

**Silently Starving: A New Form of Famine
among Small Scale Farming Households
Affected by the HIV Epidemic?**

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Disclaimer

The opinions presented are those of the authors and should not be regarded as the views of the FANRPAN, United States Department of Labor, Project Hope or Futures Group.

Abstract

The HIV and AIDS epidemic has a negative impact on food security among small scale farmers in Namibia's communal areas. If the findings presented here prove to be widespread, the threat to food security demands immediate attention from all sectors of Namibian society. HIV affected households were sampled in three Regions of Northern Namibia. A total of 144 households were surveyed during November 2004. The survey took place in three Regions in Northern Namibia, the Kavango, Oshana and Oshikoto Regions. Of those households, almost nine out of ten were determined to be food insecure. They had neither adequate formal or informal income to purchase sufficient food, nor did they produce enough staple crops to meet basic nutritional requirements throughout the year. Eleven households did not produce any crops at all in 2004. Using livestock as compensation for the crop deficit is not an option as only half of food insecure households had animals. The majority of stock owning households, however, did not possess herds large enough to allow regular off-take.

Evidence from the survey indicates that adult males have died leaving widows and orphans. This initial phase of mortality carries with it a major reduction in the household's ability to produce in two key areas. First, men traditionally make key decisions on the preparation of crop planting, as well as providing much of the heavy labor involved in preparation of fields. Second, the loss of an adult male also negatively affects livestock production through the loss of labor to both manage and look after animals.

The study posits a second phase of mortality. The spouses of men who have died due to AIDS are highly likely to themselves be either HIV positive or ill with due to AIDS. Initially, these women attempt to fill the labor void left by the death of their mates. These women are handicapped because they may have neither the knowledge, nor the physical strength to carry out these tasks. In addition, they have their own household chores that they must complete. As these women progress through the disease, their increasing infirmity and eventual death will both rob their households of their productive capacity and place additional burdens on younger family members.

Four key points emerge from the analysis. First, historical patterns from the Sentinel Survey data in each Region studied show dynamism of the epidemic. While national results reflect an overall decline in HIV prevalence, specific sites associated with the Regions surveyed portray a mixed pattern of results. Some sites are in decline, others on the rise and still others showing little change. These fluctuations could be the result of mortality, actual change in behavior, failure to change behavior, migration, or statistical issues in the Sentinel Survey itself. More needs to be known about the Regional and sub-Regional patterns of the epidemic.

Second, our data indicates that households are adopting coping strategies which vary from region to region. In Kavango and Oshana Households appear to be consolidating as adults, particularly male adults, die off. Both adults from other households as well as orphans are taken into existing households. In Oshikoto

households took in orphans, but not adults. There may be cultural reasons for this difference, particularly in the ways that widows are treated once their husbands die. Another coping strategy is crop substitution. Some farmers are planting maize due to its perceived lower labor requirements. Maize substitution may not be a viable strategy in the long run. Rainfall in Namibia is generally not sufficient for high maize yields. Maize is also not as nutritious as pearl millet, the staple crop, and this is an important factor for HIV positive people because they require higher levels of nutrition. This practice was most prevalent in the Kavango Region.

Third, as stated above, the epidemic has had a devastating effect on agricultural production. Almost nine out of ten households studied had major shortfalls in staple crop production. Other forms of income do not compensate for the grain shortfall. The result is regular hunger among households in the survey and almost no level of food security. Within this group, three subgroups are identified. Those who produce less than half of their food requirements, including 11 households that do not produce at all – 78% of the sample. Those who produce between half to close to their food requirements – 16% of the sample. Those who produce sufficient food – 6% of the sample.

Fourth responses to assist these different categories need to be tailored to the needs of each group. Those households where crop production is not providing basic necessities, may benefit more from direct transfers of cash (either in terms of support for orphans, HIV disability, or a basic income grant) than they might from extension assistance. The few households that are producing enough to feed themselves may benefit from long term interventions such as less labor intensive crops. These better off households are likely to have the human resources required to make changes to farming systems. Changes in agricultural practices can take some years to accomplish and require both a period of learning and additional labor.

This report shows the need for deeper research into the effects of and dynamics of the HIV epidemic in Namibia. The survey highlights regional differences in the epidemic, and in the response of communal farming households to its consequences. A limitation exists because the study does not include all agronomic and environmental areas of the country. The focus is on one farming system in a particular area of Namibia. In other parts of the country communal farmers practice different farming models and there are different social, cultural and economic conditions at work. Namibia's variation requires expensive surveys for a complete national understanding of the impacts of the HIV epidemic on food security. Such studies are expensive, and this is the rationale behind carrying out studies such as this in conjunction with other national level surveys.

That a potential famine looms for small scale farmers affected by the HIV epidemic cannot be denied. Unlike a normal famine, whole communities are not affected. This famine hits individual households, making it almost invisible. Only those who feel the hunger and those in their social networks may know of their plight. This is the reason for our title. It is a famine, but we do not see it. We can no longer allow our people to be hungry in silence.

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List of abbreviations

AIDS	Acquired Immunodeficiency Syndrome
HIV	Human Immunodeficiency Virus
NHIES	National Household and Income Survey
VCF	Veterinary Cordon Fence

1. Introduction

“Throughout history, few crises have presented such a threat to human health and to social and economic progress as does the HIV/AIDS epidemic.”¹

1.1. Background to the Study

This report examines the impact of the HIV epidemic on food security among communal (small scale) farmers in Namibia. The research was initiated by the Food and Natural Resources Policy Analysis Network (FANRPAN). The Namibian component is part of a seven country study.² The aim was to conduct national level surveys in each country, and to combine them in a report of the impacts of HIV on food security across the SADC Region. In addition to funds provided by FANRPAN, Futures Group expressed interest in, and ultimately provided additional monies for the project.

At the time of the request, the Namibian government was engaged in the 2003/2004 National Household and Income Survey (NHIES). This survey provides national benchmarks in areas such as income and expenditure, poverty measures, income distribution, consumption patterns and distribution of wealth. Permission was obtained to use the basic survey instrument from the NHIES to conduct this study.³ Given the limited resources available, using the NHIES allowed a focused sample on HIV affected households only. Data from the NHIES was to provide the control sample, and was supposed to be ready in the second quarter of 2005, thus allowing time for in-depth analysis. This plan has not materialized and the NHIES data will not be available until after this project concludes. Thus data from secondary sources will be used in the analyses presented here.

In Namibia the identification of households affected by HIV and AIDS can be a problem. There are legal constraints about privacy, and in some areas there has been social discrimination against households where a member is identified as HIV positive. To address this issue, HIV-related support groups were approached and their cooperation sought in obtaining access to their clients. Using established mechanisms of communication was seen as crucial to the efficient identification of HIV affected households as well as a means of establishing trust with affected families.

¹ FAO, Committee on World Food Security. Twenty-seventh Session, 28 May – 1 June 2001. Rome. *The Impact of HIV/AIDS on Food Security*. P. 2. http://www.fao.org/docrep/meeting/003/Y0310E.htm#P87_4352

² The other countries are: Botswana, Lesotho, South Africa, Swaziland, Zambia and Zimbabwe.

³ Modifications were made to the questionnaire to protect the privacy of interviewees.

The research focused on three of Namibia's political regions: Kavango, Oshana and Oshikoto. They are characterized by high rates of HIV infection, and large numbers of people involved in agricultural production. The farmers studied in this survey all lived on communal lands and are usually considered subsistence farmers. Together with the Ohangwena and Omusati Regions, the study Regions are home to almost 70% of Namibia's population.

1.2. The Impacts of HIV on Food Security

Concern about the impacts of HIV and AIDS on food security has been prominent for a number of years. As HIV moves from infection to the condition of AIDS, people become debilitated and die. The loss in human resources, knowledge and labor has serious effects on small scale farming operations. A general pattern of the effect of HIV and AIDS on livelihoods and food security was described by the FAO in 2001.⁴ Key aspects of this pattern are:

- A downward spiral of household welfare that begins when the first adult member falls ill. Productivity decreases while expenses related to health services increase. Catering to the increasing needs of the sick person leaves less time for other household members to carry out productive activities. Hence, the whole household is negatively affected. The process of asset stripping begins as families run out of savings and face increased costs of caring for the sick person.
- To the above two phases mentioned by the FAO, one can add a further phase of households once the elderly die, or if they had pre-deceased the death of adults. These households become orphan headed, often with children or juveniles taking the role of household head.
- A second phase of a downward spiral comes when the partner of the sick person also becomes ill. In this phase the issue of orphans becomes prominent. Eventually as the adults in the household die, the elderly and young remain.

The FAO further postulates that the HIV epidemic has impacts in the following areas; gender, nutrition, cultural/institutional and poverty. Gender impacts occur as the epidemic places additional burdens on women as they take the role of caring for the sick. They do this while having to still carry out their regular household duties. For most women they find that some tasks have to be left undone. In many settings women do not have access to agricultural resources, and they suffer when their spouses die, often at the hands of their in-laws. In terms of nutrition, small scale farming households affected by HIV and AIDS generally see a decline in productivity. They begin to suffer from hunger and malnutrition. Yet, this decline

⁴ FAO, Committee on World Food Security. Twenty-seventh Session, 28 May – 1 June 2001. Rome. *The Impact of HIV/AIDS on Food Security*. Much of the following discussion is extracted from pp. 4 – 7.

comes just when the sick members of the household require additional food to maintain their health. Local institutions and culture can be overwhelmed in highly impacted areas. Local networks of reciprocity and mutual assistance are strong in many rural communities. However, when the majority of households in these networks are weakened by HIV, the wider network itself begins to suffer. Local institutions also suffer as the transfer of knowledge between generations is disrupted by the early death of adults. Poverty is heightened and intensified by the HIV epidemic. Households that are above, but near local levels of poverty are under severe stress when they enter the downward spiral described above. The likelihood that they will themselves fall into poverty is high.

The effect of HIV and AIDS on agriculture is severe. The FAO postulates that the first main impact will be on labor. There will be a decline in agricultural labor force due to the epidemic which in turn will lead to declines in productivity. In its document the FAO lists the twelve countries in Africa that will suffer the highest loss of agricultural labor force between 2000 and 2020. Out of the top five countries, four are included in this study. The table is partially recreated below.

Table 1: Impact of HIV and AIDS on Agricultural Workforce in Selected African Countries

<i>Country</i>	<i>Per cent loss of Agricultural labor force due to HIV and AIDS</i>	
	<i>2000</i>	<i>2020 (projected)</i>
Namibia	3.0	26.0
Botswana	6.6	23.2
Zimbabwe	9.6	22.7
Mozambique	2.3	20.0
South Africa	3.9	19.9

Source (FAO)

On the ground impacts of this loss of labor are:

- Decline in total output through a reduction in areas planted. The loss of skills results in the poor timing of farming interventions which adds to declining productivity.
- Moving to less labor intensive crops, which may affect the both the variety of food produced and the quality of diet.
- Declines in livestock production through loss of skills and labor. As livestock are sold to cover medical and funeral expenses there is a loss of wealth and the potential to use animals for traction.

- Storage and processing of food are not as robust. Losing both labor and skills means that food can be lost due to spoilage. Seed stocks for future farming seasons can also decline.
- Disruptions in the provision of support services. Extension services are affected by the epidemic and their efficiency declines.
- Financial resources are diverted from agricultural production to cover the costs of caring for the sick and for burials. If loans are involved decreased agricultural productivity increases the chance of default, making the affected household more likely to sell assets to pay off loans.

This FAO analysis foreshadows much of what is found in Namibia today, and it provides a broad framework for both understanding the impacts of the epidemic today, and predicting the social changes we may expect in the future. In order to understand the issue of HIV and its impacts on food security, it is necessary to build information from the ground up.

1.3. Other Studies

A number of studies have been undertaken in Namibia focusing on food security. In 1990 Hay, Pell and Tanner completed a report for the International Development Centre Food Studies Group and UNICEF titled *Household Food Security in Northern Namibia*. They examined food security in the Kavango and Caprivi. A number of policy recommendations were made, but as can be expected no reference was made to HIV since the first case in Namibia was only recorded on four years prior. In the same year Tool also published for UNICEF under the title *Food Security Issues in Southern Namibia*. The *Namibia Household Food Security Report* compiled by the Namibian Institute for Social and Economic Research (NISER) for the Food and Agricultural Organization (FAO) published in 1992, also made no mention of HIV. The same was the case for the 1993 report, *Food Security or Food Self-Sufficiency for Namibia? The Background and a Review of the Economic Policy Implications*, written by the Division of Agricultural Planning in the Ministry of Agriculture, Water and Rural Development (MAWRD). It too made no mention of the possible impact of the disease on agricultural production.

The first study of the impact of HIV on agriculture in Namibia was in 1999 by the FAO under the title *The Impact of HIV/AIDS on Farming Communities in Namibia*. It was based upon data collected from the Oshana and Caprivi regions. Extension personnel conducted questionnaire-based interviews with groups and households living in rural farming communities. More than 50% of the sample reported selling livestock in order to pay for costs associated with illness and death. It also addressed the impact of lost labour on crop production. Whereas the 1999 study placed emphasis on communal farming, the methodology employed was expanded to include commercial farming operations in a follow-up study conducted by the FAO in cooperation with the University Central Consulting Bureau of the University of Namibia. It was titled *The Impact of HIV/AIDS on the Different Farming Sectors in Namibia* and published in 2001. One conclusion stood out: "Parent's deaths interrupt

the socialization of younger children and their formal and non-formal education. Interrupted education will create less able farmers for the future".⁵

1.4. Organization

This paper is organized into five sections, Basic Demographics, Income, Expenses, The Insecurity of HIV and a Conclusion. Basic Demographics provides an overview of the three regions. In this section a number of comparisons are drawn between the sample collected in this survey, Census data and HIV Prevalence Sentinel Survey data for each region. Differences between the national results of the Sentinel Survey and those of the regions are highlighted with associated hypotheses. Family Structure also comes under review. Family structure in the survey sample shows major differences across the regions. An attempt at explanation is offered. The presence of orphans is also considered. Our sample found higher percentages of orphans in families, with higher numbers of children orphaned by their fathers. The implications of this imbalance are explored.

The section on Income focuses on data from the sample. Very little in the way either formal or informal employment was found. The NHIES questionnaire used for this survey collected data on agricultural production and inputs. This analysis forms the bulk of the chapter. Generally, the vast number of households surveyed had extremely low incomes. It is found that most households do not produce enough to meet basic caloric requirements. The following section focuses on expenditures. The households do not spend much. Their focus is on basics such as clothing, education and health care. These two sections can be enhanced once the NHIES 2003/04 is released and direct comparisons with this data are possible. At the end of the expenditure chapter is an analysis of what appears to be different levels of impact by the epidemic on households and of some possible courses for intervention.

Section four provides a breakdown of analytical categories in the sample. There are households where farming has collapsed and those where farming is near collapse. This discussion includes possible levels of mediation that can be adopted for each category.

⁵ Food and Agricultural Organization. 2003, *The Impacts of HIV/AIDS on the Agricultural Sector and Rural Livelihoods in Northern Namibia*. FAO. Windhoek. Hereafter referred to as the 'AIMS Study.'

2. Agriculture, Food Security and the HIV Epidemic in Namibia

2.1. Namibian Agriculture

Approximately 70% of Namibia's 1.8 million people depend in some way on agriculture for their livelihoods. The sector accounts for just over 5% of GDP at current (2003) prices. Namibian agriculture has long been divided into commercial and communal sectors. Under colonial rule, much of the central and southern parts of the country were converted into freehold title, and given over to settler farmers of European background. This land is now considered Namibia's commercial sector. North of a line that runs roughly parallel to the Southern boundary of the Etosha National Park,⁶ and in certain former "native reserves" in and around the commercial farming area, are the communal areas of Namibia.

Under colonial times, and still today, there are vast differences in infrastructure and access to markets between these two parts of the country. The commercial farming sector accounts for 3.5% of GDP while the communal farming sector accounts for 1.5% of GDP. Above the VCF, in the Caprivi, Kavango, Ohangwena, Omusati, Oshana and Oshikoto Regions, approximately 70% of Namibia's population resides. Rates of poverty are highest in these Northern Regions.

Namibia's Northern regions generally follow a different farming system from commercial and communal farming areas in the center and South of Namibia. In the North, rain fed agriculture is possible. The main crop is pearl millet, or "omahangu," though in the Caprivi Region maize is more common. Other crops grown include sorghum, ground nuts vegetables and fruits. A typical household will have a cropping area which surrounds its living compound. This area may be fenced with brush. It will also have a kraal in which livestock – usually a mix of cattle and goats – is kept. In the past livestock were moved to grazing areas many kilometers away. This practice has been limited by first the war for national liberation, second by the recently ended conflict in Angola and third by population pressure in which former cattle posts have been transformed into permanent settlements. Over the past 15 years, new farmers have been moving into areas that were previously considered less than optimal for crop production.

Some areas of Northern Namibia have been transformed into what can be classified as "semi-freehold land." Two large areas just North of the VCF were demarcated and fenced in the late 1970s and early 1980s.⁷ These plots were leased to indigenous government officials and businessmen. Since Independence in 1990, a

⁶ This is known as the Veterinary Cordon Fence (VCF) or the "Red Line."

⁷ These are referred to as the "Mangetti Farms."

new process of enclosure has developed, where large tracts of land have been enclosed illegally.⁸ Many of both these older farmers settled in the Mangetti farms and new farmers who have enclosed land are businessmen, and salaried employees with funds to invest in their farming operations. One impact of their operations has been to squeeze lower income farmers by limiting access to resources such as grazing, water and services. This new class of farmers is increasingly market-oriented. In the past 10 years, commercial markets for millet and livestock have expanded in the Northern communal areas. However, since these new opportunities are coming from very low levels of development, they are not widespread.

Areas South of the VCF are largely limited to livestock production. The main exception is the triangle around Tsumeb, Otavi and Grootfontein where rain fed agriculture, mostly maize production, is possible. There are irrigated schemes in the center of the country near Mariental and Stampriet as well as along the Orange River at the border with South Africa. The Orange River facilities are notable for the production of table grapes bound almost exclusively for the European Union.

In terms of livestock production a rule of thumb is that cattle production is possible between the VCF and Rehoboth – a town 70 km South of Windhoek. South of Rehoboth, small stock production – sheep and goats – is the norm. Rainfall decreases the further West and South a farm is located. Farms along the Western edge of the commercial farming area between the escarpment of the Kalahari Plateau and the Namib Desert are marginally productive.

Communal farming areas south of the VCF suffer from similar deficiencies as Northern communal farmers.⁹ Access to markets and assistance in farming operations was severely restricted prior to 1990. These restrictions, however, were not as severe as those experienced by Northern communal farmers. Southern communal farmers had limited access to markets, albeit usually at a disadvantage, and some access to services. There has been improvement in these areas over the past 15 years. Due to overcrowding and lack of management skills, many Southern communal areas are heavily over grazed and situated in marginal farming areas, hence, productivity is very low. In a few places, notably in communal areas in the East of Namibia, illegal fencing has taken place.

2.2. Food Security

Namibia is the driest country in sub-Saharan Africa. Its main crop growing areas are along its Northern Border. Currently these areas are not sufficiently developed to

⁸ Fuller, B., Nghikembua S., with Tani Forbes Irving. 1995. *The Effect of Land Enclosure on Grazing Practices in Eastern Oshikoto Region*. SSD Discussion Paper No. 24 Multidisciplinary Research Centre, University of Namibia, Windhoek Namibia.

⁹ Unfortunately, resources did not permit inclusion of Southern communal farmers in this study.

provide surplus grains. Commercial crop production is concentrated for in a few areas. It is not surprising that Namibia does not produce enough crops to meet its needs. The country imports large quantities of grain, mostly from South Africa.

Namibia has a food security Early Warning Unit based in the Office of the Prime Minister. It conducts quarterly reviews of the crop, rainfall and import situation, These reports are distributed to a wide audience both inside and outside government.

2.3. The HIV Epidemic in Namibia

The first reported case of AIDS in Namibia was in 1986. Then Namibia was called South West Africa, and was a colony of apartheid South Africa. Much of the study area was a war zone with fighting between the People's Liberation Army of Namibia and the South African Defense Force. Due to the war and the general lack of health care offered to blacks in that time, it is difficult to asses the pace of the disease.

We know little about the introduction and spread of the epidemic in Namibia. There are a number of popular theories about the cause and spread of the disease, though the arrival of independence and the subsequent opening of borders was certainly a major factor in the spread of HIV. Nationally infections were first monitored in the early 1990s. Northern Namibia in particular saw dramatic increases throughout the 1990s. In 1996, AIDS became the leading cause of death in Namibia as reported by the UNDP.¹⁰

The epidemic appears to have its own dynamics. In Namibia the measure of HIV prevalence is the Sentinel Survey. The most recent results of the survey for the study area appear in Table 2 below. Most sites in the study area returned results above the National average. Three distinct patterns emerge. Four sites show declines in prevalence from 2002 to 2004. Two sites are steady. Two sites report increases.

Table 2: HIV Sentinel Survey Results (1992 - 2004)

Sentinel Site	HIV Prevalence ratio (%)						
	1992	1994	1996	1998	2000	2002	2004
Kavango							
Rundu	-	8	8	14	14	22	21
Nankudu	-	-	-	13	18	16	19

¹⁰ UNDP. 1997. *Namibia, Human Development Report*. United Nations Development Program. Windhoek. P. 36.

	HIV Prevalence ratio (%)						
Andara	-	2	11	16	15	21	17.9
Nyangana	-	6	5	10	16	22	14.9
Oshana							
Oshakati	4	14	22	34	28	28	24.9
Onandjokwe	-	8	17	21	23	23	22
Oshikuku	-	-	-	-	-	21	27
Oshikoto							
Onandjokwe	-	8	17	21	23	23	22
Tsumeb	-	-	-	-	-	25	17.7
Namibia	4.2	8.4	15.4	17.4	19.3	22	19.9

Variation at specific sites suggests localized factors in the pace and spread of the epidemic. We know little about these dynamics, but they become our concern when we measure the responses of people to HIV and AIDS. As the disease progresses through communities there will be a concomitant dynamic of the responses of people. We are only at the beginnings of our knowledge about this response. Information from each of the Regions studied will show localized variations as people cope with the epidemic from within their own social and geographic realities.

2.4. Basic Characteristics of the Survey Area

In this section brief descriptions of the regions are provided as well as education and access to services. A final segment on mortality and life expectancy shows the first impact of HIV and AIDS. Mortality, both throughout the country and in the Regions studied, had increased dramatically in recent years. Similarly, life expectancy has plummeted at national and regional levels. The effects of increased mortality will be the focus of subsequent chapters.

2.5. Brief Regional Descriptions

The three Regions studied are the Kavango, Oshana, and Oshikoto Regions. These political units are located in the Northern and most populous parts of Namibia. This is also the area of the country with the highest overall rate of HIV infections. Kavango and Oshana are located completely within the communal farming areas, North of the Veterinary Cordon Fence (VCF), with Oshikoto straddling the VCF.

The Kavango Region is defined by the Kavango River. The River is one of Namibia's few perennial rivers, and it defines the border with Angola. Most of the

population of the Kavango Region lives within 20 km of the river bank. Over eighty percent of Kavango's residents live in rural areas, practicing a mix of dryland agriculture (pearl millet, sorghum and maize) and livestock production. The Region has high potential for both agriculture and tourism, but due to very low levels of development, this potential remains largely untapped.

The Oshana Region includes three rapidly growing towns, Oshakati, Ongwediva and Ondangwa. From the mid 1990s onward there has been a spurt of growth as businesses (Namibian, South African and International) have moved into the area to take advantage of both the large market on the Namibian side of the border as well as that of Southern and Central Angola (particularly after peace came to Angola in 2002/2003). This development has been spurred on by a major upgrade to the telecommunications infrastructure,¹¹ and the rehabilitation of the North – South Highway. Currently, an extension of the rail system from Tsumeb to Ondangwa, Oshikango¹² and Oshakati is underway. Farming in this Region is based on millet, some sorghum and livestock. In many part of Oshana the soils are not good and yields tend to be low. There are both informal and formal markets for livestock and in recent years, a market for millet has developed.

The Oshikoto Region straddles the VCF. That part of Oshikoto South of the VCF includes the town of Tsumeb and commercial farms. The population of this area is fifteen percent of the Region's population. Eighty-five per cent of the population lives North of the VCF in communal farming areas. The Northern portion of Oshikoto is extremely rural. The only settlement of significance in this part is Omuthiya, just North of Etosha Park. Omuthiya has been designated as a "settlement area" -- the first step on the way to declaration as a municipal area. Since the tarred North – South highway runs through this portion of Oshikoto, access to towns such as Oshakati and Tsumeb is not a problem. If one leaves the main road, however, the number of developed gravel roads is small with dirt tracks common.

Agriculture in the communal portion of the Region follows the same pattern as Oshana and Kavango. Northern parts of Oshikoto have sandy and less productive soils. As one moves South towards the VCF, soils become more fertile. Many large scale millet producers live in this more fertile area. The Mangetti Farming Block is located to the East of the main highway and 5 kilometers North of the VCF. This approximately 1,100 square kilometer block is divided into 89 farming units. The farmers in this Block have long term leases giving them a sense of security. Their allotments are also fenced, giving them a greater degree of control in managing their herds. Many Mangetti farmers are pushing for greater access to formal, and export

¹¹ The all Regional capitals are now connected to the national fiber optic backbone, and the flat landscape has meant that cellular towers generally reach their maximum range. Hence, large parts of Northern Namibia are within reach of cell phones.

¹² Oshikango is a major port of entry for goods and people traveling from Southern Angola to and from the rest of Southern Africa.

oriented, livestock marketing opportunities. The table below provides some basic statistics for each Region.

Table 3: Demographic Characteristics of Study Regions(2001 Census)

	Kavango	Oshana	Oshikoto	Namibia
Population	202,694	161,916	161,007	1,830,330
Percent Rural	82	69	91	67
Square Km.	48,463	8,653	38,653	824,116
Number Households	30,467	29,557	28,419	346,455
Ave. HH. Size	6.5	5.4	5.6	5.1
Female headed households (%)	41	54	50	45
Economically Active (%)	50	51	40	54
Employed (%)	80	60	55	69

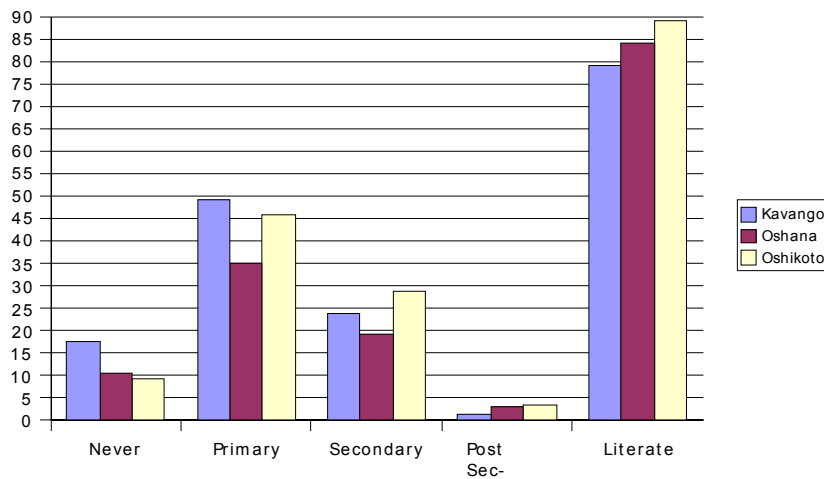
2.6. Education

Namibia has made great strides in education over the past fifteen years. Prior to 1990, access to education was determined largely by skin color. The number of schools and qualified teachers in the study area was extremely limited. Since Independence Namibia has spent roughly 25% of its annual budget on education. As a result enrollment rates for school aged children in the 2001 Census (aged 6 to 24) are at 65%. For younger children aged six to fourteen the rate increases to 90%. Literacy in the country is high. The national literacy rate, based on the ability to read and write in a language, is 81% of the population six years and above, with Kavango, Oshana and Oshikoto having rates of 72%, 91% and 84% respectively.

Questions on education as asked in the survey were slightly different from those in the Census. However, as can be seen in Illustration 1 below, levels of basic education and literacy were high. Very few respondents, however, had post secondary education, which is a crucial factor in obtaining employment. The unemployment rates for Namibians with post-secondary qualifications decreases significantly.¹³

¹³ Ministry of Labour, *The Namibia Labour force Survey, 2000*. Windhoek.

Illustration 1: Level of Education in Sample (%)



Experience in other development initiatives indicates that literate members in each household of target populations enhances the effectiveness of campaigns and interventions.

2.7. Access to Services

Generally, Namibia has been successful in providing access to safe water. It has already met the 2006 Millennium Development Goal (MDG) of providing safe water to 80% of the population. Yet, according to the MDG report of 2004, the Kavango Region has the lowest overall percentage of access to safe water.¹⁴ This is reflected in the sample as over half of the respondents drew their water from a stream or river. This water is of varying degrees of quality, depending on what happens upstream, and it could be a factor in the high levels of mortality found in the Kavango by the 2001 Census. Information about access to water is below in Table 4.

Table 4: Household Main Source of Water, Sample (% HH)

	<i>Kavango</i>	<i>Oshana</i>	<i>Oshikoto</i>
Piped in yard	7	8	20
Neighbor's Tap	7	14	22
Public Tap	26	64	48
Private Borehole	2	2	-
Stream, River	58	6	2

¹⁴ Office of the President, National Planning Commission, Namibia 2004 Millennium Development Goals. Windhoek. 2004. P. 34

	Kavango	Oshana	Oshikoto
Protected Well	-	4	4
Unprotected Well	-	2	-
Dam	-	-	4

While access to water was least favorable in the Kavango, access to health care was least problematic. Almost all those surveyed in the Kavango lived within 5 kilometers of a clinic. In Oshikoto participants generally had the longest distance to travel. The majority of Oshana residents stayed within 5 kilometers of a clinic. Table 5 provides a breakdown of distance to the nearest clinic.

Table 5: Walking Distance to Clinic, (% HH)

Kilometers	Kavango	Oshana	Oshikoto
1 or less	28	2	4
2	14	-	6
3 to 5	56	10	8
6 to 10	2	67	36
11 to 15	-	10	14
15 to 20	-	2	28
20 plus	-	4	4
missing	-	5	-

2.8. Mortality and Life Expectancy

The HIV epidemic has caused a dramatic drop in life expectancy in Namibia. In Table 6 below, data from the 1991 Census on life expectancy is given to show the impact of HIV over the ten year period 1991 to 2001. The Kavango Region has a worse profile than either the other two regions sampled, or Namibia as a whole.

Table 6: Mortality and Life Expectancy (2001 Census)

	Kavango	Oshana	Oshikoto	Namibia
Infant Mortality (per 1000 live births)				
Female	65	42	57	49
Male	75	43	60	55
Under 5 Mortality (per 1000 children of same age group)				
Female	92	55	79	64

	Kavango	Oshana	Oshikoto	Namibia
Male	101	53	78	78
Life Expectancy (1991)				
Female	59	64	59	63
Male	55	60	63	59
Life Expectancy (2001)				
Female	41	48	51	50
Male	42	46	50	48

A telling statistic on the impact of AIDS is provided in the 2001 Census. Since 1991 Namibia has seen an 80% increase in the death rate. In urban areas the rate increased by 101% and in rural areas by 73%. Illustration 2 above shows the increase of reported deaths in each of the three regions under study.

2.9. Household Characteristics

As mortality increases throughout the study area, households face different pressures. Depending on their internal resources and their socio-economic surroundings, they will adapt. Differences between the households studied and data from the 2001 Census provide the first indications of the impact of HIV and AIDS. Households in the sample are larger, more likely to be female headed, and have fewer members between the ages of 30 to 49. Data from the survey also indicates differences between Regions in terms of coping strategies.

2.9.1. Size

Two household characteristics of the sample are readily apparent. First, the households sampled here are larger. According to the 2001 Census, Kavango, Oshana and Oshikoto Regions have average household sizes of 6.7, 5.4 and 5.6 respectively. In our sample Kavango households averaged 10 members, Oshana households, 7.2 members and Oshikoto households 6.3. Increases in household size for the three Regions was 2.3 for Kavango, 1.8 for Oshana and .7 for Oshikoto. The second difference is the percentage of female headed households. The average both Kavango and Oshana was 54%. In Oshikoto the number is 67%. In the 2001 Census, Kavango returned 41% female headed households, Oshana 54%, and Oshikoto 50%. Basic data on households in the sample appears in the Table below.

Table 7: Basic Household Demographics, Sample

	Kavango	Oshana	Oshikoto
Number HH	42	51	50
Number People	431	370	316
Ave. HH Size	10	7.2	6.3
Per cent Female Headed HH	54	54.0	67.0

2.9.2. Composition

There is a divergence between regional samples in terms of the number of children present in a household as compared to adults. Kavango has the lowest number of children in the household, while the Oshikoto sample has highest. In terms of “other relatives,” the Kavango sample by far had the highest number. In the NHIES, “other relative” is defined as “other in-laws or aunt or uncle” of the head of the household. This category represents other adults who have moved into the household. Their significance will be discussed below in the section on changing household structure. Table 8 shows household composition in the sample.

Table 8: Household Composition, Sample

	Kavango	Oshana	Oshikoto
Head	42	51	50
Partner/Spouse	21	34	13
Child	164	209	235
Father/Mother of HH	6	7	10
Other Relative	189	57	9
Other Non-related Person	7	5	-
Missing	1	6	-

2.9.3. Orphans

Different definitions of what constitutes an orphan are in use in Namibia. In developmental circles an is generally considered to be a child younger than age 15 who has lost one or both parents. This approach differs from the one that emphasizes age of majority. In Namibia the age of majority is 21. Consideration has been given to both definitions because many young Namibians between the ages of 16 to 21 also attend school and are dependents even in they spend after school time in agricultural activities.

Households in our sample have higher percentage of orphans than was found in the 2001 Census. In 2001, 26.4% of households surveyed in the Kavango had orphans. In Oshana the figure was 30% and in Oshikoto 28.5%.¹⁵ In the sample the percentages are 56% for Kavango, 47% for Oshana and 56% for Oshikoto. Using the expanded definition of 21 and younger, the percentages increase to 65% for Kavango, 51% for Oshana and 58% for Oshikoto.

Aside from the higher number of sampled households with orphans, two other points deserve mention. First, a striking aspect of data from the Survey is the preponderance of orphans whose fathers have died. Clearly men in the sample have died leaving spouses and children. The death of men takes away significant contributions to agricultural production. In many parts of the three Regions it is men who gain access to agricultural land, who provide much of the heavy labor in preparation of fields and who provide significant inputs into livestock production. The disproportionate loss of men in HIV affected households has definite impacts on food production. Second, the steep increase of orphans in Kavango when the definition is expanded to include older youth, may be an indication that the epidemic in that Region is in a different phase than the other two Regions. Tables 9 and 10 below show the breakdown of households with orphans as found in the survey.

Table 9: Households with orphans younger than 15, Sample

Region	Both Parents	Mother Alive	Father Alive	Total HH affected	Sample size	% of HH's
Kavango	7	17	7	24	43	56%
Oshana	5	18	8	24	51	47%
Oshikoto	3	21	6	28	50	56%

Table 10: Households with orphans younger than 21, Sample

Region	Both Parents	Mother Alive	Father Alive	Total HH affected	Sample size	% of HH's
Kavango	12	23	8	28	43	65%
Oshana	6	21	9	26	51	51%
Oshikoto	3	23	6	29	50	58%

2.10. Household Level Responses to HIV

One predicted impact of the HIV epidemic is changes in the demographic structure of households. As has just been shown, a majority of orphans in the sample have lost their fathers. As men die, surviving widows are placed under different types of

¹⁵ These were for orphans age 15 and younger.

pressure. One is the to take up the productive tasks of their partners. These widows may not have the skills, strength or time to effectively complete these added chores. A second type of pressure is social. In some parts of the study area, widows can be forced by in-laws to either hand over significant productive assets (livestock), or to leave the homestead all together. In some instances violence occurs with households burnt down and/or physical force used to evict the widow. Such attitudes existed before the HIV epidemic, and have been the subject of changes in both traditional and formal laws aimed at eliminating the practice. However, on the ground, in isolated communities, traditional attitudes are still in force and this problem is on-going.

The stress placed in households affected by HIV enhances, perhaps distorts, a long held cultural practice. "Child swapping," when a child is sent to live with extended family, is common in Namibia. The stated reasons for this practice are to make the child familiar with extended family thus introducing him or her to the wider social network in which rural people exist. Extended families provide a social safety net for many rural households and there can be a regular movement of people between different households, a movement that can be influenced by prevailing socio-economic conditions.

HIV affected households turn to their established coping mechanisms. They seek assistance from both family and community based reciprocity networks. Evidence from our sample indicates that HIV affected households make use of these networks to differing degrees, and that there are regional variations which raise questions on the long term ability of these networks to provide assistance. When we examine households across Regions, differences emerge. Households in the Kavango represent one extreme of change, those in Oshana are in the middle, while those of Oshikoto represent an opposite of Kavango.

2.10.1. Kavango

Households in the Kavango sample are much more likely to have orphans and to have taken in relative from other households than is the norm for the Region. Both the 2001 Census, and a more recent large scale survey carried out by Johns Hopkins University show that far fewer households have orphans or "other relatives."¹⁶ Other relatives in the sample are 44% of household members. The Census returns 16% for the Kavango Region. The Johns Hopkins – Kavango Report indicates a percentage similar to the Census.¹⁷ In terms of orphans the sample shows that 56% of households had orphans compared with 26.4% of

¹⁶ Murray-Johnson, L., et. al., 2004. HIV/AIDS Strategic Information Report – Lifestyles, Knowledge, Attitudes, and Practices: A baseline household survey of residents from Andara, Nyangana, and Rundu, Namibia. Baltimore, MD: Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs. Hereafter referred to as the "Johns Hopkins – Kavango Report."

¹⁷ Both Johns Hopkins Surveys measure "other relatives" in a different fashion from the NHIES.

households as reported by the Census. It The Johns Hopkins – Kavango report only looks at households that have taken in orphans of family members who are either ill from AIDS or have died from AIDS. Only 2.9% of their sample has taken in a child whose parent is sick, and another 3.4% have taken in a child whose parent has died.

When the age structure of “other relatives” in the sample is examined, the majority are young people. Children younger than 14 make up 56% of this category while youth aged 15 to 29 make up an additional 31%. Table 11 shows the gender and age breakdown of the category “other relatives.”

Table 11: Other relatives in Household by Age and Gender, Kavango Sample

	Females	Males
Younger than 15	49	50
Older than 15, younger than 30	30	25
Older than 29, younger than 65	12	8
65 Plus	-	1
Total*	91	84

*Missing values (14) not included.

Results from the sample indicate a much higher absorption rate of children and young people for HIV affected households than the general population. One would expect the opposite, that HIV affected households would be sending children and young people away to other households within their extended family and/or community network as a way to relieve financial burdens. Instead, households in the sample have taken on additional responsibilities as they faced the challenges of a member who is chronically ill.

One possible explanation is that extended family and community based security networks, in which the Kavango sample reside, have broken. They have reached their limit to respond. Those families we surveyed have probably taken children from households that have themselves disintegrated. The large number of adults, 30 and older as well as young people between 15 and 29, indicates that households are merging. This could be an indication of the severity of pressure placed on widows. Widows, particularly if they are younger, may be forced to leave the matrimonial homestead and return to their families. It may be that in the Kavango, this practice is more common. The collapse of traditional coping mechanisms will take on added significance when we examine food security.

2.10.2. Oshana

Just under half, 47%, of the households in the Oshana sample have orphans.¹⁸ In the 2001 Census, the figure for the region was 30%. For the Oshana sample, 16% of household members were classified as “other relatives.” As can be seen in Table 12 below, some 90% of other relatives living in these households were younger than thirty. Sixty-five percent were below 15. This is a pattern similar to the Kavango, though the Oshana sample has roughly one third the number of “other relatives.”

Table 12: Other Relatives in Household by Age and Gender, Oshana

	Females	Males
Younger than 15	18	16
Older than 15, younger than 30	8	5
Older than 29, younger than 65	2	2
65 Plus	-	1
Total*	28	24

*Missing values (5) not included.

Coping mechanisms in Oshana may be under stress, but they have not broken as appears to be the case in Kavango. The low number of adults over 30 indicates that households are not merging.

2.10.3. Oshikoto

Oshikoto presents a different picture. Well over half, 56%, of households in the sample have orphans under 15. An expansion of the definition to the age of 21 only slightly raises the percentage. The 2001 Census shows that 28.5 % of households had orphans. In sharp contrast to the other two regions, the number of “other relatives” within the households was less than 3% of household composition. While orphans are common, taking in people from other households is not. In addition, households in the Oshikoto sample are the smallest of the three regions.

Child swapping and/or household consolidation is not taking place with the frequency of the other two regions. Effectively, this leaves extended family and community coping mechanisms unaffected. Hence they remain viable options for families under stress. One factor that may affect this situation is the positive action of the local traditional leadership. In the mid-1990s, the Ondanga Traditional Authority had its tribal laws codified. As part of this process, widows were given

¹⁸ For 0 to 14 years of age.

rights to the property of the marriage, including the right to remain at the matrimonial house.

3. Income and Expenditure

The HIV epidemic has significant economic impacts on households. Patterns of income and expenditure in the households studied reflect this fact. In the sample of HIV affected households, non-farm income is minimal. Farming income does not go beyond subsistence for most of the households studied. Consequently, expenses are also minimal. NHIES data would be useful in this discussion because it would allow comparisons, particularly with matching income deciles. This comparison will have to be done in future. Here, data from secondary sources will be used.

When households were asked for their main source of income, transfers – pensions and drought relief – were the main source for almost 60% of the sample. These households are particularly vulnerable as neither source of income is long lasting. Old age pensions paid by the Namibian Government to the elderly end when the beneficiary dies. Drought relief is a seasonal benefit. One in five households gave subsistence farming as the main income source. Almost 10% gave wages as the main income for the household. Table 13 below shows the results for the sample.

Table 13: Main Source of Income, Sample

Main Source of Income	Number
Salaries/Wages	14
Subsistence Farming	29
Commercial Farming	1
Business	1
Pension	59
Remittances	6
Drought Relief	27
No source of Income	7
Total	144

3.1. Non Farm Income

Premature death of by household breadwinners has ripple effects through the household's income potential. Not only is labor for agricultural production lost, but the the death of an adult also means the loss of additional income he or she may

bring in via non-farm employment. Surviving adults find their ability to earn non-farm income restricted as they are required to take on additional tasks within the household. A survey carried out in the Ohangwena Region in 2003 found that in affected households: "...fewer people are able to earn their living through farming-related activities." Adults lost approximately 40% of their working time to caring for sick household members and attending funerals. This loss of earning ability forced households to depend on remittances, old age pensions and gifts. 19 Households in this study differ from this conclusion in that non-farm income is essentially a non-factor for the majority of households surveyed.

3.2. Non-Farm Employment

Non farm income, for those households who claim it as a source, averages between N\$ 300 (US \$45) to N\$ 650 (US \$98) per month, excluding the two households found with high salaries. A total of 37 people in the sample had non-farm income. Types of employment by region are shown in Table 14. Self-employed usually means an informal sector business. Common pursuits are, running a *cuca* shop (*shebeen*), or selling different food stuff, making baskets or selling roasted meat, called "okapana." Those employed by a private employer are likely to be working in an informal business. There are 9 workers employed by the government. This group has medical aid and a pension scheme. Medical aid is crucial if either the worker or his/her dependent(s) are infected with HIV or ill due to AIDS.

Table 14: Non Farm Employment, Sample (Number of Responses)

	Kavango	Oshana	Oshikoto
Private Employer	2	12	2
Government	3	5	1
Self Employed	4	6	2
Number employed	9	23	5

When employed respondents were asked to provide their monthly income, sixteen provided information. Income ranged from N\$ 300 to N\$ 4,500 per month with an average of N\$ 1,143. Two persons in the sample made N\$ 4,500 each, or just under half the total, leaving the other 14 respondents to average N\$ 630.

People were asked the reason for not working during the past week. Being a student was the most common answer recorded. This reflects a widely held attitude that young Namibians should attend school. The inability to find work was the

¹⁹ FAO. 2003, *The Impacts of HIV/AIDS on the Agricultural Sector and Rural Livelihoods in Northern Namibia*. FAO. Windhoek. P. 16. Hereafter referred to as the "AIMS Report."

second most frequent response. Illness or disability was either the third or fourth most frequent reason depending on the region in question.

3.2.1. Pensions

Out of the total sample, sixty-two household members reported receiving old age pensions. Namibia provides old age pensions to people sixty years and older. Old age pensions are a major source of income for low income households. The pensions pay N\$ 300 (USD \$ 45) monthly. Of the 144 households in the study, 59 reported that pensions were their main source of income.

3.2.2. Household Assets

Respondents were asked about ownership or access to common household assets. Tables 15 and 16 below provide results. The most common household asset is a radio, followed by a telephone or cellphone. Of assets used for agricultural production, a plough is the most common, followed by a wheelbarrow.

Table 15: Own or Have Access to Common Household Assets, Sample(% HH)

Asset	Kavango	Oshana	Oshikoto
Radio	65	90	94
Television	0	0	2
Telephone/ Cellphone	9	8	20
Motor vehicle	2	0	2
Sewing machine	2	6	6
Donkey Cart	0	12	14

Table 16: Own or Have Access to Agricultural Assets, Sample(% HH)

	Kavango	Oshana	Oshikoto
Plough	30	29	56
Tractor	0	0	2
Wheelbarrow	5	4	18
Grinding Mill	0	0	0

While 80% of households own a plough, only 22% of households own donkeys. Donkeys are the most common draft animal in the study area. Those households that do not have donkeys must either borrow or rent them from others in their community during plowing season, or not use them at all. As will be pointed out below, it is safe to say that a large percentage of the plows owned are not used.

3.3. Farm Income

With non-farm income essentially a nil, then production from farming should be the basis for household survival. Yet, as the AIMS Study concludes, farming is decreasing in importance among households affected by the HIV epidemic. This study shows an across the board decline in agricultural production. Households affected by the epidemic planted smaller fields than unaffected households. Households headed by youths cultivated approximately half of the 3.5 hectares available for each household. Households headed by widows and those who had taken in orphans (most like the sample examined here) cultivated respectively 0.4 and 0.3 of a hectare less from the years 2002 to 2003.²⁰ In addition to decreases in area planted, affected households also had lower yields per hectare than unaffected households.²¹ A final finding of the AIMS Study is that increasing numbers of households are using hand labor to cultivate fields rather than draft animals. This obviously has a negative effect on overall yields.²²

3.3.1. Staple Grains

With formal and informal income limited, households in the sample rely on agricultural production for subsistence. Yet, here too, there are major deficits. It is well known that pearl millet (known locally as omahangu) is the staple food in the study area. In order to determine whether or not households sampled are producing enough crops to survive, an analysis of food consumption requirements versus crop production is presented.²³

Calculations were made in the following manner. The average male requires 2,944 calories per day. A non-lactating female requires 2,140 calories per day. Since the questionnaire did not distinguish between lactating and non-lactating females, all women are assumed to be non-lactating.²⁴ According to the FAO, Namibians get

²⁰ AIMS Report, pp. 11-12.

²¹ The area selected for the AIMS Study research had experienced a drought in 2002 to 2003, and there were decreases in both total hectares planted and yields for the whole sample. HIV affected households showed saw larger decreases in hectares planted and yields.

²² See the comment on the use of ploughs in the previous section.

²³ We thank Linda Larsdotter, Nutrition Advisor, NANASO, for useful comments on this section.

²⁴ The caloric requirement for lactating women is 2,640 calories per day.

53% of their Daily Energy Supply (DES) from cereals.²⁵ This means that men receive 1,560 calories and women, 1,134 calories from grain daily. One hundred grams of cooked millet yields 119 calories.²⁶ Hence, on a daily basis, an adult male requires 1.31 kg of cooked millet, and an adult female 0.952 kg.

An assumption is made that in making millet porridge (known locally as “oshifima”) only 75%, or in this case 75 grams, of millet flour is needed to make 100 grams of porridge.²⁷ The daily requirements of adult males and adult females will be 0.982 kg and 0.714 kg of millet flour respectively. On an annual basis a man needs 358 kg of millet flour while a woman requires 261 kg of millet flour.

The table below shows the number of kilograms required to meet DES per average household in the sample. Two additional assumption are made. First, that the number of men equals the number of women. Hence, for each adult an annual average of 310 kg of millet is required to meet DES. Second, that adult values apply to household members above 15, while for those below 15 half the adult rate is assumed. Hence, for those 14 and below, the annual requirement of millet is 155 kg.

Table 17: Annual Pearl Millet Production Requirements per Household, Sample

	Kavango	Oshana	Oshikoto	Sample
Ave. HH. Size	10	7	6	8
Ave. under 15	4	3	3	3
Ave. over 15	6	4	3	5
Kg. of pearl millet to meet 53% of caloric requirements	2,170	1,550	1,395	1,705

With the above figures it is possible to examine crop production to ascertain if agriculture compensates for the shortfall in other forms of income. In terms of pearl millet, it does not, as can be seen in Table 18.

²⁵ FAO. *FAO – Nutrition country Profiles: Namibia*. FAO. Rome. 2001

²⁶ [Http://www.nal.usdagov/fnic/foodcomp/](http://www.nal.usdagov/fnic/foodcomp/).

²⁷ This may be less depending on personal preferences on the thickness of the porridge.

Table 18: Annual Pearl Millet Production per Household, Sample

Households	Kavango	Oshana	Oshikoto	Sample
No. HH Below caloric requirements (Produced a crop)	37	40	47	125
Did not produce a crop	6	5	0	11
No. HH above caloric requirements	0	6	3	8
Percent below caloric requirements	100%	87%	94%	%86
Percent above caloric requirements	0%	13%	6%	%14

Almost nine out of ten households in the sample are food insecure, though there is variation across the regional samples. The AIMS Study found that HIV affected households were more susceptible to days without food during the previous month.²⁸ The authors show that HIV affected households have started to reduce areas of cultivation as well as make changes in crop choices. The reason given for both in this survey was the loss of labor due to the death of a family member important to agriculture (usually an adult male).²⁹ Previous studies in Namibia have noted that as the epidemic increases mortality, households lose available labor and as a result, plant smaller fields.³⁰

3.3.2. Other Crops

In addition to pearl millet, maize and sorghum are the most common crops. These are grown in lesser volumes than millet. The next three illustrations show regional breakdowns of production. In Kavango, three farmers produced sorghum while seventeen produced maize. As the AIMS Report notes, crop substitution is used as a strategy in some HIV Affected households.³¹ Maize is apparently planted in place

²⁸ AIMS Report , p. 18. H

²⁹ AIMS Report, pp. 11 – 13.

³⁰ Matanyaire, E. 1999. *The Impact of HIV/AIDS on Farming Communities in Namibia*. FAO. Windhoek. P. 13, University of Namibia/FAO *The Impact of HIV/AIDS on the Different Farming Sectors in Namibia*, FAO, Windhoek. ms. Published document available from FAO in Windhoek. P. 34.

³¹ AIMS Report, p. 12. We are also grateful to Linda Larsdotter, Nutrition Advisor, NANASO for insights into this discussion.

of millet, due ostensibly to the fact that less labor is required to produce a crop. In the Kavango, 17 households have planted maize while 13 have produced less than 150 kg. In Oshikoto 26 households have planted maize with 24 producing less than 150 kg.

For HIV affected households this might appear as a reasonable strategy, but three factors make this more of a 'Devil's Trade-off' in a cycle of declining production. Maize is a heavy feeder and can deplete soil if not rotated. Fertilizer is also a key input into maize production. On page 33 below, it is shown that very little is spent by the sample on agricultural inputs, particularly fertilizer. In Kavango no fertilizer was purchased. Maize also requires more rainfall than millet. In Namibia's variable climate localized droughts are common, making regular production of maize a risky enterprise. Commercial maize growers in the country consider a good crop every third year as successful. Lastly, maize meal is generally considered less nutritious than millet flour due to maize's inferior amino acid composition. People may be making serious errors in this choice, and they need to be provided with better options. Illustrations 2, 3 and 4 below show the picture of other crop production for the different Regions in the sample.

Illustration 2: Number of Households by kg. of Other Crop Production, Kavango Sample

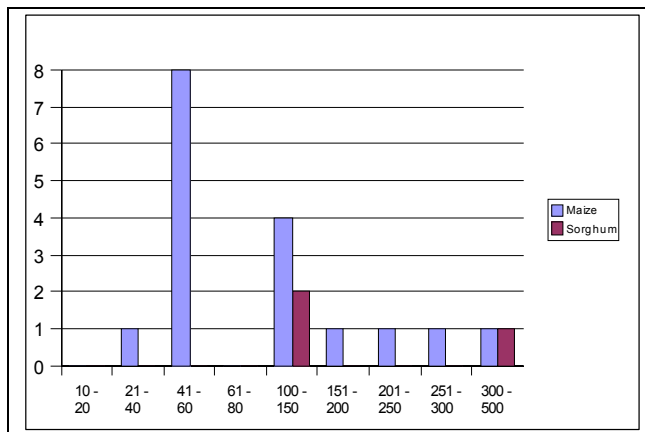


Illustration 3: Number of Households by kg. of Other Crop Production, Oshana Sample

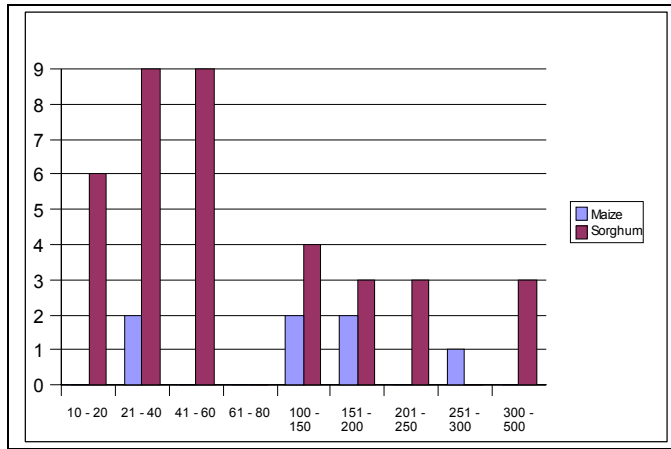
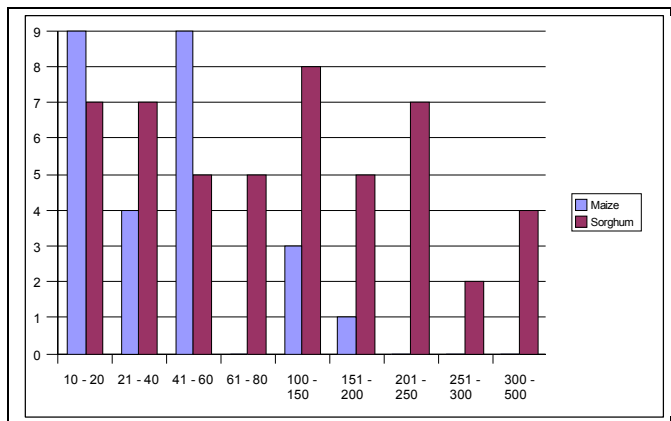


Illustration 4: Number of Households by kg. of Other Crop Production, Oshikoto Sample



3.3.3. Sale of Crops

Given the low levels of income from employment and other sources, the sale of crops could be an important source of financial support. In the Kavango sample, no grain was sold. Even the highest producing households kept their crops. Excess was probably retained as a buffer against drought, or perhaps to barter for goods and services. In Oshana and Oshikoto crops were sold. Very few households were able to sell. On average a household that sold crops earned between N\$ 119 (US \$18) and N\$ 350 (US \$53) for the year. To put this into perspective, the upper amount is N\$ 50 above one monthly old age pension payment. Table 19 on the next page provides a summary of crop sales.

Table 19: Sale of Crops, Oshana and Oshikoto Samples

	Oshana	Oshikoto
Millet		
No. HH. Sold	2	6
No. Kg. Sold	140	770
Total Value (N\$)	700.00	1,480.00
Ave. Price per kg (N\$)	5.00	1.91
Ave income per HH (N\$)	350.00	246.47
Maize		
No. HH. Sold	2	6
No. Kg. Sold	34	83
Total Value (N\$)	450.00	715.00
Ave. Price per kg (N\$)	13.24	8.61
Ave income per HH (N\$)	225.00	119.17
Sorghum		
No. HH. Sold	1	18
No. Kg. Sold	48	1,201
Total Value (N\$)	160.00	3,859.00
Ave. Price per kg (N\$)	3.50	3.21
Ave income per HH (N\$)	160.00	214.39

The production and sale of non staple crops was investigated. Only one household in the Kavango mentioned producing another crop, at a very meager level of 25 kg. In Oshana one or two households grew other crops, fruits and vegetables. One

household reported growing 1,250 kg of another grain (not specified) and another grew 250 kg of fruit. In Oshikoto no households produced another grain type. Five households produced almost 500 kg of fruit, while two households produced a total of 55 kg of vegetables.

3.3.4. Livestock

In Kavango 33 households kept livestock, Oshana, 24, and Oshikoto 40. The questionnaire asked about the number of livestock owned now and the number owned a year ago. A key point of concern is whether or not livestock are sold to cover costs associated with HIV. The pattern was mixed. As most households own very few head, or none at all, livestock cannot be seen as an alternative food/income source to the general deficit found in staple crops.

The two illustrations on the next page plot household ownership of cattle in the Kavango and Oshikoto Regions from 2003 to 2004.³² As can be seen, owners of medium sized herds in the Kavango show a drop in livestock numbers over the previous year, while those in Oshana and Oshikoto show a mixed pattern. In general, households with middle-sized herds tend to have fewer livestock in 2004 than 2003. Those with very few livestock have either maintained their herd size (not a good sign because it means no increase in wealth), or had a mixed record. Those with larger herds tended to either maintain or increase their assets. A group of four households in the in the Kavango, owning between 15 and 47 head of cattle show large decreases in the size of their herds. One household shows a drop of over 20 head , two others show a drop of approximately 18 head. The loss of these animals are not related to sales. Only two households reported selling cattle. This decline can be attributed to funeral expenses and loss due to lack of sufficient resources to look after animals.

³² Oshana and Oshikoto are similar hence only one illustration is shown.

Illustration 5: Cattle ownership by Household 2003 to 2004, Kavango Sample

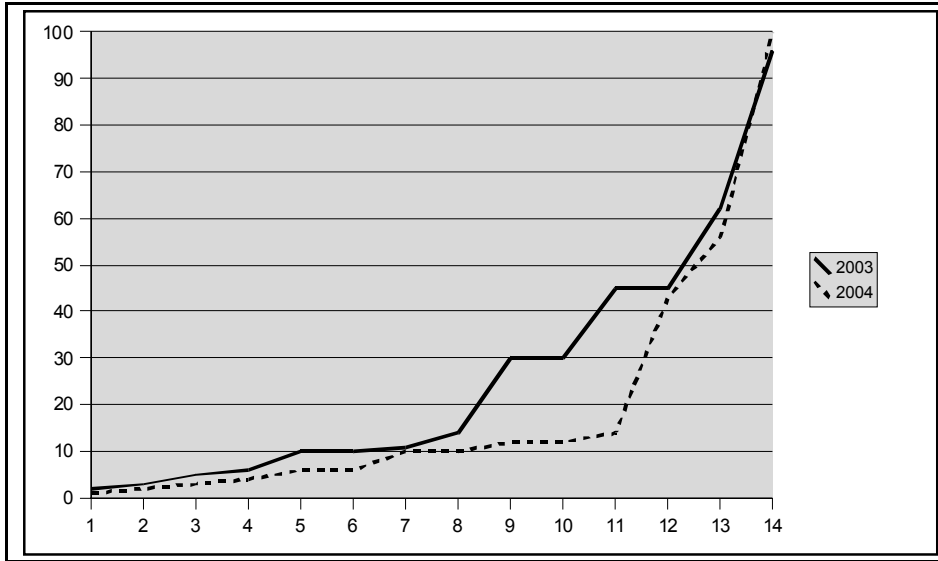
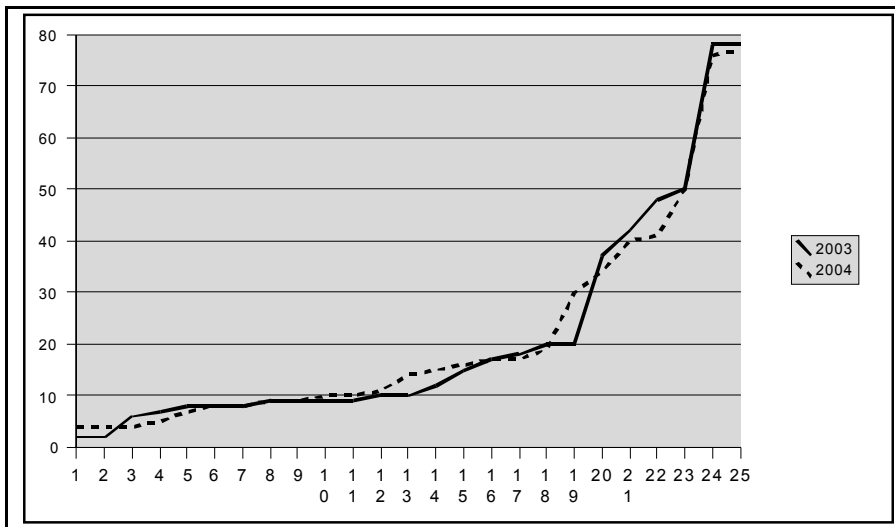


Illustration 6: Cattle Ownership by Household 2003 to 2004, Oshikoto Sample



In Kavango twelve households had goats. The range was 2 to 110 head with an average of 22. Both low and medium sized herd owners have seen a decline in numbers. One household with less than 10 goats managed to increase their herd slightly, the rest stayed the same. Only those with the largest goat herds were able to increase their numbers. One household kept 6 pigs. Thirty-three Kavango households have chickens. The range was from 1 to 70. No household gave an estimate of the number of eggs produced. Four households reported selling chickens for a combined total of N\$ 400.

In Oshana twenty households owned goats. The size of herds was 1 to 63 with an average of 20. There were seven owners of sheep in Oshana. The most owned was 12. Thirteen households owned pigs. One household had 30, while others had

between 1 and 6. Three quarters of households had chickens. The range was from 1 to 100. Eighteen households reported selling chickens during the year, but none placed a value on the sale. Ten households reported that they received a total of 216 dozen eggs from their chickens with a range of two to one hundred dozen. One household sold eggs for a value of N\$ 360.

In Oshikoto thirty-five households had goats, with a range of 2 to 82. Only one household in Oshikoto kept sheep with a slight increase from 3 to 5 between 2003 to 2004. Thirty-five households kept pigs. Twenty eight had only 1 pig. Seventeen of the households that sold a pig did so for anywhere between N\$ 35 and N\$ 600 per animal. The average price per pig sold was N\$ 295. Thirty-nine households had chickens. The range was from 3 to 170. Eighteen households sold chickens for between N\$ 20 and N\$ 700. Egg production ranged from 1 dozen to 200 dozen. Six households sold a total of 168 dozen eggs for a total of N\$ 434.

Table 20 on the next page provides a summary of livestock sold in the three regions. Two factors stand out. First, very few households sold livestock. Second, the Kavango sample is the least economically active (or agriculturally productive) while the Oshikoto sample is the most active. The majority of households do not own enough livestock for regular off take even for their own consumption. The small number of households that were able to sell animals made moderate amounts, though the three households in Oshikoto who sold cattle stand out for the high income they received.

Table 20: Sale of Livestock in 2004, Kavango, Oshana and Oshikoto Samples

	Kavango	Oshana	Oshikoto
Cattle			
No. HH Sold	2	1	3
No. Sold	2	6	9
Total Value (N\$)	3,400	N/A ³³	28,530
Range (N\$)	1,000 – 2,400	N/A	1,800 – 9,000
Ave. Income per HH (N\$)	1,700	N/A	9,510
Pigs			

³³ This was a refusal to provide information.

	Kavango	Oshana	Oshikoto
No. HH Sold	N/A	6	3
No. Sold	N/A	9	19
Total Value (N\$)	N/A	N/A	5,616.00
Range (N\$)	N/A	N/A	35 - 600
Ave. Income per HH (N\$)	N/A	N/A	1,872.00
Goats			
No. HH Sold	2	2	10
No. Sold	13	6	18
Total Value (N\$)	2,550.00	N/A	4,405.00
Range (N\$)	N/A ³⁴	N/A	120 - 650
Ave. Income per HH (N\$)	1275.00	N/A	440.50

3.4. Expenses

In this section agricultural expenses followed by household expenses are examined. Most households spend very little. There are a few households, however, with much higher expenses. Where relevant the median value in addition to the average value of expenses will be shown so the reader can have an appreciation for skewed results.

3.4.1. Expenses on Agriculture

It is generally accepted that to achieve good agricultural yields, a certain level of input is required. Some, but not all of the households interviewed were able to purchase inputs for their farming operations. The following tables provide information on the levels of input for the regions sampled. The Kavango sample,

³⁴ Respondent gave total of all sales and not a breakdown of price per animal.

where yields were the lowest shows almost no expense on inputs. Even those households with high levels of production did not provide inputs into farming. Tables 21 and 22 show a breakdown of expenses on agricultural inputs.

A key factor in improving agricultural performance is extension services. In much of the study area those services were non-existent prior to 1990. After Independence, there were shortages of trained extension workers and facilities. In some areas of Northern Namibia extension services are still not well developed, and farmers may not get regular visits from extension workers. A study carried out by the University of Namibia for the FAO in 2001 found that the the poor development of extension services was the reason for fewer visits by extension workers.³⁵ Despite this finding, the impact of HIV on extension workers cannot be overlooked. Many extension workers in Northern Namibia come from these regions. They too are affected by drains on their financial resources, time spent attending to sick relatives, attending funerals and are themselves susceptible to infection.

Table 21: Expenses on Agriculture, (Seed, Fertilizer, Water) Sample Three Regions

	Kavango	Oshana	Oshikoto
Seed and Feed			
No. HH	-	11	38
Range (N\$)	-	20 – 120	8 – 250
Total Cost (N\$)	-	583	1,533
Ave. per HH. (N\$)	-	53.00	40.34
Fertilizer			
No. HH	-	1	7
Range (N\$)	-	40	30 – 200
Total Cost (N\$)	-	40	780
Ave. per HH. (N\$)	-	40	111.42

³⁵ University of Namibia/FAO *The Impact of HIV/AIDS on the Different Farming Sectors in Namibia*, FAO, Windhoek. ms. Published document available from FAO in Windhoek. P. 37.

	Kavango	Oshana	Oshikoto
Water			
No. HH	2	11	19
Range (N\$)	120 -780	6 – 120	50 – 700
Total Cost (N\$)	900	331	3,549
Ave. per HH (N\$)	450	30.09	186.78

Table 22: Expenses on Agriculture, (Farming Services, Crop Processing, Veterinary Services) Sample Three Regions

	Kavango	Oshana	Oshikoto
Farming Services			
No. HH	-	18	12
Range (N\$)	-	60 – 450	50 – 1500
Total Cost (N\$)	-	2,520	4,605
Ave. per HH. (N\$)	-	140	383.75
Crop Processing			
No. HH	-	5	3
Range (N\$)	-	180 – 280	20 – 100
Total Cost (N\$)	-	1,140	160
Ave. per HH. (N\$)	-	228	53.33
Veterinary Services			
No. HH	-	-	15

	Kavango	Oshana	Oshikoto
Range (N\$)	-	-	20 – 705
Total Cost (N\$)	-	-	2,735
Ave. per HH. (N\$)	-	-	182.33

3.4.2. Household Expenses

Data on food purchases was not collected with this survey tool. That data was part of another protocol in the NHIES and will only be available once that survey is complete. Given the meager amounts of cash found in sample households, food purchases are not expected to be high. Next, expenses such as clothing, footwear, education, and medical costs are examined. These categories had the most frequent responses. There were many other categories where a few responses were obtained, and once the NHIES report is completed, they will be dealt with in another version of this report. In cases where one region had a high number of responses yet another region did not, data from all three regions is presented.

The Kavango sample has the least to spend, and the lowest incidence of expenses. This pattern is clear in all but one category: education. In Oshikoto respondents have the highest level of expenses. They stood out in one category: gifts. Thirty-four households gave gifts to non-household members. These ranged from N\$ 25 to N\$ 1,500 with an average of N\$ 242 and a median of N\$ 135. The high rate of gift giving in Oshikoto could be an additional sign that extended family and community networks of reciprocity remain viable.

Clothing and footwear are major expense categories. Roughly 10% of Kavango households, 50% of Oshana households, and 95% of Oshikoto households purchased these goods in 2003/2004. Costs for fees and remittances was frequently reported. Fees included tribal and religious fees as well as money sent to other households as remittances. Table 23 below shows the results.

Table 23: Total Estimated Costs of Remittances, Religious, Tribal Fees, Sample Three Regions

	Kavango	Oshana	Oshikoto
No. HH	-	15	31
Range (N\$)	-	20 – 1050	12 – 2,810
Total Cost (N\$)	-	2,920	9,536
Ave. per HH. (N\$)	-	194	308

	Kavango	Oshana	Oshikoto
Median (N\$)	-	100	155

3.4.3. Education

Table 24 shows results of expenses on education. Here, a major break in the regional pattern occurs. Households in the Kavango sample may not spend much, but they do spend on education. Thirty-eight out of the forty-three households spent money on education. Some households spent a great deal as the top four spent 70% of the total cost at a rate of N\$ 5,721 per household. If top spending households are removed from the analysis, then the other thirty-four households spent an average of N\$ 286.

Just about half of households in Oshana spent on education. This is a much lower proportion than the other two regions. In terms of amounts spent, Oshana households are close to Kavango, if one removes the outliers from the Kavango calculations. In Oshikoto a similar pattern emerged. Forty-five out of fifty households spent money on education. The top five households spent 55% of total educational expenses (N\$ 10,317 or N\$ 2063 per household). The other forty households spent a total amount of N\$ 8,140 or N\$ 204 each.

Table 24: Total Costs of Education, Sample Three Regions

	Kavango	Oshana	Oshikoto
No. HH	38	26	45
Range (N\$)	18 – 12,519	15 – 1170	14 – 5,440
Total Cost (N\$)	32,614	5,843	18,457
Ave. per HH. (N\$)	858	225	410
Median (N\$)	180	175	171

3.4.4. Medical

Medical expenses were another category in which the pattern of the Kavango sample spending very little was broken. Table 25 below shows the results for medical expenses. A large number of Kavango households report medical costs. A crucial aspect of this expenditure is that all expenses reported are for those who do not have any form of medical aid, meaning that there is no form of outside assistance for household members who are ill. Another point about the Kavango sample is that even though there is a high rate of payments by households, the overall amount spent is lower than the samples from the other two regions. The Oshana and Oshikoto samples occupy the middle and higher end of expenditures respectively. In both of the samples some household members have medical aid.

In Oshikoto 18% of households reported expenditures on medical aid. This is obviously a major assist to a household where members are either HIV positive, or ill with AIDS.

Table 25: Total Estimated Costs Medical Expenses, Sample Three Regions

	Kavango	Oshana	Oshikoto
Annual Expenditure Medical Care for Non-aid Members			
No. HH	35	30	27
Range (N\$)	4 - 1550	8 – 2247	28 – 2000
Total Cost (N\$)	8,584	10,134	11,492
Ave. per HH. (N\$)	245	338	426
Median (N\$)	120	185	200
Annual Expenditure Medical Care for Aid Members			
No. HH	-	3	9
Range (N\$)	-	80 – 540	5 – 2100
Total Cost (N\$)	-	720	2498
Ave. per HH. (N\$)	-	240	277
Median (N\$)	-	-	55

4. Food Security and HIV

4.1. The insecurity of HIV

In the previous two sections both income and expenses were examined. Formal and informal income among the households studied was low. Farm production as the main source of livelihood support, yet that too was failing. Here, a basic analysis of different classes of farmers in the sample is presented. On page 23 above, the low productivity of households with regard to staple crops was discussed. Using

that discussion as a point of departure, two general categories of household in response to the epidemic are described.³⁶ Those listed below are;

- collapsed communal farming (which can be further sub-divided), and;
- near collapse communal farming.

The main criteria used to delineate these categories was the ability to produce enough mahangu to satisfy basic caloric requirements. The levels were set at 0 – 1500 kg. annually for collapsed communal farming, and 1,501 kg annually and above for near collapse communal farming. Within the collapsed communal farming category a further delineation is made.³⁷

4.2. Collapsed Communal Farming

This set of households could not provide basic food requirements. Hunger is a constant feature of their existence. The long term prospects for these families is not good. HIV affected residents are caught in a viscous cycle of decline. HIV infection increases their nutritional needs as their bodies attempt to cope, but these people generally do not get enough food on a daily basis. Children in these households are likely to go to school hungry which can decrease their academic performance. Also, children may suffer in their physical and intellectual development due to chronic hunger. Over nine out of ten of the households studied fall into this category.³⁸ Within this group, however, another delineation can be drawn at 750 kg of annual mahangu production. Households at or below this threshold are in severe crisis. They are well below subsistence with relatively few options to make up for the shortfall in food production. Households above this threshold are crisis households.

4.2.1. Severe crisis households

These households have been unable to provide subsistence either through crop or livestock production. This group represents 113 out of 144, or 78%, of all households in the survey. In addition to not producing crops, few the households owned livestock. Severe Crisis households do not have sufficient livestock assets to cover the crop production deficit. The majority of these households do not have livestock and with rare exceptions, those who do, do not own sufficient numbers for regular off take either in terms of personal consumption or sale. Only one quarter of these households had cattle. Herd size ranged from 2 to 77. Half of the cattle owners had 11 head or less. Eleven cattle owners had between 12 and 43 head, while three have between 50 and 77 head. Thirty-eight percent of severe crisis

³⁶ What follows is by no means exhaustive as there may be other categories of response, particularly in other regions of the country.

³⁷ Please refer to the Tables on pages 24 and 25 above.

³⁸ This is 136 out of 144 households, or 94%..

households had goats. Herd size ranged from 2 to 110 head, but half of those who owned goats had less than 15. Fifteen households owned between 16 and 35 head, while five had between 37 and 110 head.

It is not known if these households were in poverty before they were affected by the HIV epidemic, or if they have become poor as a result of the epidemic. The FAO study highlights the manner in which households sell livestock to cover medical costs associated with HIV, as well as the manner in which widows in some parts of the country lose their livestock after their husband passes away. This loss means reductions in both wealth and in the tools (draft animals) required for increased production.³⁹ Regardless of the pathway severe crisis households took into poverty, it is clear that these households have few resources to allow them to emerge from poverty by their own means. With this group of households a hard question must be asked. Is it best to rehabilitate these households in terms of agricultural production, or should they be supported in other ways? As was mentioned above, many of the households studied have seen a die-off of men. Their female partners are caring for children. Many of these women are likely to be HIV positive, if not already ill due to AIDS. The fate of these women, and the impact of their potential deaths over the coming 2 to 5 years could signal a more severe phase. Already there is anecdotal evidence of child headed households in Namibia, though none were encountered in this survey.⁴⁰

Assisting these households might best be achieved through cash transfers such as: free anti-retroviral therapy, support for orphans, HIV disability payments or a basic income grant. This will allow these households to keep their young in school and eventually be better able to provide for the family, whether they chose to be farmers or not. As severe crisis households begin to recover, interventions geared toward boosting agricultural production can be considered. However, thoughts of increasing agricultural production may only be viable some years into the future.

4.2.2. Crisis households

Those households that produce from 751 kg. to 1,500 kg of millet are crisis households. These households are at the bare edge of subsistence. They are producing more than the previous category, and significant numbers of them have animals. Twenty-three out of 144 households fall into this category, 16% of the sample. As with their counterparts in the severe crisis households, sustainable production for most livestock owners will not make up for the shortfall in crop production. Over half of these households (13) had cattle. The range of herds was from 1 to 56. Half of cattle owners had less than 12. A similar number of

³⁹ Matanyaire, E. 1999. *The Impact of HIV/AIDS on Farming Communities in Namibia*. FAO. Windhoek. P. iii

⁴⁰ The youngest head of household encountered in this survey was 28 years old.

households, 14, had goats. These ranged from 5 to 70 goats with half of owners having 12 or fewer animals.

These households had also seen a die off of men. A die off of women can be expected over the next few years. The reasons why these households are not as bad off as those in severe crisis is not clear. One possible answer might be that they have not been affected by the epidemic for as long as severe crisis households. Another explanation could be that they had larger asset bases when they were affected by the HIV epidemic. Longitudinal studies would show if these households are a transitional phase. Crisis households will also require transfers to be able to sustain themselves. Again, a key objective should be to keep children in school so they can become long term solutions to the overall causes of collapse. Interventions to assist this group of households in rehabilitating their agricultural production can also be considered. Prior to agricultural interventions, there should be an assessment of the household's productive capacity in order that appropriate assistance is given.

4.3. Near Collapse Communal Farming

This group produces more than 1,500 kg. of mahangu per year.⁴¹ Eight households, 6% of the total sample, fit into this category. All of these households owned cattle and goats. The range of herds was 6 to 40 for cattle, and 9 to 63 for goats. This group produces surpluses. It is also the group most likely to have the wherewithal to invest in their own agricultural enterprises. It is not clear if this group is newly affected by the HIV epidemic, or if they have simply been able, for other socio-economic reasons, to maintain their status.

With this group, intervention strategies can be more broad. The key would be to provide support that prevents a deterioration into the other two groups. These households have both labor and income that they can invest in agriculture. Interventions should be geared toward assistance that maintains the current productive regime, and which anticipates the possible loss of labor as other household members become ill. This category of households may benefit from proposed strategies to change farming systems to less labor intensive crops.

4.4. The Chilling Implications

Throughout this analysis the limitations of the small sample have been stressed. The situation in which those interviewed find themselves is dire. The chilling implication is that the sample we found is not unique, but representative of a larger segment of the rural population. If this is the case, then the country faces a crisis. A silent famine grips residents of our rural areas. The danger of this famine is that it

⁴¹ The top producing household grew 5,000 kg of pearl millet in the previous year.

does not show itself in classical form – there is no stream of refugees, no crowding around feeding stations. Instead, this famine exists within functioning communities where hungry families intermingle with their better off neighbors. The key challenges are: first be able to identify those who suffer, and second to provide them with assistance.

Namibia is, as can be seen in the analysis, in a good position to meet the second challenge. Most of those studied had at least some access to basic services such as potable water, health care and education. This basic infrastructure can be used as a platform to bring ameliorative services. The key question is whether the country can rise to the first challenge, namely identifying the extent of this famine and generating the political will to provide solutions.

5. Conclusions

“Meeting the immediate food and other basic needs of destitute households is essential.”⁴²

The HIV epidemic has had an impact throughout Namibia. In rural settings, where communities are often bound by extended kinship and close social relations, one can expect that even those households not directly affected by either illness, or loss of a relative, have in some way been asked to support a family or neighbor.⁴³ Here, the focus is on three main elements that this study has highlighted:

- dynamism in terms of both the epidemic and that of the response by people affected by HIV,
- different levels of impact of the epidemic on households' ability to produce, and different levels of intervention required to meet the needs of these households, and
- identifiable gaps in our knowledge about the pace of the disease and the response to it by Namibians.

5.1. Dynamism

Fluctuation in Sentinel Survey results presents a challenge to our understanding. As is reported above, there have been decreases, level results and increases across individual Sentinel Survey sites in the areas of this study. On a site by site basis it is not clear if these results indicate once-off patterns or are part of a larger

⁴² FAO, Committee on World Food Security. Twenty-seventh Session, 28 May – 1 June 2001. Rome. *The Impact of HIV/AIDS on Food Security*. P. 9.

⁴³ A Zimbabwean researcher (Dr. Renneth Mano) in the FANRPAN study wondered if being impacted by HIV is not now the normal situation in rural areas because the disease has been widespread for so long. Personal Communication.

pattern. What we can learn from this variation is that the epidemic appears to have different phases, as does the response to it by ordinary Namibians.

In Kavango results show that female headed households may be merging in response to the disease, a phenomenon linked to the higher rate of deaths among males. Here, the treatment of widows who in parts of the study area are often removed or forced from their marital land, and sent back to their own families, may be contributing to this. Clearly defining national and social responses to this kind of process will, given the cultural and productive variation in Namibia, require additional work to understand the matter in both its broader and localized contexts. Other processes of response, as yet uncovered, may also be underway.

5.2. Different Levels of Impact and Support

Poverty has long been viewed as widespread among communal farmers in Northern Namibia. It is not surprising that most of the households interviewed were poor, and it would not be too rash an assumption to assume that the majority of the households interviewed would have been poor if unaffected by the HIV epidemic. Rather, a more crucial factor is the extent to which the condition of poor households has worsened due to HIV. If communal farmers in Northern Namibia are considered “subsistence” farmers, then the majority of the households surveyed are not subsisting. This survey found that over 90% of households are not producing enough food to meet daily needs. The AIMS survey found that 43% of the households surveyed had times during the previous month when they experienced hunger, and that HIV affected households were more likely to experience times without food. While there may be issues of comparability between the two measures, the fact that Namibians are going hungry because of the epidemic is an undeniable reality.

Those households which have been defined previously as “collapsed communal farming,” require immediate intervention. The status of these households has to be considered critical. Those households which are defined as “near collapse” may not be in a critical phase at the moment, but they are one “shock,” – a death of a productive adult, or a bad farming year brought on by drought – from disaster. Intervention strategies need to take account of different levels of response. The first category requires immediate assistance. With households where farming has collapsed, the strategy must be for immediate food security and long term maintenance. With adults dying as a result of the epidemic, the period of intervention may span decades as younger household members require support to obtain an education and employment. Near collapse households too, require both immediate and long term assistance. They will require assessment of their vulnerability in order to pace interventions with their capacities. They may also require longer term interventions into changing farming systems, and introducing less labor intensive crops. Households that are able to maintain their farming operations might require shorter periods of intervention, but longer periods of monitoring.

5.3. Gaps in Our Knowledge

Issues of time and geography feature in the gaps of our understanding. In terms of time we are not clear on all phases of the epidemic and concomitant response by people to the epidemic's affects. This study identifies three phases, the AIMS Survey identifies four.⁴⁴ Clearly there is overlap between the typology identified here and that of the AIMS Survey as both studies have approached a similar question from different directions. There may be other dimensions to the epidemic as well. A question that must be asked is: are there different phases to the epidemic that have yet to be experienced? Identifying these phases will be crucial toward developing policies and interventions.

The second issue of geography is also important. The Regions studied all fall in the Northern communal farming areas. This area is notable for the ability to produce crops and livestock. Other parts of the country have different farming systems. Large and small stock farming dominates in the Erongo, Hardap, Karas, Kunene and Otjozondjupa Regions. Large stock farming is also prominent in parts of Otjozondjupa Region and almost all of the Omaheke Region. Some communal farming areas in these other parts of Namibia have longer histories of inclusion into and interaction with both colonial and post colonial market economies. Thus, strategies of response and intervention may differ greatly from those found in the Northern areas.

One underlying aim of this study was to show how national surveys can be used to expand knowledge about the epidemic. A notable fact encountered during the survey was that resistance to discussing the epidemic appears to be weakening. There was only one refusal to participate in the survey in all three regions. Using local case workers provided a crucial point of entry. In the future, the possibilities of this kind of multi-agency cooperation should be explored.

Understanding the impact of the epidemic on the regions and communities throughout the country requires data that is harmonized with national level surveys. In cases such as the NHIES, using the same instruments and analysis on a targeted population will yield crucial data for policy formulation, though we recommend that modifications be made to such instruments to include questions of relevance on the impacts of HIV. Ways to incorporate this type of data into national surveys need to be brought into the mainstream of development planning.

⁴⁴ The AIMS categories are: Widow Affected, Orphan Fostering, Youth headed and Other Affected.

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