household food security.

Data management and analysis

Data entry, cleaning and analysis were all done using Statistical Package for Social Sciences (SPSS) software. Frequencies, percentages, T-tests and analyses of variances were used to compare the effects of HIV/AIDS among health districts, between affected and unaffected households and among the different household types. The calculation of the sample size was based on data from the national census of 2001 (NPC, 2002).

Problems encountered during the study

Most of the main problems encountered during both the quantitative and qualitative surveys were related to the following issues:

- The stigma attached to HIV/AIDS made respondents reluctant to admit that the disease was present in their households.
- Respondents found it difficult to recall events and conditions that occurred up to five years earlier, particularly those related to financial issues. For example, respondents could not recall the exact

amounts of income and expenditure, and so this section of the questionnaire was changed to investigate the sources of income and expenditure instead of the actual amounts of income and expenditure. Respondents also had problems recalling quantities, for example, of crop yields, landholdings, frequencies of eating particular foods, etc.

- It proved difficult to single out the effects of HIV/AIDS from those of other causes (drought, poverty, etc.), although this is less of an issue in the study area than it is elsewhere because drought is such a common occurrence in northern Namibia that it can be viewed as a regular, natural constraint to farming in that area. According to **Mendelshon *et al.*** (2000), droughts are expected in northern Namibia about twice every three years.
- One of the earliest challenges to be faced was ensuring that households were correctly categorized into their affected–unaffected status. The study depended on village headmen and survey enumerators to identify affected households, and this may have resulted in some families being incorrectly categorized.

The study region

There were four main reasons for selecting Ohangwena region as the study area:

- a large share of its population is involved in subsistence agriculture;
- it has the lowest average income in Namibia (N$1 070 compared with a national average of N$3 608) and the second-lowest Human Development Index (UNDP, 1998), indicating that 32 percent of its population live in poverty, which is 12 percentage points higher than the national average;
- it has one of the highest HIV/AIDS prevalence rates in Namibia (see Annex 2);
- the IP has already been involved in participatory research and the training of extension staff and councillors in SEAGA in this region.

More than 45 percent of the region's population is under 15 years of age, and hence are not counted in the working age population. The gender ratio is 83.5 males to 100 females (NPC 2002), which reflects the frequency of male migration to find work elsewhere, primarily in mining or industry. Ohangwena region also has poor social infrastructure such as water supply, schools and health services. There are only three hospitals, 19 clinics and two health care centres in the region, and only one hospital bed per 500+ people, which is more than double the national average. See Annex 2 for additional information about Ohangwena region and about two of the villages surveyed in the study.

The effects of HIV/AIDS and chronic diseases on the agricultural sector

This chapter describes the impacts that HIV/AIDS has on agricultural households and communities, particularly in terms of Household demography, Agricultural production, Household financial resources, Labour allocation and gender roles, and Food security and nutrition.

Household demography

Family size and dependency ratio

In general, HIV/AIDS seems to be leading to larger household sizes. The households in the quantitative study sample had a total of 4 410 members, giving an average of 8.6 people per household (see Table 2), which is considerably higher than the 6.5 recorded for the region in the 2001 census. At an average of 9.83 members each, orphan-fostering households were larger than widow-headed (6.88 members) and youth-headed ones (6.56). Study households in one village were found to have an average of between three and six orphans each. In addition, some respondents reported that teenage pregnancies were increasing as girls were exchanging sex for productive resources.

A household's size has implications on its ability to cultivate land, because labour is by far the most important input required for cropping. This puts larger households with economically active members at an advantage in producing crops (**Mendelshon et al., 2000).** Of the total of 4 410 members, 2 271 were productive (in the 15 to 59 years age groups) and 2 136 dependent, resulting in a dependency ratio of 94.5 percent (see Table 2). This is less than the ratio of 100 percent that the literature reports for the region, although this disparity may be caused by the enumerators' decision not to record the details of more than 13 members per household, thereby resulting in some minors being omitted from the survey.

Orphan-fostering households were the only ones to have more dependants than productive members. Youth-headed households had the fewest dependants because many young children are taken in by relatives who sometimes use them as a way of inheriting the deceased's property under the guise that it will be used to support the orphaned children.

Table 2: Family sizes and dependency ratios according to household type

Household type	Average family size	Dependent members *(No.)*	Independent members *(No.)*	Dependency ratio *(%)*
Unaffected	8.34	1 088	1 213	89. 7
Widow affected	6.88	107	113	94.7
Orphan-fostering	9.83	540	509	106.1
Youth-headed	6.56	52	66	78.8
Other affected	8.88	349	370	94.3
Overall	**8.58**	**2 136**	**2 271**	**94.5**

As at the time of the survey, 10.2 percent of male and 5.6 percent of female household members were living outside the region, especially in Khomas (mainly Windhoek), Erongo (Walvis Bay) and Oshana (Oshakati) regions.

Illness and death in households

In line with the national statistics, the study found that HIV/AIDS-related illness and death seem to be becoming more frequent. Among the reasons for this is the region's high level of poverty, which makes people more susceptible to the disease. In addition, the increased dependence on transactional sex (itself a result of the HIV/AIDS impact) is contributing to the disease's spread.

Table 3 shows the percentages of study households to report the presence of HIV/AIDS-related illness, as well as the percentages of households to have lost at least one member over the last five years. (Regional findings on HIV/AIDS testing and causes of death are given in Table 1, Annex 2.) Study respondents gave HIV/AIDS as the main cause of death (see Figure 1), accounting for 51 percent of all deaths over the study period. This result should be interpreted with caution because the study purposely selected HIV/AIDS-affected households for investigation. (Regional findings on the causes of death are given in Table 2 in Annex 2.)

Table 3: Households affected by HIV/AIDS-related illness and death, by health district

Health district	% of households with ill member(s)	% of households with member(s) dying (1996–2001)
Engela	19.4	62.3
Eenhana	11.6	39.3
Okongo	14.0	40.4
Overall *(No.)*	**17.1 (88)**	**54.9 (282)**

Figure 1: Causes of death among respondent households (1996–2001)

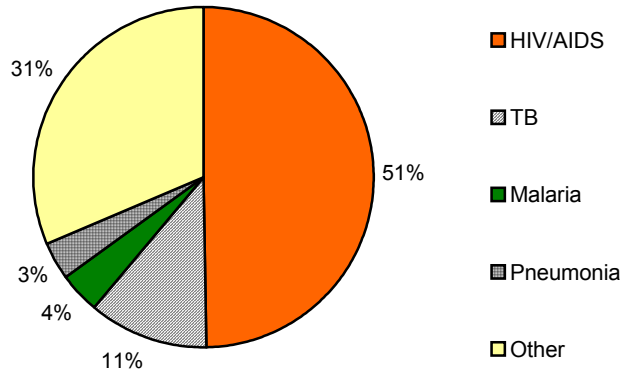


Figure 2 shows the age distribution of HIV/AIDS-related deaths among people in the productive 15 to 49 years age groups. Of particular importance, is the high number of women to die of HIV/AIDS-related illness while in their reproductive years. This seems to be a growing trend, as shown in Figure 3, which records HIV/AIDS-related deaths by gender for each of the years from 1998 to 2001; research indicates that females are more susceptible to HIV infection than men. The study's findings are reinforced by the latest official statistics, which record that the prevalence of HIV/AIDS infection among women is surpassing that among men.

Figure 2: HIV/AIDS-related deaths by gender, 15 to 49 years age groups (1996–2001)

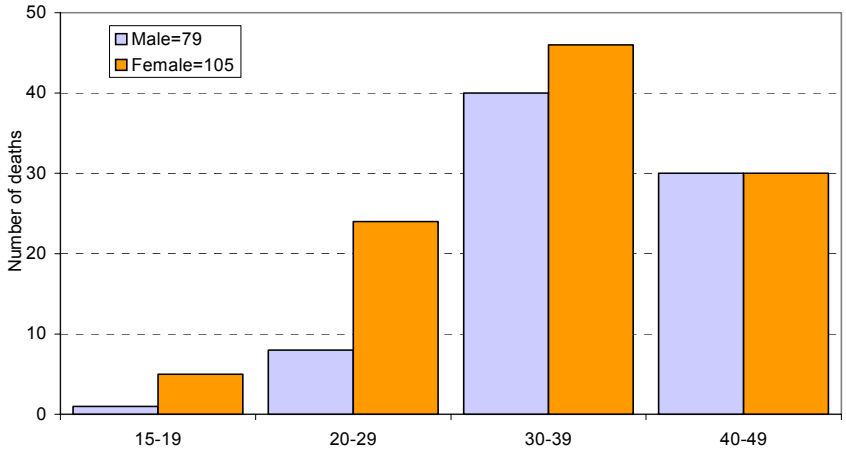
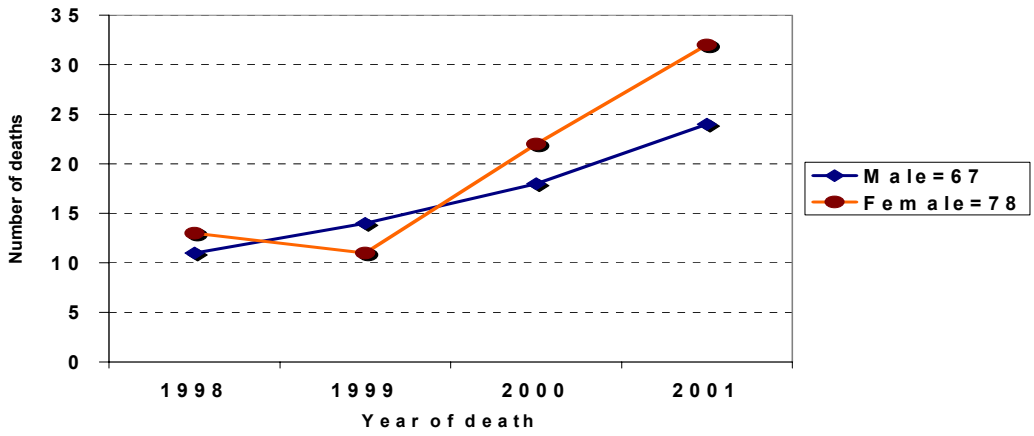


Figure 3: HIV/AIDS-related deaths among 15 to 49 years age groups, by gender (1998–2001)



The extent to which a household is negatively affected by HIV/AIDS-related death depends on which household member dies. For example, the inheritance system in Ohangwena is matrilineal, and when the husband dies it is common for other relatives to remove livestock (cattle, sheep, goats and chickens) and other large assets (cars, farm equipment, furniture, etc.) from the surviving family members (wife and children), leaving them with very little with which to survive. Some 52 percent of households in which the husband or father had died reported losing cattle, 38 percent lost farm equipment and 31 percent small stock. And, in some cases, households lost all of their productive assets in this way. In these households, crop production suffers because there is less labour available, and the results are smaller cropped areas and declining grain production. Lack of resources to pay for hired labour may also be a factor contributing to reduced cropping intensity. At least part of the cause of this problem is that women do not know about the Married Persons Equality Act, and village leaders do not promote its use. At the same time, traditional rules, which did not grant women the right to own land but did give them access to it, have been eroded.

On the other hand, when the wife dies, assets are not usually taken, and household grain production levels are usually maintained, although crop productivity may decline owing to reduced crop and weed management activities, which are usually carried out by women.

The death of household members who have outmigrated and are sending remittances home also has grave consequences for the families that depend on those remittances for their survival.

Children are particularly vulnerable to HIV/AIDS-related death. In one of the villages surveyed households expected to lose between one and two children between the ages of 4 and 5 years. In addition, children suffer severely when one or both parents die. Survey respondents reported that the children of single parents lack supervision and are more likely to have to drop out of school early in order to help their families with productive activities at home. The situation is far more serious when both parents die, as youth-headed households are often unable to produce enough food for their own consumption. This is a result of both inadequate resources and the orphans' inability to use and manage what little they have for optimum crop production. As well as crop and weed management skills, youth-headed households tend to know little about livestock management.

Agricultural production

Landownership and use

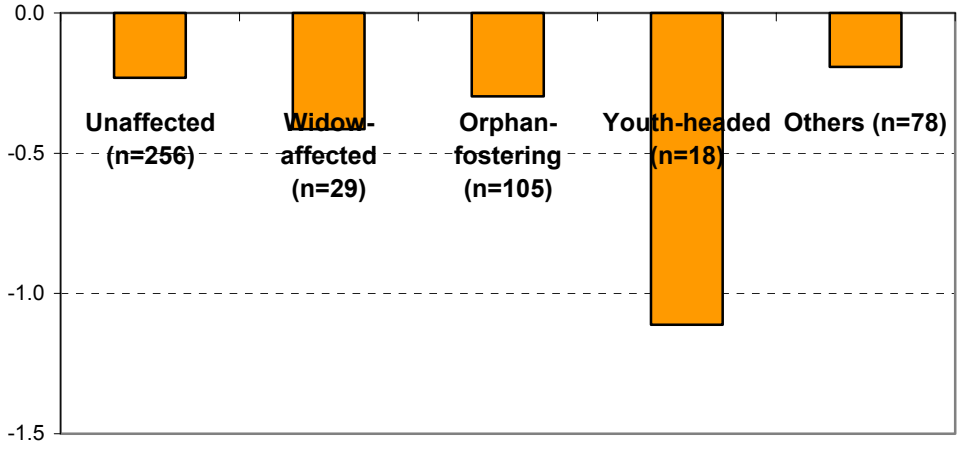
Affected households seemed to own the same numbers of farms as unaffected ones did, and most (95 percent) owned at least one. However, in most cases, less land was cultivated in the last season than in the past. Only orphan-fostering households recorded relatively large mean plot areas (4.1 ha) (see Table 1 in Annex 3), mainly because elderly grandparents have acquired their landholdings over long periods. The average plot areas of the remaining affected household types were all fairly similar. There were only very slight differences between affected and unaffected households' mean total land areas, areas cultivated last season and areas cultivated in past seasons (see Table 4).

Table 4: Average farm and cultivated areas, by household type

	Unaffected	Affected	Overall
Total land area (*ha*)	3.48	3.48	3.48
Area cultivated last season (*ha*)	3.00	2.87	2.94
Area cultivated past season (*ha*)	3.19	3.23	3.21
Change in area cultivated (*ha*)	-0.18	-0.36	-0.27

There was, however, a notable difference between the two types of household in terms of changed area cultivated. Although all households had reduced the areas that they were cultivating, affected households reported a larger decrease than unaffected ones, with the highest difference being among the 18 youth-headed households, which were cultivating on average only half as much land as in the past season (see Figure 4 and Table 2 in Annex 3). In addition, higher proportions of affected households, in particular youth-headed ones, decreased their cultivated areas, and half of the widow affected households recorded decreases, which averaged 0.41 ha. These were also the only two categories in which no household reported an increase in cultivated area. The other affected households category reported the smallest decrease in cultivated area, at an average of 0.19 ha.

Figure 4: Average changes in cultivated areas between past and last seasons, by household type (in hectares)



Crop yields

Crop production and crop yields were, in general, declining as a result of a shortage of labour and a lack of knowledge about alternative higher-yielding crop varieties. Women's increased involvement in caring for the sick resulted in them doing less weeding and, although other household members took over some of this weeding shortfall, the results were still more weeds and fewer crops per hectare.

The main crop reported was Mahangu (pearl millet), with 70.4 percent of all households growing the traditional variety, 10.5 percent the improved and 18.9 percent mixing the two varieties on their farms. Mahangu was followed by cowpea, melons, sorghum, Bambara nut and pumpkins. Very few households were growing the traditional variety of maize (4.9 percent) and even fewer groundnuts (1.2 percent). No household was growing cotton. There were decreases in the average areas cultivated for nearly all crops. There were also declines in the average yields of all crops, even for those whose cultivated areas had increased.

Both affected and unaffected households were cultivating smaller areas of all crops apart from mixed Mahangu (and improved Mahangu for unaffected households) (see Figure 5). However, affected households had reduced their cultivated areas by more than unaffected ones had. Yield decreases were also greater for affected households than for unaffected ones. Changes in cultivated area were partly due to drought in the last agricultural season, but the study findings show that the situation was worse for HIV/AIDS-affected households. Affected households may also be changing their cropping patterns to less labour-intensive options – 20 percent of these households reported "less labour due to illness and death" as a reason for reducing cultivated areas, compared with only 5 percent of unaffected ones.

Table 5: Changes in crop areas and yields, by household type

Crop type	**Change in area** (*ha*)		**Change in yield** (*latta*)	
	Unaffected	**Affected**	**Unaffected**	**Affected**
Mahangu, traditional	-0.19	-0.39	-23	-25
Mahangu, improved	+0.08	-0.20	-20	-24
Mahangu, mixed	+0.47	+0.02	-24	-37
Sorghum, traditional	-0.25	-0.27	-7.7	-8.5
Cowpea	-0.15	-0.18	-3.1	-4.44
Bambara nut	-0.05	-0.23	-2.13	-4
Melons	-0.05	-0.03	-40	-43

** A latta is a traditional measure of yield and is equal to approximately 15 kg.*

When respondents were asked to give their main reasons for reducing the areas cultivated, 20 percent of affected households reported the lack of labour due to illness/death as the most important. This was followed by drought (5.8 percent) and lack of labour due to outmigration (4.6 percent). Among unaffected households, the main reasons for reducing the area cultivated were drought (8.4 percent) followed by lack of labour due to outmigration (6.5 percent), lack of labour due to illness/death and lack of draft animals (each with 4.8 percent).

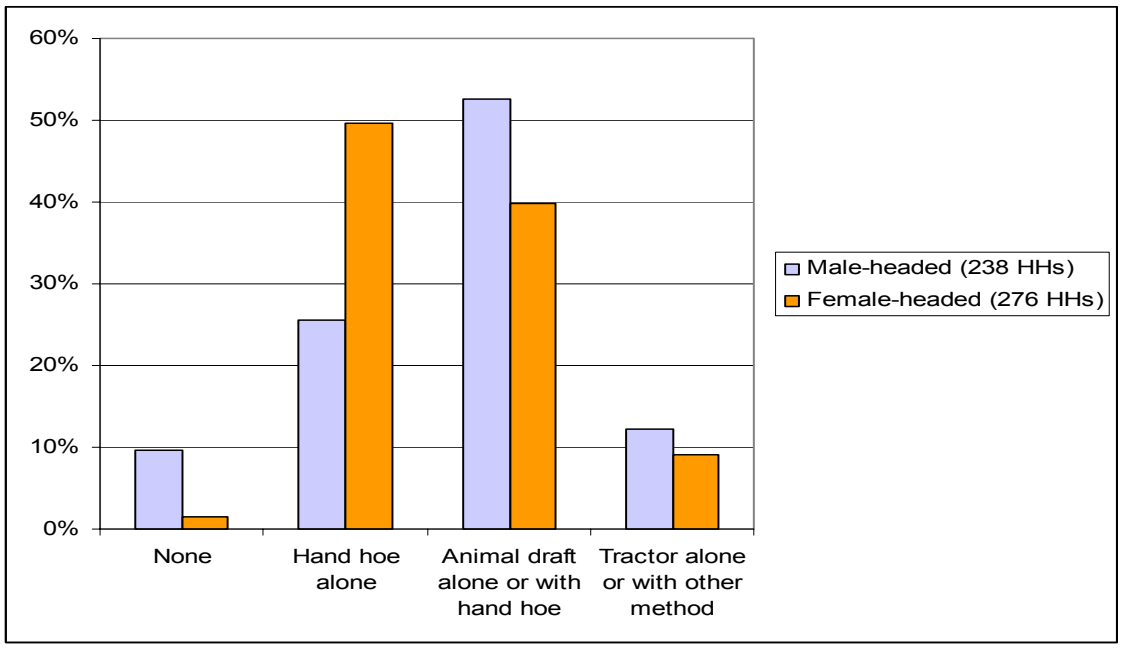
Cultivation methods

Regardless of type, all of the households surveyed showed a similar trend in cultivation methods. They depended more on labour-intensive land preparation methods (hand hoe alone) last season than they had done in the past (see Table 3 in Annex 3). As a result, smaller areas were usually being cultivated. Between the two study years, and across all household categories, changes in cultivation methods were as follows:

- The proportion of households using hand hoes alone increased from 31 to 38.52 percent.
- The proportion using draft animals, alone or with hand hoes, decreased from 55.95 to 45.72 percent.
- The use of tractors, either alone or with other methods, was not observed to be an important land preparation method in the study area.

Land preparation methods differed greatly between female- and male-headed households (see Figure 6). In the last season, 50 percent of women-headed households relied on hand hoes alone, compared with only 25 percent of male-headed ones – more than half of which also used animal draft. The statistics for widow-headed households were more or less the same as those for female-headed ones.

Figure 5: Land preparation methods, gender-disaggregated (2001/2002)



Agricultural knowledge

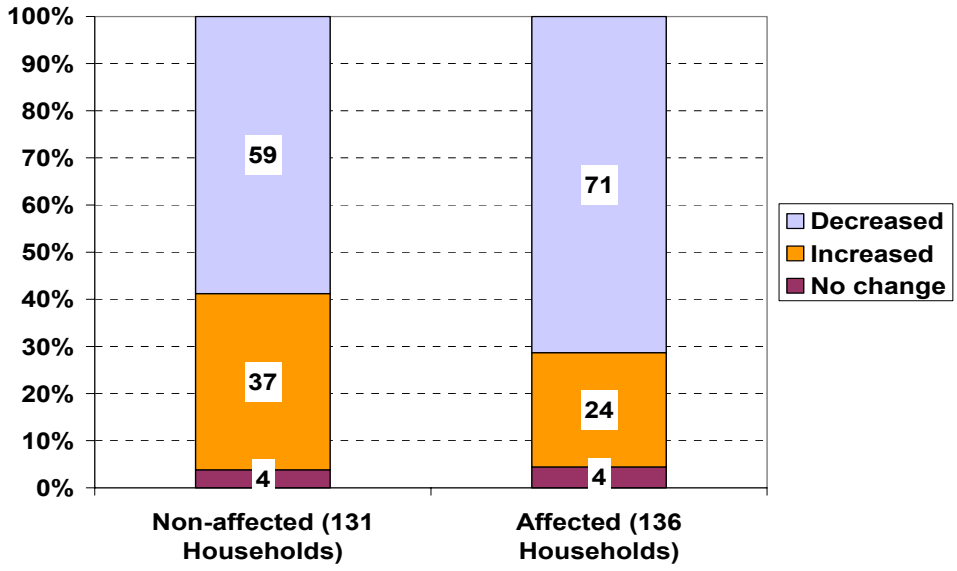
In rural areas of Namibia, extension services are limited and there is little sharing of information within and among communities. As a result, much agricultural and other knowledge is passed on from one generation to the next, but this system is collapsing as HIV/AIDS and related diseases cause the premature death of experienced adults before they have had the chance of sharing their experience with future generations. The situation is particularly grave given the increasing numbers of adults, particularly women, in productive age groups who are dying of HIV/AIDS.

The loss of traditional knowledge has implications for all areas of agricultural production. For example, some communities that used to practise mixed farming have abandoned crop production and are now raising livestock only. Others are no longer able to carry out freshwater fishing and aquaculture activities, mainly as a result of drought drying up the water sources were fish lived, but also because knowledgeable community members have died. Rural communities have depended on natural resources for generations, but the premature death of people who knew how to exploit them sustainably is leading to deforestation and environmental degradation as poverty and lack of awareness cause people to overharvest wild fruits and fish and to cut down forest trees and plants.

Livestock ownership

There was considerable variation among different household types' ownership of cattle, but less among their ownership of other livestock types (goats, chickens and pigs) (see Figure 7 and Table 4 in Annex 3). All youth-headed households reported decreased cattle ownership, followed by widow affected (at 89 percent) and orphan-fostering households (71 percent). While some of these reductions may be the result of asset loss, drought also played a part, as 60 percent of unaffected households reported owning fewer cattle than in the past. It is interesting to note that only 53 percent of other affected households reported decreased cattle ownership. This is probably because this group consists mainly of households looking after sick relatives or headed by widowers, and these categories are not affected by asset stripping. Youth-headed households lost an average of 17 cattle, which is a lot more than other household types lost. Unaffected households lost an average of far less than one head of cattle.

Figure 6: Impact of HIV/AIDS on number of cattle (1996-2001)



Draft animals (oxen and donkeys) are important for the timely cultivation of land in Ohangwena region. Over the study period, youth-headed and widow affected households were the most likely to own fewer draft animals (see Figures 8 and 9 and Table 5 in Annex 3). All youth-headed and 75 percent of widow affected households owned fewer oxen, while for donkeys the numbers were 75 and 86 percent, respectively. Unaffected households where the least likely to have lost draft animals, with 50 percent reporting a decrease is the number of oxen and 42 percent a decrease in the number of donkeys. Youth-headed households also lost the highest numbers of animals, averaging five oxen and four donkeys.

Figure 7: Changes in ownership of oxen, by household type

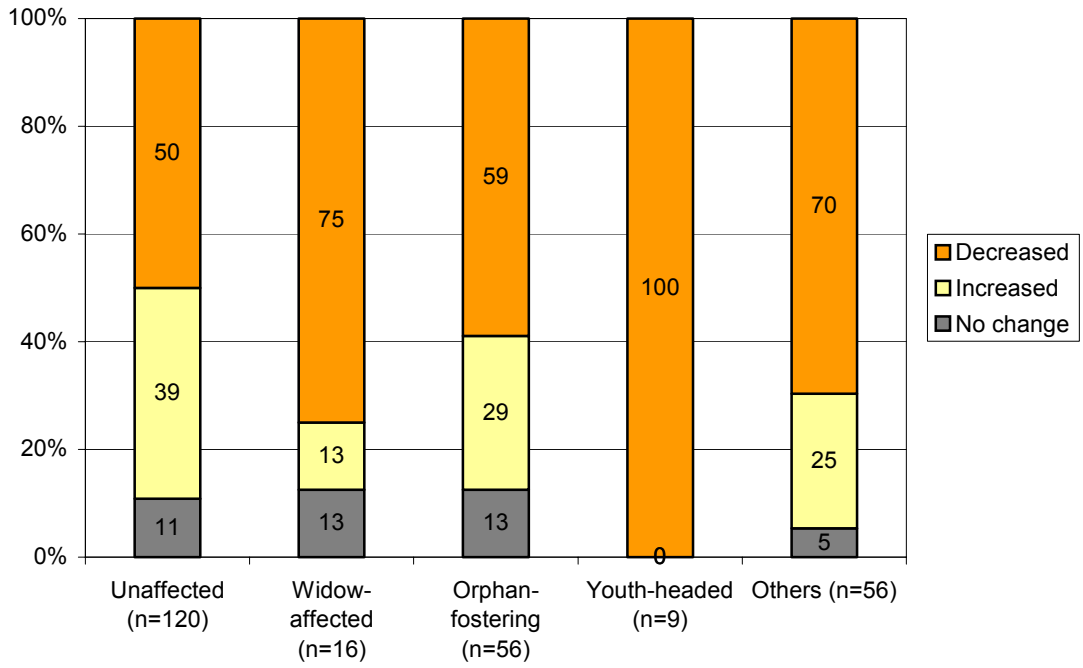
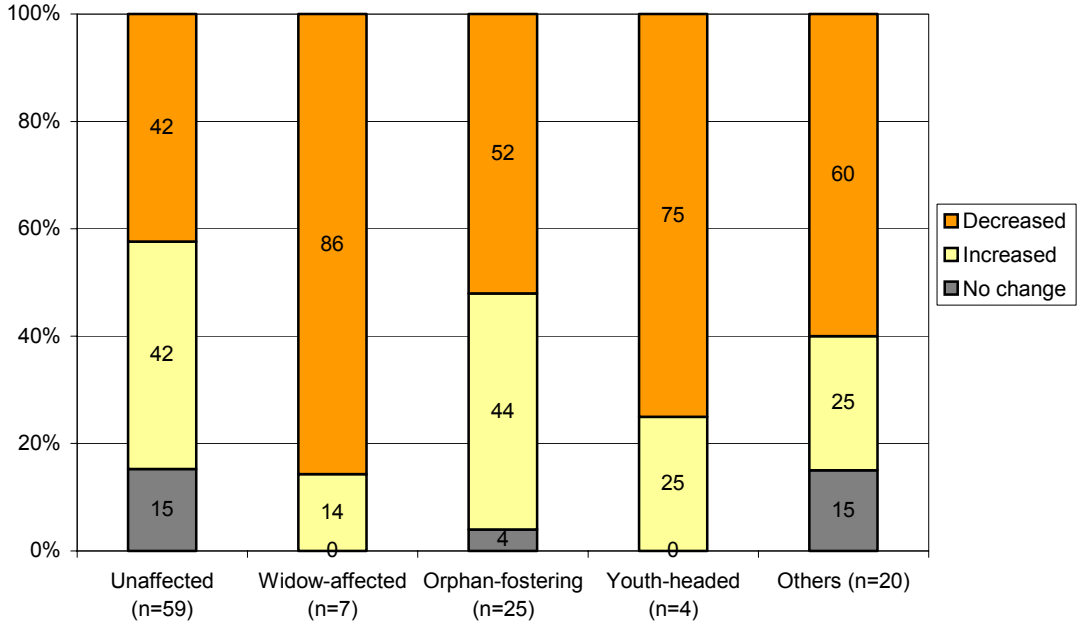


Figure 8: Changes in ownership of donkeys, by household type



Household financial resources

HIV/AIDS places a great strain on household financial resources. As families are required to face increasing medical and funeral bills, as well as rising food and farm input prices and school fees, their sources of income are dwindling. Even those households that are generating money from alternative sources, such as street vending or the sale of local beer, chickens or crafts, are unable to confront the ever-expanding costs of living with HIV/AIDS.

Wages and other sources of income

In Ohangwena region the main occupation is farming, which was reported by about 48 percent of men and 59 percent of women study respondents. Slightly less than 30 percent of both men and women were unemployed. Men were more likely than women to be employed by companies, the police and government. Women were twice as likely to be pensioners or shop assistants as men were. The gender distribution among other occupations, such as teaching and self-employment, was fairly even.

A higher proportion of men (16.4 percent) than women (13.6 percent) were wage earners. Within the productive age group (15 to 60 years), the difference between males and females was higher, with men being nearly twice as likely to earn wages (at 26.9 percent) than women (at 14.5 percent). Widow affected households reported the lowest proportion of wage earners, even lower than youth-headed ones (see Table 5). The highest proportion of wage earners was among orphan-fostering households, but most of these people were pensioners whose pensions of N$200 (approximately US$25) a month were counted as wages. Table 5 also shows that more male-headed households reported wage earners than female-headed ones did.

Table 6: Distribution of wage earners by household category and sex of head

Household type	% wage earners
Unaffected	*46.6*
Affected	
▪ Widow affected	19.2
▪ Orphan-fostering	58.3
▪ Youth-headed	27.8
▪ Other affected	52.9
Overall	**48.1**
Of the overall	
Male-headed	57.3
Female- headed	40.0

Fewer and fewer people are able to earn their living through farming-related activities, and some respondents reported that caring for the sick and attending funerals were taking up about 40 percent of their productive time. As a result, other sources of income – pensions, remittances and gifts – are becoming more and more important to affected households. Government grants are also paid to orphans and orphan-fostering households in some, but not all, of the villages surveyed. However, these often take a long time to activate and the sheer numbers of orphans involved is putting this whole system under growing pressure.

Pensions were the most frequently reported source of income for both affected and unaffected households in both the past and the last seasons (see Table 6). Fewer households sold crops last season than in the past, and this is probably owing to the drought. Although there is a similar trend in the sale of livestock, the reduction of animal sales was more pronounced among affected households (down by 10.8 percentage points) than unaffected ones (by 6.2 percentage points). The sale of crafts, remittances and pensions all increased over the study period. Unaffected households depended more on wages last season than in the past, while the percentage of affected households depending on wages dropped from 28.2 to 22 percent, indicating that HIV/AIDS and related diseases were hitting productive family members particularly hard.

Table 7: Main sources of household income for past and last seasons in percentage

Income source	Past season		Last season	
	Unaffected	**Affected**	**Unaffected**	**Affected**
Crops	18 (6)	17 (6)	14 (6)	12 (6)
Livestock	27 (3)	31 (2)	21 (4)	20 (5)
Crafts	18 (5)	20 (5)	20 (5)	22 (3)
Wages	27 (3)	28 (4)	34 (3)	22 (3)
Remit	31 (2)	30 (3)	35 (2)	32 (2)
Pensions	32 (1)	46 (1)	40 (1)	54 (1)

Values in brackets are the order of ranking.

Expenditure

A higher proportion of affected (23.7 percent) than unaffected households (13.3 percent) spent a considerable part of their incomes on millet. Draft hire was reported by 71 percent of unaffected households and only 34.5 percent of affected ones, and unaffected households also spent more on meat. Expenditure on maize, farm equipment, hired labour, school fees and medical costs were similar for both affected and unaffected households.

Labour allocation and gender roles

Most rural households rely on their own labour to perform agricultural activities. Male labour is sometimes hired for ploughing with draft animals and female labour for threshing. More children are working than in the past, with detrimental effects on their schooling and education levels. Orphans – both fostered and those who are hired as labour – are particularly affected by this. Fewer families than expected reported the use of ondjambi or okakugugu, the traditional systems under which households call on neighbours and friends to work on their fields (mainly for hand weeding, harvesting and threshing).

The gender division of labour is very clearly defined in rural Namibia. However, the qualitative study found some evidence of changing gender roles resulting from HIV/AIDS, as men, women, boys and girls started to take on more of the activities that are normally regarded as the other sex's responsibility. Women in widow-headed households reported using more draft power for ploughing than they had done in the past. They were also taking on pest control tasks that had previously been done by men. Women were becoming increasingly involved in income-generating activities (such as beer brewing), and were also more likely to seek employment opportunities outside the local area.

The study's findings regarding changes in labour allocation for major farming tasks are summarized in the following:

- *Ploughing:* Most ploughing is carried out by hand or with draft animals. Less than 1 percent of households reported the use of tractors. In general, less draft ploughing was being carried out in both affected and unaffected household types, partly as the result of drought, as well as the impact of HIV/AIDS. Boys in many affected household categories reported increased involvement in hand ploughing, which implies a reallocation of labour due to HIV/AIDS.

- *Planting:* Planting usually consists of broadcasting seed on freshly ploughed soil, and women carry out most planting activities. In general, family members' involvement in planting did not change much over the study period, although both girls and boys in youth-headed households reported increases. This implies that the death of mothers increases the planting burden on orphans.

- *Fertilizing:* Fertilizing in the study area consists of applying manure, and involves mainly girls and boys, although women are also far more involved than men. Only youth-headed households showed a reduction in family members' involvement in fertilizing over the study period. This indicates that the death of parents represents a loss of knowledge and/or resources (such as the cattle that provide animal manure).

- *Hand weeding:* Women and girls are responsible for most weeding, and there was little change in their involvement over the study period for most household categories. However, men were less involved in weeding than in the past, especially in widow affected and youth-headed households, where increases in boys' participation indicate that the young males in these households carry out more weeding to compensate for the loss of adults.

- *Harvesting:* Women, boys and girls are all nearly equally involved in the harvesting of crops, while men's involvement is far smaller and declined over the study period, particularly in affected households. In youth-headed households, the death of mothers caused a 50 percent reduction in women's participation in harvesting, which also declined in the other affected households category (by 10 percentage points). These results show that the death of adults leads to a decline in household labour for harvesting.

- *Threshing:* Men are rarely involved in threshing, which is mainly carried out by women and young members of the household. Girls' participation in threshing increased in orphan-fostering

and youth-headed households, which indicates that these households are using more orphan labour for threshing.

- *Milling:* Men's and boys' participation in milling is minimal. In general, women were less involved in milling last season than in the past for all household types, particularly youth-headed and other affected ones. However, girls generally participated more, especially in widow affected households.

Food security and nutrition

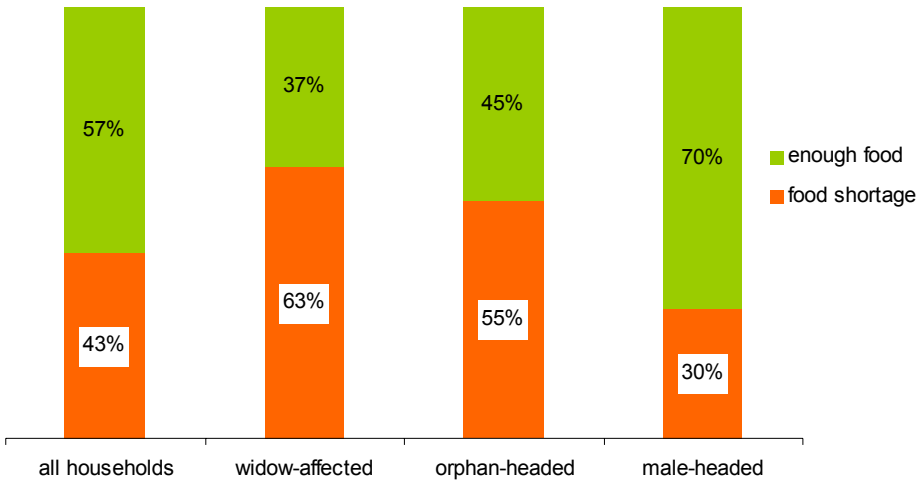
Poverty was the greatest threat to household food security and nutrition status, but HIV/AIDS-related illness and death also played an important role. For some of the poorest households in the study, food was available only for the two to three days that followed the payment of pensions and remittances. Knowledge loss resulting from the death of experienced household members also contributes to increased food insecurity because traditional crop storage skills are lost, resulting in the spoiling of stored food supplies. Food security was also badly affected by drought, and some households were benefiting from government drought relief food.

Food security

A food-secure household is one that has access to and/or can afford enough food to ensure that all of its members are kept healthy and well-nourished. The study found that food insecurity is a problem throughout the region. This is the result of drought and inadequate rainfall, low agricultural productivity, low incomes, the loss of income resulting from illness and death, and increased household size. Household food security is compromised by reduced labour availability, declining household income bases and the affects of asset loss.

Nearly half (43 percent) of all households reported having experienced food shortages during the month prior to the survey (see Figure 10). Of these households, slightly more than half had been without food for one to three days, while the others had lacked it for four days or more. Affected households generally experienced more days without food than unaffected ones, and the most food-insecure households were widow affected (63 percent of which had suffered days without food) and youth-headed (55 percent). Study results also differed according to the gender of the household head. Half of the female-headed households reported having experienced food shortages during the last month, compared with 30 percent of male-headed ones.

Figure 9: Household food security



Drought was the most common reason given for household food insufficiency, followed by lack of cash, reduced cultivated areas and enlarged family due to fostering orphans. This order of ranking is true for all household types, except for orphan-fostering ones (for which enlarged family was the second most important reason) and youth-headed ones (for which reduced cultivated areas was).

Nutrition

A healthy and well-balanced diet is essential in the care of people living with HIV/AIDS. Most of the study respondents indicated that they were aware of the importance of good nutrition, especially for people living with HIV/AIDS, but few were able to provide it, mainly because of poverty.

About one-third of all households, regardless of type, reported that they were spending more of their incomes on maize flour. The majority of households were spending the same or less on meat than they had done in the past, but unaffected households were spending more on meat than affected ones were. Widow affected and other affected households seemed to have the most unbalanced diets. Surprisingly, youth-headed ones fared better, possibly because they derive higher proportions of their incomes from wages and remittances, which they are able to use to purchase different foods. Some households were able to supplement their normal diets with freshwater fish and frogs at times of flooding. Others acquired "extras" by selling crafts and other produce.

Staple foods in the study are oshifima (stiff porridge made from pearl millet flour), oshikundu (a fermented non-alcoholic drink made from pearl millet flour), bread, rice or pasta, and legumes (principally beans, cowpeas and nuts). Nearly all the carbohydrate needs of all types of household come from oshifima and oshikundu, while the low level of legume consumption (only 8.4 percent of households reported eating them at least once a week) indicates that the community does not benefit much from these rich sources of vegetable proteins. *Other food types* are cooking oil, sugar and tombo (an alcoholic drink made from sorghum and millet). *Vegetable* consumption was low, with only 17.6 percent of all households consuming vegetables at least once a week.

Table 7 shows the proportions of households to consume *animal products* at least once a week. In general, animal products were not eaten frequently, with only 20 percent of all households consuming meat at least once a week, 18.2 percent fish, 6.9 percent chicken, 5.3 percent milk, and 4.8 percent eggs. The other affected households category tended to fare the worst in terms of regular animal product consumption. These households have high proportions of sick members, so it could be that money was being spent on medical expenses instead of on providing nutritious food. Widow affected households were the least likely to eat meat weekly and the second least likely to eat chickens, fish and eggs, while youth-headed households came top in terms of regular fish, chicken and egg consumption, and higher than average for meat. Their milk consumption was, however, only average. More male- than female-headed households consumed animal products at least once a week, especially meat.

Table 8: Households' consumption of animal products at least once a week, by household type in percentage

Household type	Meat	Chicken	Fish	Milk	Eggs
Unaffected	21.0	6.5	19.9	4.7	4.6
Widow affected	12.5	3.1	15.7	6.2	3.1
Orphan fostering	22.4	10.2	16.8	7.4	4.6
Youth-headed	22.2	16.7	33.3	5.6	16.7
Other affected	16.1	2.5	12.3	3.7	2.4
Overall	**20.0**	**6.9**	**18.2**	**5.3**	**4.8**

Coping strategies

Existing coping strategies

Nearly all of the strategies that households were adopting in the face of HIV/AIDS were directed at survival, and the effects of many of them are likely to be detrimental. For example, households were adapting to the shortage of labour by cultivating smaller areas of crops, and this is resulting in lower production levels, which put food security at even greater risk than it already is. Many affected households, particularly orphan-fostering and youth-headed ones, were depending more on child labour than they had done in the past, and children were having to drop out of school. Children were also being called on to help care for the sick, with the same results for their education opportunities. The effects of this are likely to be increased illiteracy and lower levels of education, both of which are detrimental to rural communities and their ability to develop.

High rates of poverty and unemployment were leading an increasing number of people to leave the district and seek work elsewhere, often in cities. The household members who they left behind were depending more and more on remittances for survival. Pensions, too, were being used to buy staple foods and other bare necessities, particularly in grandparent-headed households, and some households were turning to relatives for support. The government provides food relief to particularly vulnerable and food-insecure households. Money was also being raised through the sale of livestock and other household assets, reducing families' income sources and food supplies and leaving them with little on which to survive in the future. These strategies may allow people to survive in the immediate future but they are not sustainable for the community in the longer term.

Some households were diversifying their sources of income by selling local beer and handicrafts. In some areas, people were able to boost their incomes and food intake by freshwater fishing or the collection of wild foods. The risks here are that natural resources will be overexploited and become degraded. Even more serious is the rise in the exchange of sex for productive resources, especially among orphaned girls who are put at great risk of contracting HIV/AIDS.

Households were adapting their farming practices. In some cases, changes were forced as a result of knowledge being lost with the death of experienced farmers. For example, mixed farmers in some communities abandoned crop farming and started to concentrate on livestock production only. In others, fishing activities ceased because of knowledge loss. The lack of extension services is making it difficult for farmers to adopt new high-yielding practices that require less labour, although some improved crop varieties were introduced.

Community support structures

The study found four main types of organization offering community support to cope with the effects of HIV/AIDS. However, most of these institutions concentrate on the health aspects of HIV/AIDS and do not address the issues related to agricultural production and food security:

- The government provides pensions for the elderly and grants for orphans and other particularly vulnerable groups. But it is difficult to obtain access to orphan grants because of the complicated administration process involved. Government extension services are also being negatively affected by the impact of HIV/AIDS.
- The church provides support with prevention, counselling, care, education and information sharing, as well as some financial and other material aid to people living with HIV/AIDS and their families.
- Organizations such as the Red Cross provide prevention, counselling and care.
- NGOs provide a range of services. For example, one NGO that is part of a hospital outreach programme provides home-based counselling and care and trains community volunteers. Another,

the HIV/AIDS Campaign Organisation, provide health-related support in terms of prevention, counselling and care.

In addition, the extended family is an increasingly important support structure. Households foster orphans and assist each other with productive activities, such as ploughing and weeding.

Conclusion

The main aim of this study was to investigate whether HIV/AIDS-affected households face more difficult livelihood situations than unaffected ones do. Although it was found very difficult to isolate the impacts of HIV/AIDS from those of other phenomena such as drought, poverty and food insecurity, some HIV/AIDS effects were clearly identified.

The study's principal findings can be summarized as follows:

- **Loss of agricultural knowledge**: The main areas in which HIV/AIDS has contributed to a loss of knowledge are crop management, pest control, soil fertility, crop and produce storage, freshwater fisheries, forest products, and traditional livestock management. The lack of knowledge is affecting the uptake of improved farming practices.
- **Labour patterns:** Among HIV/AIDS' effects on labour allocation is household members' diversification of income sources. Increasingly, both young men and young women are migrating to seek jobs elsewhere, while all household members are looking for off-farm activities, either as waged workers or in self-employment. The pandemic has also contributed to some changes in gender roles and relations, although these are also the result of other socio-economic conditions emanating from drought and poverty and, so far, they have affected women far more than men. Women are spending more time looking after the sick, and less time on their productive activities, more of which are now done by children. Men, on the other hand, have not changed their allocation of time to any great extent.
- **Household finances:** The reduced availability of household labour, declining crop productivity and yields, sale or loss of assets, and increasing demands on household financial resources are all contributing to greater poverty. This has implications on food security, people's susceptibility to HIV/AIDS, and communities' resilience to the negative impacts of other phenomena.
- **Household food security and nutrition:** Households recognize the importance of good nutrition for the sick and the young, but poverty and increased numbers of dependants are preventing them from obtaining appropriate foods. Households' access to food is negatively affected by reduced labour availability (and the resultant declines in crop areas cultivated and crop yields), declining household income bases and the effects of asset loss. Affected households' increased food insecurity is forcing them to depend more on relatives for help, and this is damaging their sense of dignity and self-respect.
- **Community support structures**: Most support comes from civil society organizations providing health-related support for HIV/AIDS prevention, care and counselling, and from government institutions providing or carrying out social safety net programmes.

Follow up activities

Based on the findings in the IP baseline survey, a two-day national stakeholder IP-workshop was organized in Namibia, 11-12 February 2003. The workshop participants came up with ideas of cross-sectoral responses to mitigate the impacts of HIV/AIDS on agricultural production, food security and rural livelihoods. In May and June 2003 IP-Namibia organized feedback meetings in the communities that had been surveyed in Ohangwena Region and consultative meetings with regional stakeholders

where they decided on priority areas and established mechanisms for effective coordination and implementation of HIV/AIDS mitigation activities in target communities.

IP-Namibia is implementing activities related to the following three areas in the period July to December 2003 (key partners in parentheses):

- **Protecting the property of the most vulnerable in Namibia** (The Ministry of Women Affairs and Child Welfare - MWACW):
  The IP is in collaboration with MWACW and the Legal Assistance Centre (LAC) implementing a pilot project to address asset stripping in the Ohangwena province. LAC has a number of years of experience in the legal litigation of property, and MWACW is committed to enforcing the Married Persons Equality Act. This project will sensitize and train local leaders and provide para-legal training for community-based support workers in the use of appropriate materials on the rights of women, orphans and vulnerable children. Members of MWACW will also receive paralegal training. Training material on property stripping has been adapted and translated into local languages. A national advocacy campaign on mitigating property stripping will be launched prior to a national conference in 2004. Collaborating services at FAO/HQ: SDAA (FAOSAFR).

- **Youth mobilization and capacity building** (Ministry of High Education, Training and Employment Creation - MHETEC):
  The objective with this project is to support intergenerational transfer of agricultural knowledge and skills. Activities will include leadership training, and capacity building related to HIV/AIDS, nutrition and income generation. Collaborating services at FAO/HQ: SDRE and SDW.

- **Provide more responsive rural services to households affected by HIV/AIDS**: (Ministry of Health and Social Services - MoHSS in Ohangwena region): Information on food security and nutrition for PLWHA has been identified as major knowledge gap. Appropriate material will be developed and reproduced, and home-based care, health and extension workers will be trained together. Local materials, in particular a book developed by Catholic AIDS Action called "Healthy eating for people living with HIV/AIDS" will be adapted. Collaborating services at FAO/HQ: ESNP and SDW.

Additional recommendations

- As a strategy for immediate relief and longer-term development, food-for-work projects should be introduced as soon as possible. Not only will these help households to cope with the effects of poverty and illness, but they will also help to maintain and develop rural communities.

- Improved crop varieties and agricultural management practices need to be adopted. To fill the gap in rural communities' knowledge about these, the Ministry of Agriculture should conduct a survey to find out farmers' needs, especially regarding the sharing of agricultural information. Not only will new varieties and practices help to increase yields and income, but also they are also more cost-effective and less time-consuming.

- Community natural resource management projects should be introduced as a way of protecting and conserving valuable natural resources that are at risk of being destroyed by inappropriate exploitation activities.

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Annex 1: Tools used in the qualitative survey

ACTIVITY	CATEGORY OF ANALYSIS AND PRINCIPAL ISSUES	SELECTED TOOLS
Community meetings	**Development context analysis** Agricultural knowledge, access to rural institutions, food security and nutrition	Historical time lines Venn diagram Village resource map Wealth ranking
Focus group discussions	**Livelihood analysis** Gender division of labour, decision-making, access and control over Resources, Coping strategies	Gender activity clock Seasonal calendar Problem analysis chart
Household interviews	**Livelihood analysis**	Income and expenditure matrix

Annex 2: The study region

Ohangwena is a rural region where nearly three-quarters (72.2 percent) of the people earn their living from subsistence farming, 1.2 percent from cash cropping, 0.4 percent from animal rearing, 2.9 percent from business activities, 8.2 percent from waged work, 9.3 percent from pensions, and 4.5 percent from cash remittances. Unemployment stands at about 35 percent.

The climate is mild sub-arid with temperatures ranging from 9° C in winter to 32° C in summer. Average rainfall is 592 mm, varying from 321 to 828 mm in the western part of the region, and from 348 to 871 mm in the east. This huge disparity in rainfall reflects its unreliability, and thus the vulnerability of people who are dependent on agricultural production. The region has no perennial river and only a few water dams, but rich underground water resources in the east reach well below the saline level and provide good grazing lands, which attract potential farmers from other regions. Ohangwena is, however, severely overstocked; although the carrying capacity in 1998 was estimated at 177 000 head of large livestock, the actual number of animals for that year was 264 000 head **(UNDP, 1998).** Phororo (2000) indicates Mahangu cultivation as the most important agricultural activity (practised by 99.7 percent of farmers). Horticulture (80.8 percent) ranks second, followed by sorghum (77.4 percent). Goats are reared by 76 percent of farmers and are more important than cattle, which are reared by 58.9 percent. More women than men are involved in horticulture and more men than women in livestock farming.

Ohangwena has been experiencing a boom in wholesale and retail trade activities, particularly in settlements close to the border with Oshikango. The opening of an economic processing zone (EPZ) park in Oshikango at the end of 1998 boosted development further, and new jobs in the trade sector are attracting people to these areas. Unfortunately, this has also resulted in a phenomenal increase in the exchange of sex for productive resources with a resultant high likelihood of exacerbating the region's HIV/AIDS situation.

HIV/AIDS and chronic diseases in Ohangwena region

Table 1 shows the number of HIV tests carried out in Ohangwena region in 2001, indicating that 55 percent of the people in high-risk groups who were sent for testing came out positive. The Engela Health District had the highest percentage of positive cases (64 percent) followed by Okongo (40 percent) and Eenhana (41 percent). Table 2 lists the main causes of adult death in Ohangwena during 2000 and 2001.

Table 1: HIV/AIDS testing in 2001 by health district (*ORMT, 2002*)

	Engela	Eenhana	Okongo	Ohangwena total
Total tests carried out	1 702	707	200	**2 609**
HIV+ test (adults)	947	259	66	**1 272**
HIV+ test (children < 5)	145	2	14	**161**
Total positive tests	1 092	261	80	**1 433**
Total positive tests (%)	64%	37%	40%	**55%**

Table 2: Major causes of adult death in Ohangwena Region in 2000 and 2001 (ORMT, 2002)

Cause of Death	Death in 2000	Death in 2001
HIV/AIDS	277	312
Malaria	104	419
Pneumonia	94	351
Pulmonary TB	138	179
Diarrhoea	77	99

Endola and Odibo villages

Village and location	Population size	Infrastructure	Main sources of income	Other relevant information
Endola 15 km from Oshakati and about 90 km from Eenhana Ohangwena Regional Council	36 000 people 6 000 households Average 6.1 members each	Cuca shops, small general dealers Community clinic Secondary school of about 1 000 students, primary school with 600 students Gravel road Dam	Mixed farming Waged income from urban areas	Limited employment opportunities About 63 000 orphans lost their parents to the pandemic Access to drought relief food since 2002 Most afflicted groups are women of 25 to 45 years and of 45 to 60 years
Odibo 8 km from Oshikango, the control zone for the EPZ	2 000 people, most are young and not interested in farming	Mission school Councillor's office Clinic Cuca shop	Few involved in subsistence farming, most are self-employed	Problems of orphans, an average household has 3 to 6 orphans

Annex 3: Study findings

Table 1: Household ownership of plots, by household type

Household type	Households with plots		Mean plot area
	(No.)	*(%)*	*(ha)*
Unaffected	276	92.8	3.72
Widow affected	32	90.6	3.31
Orphan-fostering	107	98.1	4.1
Youth-headed	18	100	3.1
Other affected	81	97.5	3.2
Overall	**514**	**94.7**	**3.7**

Table 2: Changes in cultivated area, by household type

Household type	Last season		Last and past season (difference)		
	Area cultivated (*ha*)	**Area uncultivated** (*ha*)	**Change in cultivated area** (*ha*)	**Households reporting decreased area** (*%*)	**Households reporting increased area** (*%*)
Unaffected	3.19	0.53	-0.23	25.8	5.6
Widow affected	2.64	0.67	-0.41	50.0	0.0
Orphan-fostering	3.50	0.60	-0.30	21.1	9.2
Youth-headed	1.92	1.20	-1.11	70.0	0.0
Other affected	2.73	0.47	-0.19	33.3	3.5
Overall	**3.10**	**0.60**		**28.3**	**5.6**

Table 3: Changes in cultivation methods, by household type

Household type	Method of cultivation	% using method	
		Past	**Last**
By sex of household head			
Male-headed (238)	None	11	10
	Hand hoe alone	18	26
	Animal draft alone or with hand hoe	63	53
	Tractor alone or with other methods	7	12
Female-headed (276)	None	2	1
	Hand hoe alone	42	50
	Animal draft alone or with hand hoe	49	40
	Tractor alone or with other method	7	9
By sampling code			
Unaffected (273)	None	8	7
	Hand hoe alone	29	36
	Animal draft alone or with hand hoe	57	46
	Tractor alone or with other methods	6	11
Widow-affected (32)	None	4	4
	Hand hoe alone	12	54
	Animal draft alone or with hand hoe	81	35
	Tractor alone or with other methods	4	8
Orphan-fostering (108)	None	3	3
	Hand hoe alone	31	32
	Animal draft alone or with hand hoe	57	54
	Tractor alone or with other methods	9	12
Youth-headed (18)	None	0	0
	Hand hoe alone	39	44

	Animal draft alone or with hand hoe	50	39
	Tractor alone or with other methods	12	17
Other affected (85)	None	7	5
	Hand hoe alone	43	51
	Animal draft alone or with hand hoe	44	39
	Tractor alone or with other methods	6	6
All households (514)	**None**	**6**	**5**
	Hand hoe alone	**31**	**39**
	Animal draft alone or with hand hoe	**56**	**46**
	Tractor alone or with other methods	**7**	**10**

Table 4: Household ownership of livestock, by household type

Household type	Households with cattle		Mean number of cattle	Mean change in cattle number
	No.	%		
Cattle				
Unaffected	113	41.4	19.5	-0.22
Widow affected	7	21.9	7.6	-5.89
Orphan-fostering	49	45.8	16.9	-5.06
Youth-headed	2	11.1	2.5	-17.30
Other affected	36	44.4	9.8	-1.63
Overall (cattle)	**207**	**40.5**	**16.6**	**-0.23**
Goats				
Unaffected	175	63.4	15.6	-4.7
Widow affected	15	46.9	12.1	-5.7
Orphan-fostering	79	73.8	15.3	-4.0
Youth-headed	9	50	8.6	-8.5
Other affected	59	72.8	13.9	-2.8
Overall (goats)	**337**	**65.6**	**14.9**	
Chickens				
Unaffected	233	84.4	9.5	-2.4
Widow affected	25	78.1	8.3	-1.5
Orphan-fostering	87	81.3	10.6	-3.8
Youth-headed	16	88.9	7.8	-2.6
Other affected	67	82.7	9.5	-4.1
Overall (chickens)	**428**	**83.3**	**9.6**	
Pigs				
Unaffected	87	31.5	1.93	-0.4
Widow affected	5	15.6	2.0	-0.4
Orphan-fostering	43	40.2	1.93	-1.1
Youth-headed	3	16.7	1.33	0.00
Other affected	24	29.6	2.58	-1.3
Overall (pigs)	**162**	**31.5**	**2.01**	

Table 5: Household ownership of draft animals, by household type

Household type	Households with draft animals		No. per household	Change in no. of animals
	No.	%		
Oxen				
Unaffected	95	34.5	4.3	-0.40
Widow affected	6	18.8	2.5	-1.81
Orphan-fostering	43	40.2	5.0	-0.91
Youth-headed	2	11.2	2.0	-4.78

Other affected	27	33.3	4.0	-0.08
Overall (oxen)	**173**	**33.5**	**4.4**	
Donkeys				
Unaffected	44	15.9	3.0	-0.22
Widow affected	2	6.3	5.0	-3.00
Orphan-fostering	21	19.6	3.1	-0.84
Youth-headed	2	11.1	2.5	-3.75
Other affected	16	19.8	3.1	-1.95
Overall (donkeys)	**85**	**16.5**	**3.1**	