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ACRONYMS

ACP	Agricultural Commercialization Programme
ADRA	Adventist Development and Relief Agency
AIDS	acquired immune deficiency syndrome
ASP	Agricultural Support Programme
CBO	community-based organization
CSO	Central Statistics Office
DACCO	District Agriculture and Cooperatives Coordinator
DCI	Development Cooperation Ireland
DMCO	District Marketing and Cooperatives Officer
FBOs	faith-based organizations
FHH-O	female-headed household fostering orphans
FHH-PLWA	female-headed household with people living with AIDS
FSP	food security pack
GMA	Game Management Area
HIV	human immunodeficiency virus
IGA	income-generating activity
ILO	International Labour Organization
ILOHAH	Improving Livelihoods of HIV/AIDS-Affected Households
IMF	International Monetary Fund
MACO	Ministry of Agriculture and Cooperatives
MHH-O	male-headed household fostering orphans
MHH-PLWA	male-headed household with people living with AIDS
MMD	Movement for Multiparty Democracy
MoH	Ministry of Health
NAMBOARD	National Agricultural Marketing Board
NCU	Northern Cooperative Union
NGO	non-governmental organization
OVCs	orphans and vulnerable children
PACO	Provincial Agricultural Coordinating Officer
PAM	Programme Against Malnutrition
PLWA	people living with AIDS
PRSP	Poverty Reduction Strategy Paper
PTA	parent–teacher association
PUSH	Project Urban Self-Help
PWAS	Public Welfare Assistance Scheme
SAP	Structural Adjustment Programme
SEA	Standard Enumeration Area
SLA	sustainable livelihoods approach
SPSS	Statistical Package for Social Scientists
TAZARA	Tanzania–Zambia Railway
TB	tuberculosis
TNDP	Transitional National Development Plan
ZAMSIF	Zambia Social Investment Fund
ZMK	Zambian Kwacha (ZMK 4 700 is equivalent to US\$1)

GLOSSARY

Dependency ratio: ratio of dependants (0 to 15 years and 65 years or over) to producers (15 to 64 years).

Drop-out rate: ratio of the number of children and young people aged between 5 and 20 years who dropped out of school to the total number of children and young people aged between 5 and 20 years who were ever enrolled in school.

Female-headed households taking care of people living with AIDS or related diseases: households headed by women in which at least one family member between 15 and 49 years of age (productive age) is long-term sick (for three months or longer prior to the survey) as a result of HIV/AIDS or related illnesses (malaria, pneumonia, TB).

Female-headed households with orphans: households that are headed by women and take care of their own orphaned children (i.e. father has died) and/or orphaned children from others (e.g. relatives).

Female-headed households taking care of people living with AIDS (PLWA) and orphans: households headed by women that experience a so-called double burden by taking care of their own orphaned children (i.e. father has died) and/or orphaned children from others (e.g. relatives) *and* having at least one family member between 15 and 49 years of age (productive age) who is long-term sick (for three months or longer prior to the survey) as a result of HIV/AIDS or related illnesses (malaria, pneumonia, TB).

Foster child: a child who is living (fostered) in a household other than that of his or her parents.

HIV/AIDS-affected households: households that are directly affected by HIV/AIDS in that at least one family member of productive age is sick and/or lost to HIV/AIDS or related illnesses, and/or that are indirectly affected through caring for orphaned children.

Household: a group of people who live in the same household, provide for each other and often share meals. Household members also include those who are temporarily absent from the household but have returned at some point in the last year and are expected to resume residence in the household in the future.

Livelihood: the capabilities, assets and activities required in order to acquire a means of living (DFID, 2000).

Male-headed households with orphans: households headed by men that take care of their own orphaned children (i.e. mother has died) and/or orphaned children from others (e.g. relatives).

Male-headed households taking care of people living with AIDS or related diseases: households headed by men in which at least one family member between 15 and 49 years of age (productive age) is long-term sick (for three months or longer prior to the survey) as a result of HIV/AIDS or related illnesses (malaria, pneumonia, TB).

Male-headed households taking care of PLWA and orphans: households headed by men that experience a so-called double burden by taking care of their own orphaned children (i.e. mother has died) and/or orphaned children from others (e.g. relatives) *and* having at least one family member between 15 and 49 years of age (productive age) who is long-term sick (for three months or longer prior to the survey) as a result of HIV/AIDS or related illnesses (malaria, pneumonia, TB).

Non-affected households: households in which both parents are alive, no orphans are being fostered, and no members between 15 and 49 years of age (productive age) are long-term sick (for three months or longer prior to the survey) as a result of HIV/AIDS or related illnesses (malaria, pneumonia, TB).

Non-vulnerable female-headed households: households headed by single, divorced or separated women that do not take care of orphans and that do not have members between 15 and 49 years of age who are long-term sick as a result of HIV/AIDS or related illnesses.

Non-vulnerable male-headed household: households headed by men that do not take care of orphans and that do not have members between 15 and 49 years of age who are long-term sick as a result of HIV/AIDS or related illnesses.

Orphan: a child under 18 years of age who has lost one or both parents through death.

Sustainable livelihood: a livelihood that can cope with and recover from stresses and shocks and maintain its capabilities and assets, both now and in the future, while not undermining the natural resource base.

INTRODUCTION

Poverty continues to be an endemic problem in Zambia. According to the Living Conditions Monitoring Survey of 1998, 73 percent of the population are classified as living in poverty. Furthermore, poverty is more prevalent in rural areas (where it affects 83 percent of the population) than urban ones (56 percent). Poverty has existed for a long time in Zambia, but it is clear that diseases, including HIV/AIDS, have exacerbated it by contributing to decreased agricultural productivity and increased household food insecurity. In fact, HIV/AIDS is eroding households' ability to avail themselves of opportunities to strengthen their economies. Northern Province has a predominately rural population (85 percent) for whom chronic poverty continues to undermine all aspects of development at the community and household levels. Such poverty is deepened by the impacts of HIV/AIDS.

Currently, it is estimated that 16 percent of the population of Zambia aged between 15 and 49 years is HIV-positive (CSO, 2000). The AIDS endemic had left an estimated 600 000 orphans by 2000, and it is projected that 974 000 children will be orphaned by 2014 (TNDP, 2003). HIV/AIDS affects both sexes, but is not gender neutral. Women are biologically more susceptible to contracting HIV in one sexual encounter than men are. Moreover, HIV/AIDS worsens gender-based differences in access to land and other productive resources such as labour, technology, credit and water. In Zambia, women and youth contribute 70 percent of agricultural labour, but they have little access to productive assets and are marginalized in the decision-making processes at both the household and community levels. These gender differences become more acute when productive resources are eroded, making female- and youth-headed households the most vulnerable of the rural poor. HIV/AIDS has no age boundaries, and the loss of adult labour has forced families to withdraw older children from school so that they can take care of younger siblings and/or help in food production.

It is against this background that Development Cooperation Ireland (DCI), the Food and Agriculture Organization of the United Nations (FAO) and the Government of Zambia, through its Ministry of Agriculture and Cooperatives (MACO), conducted a household livelihood research in order to gain a better understanding of the dynamics affecting assets and livelihood strategies that are induced by the presence of HIV/AIDS in communities and households in Northern Province.

The household livelihood research is part of the Improving Livelihoods of HIV/AIDS-Affected Households in Northern Province (ILOHAH) project and was undertaken over a total period of eight months. The research was guided by FAO headquarters and a Project Steering Committee on HIV/AIDS and Rural Livelihoods, which comprises representatives from FAO-Zambia, DCI, the Zambian Government, the Central Statistics Office (CSO) and the Northern Province HIV/AIDS Task Force. The research was implemented in **two stages**. First, **participatory livelihood analysis** was conducted in order to develop a broad understanding of the dynamics in the assets and livelihood strategies of HIV/AIDS-affected households in Northern Province and to identify appropriate livelihood interventions. Information for the various livelihood components was collected through **qualitative household, focus group and key informant interviews**. After completing the qualitative livelihood analysis and identifying possible livelihood interventions, **quantitative household baseline data** were collected for selected parameters to support the qualitative findings and to be used for future monitoring purposes.

This report summarizes the findings of the household livelihood research and comprises two sections. Section A presents the results from the participatory livelihood analysis and includes information on the macro-factors that influence livelihoods in Northern Province (Chapter 2), asset dynamics induced by HIV/AIDS (Chapter 3), household livelihood strategies and responses to HIV/AIDS (Chapter 4), and livelihood outcomes (Chapter 5). Section B describes findings from the quantitative household baseline survey and includes sections on household demographics, adult morbidity and mortality, property grabbing, education/school drop-outs, household resource bases, livelihood strategies, land and crop husbandry, and livelihood outcomes.

PART A

PARTICIPATORY LIVELIHOOD ANALYSIS



EXECUTIVE SUMMARY: PARTICIPATORY LIVELIHOOD ANALYSIS

1. A livelihood analysis was conducted in eight locations in Mpika, Mungwi, Isoka and Chilubi districts of Northern Province, Zambia. The aim was to *gain a clear understanding of the dynamics of assets and livelihood strategies that are induced by the presence of HIV/AIDS in communities and households in Northern Province*. The livelihood analysis sampled five household categories: female-headed households with orphans; male-headed households with orphans; female-headed households taking care of people living with AIDS or related chronic diseases; male-headed households taking care of people living with AIDS or related chronic diseases; and non-affected households, for comparative purposes. The livelihood analysis was followed by a baseline survey of selected parameters that can be used to quantify and support some of the qualitative findings and to provide baseline data for future monitoring purposes (Part B of this report).

Effects of HIV/AIDS on Household Assets

Human capital

2. The average age of household heads in female- and male-headed households with orphans is significantly higher than it is in other household categories, implying that these households are increasingly headed by grandparents. Moreover, female-headed households keep about three times as many orphans than male-headed households. In particular, female-headed households taking care of people living with AIDS (PLWA) bear the brunt of looking after orphans, supporting an average of about 3.6 orphans each.
3. A higher proportion of women than men heads of household are illiterate. Only about a quarter of female household heads completed primary-level education, and an even smaller proportion continued to secondary level. The disadvantages of low education levels are compounded by increased numbers of school drop-outs among the children from these households. Withdrawal of children from school is particularly high among female-headed households with PLWA. Generally, more girls than boys drop out of school.
4. The ratio of active household members (including children and the elderly) to the overall household size is significantly different among the different households, with male- and female-headed households taking care of PLWA having the lowest ratios. This means that the active members in these households have to work longer hours in order to ensure household food security.

Social capital

5. Only a few households taking care of PLWA are able to become members of cooperatives because these households lack time and face financial constraints. In Zambia, cooperatives are the vehicle through which input loans, such as those from the government-sponsored Fertilizer Support Programme, can be obtained.
6. In addition, few female-headed households with PLWA participate in community-based organizations (CBOs) because of competing labour needs and insufficient targeting on the part of service providers. The majority of the female-headed households with PLWA that do participate in CBOs are members of women's clubs and traditional birth attendant groups (41 percent). In addition, few female-headed households take up leadership positions in CBOs.
7. In all study areas, very limited community-based support was given to households affected by HIV/AIDS. Community assistance mostly consists of contributing some food and labour for funerals and visiting the chronically ill. In the absence of strong community safety nets, most of the support to HIV/AIDS-affected households comes from relatives and friends within the community.

Natural capital

8. Except for the case of resettlement schemes, land in Northern Province is communal. In both fishing and agriculture communities, female-headed households taking care of PLWA have significantly smaller portions of agricultural land.
9. Owing to the increasing difficulties that rural households face in obtaining chemical fertilizers, access to forest for slash-and-burn (chitemene) cultivation plays an important role in household food security. Access depends on the household's ability to work the land, and allocations are made by the local leadership on the basis of family size. In some areas, trees near the homesteads have been depleted, and community members have to venture further afield to find forests where they can establish fields. This has proved to be quite difficult for female-headed households, which also face difficulties in the actual slashing of tree branches.

Physical capital

10. In all study areas, ownership of tools is unequally distributed between male- and female-headed households. As a result of distress sales and property grabbing, female-headed households taking care of PLWA own fewer physical assets such as axes, shovels and radios. In addition, fewer female-headed than male-headed households own bicycles, and thus have less opportunity to transport their produce to markets. Moreover, female-headed households taking care of PLWA own fewer small ruminants than other household categories do, owing to the constant need to sell stock in order to meet immediate cash needs.
11. Regarding the adoption of improved farming technologies, such as fertilizers, chemicals and improved seed, female-headed households taking care of PLWA and/or orphans use less fertilizer and fewer improved varieties and chemicals than male-headed households, because they lack financial resources to purchase them. This has an impact on crop productivity.
12. Property grabbing is common at all study sites, and is increasing as a result of high poverty levels. About 29 percent of the female-headed households interviewed had experienced property grabbing of household goods such as furniture, radios, bicycles, kitchen utensils, clothing and iron sheets. More instances of property grabbing were reported in the remote fishing communities than in the predominantly agricultural communities, mainly as a result of less awareness of the Intestate Act.

Financial capital

13. *Female-headed households taking care of PLWA* have few income sources and rely mainly on sales of crops and beer to obtain cash. Following the death of the husband, in these households the proportion of income earned from fishing had declined over the last five years. The income earned from poultry had also decreased slightly, mainly as a result of distress sale. This household category spends most of its financial resources on purchasing food. In fishing communities, female-headed households with PLWA spend 31 percent of their earnings on food. In addition, HIV/AIDS and related chronic illnesses had increased household expenditure on medical fees by about 5 percent during the last five years.
14. In *male-headed households taking care of PLWA*, most income is earned through the sale of crops, daily piecework and beer brewing. The contribution of fish sales to the annual income has decreased owing to the inability of sick men to go out on lakes or rivers and to the overall decline in fish availability in Northern Province. Following the sickness of one or more members and the associated reduction in agricultural production, these households spend more money on food and medical fees. Consequently, households are left with fewer financial resources to purchase agricultural inputs.
15. In comparison with other household categories, *female-headed households taking care of orphans* rely more on beer brewing as a poverty coping strategy to secure access to finances. This is particularly true of households headed by grandmothers, where the head is becoming too old to cultivate land and the children are too young to assist.

16. *Male-headed households taking care of orphans* have relatively more active household labour compared with other households. As a consequence, they secure most of their income from sales of crops and fish, whose contribution had increased over the last five years. In addition, these households spend more on school fees, which constitute about 8 percent of total household expenses.
17. *Non-affected households* are relatively more diversified in terms of income generation, and most income is obtained from crop sales and fishing. In communities that are close to the game reserves, illegal poaching is an important income source for non-affected households, and contributes about 25 percent of annual income. Although decreasing slightly, these households invest relatively more in agriculture in terms of purchasing inputs than the other household categories do. The proportion of expenditure that they spend on medical fees is about half that spent by HIV/AIDS-affected households.

Household Livelihood Strategies

18. Crop production is an important livelihood strategy for all the selected districts. Owing to a lack of inputs among farming households and the low fertility of soil in the province, farmers are reverting to chitemene cultivation methods and low-input crops such as cassava. Households with PLWA are reverting to the cultivation of traditional staple crops to a greater extent than other household categories are.
19. Chitemene is very labour-intensive in terms of both preparing new fields and of walking to distant fields. Consequently, female-headed households with PLWA and/or orphans find it very difficult to cultivate under chitemene. As a coping strategy, these households normally resort to hiring men to cut the branches from trees in exchange for chickens or beer.
20. Fishing is an important economic activity in the livelihoods of rural households in Northern Province. About 75 percent of the households interviewed in the fishing communities are actively involved in fishing, compared with only 23 percent in the agriculture communities.
21. Households taking care of PLWA and female-headed households with orphans have fewer members involved in income-generating activities, as they have less available active labour and time. As a consequence, these households have fewer alternatives to supplement the low income they earn from agriculture and fishing.
22. Of the various income-generating activities, beer brewing was found to be an important source of income and labour exchange among all household categories, especially grandmother-headed households, which face labour and time constraints.

Livelihood Outcomes

23. One indicator for measuring livelihood outcomes is household food sufficiency. None of the household categories interviewed have food to last them all year round, and have to purchase food for periods ranging from two to four and a half months. Female-headed households with PLWA are food-insufficient for an average of 3.4 months a year.
24. 84 percent of female-headed households with PLWA perceive the future as bleak. Most of these households are headed by younger widows or grandmothers looking after sick children and grandchildren. Neither have much hope for the future: in the case of grandmothers, the household head is ageing and the grandchildren are often too young to assist in the farm work; while for younger widows, the head is either sick herself or spends most of her time nursing her sick children instead of working on the farm.

CHAPTER 1: INTRODUCTION TO THE PARTICIPATORY LIVELIHOOD ANALYSIS

1.1 Tools and Methods

The participatory livelihood analysis followed a sustainable livelihoods approach (SLA). The livelihoods approach was a useful tool for helping to understand the opportunities and constraints that households face and for identifying practical priorities for action based on the views and interests of those concerned. The sustainable livelihoods framework presents the main factors that affect people's livelihoods, and their interrelationships, including the vulnerability context, human, social, physical, natural and financial capital, livelihood strategies and livelihood outcomes. Within this framework, livelihood data and information were captured through the following instruments:

Livelihoods are defined as the capabilities, assets and activities required to obtain a means of living (DFID, 2000). A livelihood is regarded to be sustainable when it can cope with and recover from stresses and shocks and maintain its capabilities and assets, both now and in the future, while not undermining the natural resource base.

- a review of secondary data from various sources, including CSO, Misamfu Regional Research Centre, the Ministry of Health, the Provincial Agricultural Coordinating Officer (PACO), DCI and FAO;
- direct observations during fieldwork;
- key informant interviews using semi-structured checklists involving local community leaders, teachers, staff at health centres and hospitals, extension workers and representatives of local non-governmental organizations (NGOs);
- focus group discussions using checklists with groups of men, women and community leaders;



Focus group discussions with women and men

- social mapping (including wealth ranking) to determine community social assets and other aspects relating to human capital;
- social network mapping to identify the social networks that different household types employ/have access to in pursuit of their livelihoods;
- seasonal calendars to discern the division of labour by gender;
- Venn diagrams/institutional profiles to determine the presence and maturity of institutions and organizations in the study area;
- problem analysis and ranking to identify the main problems, coping strategies and their gender implications, as well as the potential solutions to these problems as perceived by the communities;
- case studies to provide in-depth information about how households are affected by HIV/AIDS and other chronic illnesses, detailing specific responses/coping strategies for different categories of households;
- household interviews using a questionnaire to quantify some of the variables and for triangulation purposes. Household data were analysed using the Statistical Package for Social Scientists (SPSS).

1.2 Sampling

Although the target population of the research was poor rural households, the household livelihood research in Northern Province aimed specifically at households that are directly affected by HIV/AIDS in terms of having at least one family member sick and/or lost to HIV/AIDS or related illnesses and/or of caring for orphaned children. More specifically, the research sampled the following five household types:

- *Female-headed households with orphans (FHH-O)*: these households are headed by women and take care of their own orphaned children (i.e. father has died) and/or orphaned children from others (e.g. relatives).
- *Male-headed households with orphans (MHH-O)*: these households are headed by men and take care of their own orphaned children (i.e. mother has died) and/or orphaned children from others (e.g. relatives).
- *Female-headed households taking care of people living with AIDS or related chronic diseases (FHH-PLWA)*: households headed by women in which at least one family member between 15 and 49 years of age (productive age) is long-term sick (for three months or longer prior to the survey) as a result of HIV/AIDS or related illnesses (malaria, pneumonia, TB).
- *Male-headed households taking care of people living with AIDS or related chronic diseases (MHH-PLWA)*: households headed by men in which at least one family member between 15 and 49 years of age (productive age) is long-term sick (for three months or longer prior to the survey) as a result of HIV/AIDS or related illnesses (malaria, pneumonia, TB).
- *Non-affected households (for comparative purposes)*: households in which both parents are alive, no orphans are being fostered and no members between 15 and 49 years of age (productive age) are long-term sick (bedridden for more than a month) as a result of HIV/AIDS or related illnesses (malaria, pneumonia, TB).

The participatory livelihood analysis collected qualitative data for the present situation. For some topics, the analysis tried to understand or measure changes over time as a result of HIV/AIDS (e.g. changed cropping patterns resulting from labour constraints owing to illness or having to look after orphans). Where applicable, the analysis identified changes that have occurred over the last five years (i.e. a recall period of five years).

The livelihood analysis was conducted in a cross-section of rural locations in Northern Province in order to provide a representational picture of the household and community economies of that province. According to the Zambia Livelihood and Vulnerability Assessment (Zambia VAC, 2003), Northern Province contains two main livelihood zones:

1. Zone 1B: livelihoods based on crops, fishing and trading;
2. Zone 2B: livelihoods based on crops, game meat, wages, charcoal and/or mining.

The research took place in three districts within zone 2B (Isoka, Mpika and a community in Mungwi) and two districts in zone 1B (Chilubi and a community in Mungwi). The districts were selected on the basis of HIV/AIDS prevalence rates and levels of poverty. Within the districts, the study was conducted in eight communities: Kananda and Mumba in Mungwi district, Kampumbu and Milongo in Isoka district, Finkuli and Lukulu in Mpika district, and Chilubi Island and Matipa in Chilubi district. In each district, one community with NGOs and/or faith-based organizations (FBOs) working in the area of asset protection (local governance, social cohesion, awareness raising on property rights, etc.) and one community without such a presence were selected.

For the interviews, the households in each community were listed and stratified into the five household types, with the assistance of village leaders, local health workers and agriculture camp officers. Staff at health centres played an important role in identifying or confirming the presence of PLWA and/or chronically ill household members. Households were then randomly selected from each of the strata at each study site. A total of 990 participants took part in the survey, which covered 232 households, 18 key informants, 77 village/community leaders, 405 men and 258 women (see Table 1.1).

Table 1.1: Participants in the household livelihood research

Community/ zone	Focus groups			Key informants		Household interviews					Total
	Women	Men	Leaders	Schools	Clinics	FHH- PLWA	MHH- PLWA	FHH-O	MHH-O	Non- affected	
Zone 1B (predominantly fishing)											
Mumba	27	26	8	1	1	5	5	5	7	2	87
Chilubi Mainland	87	52	14	1	1	12	8	7	6	12	200
Chilubi Island	37	22	7	1	1	7	7	7	6	10	105
Zone 2B (predominantly agriculture)											
Milongo	37	22	6	1	1	1	5	7	5	5	90
Kampumbu	30	43	8	1	1	5	7	6	6	4	111
Finkuli	74	49	12	1	1	5	5	5	5	4	161
Lukulu	80	27	13	1	1	5	5	5	5	4	146
Kananda	33	18	9	2	2	5	5	6	5	5	90
Total	405	259	77	9	9	45	47	48	45	46	990

1.3 Study Limitations

All research encounters difficulties of some kind or another. The following are some of the main problems encountered by this research:

- The research team very much appreciated the three vehicles that the Ministry of Agriculture in the province provided for use during field visits. However, owing to financial restraints, the vehicles had not been well maintained and so required continual repairs while out in the field.
- Provincial stakeholders had advised that Chilubi district be included in the survey. However, its remoteness meant that travel arrangements and other logistics were challenging, especially regarding travel across Lake Bangweulu to the island.
- The research team found it difficult to find enough female-headed households taking care of PLWA in Milongo community (Isoka district) because this is a settlement scheme with few households and a small population.
- In Mumba community (Mungwi district) it was difficult to find enough non-affected households for proper sampling. The HIV/AIDS prevalence rate in this fishing community is high, and many households take care of PLWA and/or foster orphans.

CHAPTER 2: MACRO-FACTORS INFLUENCING LIVELIHOODS

2.1 Introduction

This chapter starts by providing an overview of the province, including the geographical, natural, political, economical and cultural elements as they influence people's livelihoods. This is followed by a description of the shocks and trends that affect people's livelihoods. HIV/AIDS represents an extreme livelihood shock, and households have to make multiple adjustments in order to survive this threat to their survival. The chapter ends by briefly describing the institutions and organizations, both formal and informal, that operate in the study communities and that directly influence the livelihood outcomes of the population.

2.2 Context

2.2.1 Geographical context

Northern Province (see Figure 2.1) is the largest administrative region in Zambia covering an area of 148 000 km², or about 20 percent of the country's territory. It is divided into 12 districts: Kasama, Mpika, Mbala, Isoka, Nakonde, Chinsali, Mungwi, Mpulungu, Mporokoso, Luwingu, Chinsali and Kaputa.

Figure 2.1: Northern Province, Zambia



The province is served by two major all-weather tarred roads: the Great North Road and the Mpika-Mbala/Mpulungu Road. The Great North Road is the main trunk route for imports and exports to and from the United Republic of Tanzania and other East African countries, while the Mpika-Mbala/Mpulungu Road is used to transport goods for export and import through the port of Mpulungu on Lake Tanganyika. Four of

the province's 12 districts are not connected by tarred roads. The untarred roads have deteriorated as a result of heavy rainfall; most feeder roads in all districts have also deteriorated and require repairs.

The Tanzania–Zambia Railway line (TAZARA) passes through three districts in the province – Mpika, Kasama and Nakonde. TAZARA provides passenger services, as well as goods transportation as an alternative to import and export transportation between Zambia and the Tanzanian port of Dar es Salaam.

Within the province, the location of communities is influenced by the improved rail communication network and economic activities. There is high population density along the rivers owing to fishing and trading. Population density is also high along the railway line because of the good business opportunities offered. According to CSO (2000), the province has a total population of 1 407 088 people, with an average density of 9.5 people per km². The population has increased by 481 223 people from 925 865 in 1990, representing an annual growth rate of 4.3 percent. Table 2.1 indicates the population breakdown by district and gender.

Table 2.1: Population in Northern Province, by district

District	Population		District total	Growth rate (%)
	Male	Female		
Chilubi	29 055	30 418	59 473	3.0
Chinsali	64 540	64 866	129 406	3.7
Isoka	49 282	51 708	100 990	2.0
Kaputa	44 048	42 560	86 608	5.0
Kasama	89 140	90 796	179 936	3.7
Luwingu	41 587	41 782	83 369	1.5
Mbala	80 818	80 715	161 533	3.8
Mpika	72 251	73 064	145 315	1.7
Mporokoso	49 371	49 005	98 376	6.0
Mpulungu	33 049	33 283	66 332	4.1
Mungwi	69 089	73 113	142 202	6.6
Nakonde	74 396	79 152	153 548	11.9
Total	696 626	710 462	1 407 088	4.3

Source: CSO, 2000.

2.2.2 Natural environment

The province is well endowed with natural resources, including abundant land, water, wildlife and forests. Agriculture and fisheries are the major activities. There are four major fisheries in the province: Lake Tanganyika, Mweru-wa-ntipa, Lake Bangweulu, and Chambeshi River. Together these contribute about 30 percent of Zambia's fish production. The forest in the province provides income-generating opportunities from the collection and sale of caterpillars, mushrooms, wild fruits, orchids and honey. The forest is also an important resource for slash-and-burn cultivation (chitemene), and provides material for charcoal burning, fuelwood and timber.

The main environmental problems in the province are deforestation, the depletion of wildlife, soil erosion and settlement problems. Deforestation is caused mainly by chitemene cultivation, charcoal burning and the indiscriminate cutting of trees for timber and fuelwood. Wildlife is being depleted by illegal poaching for consumption and sale. Soil erosion results from a lack of awareness regarding proper land use, untimely bushfires and unrestricted fuelwood collection. Government legislation in the Fisheries Act, the Wildlife Act and the Forest Act is aimed at protecting these natural resources and promoting the sustainable utilization of fisheries, wildlife and forests, respectively.

The province falls under the country's agro-ecological zone III, with average annual rainfall of more than 1 000 mm and a growing season of about 120 to 150 days. It is subdivided into five agro-ecological zones (ARPT, 1986): the lakes depression, the central plateau, the northeastern plateau, the Chambeshi-Bangweulu floodplains, and the Luangwa Valley.

The lakes depression (zone 1) is an isolated cassava–fish system covering Kaputa, Mpulungu and part of Mbala districts. The central plateau (zone 2) contains approximately 60 percent of the province’s suitable agricultural land (ARPT, 1988) and covers Mpika, Kasama, Chinsali, Mporokoso and Luwingu districts. In 1988, this zone had a rural population of 71 000 households with a population density of four to seven people per square kilometre. The two main farming systems found in this zone are the traditional chitemene and more permanent systems, which range from traditional to more commercial maize-based systems. Most of the systems followed are mixed, depending on a variety of factors including the availability of woodland and the level of commercialization. All systems are dominated by four main cash crops: maize, cassava, finger millet and beans. Other widely grown crops include groundnuts, sweet potatoes, Bambara nuts and a variety of local vegetables.

The northeastern plateau (zone 3) has a diversity of land use methods, and incorporates parts of Mbala, Isoka, Nakonde and Chinsali districts. In 1988, the population of this zone stood at 34 500 rural households with a density of 15 people per km². This zone is characterized by a lower use of chitemene than in zone 2, more widespread use of ox cultivation and shorter fallow periods than in the rest of the province.

As in the central plateau, cassava, finger millet and maize are all used as starch staples, but maize is more important among traditional farmers in zone 3 than in zone 2. This zone is the highest maize producer in the province (ARPT, 1988).

The Chambeshi Bangweulu floodplains (zone 4) are characterized by the disappearance of the traditional chitemene land use method owing to high population density and the poor regeneration capacity of the bush wood thicket. More permanent cassava mound cultivation methods have taken its place. This zone covers Chilubi Island, Kasama, Mungwi and Mpika districts. Fish provides 75 percent of cash incomes, and farming 16 percent (PPU socio-economic survey of Mweru-wa-ntipa).

The Luangwa valley (zone 5) occupies that part of the province that falls below the Muchinga escarpment and is bounded on the east by the Luangwa River. This zone lies entirely within Mpika district and is made up of North and South Luangwa National Parks and the Munyamadzi Game Management Area (GMA). Munyamadzi GMA, which forms a corridor between the two national parks, is the only part of the zone that is inhabited, and is also known as Chief Nabwalya’s area. Sorghum, finger millet and maize are grown as staples in this zone, with sorghum being the traditional and most widely grown staple. Generally, there is little pressure on land because the population density is low. All cultivation is by hand hoe as tsetse infestation precludes the raising of cattle.

2.2.3 Political context

Since independence, Zambia has passed through three distinct political phases called republics. The first and second republics were generally characterized by a centrally managed and subsidized economy. In the agriculture sector, which is the main livelihood strategy in Northern Province, inputs such as maize seed and fertilizer were heavily subsidized and uniformly priced throughout the country. This, coupled with subsidized and guaranteed produce marketing, encouraged widespread maize cultivation in the province, in-line with the government policy of food self-sufficiency.

In the early 1970s, institutional reforms established provincial cooperative unions that replaced and strengthened the role of the then National Agricultural Marketing Board (NAMBOARD) in carrying out subsidized input and output marketing. The era following this saw tremendous progress regarding the contribution of the small-scale farming sector to the rural economy. According to Howard *et al.* (1993), the area under maize increased by 70 percent between 1983 and 1991, and the proportion of land planted with maize was around 57 to 70 percent. Several authors (Bangwe *et al.*, 1996) point out that this historical increase in maize performance was achieved at a high cost to the economy owing to marketing and distribution subsidies. By 1991, the maize subsidy was costing the government 90 million pounds (Foster, 1993). This contributed to the government’s fiscal and budgetary problems in the late 1980s, and efforts to liberalize the economy gradually started to be made, marking the start of the Structural Adjustment Programme (SAP). Attempts to liberalize the economy fully were, however, half-hearted and marked by U-

turns that led to acrimonious relations between populist politicians on one hand and reform-minded politicians, the International Monetary Fund (IMF) and the World Bank on the other (Bangwe *et al.*, 1996).

The Movement for Multiparty Democracy (MMD) Government in the third republic accelerated the pace of economic reforms with its policy document of 1992, which outlined the strategies of market liberalization, the removal of input and food subsidies, crop diversification and service provision for smallholders, and the expansion of opportunities for outlying regions. Government was to play a regulatory and facilitating role in these changes (GRZ, 1992).

One of the expected results of agricultural market liberalization was the realignment to crop production by comparative advantage. This means that areas that are not suitable for maize production would witness reduced production levels (Chuzu, 1993). A lack of subsidized inputs in Northern Province has encouraged farmers to revert to the cultivation of traditional staples (cassava and finger millet) under the slash-and-burn system of cultivation (chitemene). The demise of the Northern Cooperative Union (NCU) in the province has meant that farmers no longer have guaranteed markets for their produce. The private sector has taken over the marketing functions of quasi-government organizations in only the most accessible areas of the country, and the transaction costs in remote areas such as those of Northern Province are prohibitive. Under this scenario, farmers are increasingly relying on barter for marketing their produce.

In spite of this, agricultural development has the potential to enhance Zambia's economic performance and reduce poverty. This is very important because the majority of Zambians (more than 70 percent) depend on agriculture-related activities for their livelihoods. The agriculture sector's failure to provide secure livelihoods to the rural population is a major contributing factor to rural poverty (TNDP, 2003).

Poverty in Zambia, as elsewhere, is multidimensional and caused by complex factors. Rural poverty is largely attributed to poorly functioning markets for agricultural outputs and low agricultural productivity owing to a reliance on very basic implements combined with low utilization of agricultural inputs. The majority of the rural and urban poor earn their livelihoods from small-scale agriculture and a variety of informal income-generating activities, which tend to be short-term, seasonal and poorly rewarding. This phenomenon has generally resulted in severe food insecurity and the attendant high levels of malnutrition among both children and adults (PRSP, 2002).

In order to reverse Zambia's deteriorated socio-economic conditions, a balanced and multi-pronged approach has been outlined in the Poverty Reduction Strategy Paper (PRSP, 2002–2004). The PRSP primarily, but not exclusively, targets agricultural development as the engine of income expansion for the poor through the Agricultural Commercialization Programme (ACP) and the promotion of cooperatives to increase access to inputs and produce markets; agriculture is thus perceived to possess the best opportunities for enhancing the poor's livelihoods. In this regard, particular efforts will be directed towards stimulating agricultural growth that is sensitive to equitable resource access and use. The poverty reduction strategy recognizes, however, that the growth stimulation approach should be complemented by measures that target the poor to protect them from the adverse impacts of economic reforms and other internal and external factors. In particular, basic education and health are seen as powerful instruments for assisting the poor, and substantial resources have been earmarked for these two sectors. The PRSP also plans to reinforce other existing measures, including the poverty-focused social safety nets such as the Public Welfare Assistance Schemes (PWAS), the Social Recovery Fund, Project Urban Self-Help (PUSH), the food-for-work programme, and entrepreneurial development and training for retrenched employees. In addition to this, Zambia's PRSP has incorporated the fight against HIV/AIDS, which is a critical intervention against poverty (PRSP, 2002).

2.2.4 Economic context

Northern Province has one of the highest provincial poverty levels in Zambia in terms of the incidence of extreme poverty, but this has reduced marginally over the last ten years (see Table 2.2).

Poverty was reported to be on the increase across all the study sites. The reasons for this increase are attributed to the general economic decline in the country, which is exacerbated by unfavourable agricultural

policies and the presence of HIV/AIDS. The structural adjustment policies, particularly the agricultural policies, were singled out as unfavourable by most farmers because they have made it difficult to secure agricultural inputs, as well as to sell produce. Other factors cited by poor farmers in Northern Province include lack of employment opportunities, lack of credit facilities, and absence of a regulated market resulting in high reliance on unfair bartering (see Chapter 4).

Table 2.2: Incidence of extreme poverty in Zambia, by province

Province	Incidence of extreme poverty (% of population)			
	1991	1993	1996	1998*
Western	75.8	83.5	73.6	78
Luapula	72.5	77.8	63.9	69
Eastern	76.1	81.2	69.9	66
Northern	75.9	71.5	69.4	66
North-Western	64.5	75.5	64.8	64
Central	55.7	70.7	58.6	63
Southern	69.4	76.1	58.6	59
Copperbelt	43.8	28.1	33.3	47
Lusaka	18.7	24.3	22.0	35
Zambia total	58.2	60.6	53.2	58

Source: CSO; 1996; * CSO, 1998.

Levels of poverty vary among households (see Table 2.3). A simplified ranking based on people's perceptions of wealth revealed that most female-headed households, especially those fostering orphans, were in the poor category. The most common wealth indicators used by the communities were owning a well-stocked trading shop, being able to stock food all year round, owning livestock, being able to send own children to school, and – to a lesser extent – owning an iron-roofed house.

Table 2.3: Poverty among household types (according to community perspectives)

District	Community	Household by category (%)				
		Widow-headed	Widower-headed	With chronic illness	Female-headed fostering orphans	Male-headed fostering orphans
Mungwi	Kananda	10	7	26	60	15
	Mumba	24	6	17	38	12
Isoka	Milongo	26	5	12	18	13
	Kampumbu	18	2	10	39	34
Mpika	Finkuli	32	4	44	89	13
	Milongo	30	3	17	45	32
Chilubi	Mainland	31	Na	Na	31	69
	Island	37	Na	14	76	26
Overall average		26	5	21	50	27

Source: Field survey (social mapping).

Poverty levels also vary within the province. According to CSO (1998), Chilubi is the poorest district owing to its remoteness. It is also considered to be one of the poorest districts in Zambia. The proportion of households living in extreme poverty is estimated to be 82 percent (see Figure 2.2).

One of the contributing factors to high rural poverty levels are weak market linkages. Following the demise of NCU, the province has had generally limited produce markets. The private sector has not fully taken over the role of quasi-government institutions owing to high transaction costs. The prices of cassava and millet, which are important staple crops in the province, have remained relatively stable over the last five years, but that of maize has fluctuated considerably at both the district and provincial levels as a result of inconsistent policies and production costs. Production costs are not consistent in that the price of maize has lagged behind that of fertilizer over the last five years. The reasons cited for low average prices of maize are (Kasama District Marketing and Cooperatives Officer [DMCO], personal communication):

1. unfair competition from neighbouring countries such as the United Republic of Tanzania and Malawi;
2. long distances to more viable markets such as the Copperbelt;
3. farmers' low education levels.

Figure 2.2: Levels of extreme poverty by district

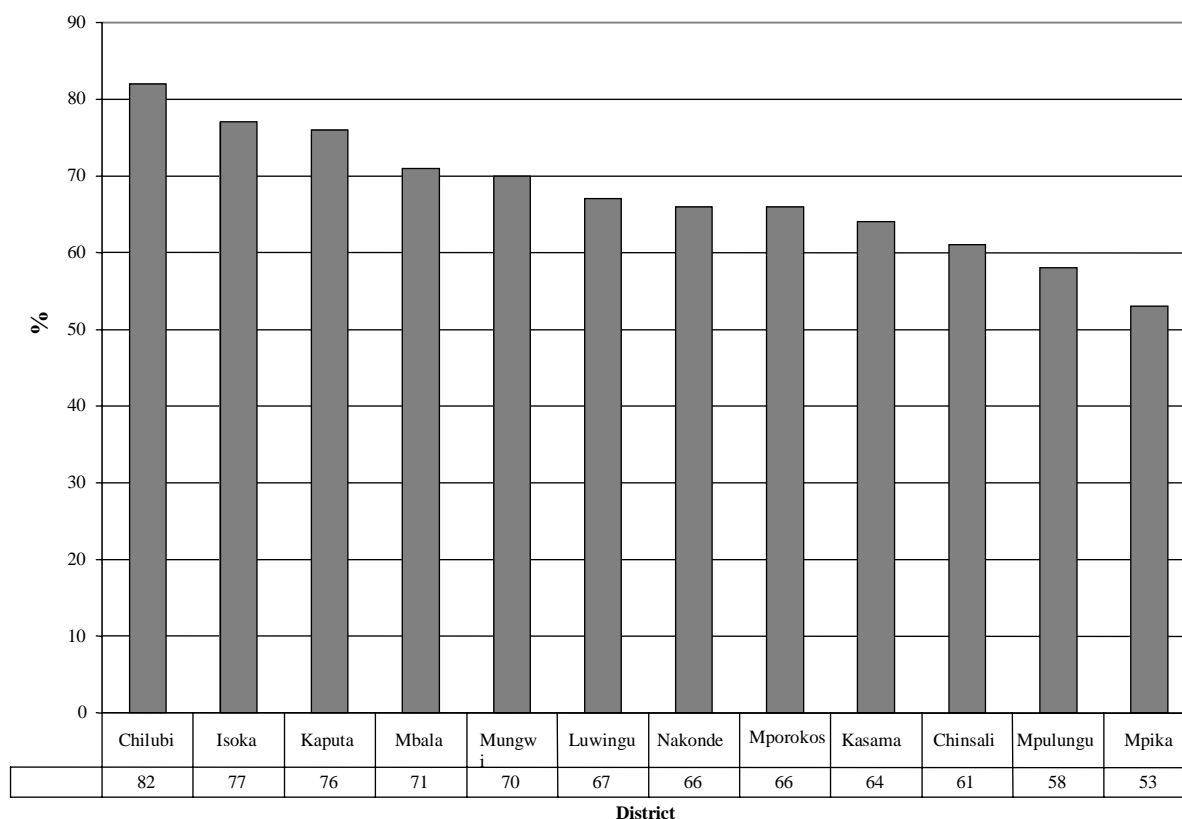


Table 2.4 gives an overview of how the maize–fertilizer ratio has fluctuated over time, based on nominal values.

Table 2.4: Fertilizer–maize price ratios

Year	Price of fertilizer (50 kg "D" compound) (ZMK)	Price of maize (50 kg) (ZMK)	Fertilizer–maize price ratio
1998	28 000	25 000	1:12
1999	32 000	14 000	2:28
2000	55 000	14 000	3:93
2001	71 000	30 000	2:37
2002	85 000	40 000	2:12
2003	86 000	30 000	2:87

Source: Office of the District Agriculture and Cooperatives Coordinator (DACO), Kasama.

2.2.5 Cultural context

The main tribe in Northern Province is the Bemba, although in isolated areas it is dominated by other tribes, such as the Namwanga in Isoka/Nakonde and the Bisa in Mpika and Chilubi districts. Apart from the Namwanga, these tribes are largely matrilineal, but patrilineal systems are becoming increasingly important owing to intertribal marriage.

The social and family structure among the Bemba and Bisa is traditionally monogamous and matrilineal. The bridegroom's relatives are required to pay their in-laws about ZMK 400 000 to 600 000 (US\$8 to \$12) as bride price, as well as providing two pieces of chitenge equipment, one or two hoes, a goat and five to eight chickens. Bisa custom on Chilubi Island does not require the payment of a dowry. Under the matrilineal system, the husband usually moves to the wife's home; after the husband's death or divorce, the children and household property remain with the wife's family.

The Namwanga and Tambo are the dominant ethnic groups in Isoka, and are generally patrilineal and partially polygamous. At marriage, the wife joins the husband in his village. Both tribes require the payment of dowry at marriage, usually in the form of cattle, cash, blankets and hoes. The go-between, traditionally known as the *shibukombe*, should be a man or woman who is highly respected in the community.

Families in Northern Province live under both nuclear and extended family arrangements. It is normal practice to share orphans among the relatives of the deceased, although the capacity to take good care of them depends on the availability of resources in the fostering household. In most cases, orphans are taken care of by grandparents. Foster orphans do not normally have equal status with the host's own children, especially when they are the man's relatives.

Early marriage is common practice in all the study areas, and is on the increase owing to the high levels of poverty. Families marry off their daughters early to reduce the family size and to secure some livelihood income from dowries, as well as – in the case of matrilineal societies – to secure male labour. Girls are married at as early as 13 years of age.

Sexual cleansing (*ukupyanka*), which literally means to put the spirit to rest, is a traditional practice among the communities. It is believed that a widowed person will become mad if he/she embarks on a sexual affair with another person before being cleansed. In some communities, however, the practice of sexual cleansing is gradually being phased out owing to the advent of HIV/AIDS. The normal practice now is for either the widow or relatives of the deceased to decide whether or not to follow the ritual. A substitute for sexual cleansing has emerged, which consists of tying white beads (*akalungu*) around the arm of the widow or widower. However, the elderly in general, and community members in Chilubi Island in particular, strongly believe that it is only through sexual cleansing that the spirit can be put to rest. The brewing of beer at the cleansing ceremony is common. The ceremony usually marks the end of the mourning period, commonly known as "*ukufumya amatipa kumakasa*" or "removing mud from the feet of mourners".

Following a death, relatives normally mourn for about two weeks. During those two weeks, the families of the deceased's mother and father and some selected community elders meet to discuss how to share out the property and take care of the orphaned children. The traditional practice is for the wife to retain the household property when a husband dies. However, poverty is leading the husband's relatives increasingly to take part of the property, claiming that their relative purchased it. When a wife dies, her relatives (brothers) take the property. Property grabbing is usually associated with the deceased's level of wealth. When a poor man dies, his wife and children normally inherit what little property there is, but when a rich man dies, his relatives take most or all of it. Wills are never prepared, although some community members are aware of what they are.

When a married person dies, in most cases, the family of the deceased finds a man/woman from within its own ranks to inherit the surviving spouse. Increasingly, if the deceased is suspected to have died of HIV/AIDS or related causes (i.e. showed signs of full-blown AIDS), the family will just tie white beads on to the left arm of the survivor to signify cleansing (*akalungu*), after which she/he is free to marry anyone from outside family. However, in areas where the awareness of HIV/AIDS is low, such as Chilubi district, wives are inherited even if the late husband has died of full-blown AIDS.

2.3 Shocks and Trends

2.3.1 HIV/AIDS and related chronic diseases

Currently, it is estimated that 16 percent of the population of Zambia aged between 15 and 49 years is HIV-positive (CSO, 2002). Infection rates are substantially higher among women (18 percent) than men (13 percent). In Northern Province, the prevalence rate is estimated at between 12.8 and 14.8 percent (CSO, 2000). Table 2.5 shows the HIV prevalence rates in the province by district.

The prevalence of HIV/AIDS in the communities visited was reported to have been increasing. According to community leaders, up to four funerals a month can occur in a village; in the past, one or two months would pass without any funerals. Hospital data reaffirmed this perception. According to Chilubi District Health Management Board, for instance, the number of suspected and confirmed cases of AIDS rose from 1.2 per 1 000 in 1999 to 2.1 per 1 000 in 2003.

Table 2.5: HIV prevalence rates, by district

District	HIV prevalence rate (15 to 49 years) (%)
Kasama	14.8%
Mungwi	14.8%
Mpika	13.8%
Isoka	13.3%
Nakonde	13.3%
Mbala	13.2%
Mpulungu	13.2%
Mporokoso	13.2%
Chinsali	12.9%
Kaputa	12.8%
Luwingu	12.8%
Chilubi	12.5%

Source: CSO, 2000.

HIV/AIDS prevalence in the province is generally attributed to high poverty levels and factors related to mobility, culture and tradition. High poverty levels increase the likelihood of survival sex to secure access to food and income, as well as commercial sex. The communities mentioned that young girls increasingly resort to survival sex in order to obtain cash for clothes, school fees and hair dos. In addition, poverty-linked malnutrition contributes to an earlier onset of AIDS and increases the likelihood of opportunistic infection.

Following the removal of the regulated market system, and owing to the low levels of financial capital in the communities, households rely heavily on bartering with traders. This often involves sexual favours during negotiations. Female traders coming from town to buy game meat, fish and potatoes also offer sex in order to obtain these commodities at lower prices, especially when demand is greater than supply and prices shoot up.

Mobility is high in the province, which is crossed by the Great North Road and the TAZARA railway, both going to the United Republic of Tanzania. The province also has four major fisheries and two game reserves. Community members mentioned that road constructors and truck drivers give young girls and women small sums of money in exchange for sex. Other factors include cultural and traditional practices such as sexual cleansing, wife inheritance, multiple sex partners, the low use of condoms and excessive beer drinking.

The communities have little capacity to assist households affected with HIV/AIDS. Most assistance to these households comes from relatives and friends. However, a home-based care scheme has been introduced in Mpika-Finkuli. It assists the chronically ill with medicines, food (high-energy protein supplements and soy meal) and basics from the rural health centre. However, its capacity is still limited, and so its impact in the community is not yet significant. According to health personnel from the hospitals, HIV/AIDS has had social

impacts (marriage breakdowns and the disturbance of set programmes), as well as economic (decreased productivity levels, reduced income, poor food security and the loss of proactive time) and psychological effects (depressed family, stress, suicide, self-pity, isolation, stigma and hatred).

2.3.2 Demographic trends

According to the 2000 national census of population and housing, Northern Province has an annual population growth of 4.3 percent, which is the highest of any province in the country. In addition to a high birth rate, rural populations also increase as a result of retirees from urban areas returning home or moving to the new resettlement schemes. In some instances, retired people returning home have boosted the local economies in their areas through asset ownership funded by pension money. In the Milongo area of Isoka district, for instance, the local community attributed the increased numbers of different livestock types in the community to the recent influx of retired people with money returning home. The purchasing power of retired people returning home is higher than that of the locals.

Regrettably, however, the return of PLWA to their homes in the villages has also been on the increase, and has become common practice since the advent of the epidemic. PLWA normally return home from urban areas before they die to seek palliative care from their parents and relatives. For this reason, the local people have nicknamed the HIV/AIDS disease “*Kalaye Noko*” a Bemba phrase that literally means “go and say goodbye to your parents”. The phrase arose as a result of people with no chance of survival coming back home. It was also hypothesized by the communities that the costs associated with caring for AIDS patients are probably much higher in urban than rural areas, so many afflicted people return to the rural areas where the cost of living is relatively low. PLWA returning home have a negative impact on rural households because they put a burden on their hosts given the low resource base at their disposal. PLWA normally require continuous medication and special foods that are not normally in the dietary patterns of rural households. In addition, much of the burden of caring for the sick is borne by women, who already do most farm work.

Communities throughout the study sites indicated that the numbers of female- and widow-headed households were increasing as a result of deaths from HIV/AIDS. The communities indicated that men are generally more versatile and thus tend to remarry more quickly than women after the death of a spouse. The sampled communities also cited the increase in the number of orphans over the past five years as a proxy indicator of the devastating effects of HIV/AIDS. Despite the growing number of orphans, there are no community safety nets to assist them. The most common way of coping with orphans is to exchange their labour for food or cash through piecework. Statistics also indicate that elderly women foster more orphans than other categories. This is partially because widowers are rarely left to keep young orphans when there is no adult woman in the household. By tradition, grandparents in Zambia tend to stay with their grandchildren, even when the parents of the children are alive. Where there are no surviving close relatives, such as a parent or grandparent, the usual practice is for orphans to be shared among the extended family for fosterage.

2.3.3 Institutions and organizations

The study sites are characterized by diversified levels of institutional support. The most common formal organizations operating in the sampled areas are government institutions such as the Ministry of Agriculture and Cooperatives (MACO), the Ministry of Health, the Ministry of Education and the Ministry of Social Development. Other notable formal institutions are the NGOs, the Programme Against Malnutrition (PAM), the Agriculture Support Programme (ASP), the Adventist Development and Relief Agency (ADRA) and Cinci Wa Babili. In addition to formal organizations, the study sites also have several informal organizations. The most prominent of these being the church, village development committees, parent-teacher associations (PTAs), anti-AIDS clubs and cooperative societies. Annex 1 provides a detailed overview of the various organizations working in Northern Province, including their main activities, target beneficiaries, geographical scope and comparative advantages for possible follow-up interventions.

The most prominent new organizations being formed in the study sites are cooperatives, whose main objective is usually to obtain access to inputs from the government’s Fertilizer Support Programme. A

number of anti-AIDS clubs have also been introduced by the Ministry of Health in order to increase awareness of HIV/AIDS. In contrast, many credit organizations were reported to have collapsed over the last five years owing to the withdrawal of government support following liberalization and the removal of subsidies.

The types of services that are missing in the study sites vary. Those most commonly cited by the communities in the study sites were credit facilities for agricultural inputs, health services, and marketing and hammer mill services. of dowry at marriage, usually in the form of cattle, cash, blankets and hoes. The go-between, traditionally known as the *shibukombe*, should be a man or woman who is highly respected in the community.

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CHAPTER 3: IMPACT OF HIV/AIDS ON HOUSEHOLD ASSETS

3.1 Introduction

The previous chapter gave an overview of the macro-level factors that influence livelihoods in Northern Province. It aimed to provide an understanding of the external or vulnerability context. This chapter looks at the impacts of HIV/AIDS on the different sets of livelihood assets that are essential to households' livelihood strategies, i.e. human, social, natural, physical and financial capital.

3.2 Human Capital

Human capital consists of skills, knowledge, the ability to work and good health, all of which are important for pursuing livelihood strategies. This section focuses on changes in household composition, education and ability to work, as well as on household responses to the loss of labour.

3.2.1 Household composition

HIV/AIDS is unique in that it attacks the most productive segment in society, thus robbing households of adult labour and knowledge. Table 3.1 shows that female-headed households with PLWA and/or orphans have fewer household members in the 15 to 64 years age group, and thus less labour available for productive and domestic activities. Table 3.1 also shows that the average ages of both female and male heads of household is significantly higher in households that take care of orphans than in other household types, implying that these households are increasingly headed by grandparents.

Table 3.1: Average household composition, by type

Household members	Average number by household type				
	FHH-PLWA	MHH-PLWA	FHH-O	MHH-O	Non-affected
Members under 15 years of age	3.12	3.00	3.06	4.40	3.02
Members 15 to 64 years of age	2.58	3.47	2.31	3.35	2.89
Members over 64 years of age	0.21	0.31	0.21	0.20	0.15
Total members*	5.94	6.67	5.56	7.89	6.40
Average age of head*	47.23	48.87	49.02	49.09	42.63

* Significant at $p < 0.05$.

The AIDS pandemic has left many orphans, and Zambia has one of the highest proportions of AIDS orphans in the world. In 2000, an estimated 600 000 children had been orphaned by the AIDS pandemic, and this figure is projected to rise to 974 000 by 2014 (TNDP, 2003). In Northern Province, widows and grandmothers take care of most of the orphans. Sample data from the participatory livelihood analysis showed that female-headed households maintain about three times as many orphans as male-headed households (Table 3.2). In particular, female-headed households taking care of PLWA bear the brunt of looking after orphans, supporting an average of about 3.6 per household. These households face the double burden of caring for both orphans and PLWA.

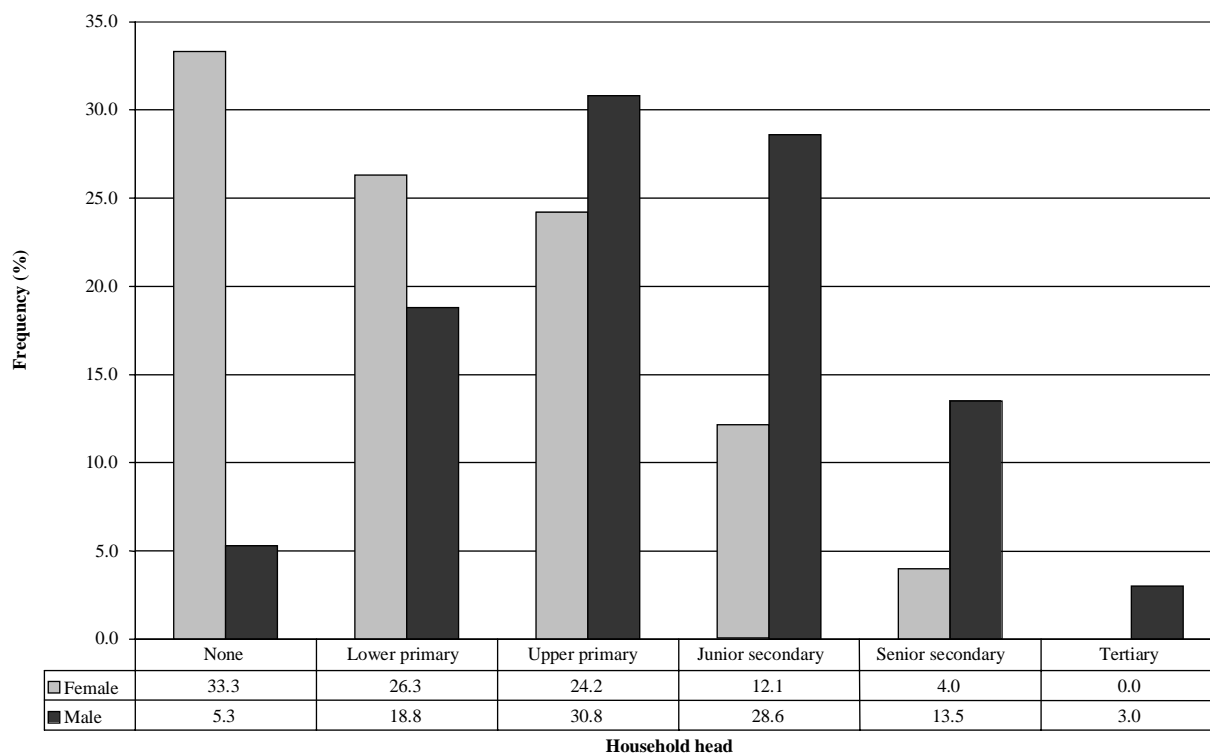
Table 3.2: Average number of orphans per household, by type

Orphans	Average number by household type					P value
	FHH-PLWA	MHH-PLWA	FHH-O	MHH-O	Non-affected	
Boys	1.85	0.69	1.54	1.18	0	0.00
Girls	1.71	0.33	1.75	1.53	0	0.00
Total	3.56	1.02	3.29	2.71	0	0.00
<i>Distribution (%)</i>	33	10	31	26	0	-

3.2.2 Education level

The level of education attained by household members has an important bearing on the quality of household human capital. Survey findings showed that male household heads attained better levels of education than their female counterparts across all household types. As shown in Figure 3.1, a higher proportion of women than men heads of household are illiterate. Furthermore, only about a quarter of female household heads in the sample completed primary-level education, and an even smaller proportion continued to secondary level.

Figure 3.1: Education levels attained by household heads, by gender



The disadvantages of low education levels for female household heads are compounded by increased numbers of school drop-outs among children from female-headed households. Withdrawal of children from school is significantly higher among female-headed households with PLWA (Table 3.3). Generally, more girls than boys drop out of school. Low education levels increase poverty across generations.

Table 3.3: Withdrawal of children from school, by household type

Gender	Average number of school drop-outs by household type					P value
	FHH-PLWA	MHH-PLWA	FHH-O	MHH-O	Non-affected	
Boys	0.50	0.24	0.50	0.35	0.19	0.05
Girls	0.77	0.64	0.42	0.47	0.33	0.04
Total	1.27	0.89	0.92	0.82	0.52	0.02

HIV/AIDS has resulted in more children being withdrawn from school to assist in taking care of younger siblings and in agriculture production. This is because households affected by HIV/AIDS and/or looking after orphans can no longer afford to pay for school/PTA fees and related costs such as books and uniforms. Other reasons for dropping out of school include the long distances to/from school, children's lack of interest in continuing their education, failure to pass examinations, early pregnancy and the need to contribute more labour at home owing to chronic illness or death (Table 3.4). Early marriage was cited only in fishing communities (3.7 percent of drop-outs).

Table 3.4: Reasons for dropping out of school, by household type

Reason	Percentage of respondents by household type					Total
	FHH-PLWA	MHH-PLWA	FHH-O	MHH-O	Non-affected	
Lack of finances	76.7	54.2	80.0	55.0	35.7	64.4
Early marriage	3.3	0.0	3.3	0.0	0.0	1.7
Other	20	45.8	16.7	45	64.3	33.9

3.2.3 Ability to work

In the sample area, households that take care of people living with AIDS and related chronic diseases face severe labour constraints. Sickness of the spouse and/or child or relative residing in the household results in a significant decrease in the number of active household members who are able to participate full-time in domestic and productive activities. Moreover, female- and male-headed households that take care of PLWA have relatively fewer active male members (Table 3.5). This has serious implications on these households' livelihood strategies, as some activities are largely carried out by men, such as chitemene, fishing, poaching and charcoal burning.

The ratio of active or productive household members (including children and the elderly) to the overall household size differs significantly among the different household types in the sample, with male- and female-headed households taking care of PLWA having the lowest ratios. This means that the active members in these households have to work increasingly hard and for longer hours in order to ensure food for the entire household.

The impact of HIV/AIDS on household labour availability is not only direct, but also indirect in that productive time is diverted to taking care of the sick. Women bear most of the burden of nursing sick household members. With HIV/AIDS and related chronic illnesses, the average period of sickness before death ranged from 19.1 months in female-headed households with PLWA to 15.5 months in male-headed households with PLWA.

Table 3.5: Average active labour force, by household type (includes active children and the elderly)

Numbers	FHH-PLWA	MHH-PLWA	FHH-O	MHH-O	Non-affected	P value
Active male members	1.72	1.75	2.07	2.57	1.91	0.029
Active female members	1.62	1.84	1.41	2.37	1.89	0.026
Total active members	3.34	3.60	3.36	4.94	3.80	0.002
Ratio of active members to total household members	0.57	0.54	0.60	0.62	0.63	0.048

3.2.4 Responses to loss of labour, and intra-household labour reallocation

As a result of chronic illnesses and death in a household, labour is lost either directly or indirectly through the withdrawal of able-bodied household members' from productive work to nurse the sick or attend funerals. Where possible, households try to cope with the reduced household labour force by hiring labour. Female-headed households taking care of PLWA and/or orphans hire male labour for chitemene and preparing rice fields. Male-headed households where the wife is sick or ageing hire female labour for weeding. Most labour is hired in exchange for beer, chickens or food depending on the particular household's access to such resources. Beer is a major method of paying for male labour in female-headed households. In addition to hiring labour, affected households are often assisted by their extended families for activities such as land preparation, cutting trees for chitemene and collecting fuelwood. However, hired and extended family labour does not make up for all of the labour lost, which means that working hours are increased for other household members, including children.

In response to the loss of labour, households reallocate the intra-household division of tasks. The most common situation is for a spouse to take over the activities/responsibilities of the sick or dead partner. Widows or wives with sick husbands normally take over the responsibilities of their husband, including

masculine activities such as ploughing, piecework, etc., while retaining their responsibility for all domestic activities as well as nursing sick household members. Sometimes, women receive help from relatives for demanding activities such as cutting branches under chitemene, but in most cases they hire male labour in exchange for beer. Widowers or husbands whose wives are sick also take over some of their dead/sick wife's roles. Men who are able to may hire women to do some of these activities, or they may seek help from female relatives, but in most cases they depend on their children's assistance.

With regard to children, girls are increasingly involved in domestic activities including nursing the sick (especially if it is the mother who is affected), planting, weeding and income-generating activities, such as beer brewing. Boys also become more involved in domestic activities if it is the mother who is affected. Quite often, however, boys take over the masculine roles of their fathers, including working in the fields, fishing, charcoal burning, piecework and poaching.

3.3 Social Capital

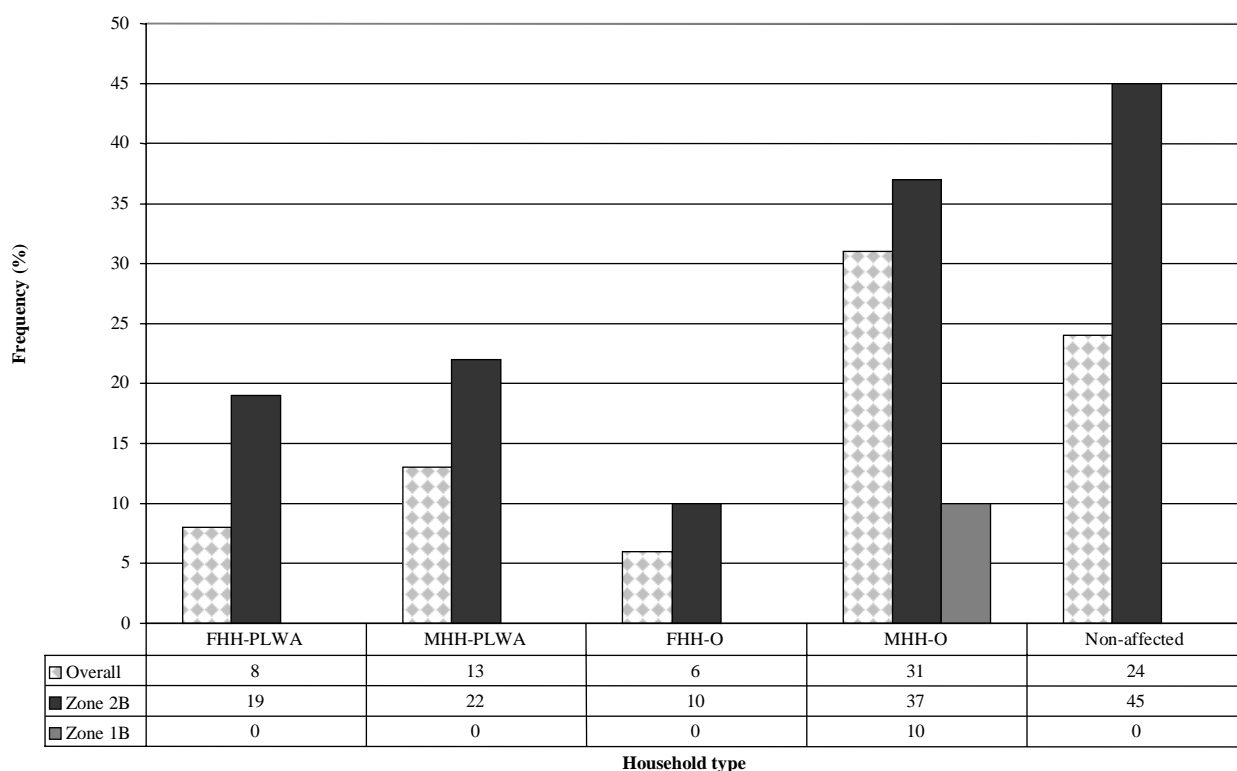
Social capital comprises the social resources that people draw on in pursuit of their livelihoods, such as networks, membership of groups, exchange relations and access to wider institutions in society. This section looks at the effects of HIV/AIDS on households' social capital, including membership in cooperatives and other community-based organizations (CBOs), reciprocal relations and community support to HIV/AIDS-affected households.

3.3.1 Membership in cooperatives and CBOs

Cooperatives in Zambia are an important vehicle through which rural farmers can obtain government-sponsored input loans such as those under the current Fertilizer Support Programme. Thus, memberships in such organizations can quite often make the difference between food security and food insecurity for rural households. Membership in organizations and access to inputs, however, require households to pay a certain amount of money upfront. Under the Fertilizer Support Programme, households have to pay about 50 percent of the cost of the fertilizer, which comes to between ZMK 200 000 and ZMK 300 000 (about US\$43 to \$64) per hectare. Most households affected with HIV/AIDS can hardly afford this and are quite often excluded from membership. Figure 3.2 shows how non-affected households and male-headed households with orphans participate relatively more in cooperatives. In contrast, only a few households taking care of PLWA and female-headed households with orphans are members of cooperatives, owing to lack of time and to financial constraints. Cooperatives are almost non-existent in fishing communities where infrastructure is poor and crop production is concentrated on cassava.

Female-headed households, particularly those with PLWA, also participate little in CBOs as a result of competing labour needs and insufficient targeting by service providers (Figure 3.3). The majority of female-headed households with PLWA that do participate in CBOs are members of women’s clubs and traditional birth attendant groups (41 percent). Female-headed households take up few leadership positions in CBOs: only 7.3 percent of them were chairpersons, treasurers or secretaries of community organizations, whereas 29 percent of the male-headed households fulfilled leadership roles. In addition, only few female-headed households looking after PLWA and/or orphans participate in the community-level area satellite committees set up by PAM to identify vulnerable households that are entitled to its free food and farm input support. Consequently, female-headed households often lose out on development initiatives, including relief support.

Figure 3.2: Membership in cooperatives, by household type



3.3.2 Community support for HIV/AIDS-affected households

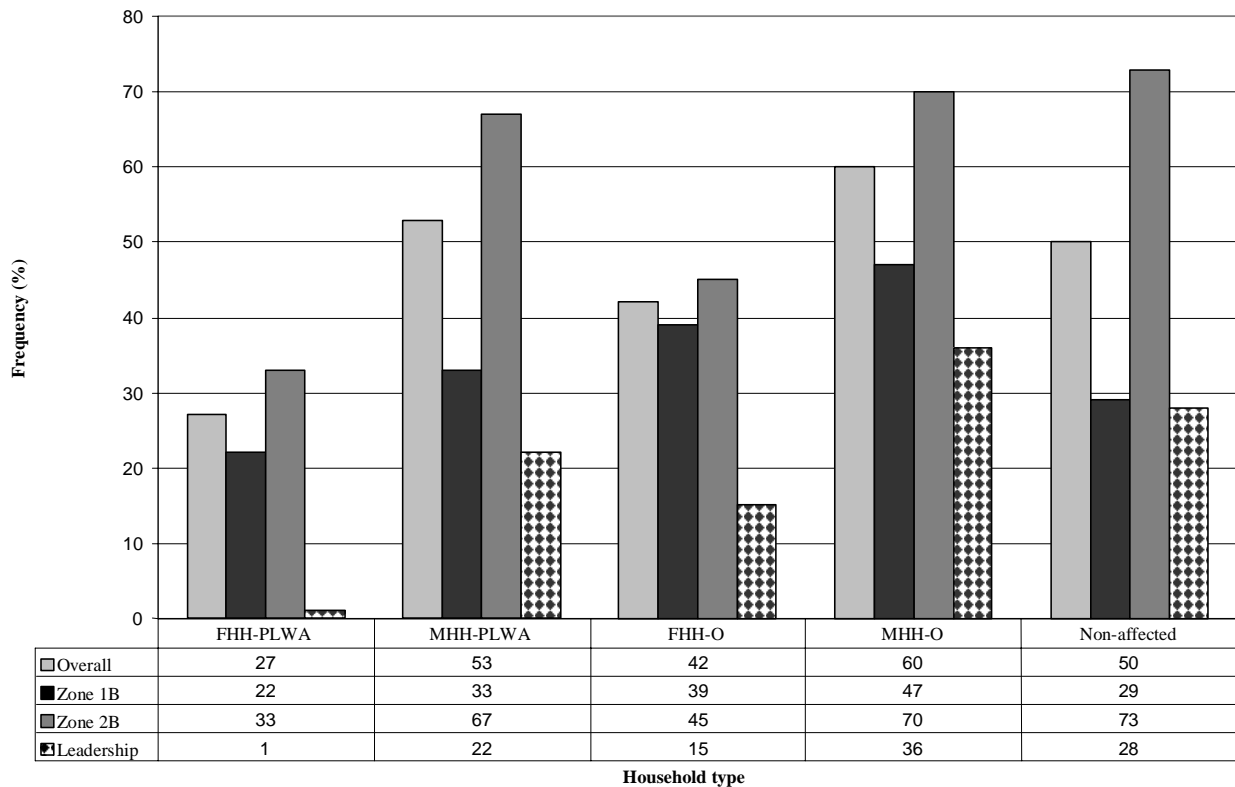
In all communities within the study area, only very limited community-based support was provided to households affected by HIV/AIDS. Most community assistance consists of contributing food and labour during funerals, and visiting the chronically ill. However, external agencies provided some support to vulnerable groups in the community, including the following:

- Government support through PAM-managed food security packs (FSPs) providing inputs to vulnerable households: PAM is an umbrella NGO working closely with the Zambian government, donors and NGOs.
- Relief food distribution from the World Food Programme (WFP) in conjunction with the government: this is administered on the ground by various NGOs and targets the vulnerable in society, although it sometimes benefits relatively better-off households instead.
- Credit, food and material support from the Ministry of Community Development and Social Welfare, which provides a range of community and social welfare services to the needy in society and aims at empowering economically active poor and disadvantaged people through micro-credit support and non-formal education and skills training. The ministry directs its activities to older people, people

with disabilities, vulnerable children and unsupported men and women. In practice, however, government public welfare assistance is mainly limited to urban areas.

- FBOs, through various churches providing assistance to affected households: this assistance includes the provision of food, clothes, school fees and uniforms, labour for cultivating fields and material assistance for funerals.
- Home-based care, which had just been initiated in Mpika district: the home-based care programme run by the rural health centre provides AIDS and TB patients with food, cash and counselling support, free of charge.

Figure 3.3: Membership in CBOs, by household type



3.3.3 Reciprocal relations and labour sharing

In the absence of strong community safety nets, most support to HIV/AIDS-affected households comes from relatives and friends within the communities. In line with African tradition and culture, reciprocal relations are quite strong in the study areas. Vulnerable households often rely on relatives and friends within the communities for support in terms of food, groceries, transporting the sick to hospital and even caring for the sick. In exchange, the vulnerable households assist the other households with domestic activities. Better-off households assist relatives and friends with small sums of cash to buy food or pay for medical expenses, clothes or school fees for orphans, while the assisted households always offer something else in return, usually labour and visiting the sick. Reciprocal relations sometimes take the form of shared labour, as friends and relatives may arrange to work in each other's fields on a rotational basis. Such labour-sharing arrangements are often arranged through church membership, except when they involve relatives. Table 3.6 summarizes the main kinship relations by household type in the study area as follows:

- Households looking after PLWA do not participate in labour-sharing arrangements. This is most likely owing to time constraints and weakness making it difficult for the household to commit to working on a rotational basis from field to field.

- Only male-headed households provide and receive assistance in transporting the sick to health centres. Female-headed households provide and receive little assistance as many lack access to bicycles, which are the main means of transport in the study areas.
- Households taking care of PLWA and/or orphans receive assistance from relatives – often non-affected households – for school fees, clothes and the care of orphans. This implies that AIDS affects a very wide population as it increases dependence on the social network.
- All households receive some financial assistance from time to time to purchase basic items and to cover school fees. Most of this assistance is provided by non-affected households and male-headed households fostering orphans.

Table 3.6: Household reciprocal relations, by household type

Relationship	Frequency by household type					Total
	FHH-PLWA	MHH-PLWA	FHH-O	MHH-O	Non-affected	
Reciprocal relationship with relatives, neighbours and/or friends through which basic items (salt, maize meal, etc.) are exchanged	100.0	100.0	100.0	100.0	100.0	100.0
Involved in labour-sharing arrangements with extended family, friends and/or neighbours	0.0	0.0	33.3	20.0	10.0	13.5
Receives support for transporting the sick to health centres	0.0	16.7	0.0	20.0	10.0	8.1
Provides support for transporting the sick to health centres	0.0	16.7	0.0	40.0	10.0	10.8
Receives assistance for clothes and school fees from relatives, neighbours and/or friends	28.6	16.7	22.2	20.0	0.0	16.2
Provides assistance for clothes and school fees to relatives, neighbours and/or friends	0.0	0.0	0.0	0.0	10.0	2.7
Receives domestic support for looking after orphans	28.6	16.7	44.4	0.0	0.0	21.6
Provides domestic support for looking after orphans	0.0	16.7	0.0	0.0	50.0	16.2
Receives assistance in nursing the sick	42.9	33.3	33.3	20.0	20.0	29.7
Provides assistance in nursing the sick	0.0	16.7	11.1	20.0	10.0	10.8
Receives financial assistance	28.6	50.0	33.3	20.0	70.0	43.2
Provides financial assistance	0.0	0.0	0.0	20.0	50.0	16.2
Number of households in sample	7	6	9	5	10	37

Edward is 57 years old and, together with his wife Cecilia, looks after six children and two grandchildren. He is also caring for two of his grown-up daughters who are afflicted by HIV/AIDS. However, Edward has been sick and lame since 1999. His household also lost two grandchildren as a result of diarrhoea-related illnesses.

The household's livelihood depends on cassava cultivation for home consumption, fishing and beer brewing, with the sale of beer contributing about 30 percent of its income. Edward used to cultivate rice and maize using fertilizers and improved seeds, but illness and a lack of finances have led him to reduce the total area cultivated and shift to cassava cultivation. Three girls dropped out of school, as Edward could no longer afford the expense of uniforms and schoolbooks.

As a result of sickness in the household, there has been some reallocation of tasks among household members. The boys have taken over the fishing activities that were previously carried out by Edward, while the girls are brewing beer, nursing the sick and cultivating fields. Edward has reciprocal relations with his nephew, father-in-law, close friends and sister, whom he assists with transport (bicycle) and some food whenever there is surplus. In return, these households assist Edward with food, basics (salt and maize meal) and looking after his grandchildren. Edward used to be a member of a cooperative but can no longer participate owing to continuous illness. When asked about the future, Edward mentioned that his household would be worse off owing to the illness of household members resulting in high medical expenses and labour constraints.

3.4 Natural Capital

Natural capital consists of the natural resource stocks from which households derive their livelihoods. In Northern Province, these stocks are mainly land, forests, streams, wildlife, rivers and lakes.

3.4.1 Land

With the exception of the resettlement schemes, the land in Northern Province is communal. Access to land is through chiefs, who are assisted by headmen and village committees that process requests and allocate the pieces of land required. Inhabitants usually inherit land through their family lineage, which can be under either the patrilineal or the matrilineal system. Landownership in Milongo resettlement scheme in Isoka is by title deed, as the land belongs to the government.

Land in Northern Province is still abundant despite the population increase. Households in fishing communities have less access to land than those in agriculture communities, as most households are residing only temporarily in the fishing communities and their main livelihood activity is fishing. In both fishing and agriculture communities, female-headed households, particularly those taking care of PLWA, have significantly smaller areas of agricultural land than male-headed ones. Table 3.7 shows the average per capita land available by household type.

Table 3.7: Average and per capita available land, by household type

	Land size by household type (ha)					P value
	FHH-PLWA	MHH-PLWA	FHH-O	MHH-O	Non-affected	
Livelihood zone 1B (fishing communities)						
Average total available land	0.62	1.14	1.09	1.80	1.56	0.05
Per capita available land	0.11	0.91	0.17	0.24	0.26	0.02
Available land per active member	0.28	0.35	0.28	0.49	0.49	0.03
Livelihood zone 2B (agriculture communities)						
Average total available land	1.54	3.19	1.90	3.12	4.64	0.01
Per capita available land	0.29	0.50	0.43	0.44	0.71	0.06
Available land per active member	0.48	1.21	0.93	0.68	1.16	0.04

Incidences of land grabbing are rare in the study areas. About 5.6 percent of the sampled households (4.0 percent in farming and 7.5 percent in fishing communities) reported land grabbing by relatives of the deceased spouse. Land grabbing was higher among male-headed households with PLWA and orphans than in female-headed households; this was owing to the predominantly matrilineal society.

3.4.2 Forests

The land in Northern Province is generally acidic with inherent fertility that is too low to support cereal crops (maize) without the application of chemical fertilizers. Following structural adjustment and liberalization of the agriculture sector, households' access to fertilizer has become increasingly difficult. As a result, they have resorted to traditional chitemene cultivation methods, for which access to forest is a prerequisite. Chitemene has been practised for a long time in the province, and at present it is critical to household food security. Household access to forests for chitemene depends on their ability to work the land and on allocations made by the local leadership, based on family size. In some areas, trees near the homesteads have been depleted, and community members have to venture further to find forests in which to establish their fields. This has proved to be quite difficult for female-headed households, which also have difficulties with the actual slashing of tree branches.

As well as chitemene, forests are also sources of many products that are of economic importance to the communities. These include mushrooms, caterpillars, charcoal, timber, poles, honey, fuelwood and wild fruits, which most households rely on during the hunger periods. Men carry out most of the honey collection and charcoal burning, while women collect mushrooms, caterpillars and wild fruits. Overutilization of the forest and its products has led to reduced availability of wild foods, and some species suitable for timber are now almost extinct. Some forests in these communities are gazetted forest reserves, but community members still enter them to cut trees for various purposes. The communities are aware of the existence of the Forest Act, but continue to cut the forests in order to secure a livelihood.

3.4.3 Wildlife

Northern Province is endowed with vast wildlife, which is protected in national game parks and the surrounding game management areas. This resource has been an important livelihood source for communities such as Finkuli and Lukulu in Mpika district, which are situated just to the west of Luangwa National Park and Lavushi Manda Game Reserve. Poaching for food and income in such communities has been practised for many years, and is increasing as a result of the high poverty levels (see Chapter 4).

3.4.4 Rivers and lakes

The province is traversed by many rivers, and is endowed with some of the most important lakes in Zambia. Fishing is the main livelihood activity pursued from these water bodies. Fish catches in the study area have, however, declined over the past five years owing to the use of unauthorized fishing methods (fine-mesh nets, poisoning, hammer and net, embankments and traps), an increase in the number of fishers, and defiance of regulations against fishing in the rainy season (the breeding period).

Water from rivers and lakes is used to a much lesser extent for fishponds. According to 1997 Department of Fisheries statistics, there are many fishponds in Mungwi district (286 farmers with 869 fish ponds covering a total area of 199 640 m²), Isoka district (177 farmers with 565 fishponds covering a total area of 105 286 m²) and Mpika district (308 farmers with 734 fishponds covering a total area of 139 271 m²).

Water from lakes and rivers is also used to irrigate gardens and winter-cultivated crops. Most gardens are situated along rivers, on lakeshores or in the dambos (wetlands). The leasing of garden plots to other households as a means of raising income is common. Male-headed households have greater access to irrigated gardens than female-headed ones because of the need to pay annual fees of ZMK 25 000 (US\$5.3) to use the irrigation furrow. Table 3.8 shows average areas of irrigated land per household type.

Table 3.8: Average areas of irrigated land, by household type

Household type	Average area irrigated land (ha)	Per capita area of irrigated land (ha)
FHH-PLWA	0.05	0.01
MHH-PLWA	0.14	0.02
FHH-O	0.02	0.01
MHH-O	0.13	0.02
Non-affected	0.26	0.04
Total	0.12	0.02
P value	0.09	0.06

3.5 Physical Capital

Physical capital includes the basic infrastructure (transport, shelter, energy, communications and water systems), production equipment and tools that enable households to maintain and enhance their relative levels of wealth. This section describes the dynamics in ownership and access to production tools, improved technologies and livestock, in the context of HIV/AIDS.

3.5.1 Access to physical assets

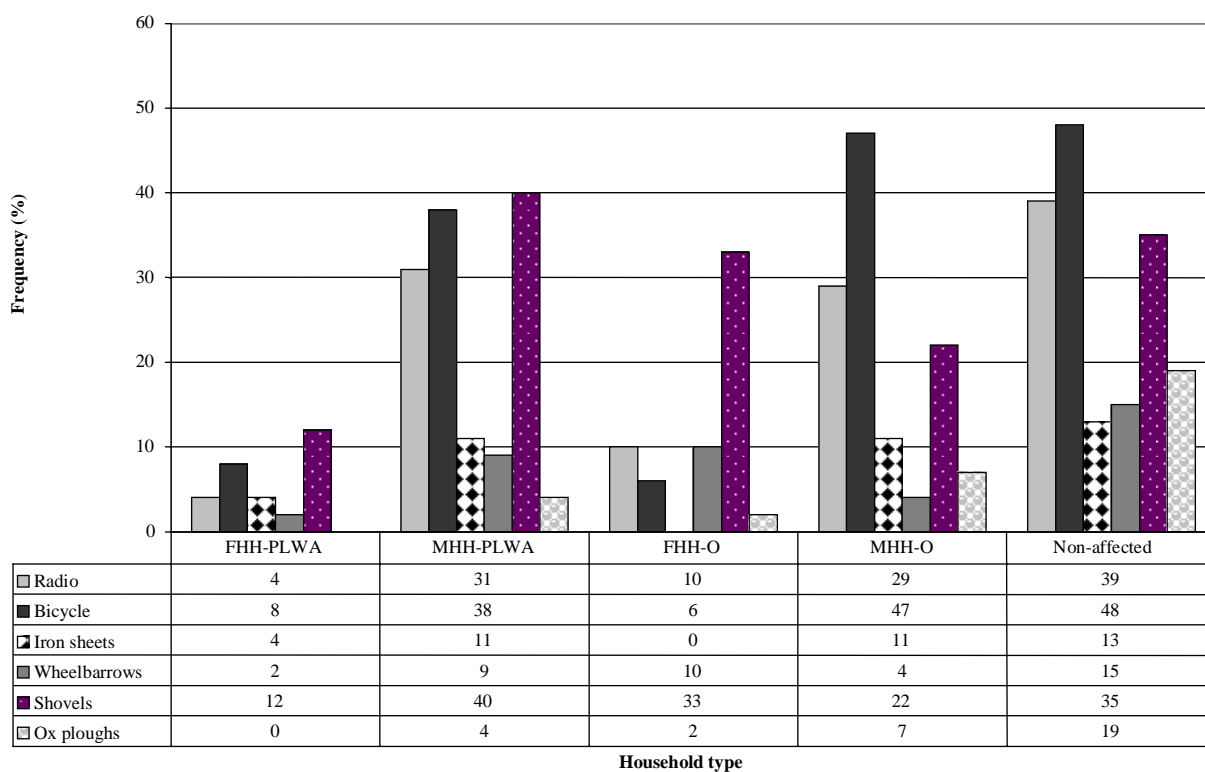
The tools of significant importance to the livelihoods of people in the study area are basic ones such as hand hoes, axes and shovels. Other property items mentioned were bicycles, radios, fishing nets and, to a lesser extent, wheelbarrows. Hand hoes are important for a range of land cultivation activities, including land preparation, planting and weeding. Axes are important for chopping branches under the chitemene farming system, while bicycles and wheelbarrows are used for the transportation of produce to markets. Shovels are important tools for preparing mounds and ridges on which crops can be planted. Residue composting (*Fundikila*) is an important activity in Northern Province that requires the use of shovels.

In all study areas, access to and ownership of tools is unequally distributed between male- and female-headed households. Female-headed households, particularly those taking care of PLWA, own fewer physical assets such as axes, shovels and radios owing to distress sale and property grabbing (see subsection 3.5.4). In addition, few female-headed households own bicycles, and thus they have less opportunity to transport their produce to markets. Consequently, these households are more restricted to selling or bartering their crops within the community, which earns less income. Figure 3.4 compares the levels of ownership of selected tools and equipment as reported by the different household types during the household interviews.

3.5.2 Use of improved technologies

Adoption of improved farming technologies, such as fertilizers, chemicals and improved seed, is overall low in Northern Province. Livelihood data indicate that fewer than 25 percent of all households use chemical fertilizers and improved seed, and only a small proportion (9 percent) use chemicals. Particularly in fishing communities, the use of improved technologies is low, as farmers rely mostly on low-input crops such as cassava.

Figure 3.4: Ownership of selected physical assets, by household type



Among the different households interviewed, female-headed households taking care of PLWA and/or orphans use less fertilizer and fewer improved varieties and chemicals than male-headed households, as they lack the financial resources to purchase these inputs (Table 3.9). The use of chemical fertilizers depends on making the down payment demanded by the government Fertilizer Support Programme, which is too high for most households, particularly female-headed ones. Most of the female-headed household that do have access to fertilizer and improved seed are beneficiaries of the PAM FSP support.

Table 3.9: Access to improved technologies, by household type

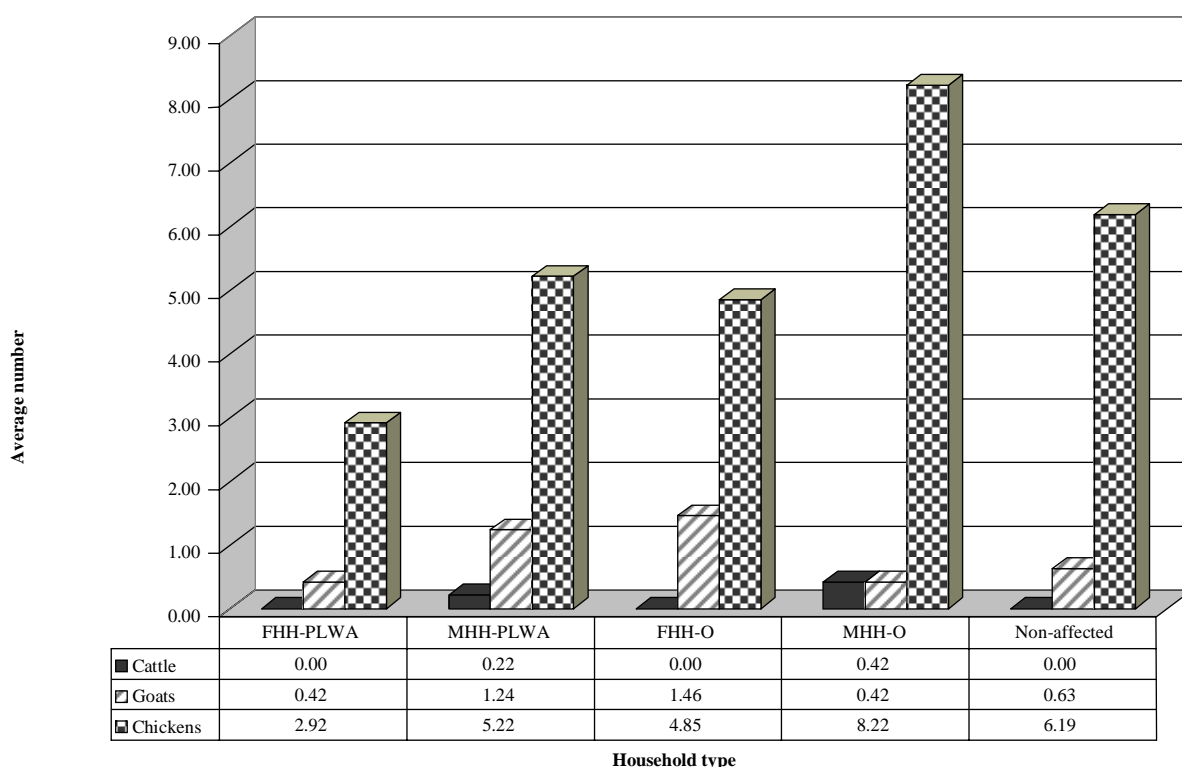
Livelihood zone	Technology type	Household type (%)					Total
		FHH-PLWA	MHH-PLWA	FHH-O	MHH-O	Non-affected	
Zone 1B (fishing communities)	Use of fertilizer	3.7	0.0	0.0	15.8	8.3	6.0
	Use of improved seed	11.1	0.0	0.0	26.3	20.8	13
	Use of chemicals	0.0	0.0	0.0	15.8	4.2	4.0
Zone 2B (agriculture communities)	Use of fertilizer	14.3	40.7	24.1	29.6	50.0	40
	Use of improved seed	19.0	22.2	10.3	22.2	45.5	29
	Use of chemicals	4.8	18.5	3.4	3.7	36.4	16

3.5.3 Ownership of livestock

Livestock ownership in Northern Province is predominated by chickens and goats. The very few cattle that are kept in the study areas are mainly restricted to the tsetse fly-free areas of Isoka, Mungwi and Chilubi Mainland. During the 1980s, the government tried to introduce oxen in Northern Province, but most of the animals died as a result of disease, or were sold.

Figure 3.5 shows the average numbers of chickens, goats and cattle owned by the different household types in the study areas. Overall, male-headed households with orphans rear slightly more chickens, while female-headed households with orphans own slightly more goats than the other household types. As with tools and access to improved technologies, female-headed households with PLWA own very few small ruminants compared with other household types, owing to constant selling in order to meet immediate cash needs. During the field survey, female-headed households taking care of PLWA frequently reported that they had sold their chickens to raise income for food, medication and/or school fees. In all areas apart, from the Milongo resettlement scheme in Isoka, communities indicated that numbers of all the livestock types mentioned decreased as a result of distress sale and diseases, such as repeated outbreaks of Newcastle disease, which killed most of the chickens. In some areas, households also had to sell their goats because of community by-laws that restrict their movement to other people’s homesteads for fear of causing damage to crops.

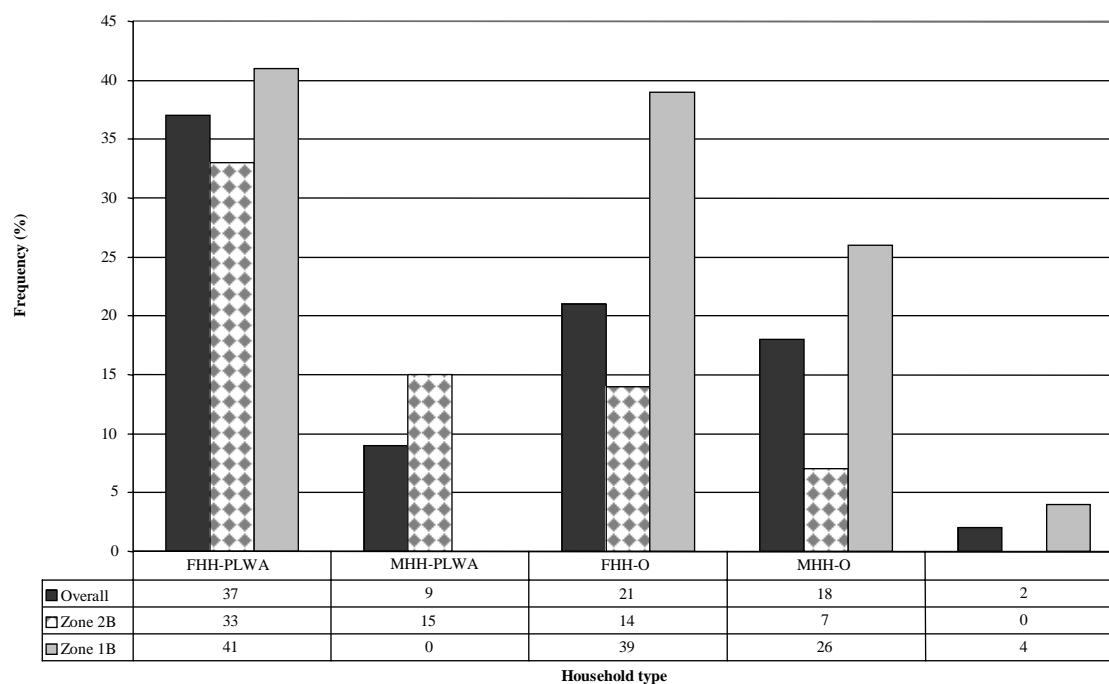
Figure 3.5: Livestock ownership, by household type



3.5.4 Property grabbing

Property grabbing is common in all of the study areas and is increasing as a result of high poverty levels. About 17.7 percent of the households interviewed had experienced the grabbing of household goods such as furniture, radios, bicycles, beds, kitchen utensils, clothing and iron sheets. More instances of property grabbing were reported in the remote fishing communities (22.6 percent of all households) than in predominantly agriculture communities (13.5 percent), mainly owing to less awareness of the Intestate Act. Figure 3.6 shows the frequencies of property grabbing reported by households during the field survey.

Figure 3.6: Incidences of property grabbing, by household type



As Figure 3.6 shows, female-headed households experience more property grabbing than male-headed ones. Property grabbing is particularly high among female-headed households taking care of PLWA. Within these households, the property that remained after the husband died was claimed by his relatives. Property grabbing is a sensitive issue in the communities, and few people seek support from the legal system. Most victims of property grabbing indicated that they normally do not have the necessary resources to pursue cases in court. In some instances, households mentioned that they did not want to take legal action against the culprits for fear of witchcraft or unnecessary confrontations with the relatives of the deceased. In addition to not being able to protect property from being grabbed, no community safety nets were established to support the victims. Most victims of property grabbing try to make up for the lost property by borrowing from relatives or involving themselves in off-farm income-generating activities such as piecework.

3.6 Financial Capital

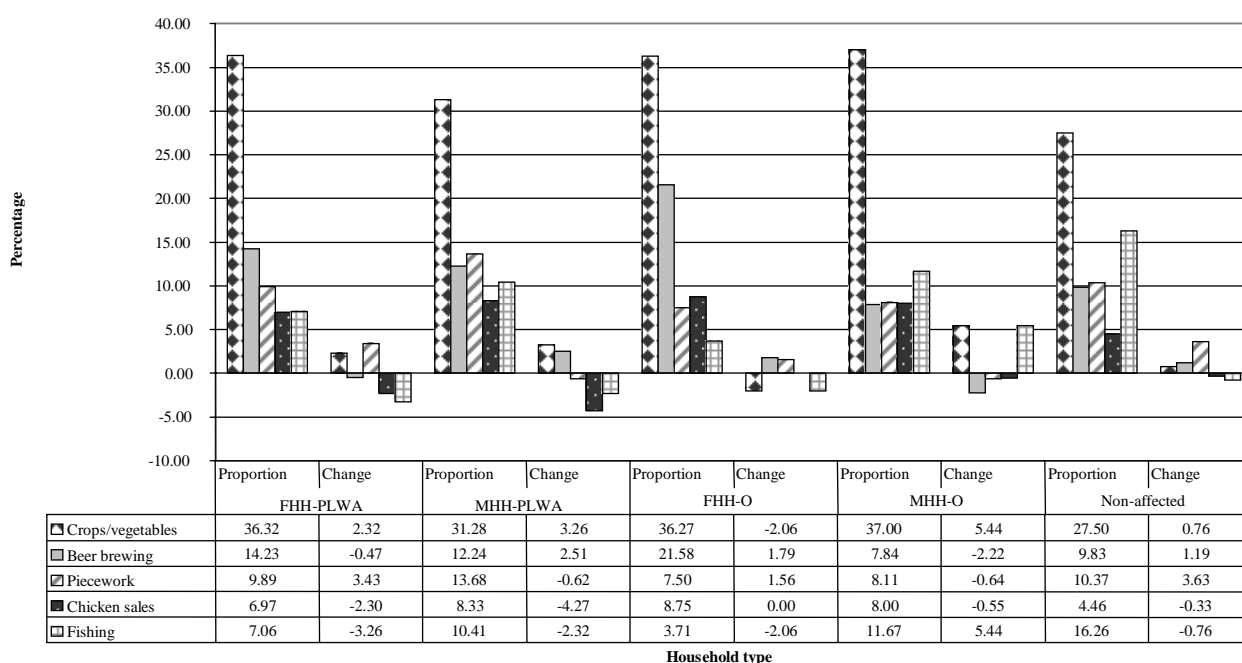
Financial capital includes the cash and other liquid resources (e.g. savings, credit, remittances, pensions, etc.) that are essential to people's livelihoods. This section looks at the changes in income and expenditure patterns that result from HIV/AIDS, as well as households' access to credit and the use of bartering among the different household types.

3.6.1 Changes in income patterns

The study sites are characterized by a diversity of income sources, including on- and off-farm activities. The most prominent sources of income are sales of crops and vegetables, beer brewing, piecework, poultry, handicrafts and fishing. Crop sales, poultry and handicrafts are significantly more important in the predominantly agriculture communities (zone 2B), while the sale of fish is a more important source of income for the fishing communities (zone 1B). In both livelihood zones, however, crop cultivation is the mainstay of the local economy.

The types of income sources remained relatively unchanged over the past five years, mainly as a result of the lack of alternative income-generating opportunities. Total household income, however, decreased, particularly in female-headed households, where time and energy were lacking. The proportions of income to the total annual income earned from these sources (income patterns) also changed slightly. Figure 3.7 illustrates the changes in income patterns over the last five years by household type.

Figure 3.7: Changes in income patterns over five years, by household type



The graph shows the following features for the different household types:

- *Female-headed households taking care of PLWA* have relatively few income sources and rely mainly on the sale of crops and beer to obtain cash. Owing to the need for ready money to pay medical bills, these households resort increasingly to daily piecework, often involving one or more of the children. The proportion of income earned from fishing declined over the last five years following the death of the husband. Income earned from poultry also slightly decreased, mainly as a result of selling at low prices (distress sale) owing to competing cash needs.
- In *male-headed households taking care of PLWA* most income is earned from the sale of crops, daily piecework and beer brewing. The contribution of fish sales to the annual income has decreased, owing to the inability of sick husbands to go out on the lake or river, as well as to the overall decline in fish availability in Northern Province. This is especially so in the fishing communities, where the income contribution of fish sales in this category of household decreased by about 10 percent. The proportion of income earned from the sale of chickens also decreased owing to frequent outbreaks of Newcastle disease and, more important, distress sales to pay for medical bills and transport costs to health clinics.

This was especially the case in agriculture communities (zone 2B), where chicken sales are an important income source whose annual contribution declined by 6 percent

- Compared with the other household types, *female-headed households taking care of orphans* rely more on beer brewing as a poverty coping strategy to secure access to finances. This is particularly so for households headed by grandmothers, where the head is becoming too old to cultivate the land and the children are too young to assist. In fishing communities, where income opportunities are limited, the sale of beer contributes 31 percent of the total household income.
- *Male-headed households with orphans* have relatively more active household labour than the other households. As a consequence, they secure most of their income from sales of crops and fish, whose contribution increased over the last five years. In the fishing communities (zone 1B), fishing and crop cultivation are equally important income sources, each contributing 25 percent of annual household income. In the predominantly farming communities (zone 2B), 45 percent of the annual household income is earned from crop sales.
- *Non-affected households* are relatively more diversified in terms of income generation, and most income is obtained from crop sales and fishing. In communities that are closely located to game reserves, illegal poaching is an important income source for these households, and contributes about 25 percent of annual incomes. As a result of continuous poverty trends, the earnings from illegal poaching increased by about 18 percent.

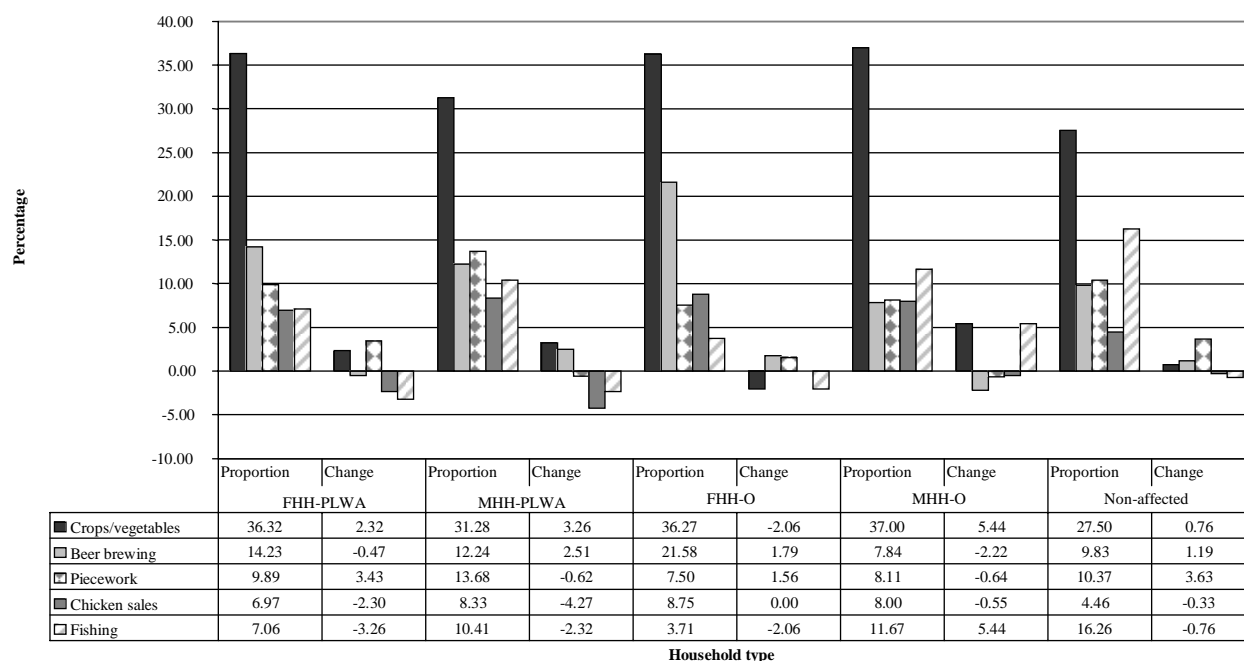
3.6.2 Changes in expenditure patterns

Livelihood systems in the study sites are characterized by various items of expenditure. The most common expenditure categories are food, basics (groceries such as salt and soap), school fees and medical bills. The proportion of expenditure on each category varies according to the household type. Figure 3.8 illustrates the expenditure patterns and the average change over the last five years by household type.

The graph indicates the following:

- *Female-headed households taking care of PLWA* spend most of their financial resources on buying food for the household. This is particularly so in the fishing communities, where agriculture production is low and income from fishing insignificant. In these communities, these households spend 31 percent of their earnings on food. In addition, HIV/AIDS and related chronic illnesses increased household expenses on medical fees by about 5 percent during the last five years. Compared with the other households, this category spend more on purchasing food and on medical expenses, leaving fewer resources for paying school fees and investing in agricultural production.
- Following the sickness of one or more members, and the associated reduction in agricultural production, *male-headed households with PLWA* spend more money on food and medical fees. Consequently, these households are left with fewer financial resources to purchase agricultural inputs.
- *Female-headed households taking care of orphans*, especially those headed by grandmothers, decreased the areas they cultivated owing to competing demands on their time and the inability to purchase farm inputs. Consequently, these households recorded the greatest increase in proportion of expenditure on food items.
- *Male-headed households with orphans* slightly increased their expenditure on food items during the last five years following the increase in household size. Nevertheless, the proportion of total household expenditure spent on food is about half what it is in female-headed households taking care of PLWA and/or orphans. Compared with other household types, this category spent more on school fees, which constitute about 8 percent of their total household expenses.
- Although slightly decreasing over time, *non-affected households* invest more in agriculture in terms of purchasing inputs than the other household types do. In addition, the proportion spent on medical fees is about half that spent by HIV/AIDS-affected households.

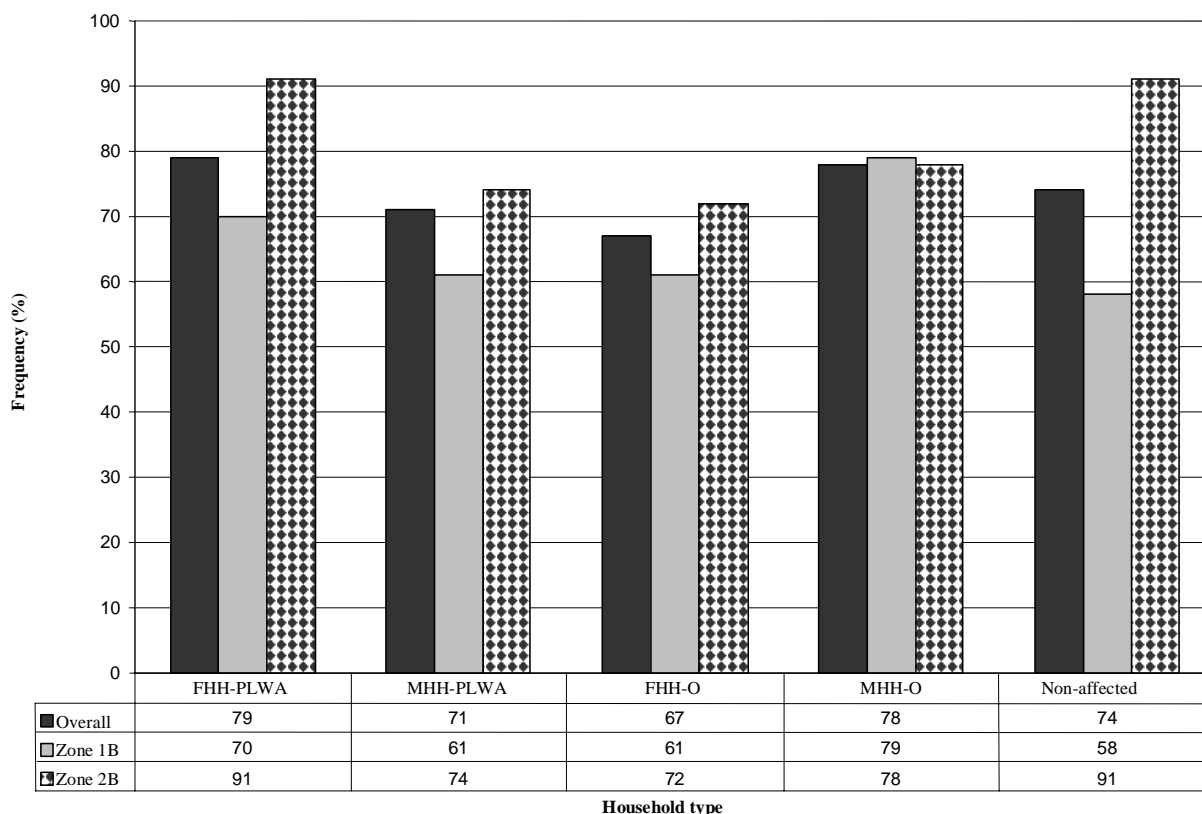
Figure 3.8: Changes in expenditure patterns, by household type



3.6.3 Bartering

As a result of liquidity problems in the local economy and inadequate market linkages, bartering has become a very important means of obtaining household goods and food in all of the communities. Bartering mainly involves the exchange of crop produce for other crops, clothes, groceries, food, fish, chickens, labour and/or luxury goods, among households and with traders. In addition, beer and food are exchanged for labour. Businesspeople from urban areas have taken advantage of the weak market for agricultural produce by offering low prices and unfair terms of barter, often involving sexual favours. Figure 3.9 shows the extent to which the different household types barter their produce and other household items. Female-headed households with orphans barter slightly less than other households as they have fewer surpluses. Female-headed households with PLWA also have low surpluses, but their pressing needs for cash make them barter more. These households have little variety in crops, and cultivate mainly cassava. In order to obtain cash, they barter their cassava crop for maize or fish, at the expense of their own consumption, which they sell locally at low prices. Bartering is lower in the fishing communities because of the low agricultural production. Fish is bartered to some extent, but it is more usually sold in the fishing camps to visiting traders.

Figure 3.9: Extent of bartering, by household type



3.6.4 Credit and savings

The study areas are characterized by limited sources of credit. The most common sources are in the informal sector, such as friends, relatives and local business people. Credit from the formal sector is rare, except that offered by the government’s Fertilizer Support Programme and PAM. Households in fishing communities are the highest users of credit, especially for food purchases during the hungry season, which coincides with the season in which fishing is not allowed (the breeding period). Non-affected and male-headed households with orphans borrow from the informal sector, mainly to purchase farm inputs. Most households taking care of PLWA, on the other hand, obtain credit from friends and relatives for paying medical fees (Table 3.10).

Table 3.10: Percentages of households using credit, by household type

Credit	FHH-PLWA		MHH-PLWA		FHH-O		MHH-O		Non-affected	
	Zone 1B	Zone 2B	Zone 1B	Zone 2B	Zone 1B	Zone 2B	Zone 1B	Zone 2B	Zone 1B	Zone 2B
Overall percentage using credit	37.0	28.6	41.2	25.9	52.6	24.1	21.1	23.1	50.0	36.4
Purposes										
Consumption	50.0	28.6	42.9	0.0	50.0	14.3	20.0	0.0	54.5	0.0
Medical fees	40.0	42.9	14.3	57.1	10.0	0.0	20.0	40.0	0.0	12.5
School fees	0.0	0.0	14.3	0.0	10.0	14.3	20.0	0.0	0.0	12.5
Agricultural inputs	10.0	28.6	14.3	42.9	0.0	42.9	20.0	60.0	18.2	75.0
Other	0.0	0.0	14.3	0.0	30.0	28.6	20.0	0.0	27.3	0.0

CHAPTER 4: HOUSEHOLD LIVELIHOOD STRATEGIES

4.1 Introduction

Following the previous chapter's analysis of the effects of HIV/AIDS on household assets, Chapter 4 aims to build an understanding of the changes in households' livelihood strategies. It describes the different livelihood strategies according to household type, gender and livelihood zone, and then provides an overview of livelihood constraints.

4.2 Livelihood Strategies

According to the Zambia Livelihood and Vulnerability Assessment (Zambia VAC, 2003), Northern Province is covered by two main livelihood zones:

1. Zone 1B: livelihoods based on crops, fishing and trading;
2. Zone 2B: livelihoods based on crops, game meat, wages, charcoal and/or mining.

However, most households in the province base their livelihoods on a combination of crops, game meat, wages, charcoal and/or mining.

4.2.1 Crop production

Crop production is an important livelihood strategy for all the selected districts. The main crops grown are maize, cassava, rice, finger millet, sorghum, beans, Bambara nuts and Irish potatoes. While rice, cassava and Bambara nuts are the most important food crops in the fishing communities (zone 1B), maize, cassava, beans and Irish potatoes are important cash and food crops in the predominantly cropping communities (zone 2B).

The prevalent farming system in the fishing communities is described as a predominantly cassava–fish system, which is located on the perennially waterlogged areas surrounding the Chambeshi River and Lake Bangweulu – also commonly referred to as the Chambeshi-Bangweulu floodplains (ARPT, 1996). Mumba community in Mungwi district, and the two communities within Chilubi district are part of this farming system. Maize is normally grown in rotation with groundnuts and beans on permanent fields, while finger millet is grown in rotation with cassava and Bambara nuts on semi-permanent fields. Rice production is common in the wetland areas of these farming systems.

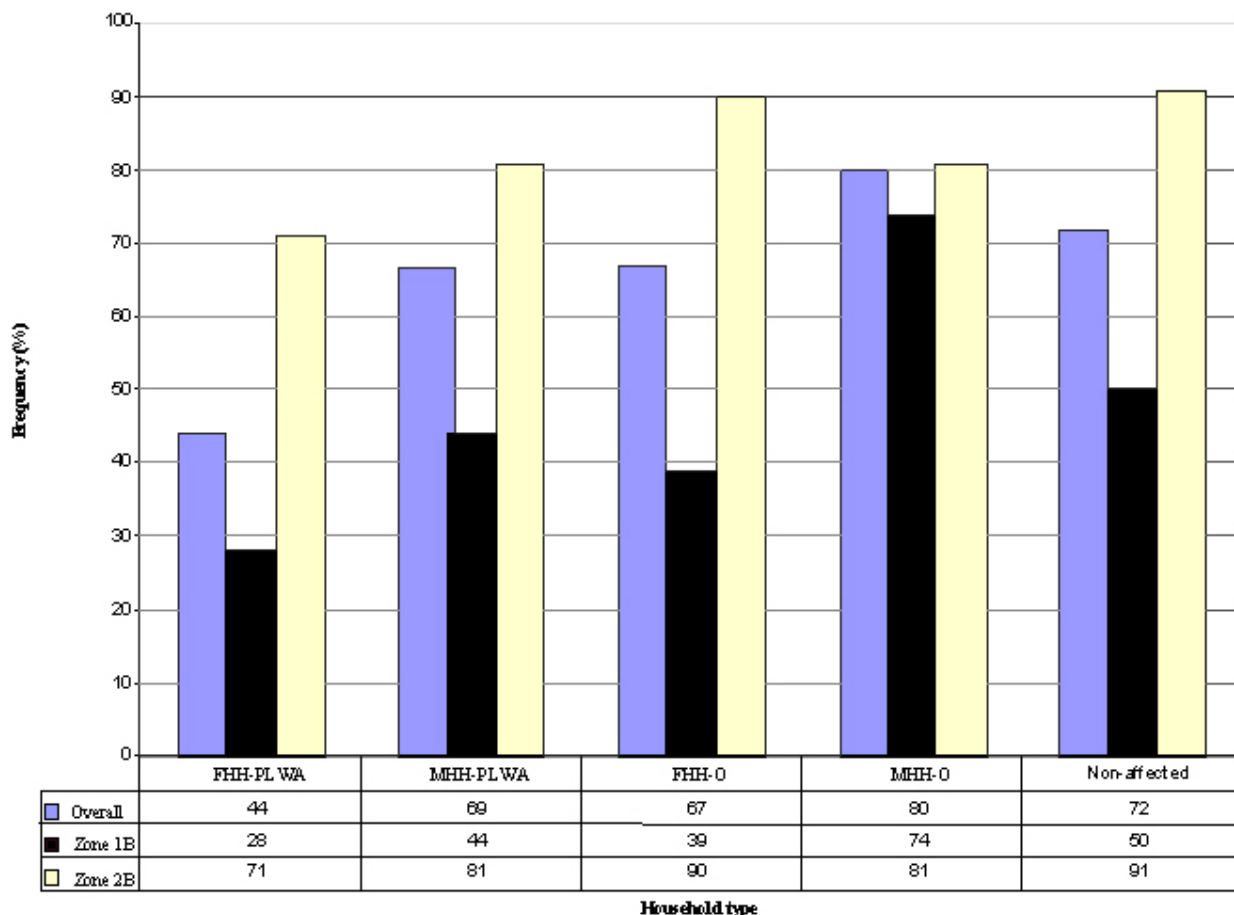
Communities whose livelihoods are based more on agriculture (zone 2B) are characterized by two types of farming systems: a traditionally chitemene-based finger millet–bean cropping system in the central plateau; and, in the northeastern plateau, a highly productive maize–cassava finger millet cropping system based on increasingly permanent land use methods with a tradition of keeping cattle. The communities in Isoka district are part of the eastern plateau farming system, while Kananda community in Mungwi district and the two communities of Lukulu and Finkuli in Mpika district are integral parts of the central plateau. Literature indicates that the latter is one of the most productive farming system zones in the province.

Until the post-independence era (the 1970s to late 1980s), when agricultural inputs were subsidized, maize and rice were the main cereal and staple crops grown in the province. The production and productivity of these crops have since been declining as a result of lacking inputs among farming households and, in particular, the low fertility status of soil in the province. Soils in Northern Province are generally acidic with low inherent fertility, which makes it difficult to grow cereal crops such as maize and rice continuously without applying chemical fertilizer. Consequently, farmers have resorted to the traditional chitemene system and to low-input crops such as cassava, finger millet and legumes, which have minimal nutrient requirements. Households with PLWA reverted back to the cultivation of these traditional staple crops to a

greater extent than other household categories. These households have little cash for purchasing inputs because of competing needs over limited income. Study findings indicated that the proportion of households currently growing maize and/or rice is least among female-headed households with PLWA and/or orphans, followed by male-headed households with PLWA (Figure 4.1).

The proportion of households growing maize/rice was generally lower in the fishing communities (zone 1B) than in the predominantly cropping communities (zone 2B). Farming systems in this zone are based more on cassava growing, as poor soils and a lack of cooperatives make it difficult to grow maize sustainably and profitably.

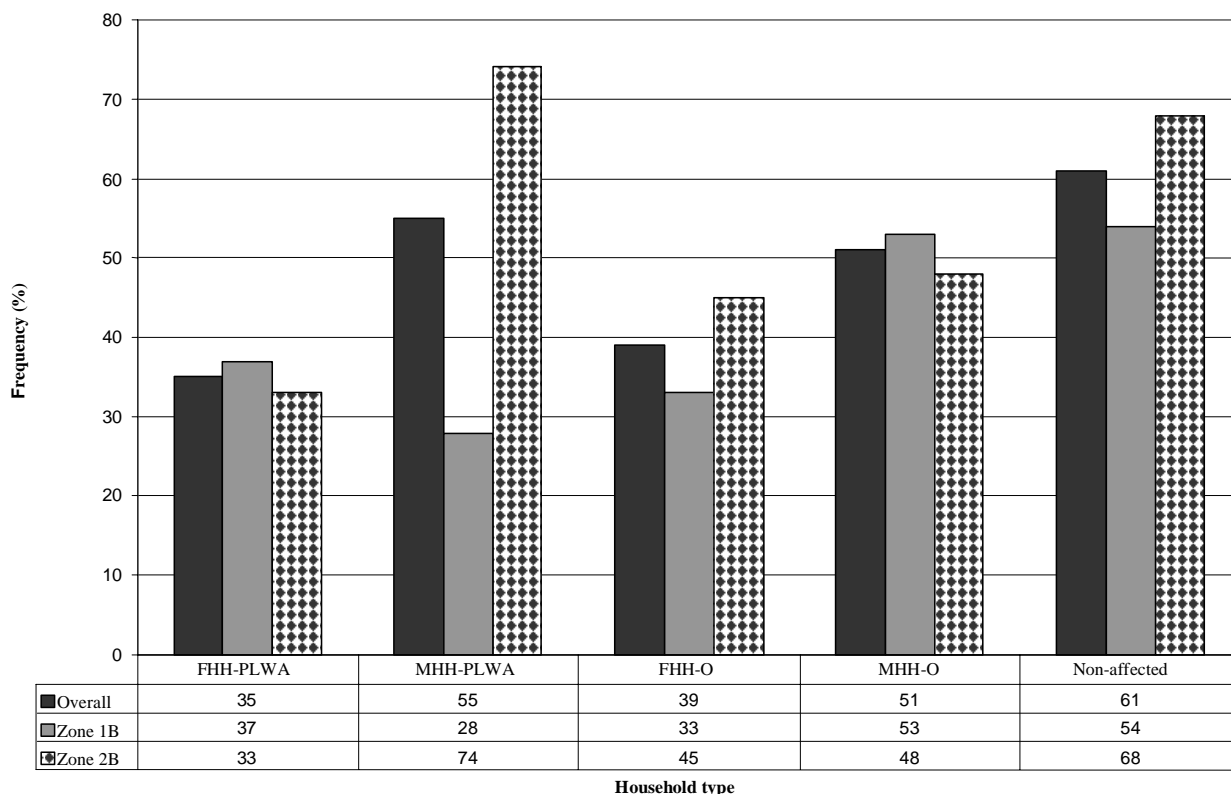
Figure 4.1: Proportions of households cultivating maize and/or rice, by household type



The chitemene system of cultivation is becoming increasingly important to food security in the study areas as a result of households' reduced access to inorganic fertilizers. The system entails cutting down the branches of trees in a circular area of forest, chopping the branches, heaping them across the field and burning them to provide potash for crops. Finger millet is planted in the first year, followed by beans and cassava in the second and third years, respectively. The chitemene field is used for only three to four years, after which a new field should be opened up. Owing to chitemene's destruction of forests and related environmental concerns, policy-makers have made deliberate moves to discourage its continued use. Farmers argue, however, that it is the only viable option available to them in the absence of an effective and sustainable fertilizer credit scheme. Community leaders emphasized that chitemene has long existed as a survival strategy for household food security and that the system is not as destructive as many people think because it allows trees to regenerate after some time. However, in the study communities, forest areas in the vicinity of homesteads have been depleted, forcing most households to walk for up to 10 km to open up new fields. Chitemene is very labour-intensive, both for opening new fields and in terms of the distances walked to distant fields. Consequently, female-headed households with PLWA and/or fostering orphans, particularly those headed by elderly grandmothers, find it very difficult to cultivate under chitemene (Figure 4.2). As a survival strategy, female-headed households normally resort to hiring men to cut the tree branches for them,

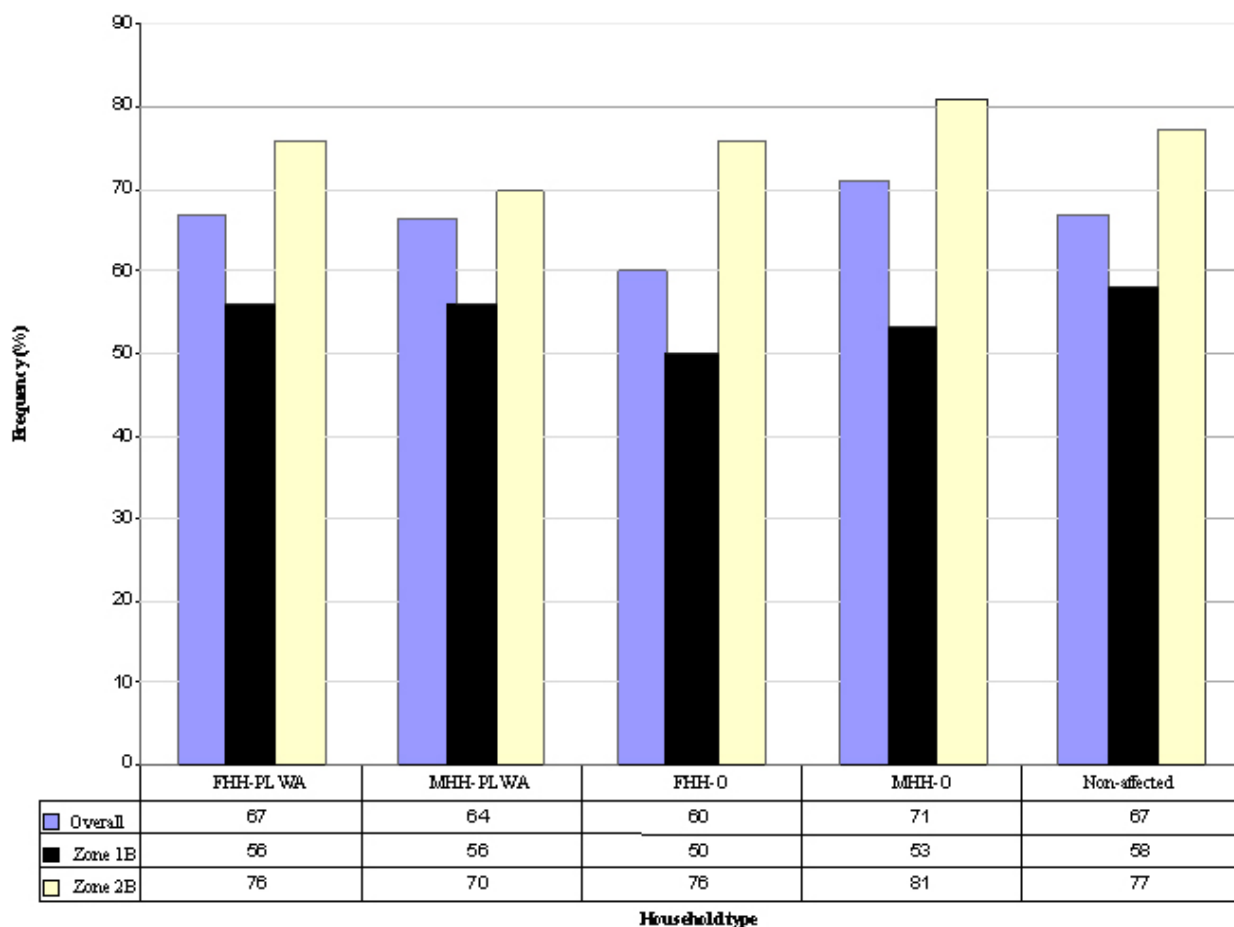
in exchange for chickens or beer. Fewer households in fishing communities practise chitemene, as these communities have less access to forest resources.

Figure 4.2: Proportions of households cultivating under chitemene, by household type



Cultivation of vegetables is common among all households, especially those in the predominantly agriculture communities (Figure 4.3). A higher proportion of households in these communities grow vegetables than in the fishing communities because of the relatively better access to inputs and markets. In all sites, female-headed households tend to concentrate on the cultivation of traditional vegetables, such as pumpkin leaves, cat whiskers, cassava leaves, sweet potato leaves and bean leaves. Most of the vegetables are for home consumption, although some surplus is usually sold. Male-headed households, on the other hand, tend to cultivate more high-value vegetables such as tomatoes, onions, rape, cabbage and okra. This is because they have more financial resources to purchase seed and chemicals, as well as to pay annual water user fees.

Figure 4.3 Proportions of households cultivating vegetables, by household type



Northern Province is characterized by weak market linkages, and surplus crop production is usually sold locally at low prices or through barter with traders. Households in stress often sell their produce, even when they have no surplus, as they have to meet immediate cash needs. According to Figure 4.4, fewer households taking care of PLWA and fewer female-headed households with orphans market their produce than do non-affected and male-headed households with orphans. As a result of time and energy constraints, and the inability to purchase inputs, these households have reduced the areas under cultivation, and consequently have fewer surpluses.

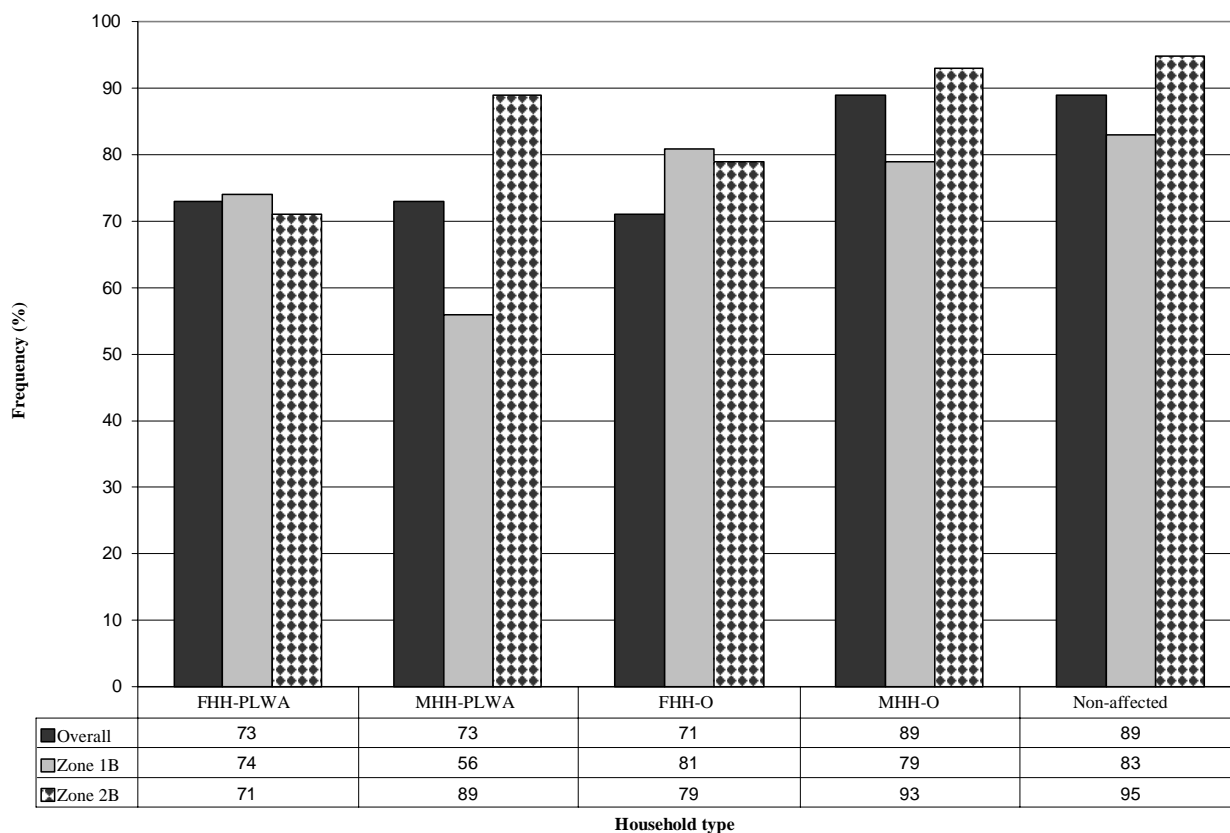
4.2.2 Fishing

Fishing is an important economic activity in the livelihoods of rural households in Northern Province. The province contributes more than a third of the country's annual total fish catch. Three of Zambia's most important fisheries – Mweru-wa-ntipa, Tanganyika and Bangweulu (north) – are partly located in the Northern Province. As well as these lakes, Northern Province is also endowed with numerous rivers, swamps and wetlands (dambos), which are also important sources of fish and form the basis of livelihood for many rural dwellers in the province. Among the sampled communities, Mumba in Mungwi is part of the Chambeshi fisheries, while Chilubi mainland and Chilubi Island are part of the Bangweulu. The types of fish that are common in the province include barbus, catfish, barbel fish, bottlenose fish, tiger fish and bream.

The fishing methods used range from the commercial to the subsistence. In commercial fishing, beach seines/seine netting is common, while gillnetting is common for small-scale fishing. Beach seines/seine netting is normally carried out by throwing the net into stagnant waters and pulling it out so that it encircles the fish within an area. Depending on the length of the net, two or more fishers can be involved in pulling it out of the water. Gillnetting involves the use of stationary nets that are normally left overnight and catch fish through the gills. This method is carried out by a single fisher. Other fishing methods that are more subsistence and

traditional in nature are spearing, trapping, basket fishing and fish poisoning. Spearing and trapping methods are used mostly by men, while basket fishing and fish poisoning are used more by women. Rod and line methods of fishing cut across all socio-economic groups, including children.

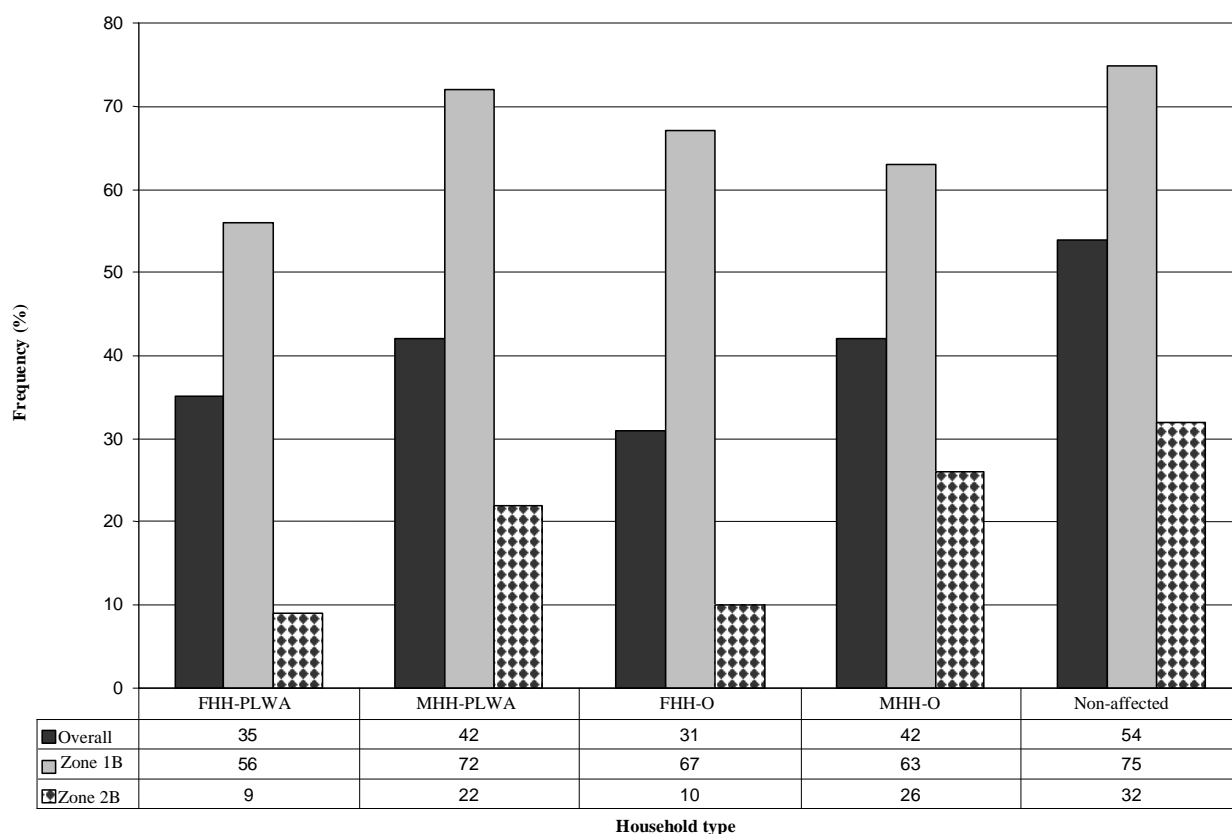
Figure 4.4: Proportions of households marketing crops, by household type



Fish poisoning is more prevalent among female-headed households because it costs less in terms of resources and time. The poison that is commonly used is *Tephrosia vogellii*, locally known as Ububa. This suffocates fish instantly by deoxygenating the water in a confined area so that the fish become weak and come up gasping for air. At this point, they are caught by either scooping in baskets or spearing. About 18.5 percent of the female-headed households involved in fishing in Mumba and Chilubi district reported using fish poisoning, compared with an average of 12.5 percent for male-headed households with PLWA and/or orphans. This statistic may not be representative of the actual numbers using poison, as most households did not acknowledge it for fear of legal implications. The use of poison as a means of catching fish constitutes a legal offence that is punishable in the courts of law.

Other inappropriate fishing methods that were reported are the use of small-mesh nets and the hammer and net. The use of small-mesh nets is common among households at the study sites as they try desperately to make a living from declining fish stocks. In fact, key informant interviews with extension personnel at the fishing study sites indicated that some fishers have resorted to the use of mosquito nets in order to make sure that they catch reasonable quantities of fish for home consumption. The hammer and net method of fishing, commonly referred to as *Ukutumpula* in the local language, entails setting a net in water and using a knob *kezy* to hit the water and drive the fish towards the net. These destructive fishing methods prevent fish from reaching full-growth and disturb the breeding cycle, thereby reducing fish stocks.

Figure 4.5: Proportions of households involved in fishing, by household type



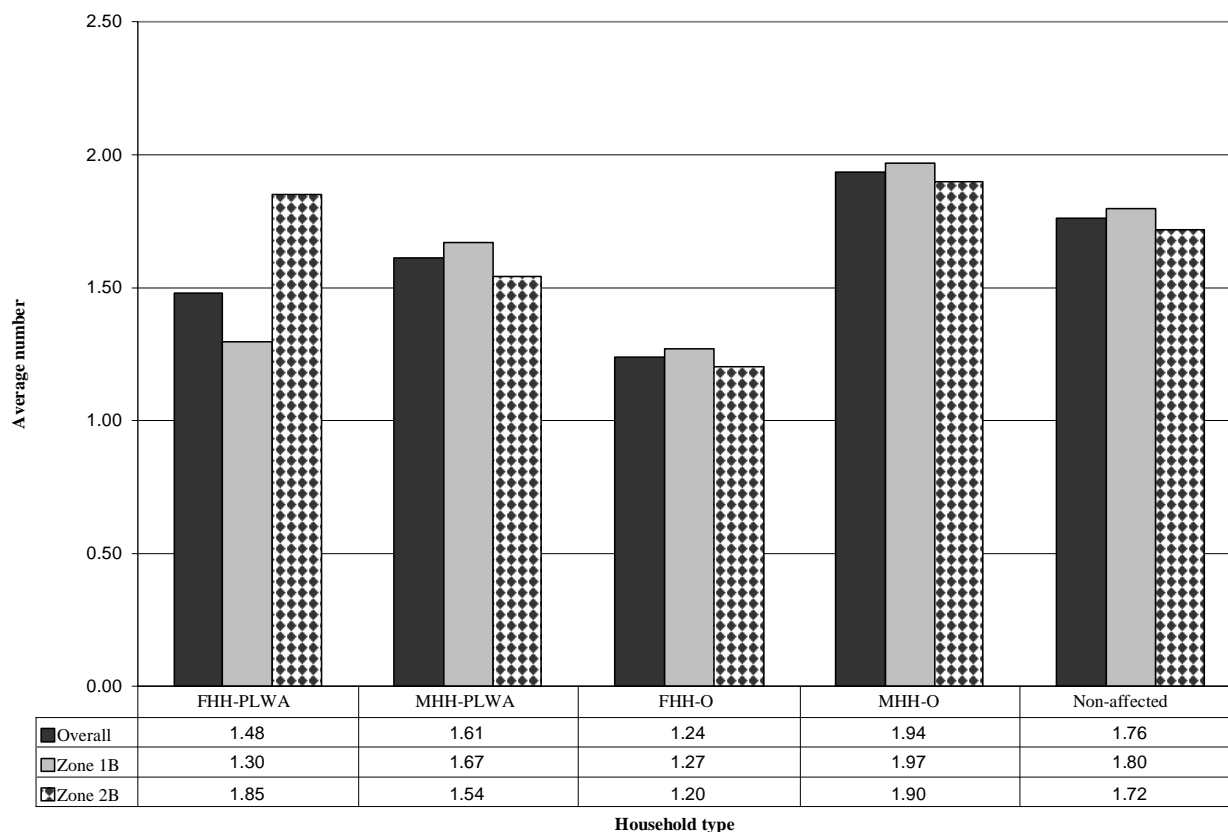
About 75 percent of all the households interviewed in the fishing communities are actively involved in fishing, compared with only 23 percent in the agriculture communities. Overall, the results of the livelihood analysis indicate that male-headed households are more involved in fishing than female-headed ones, which normally follow smaller-scale and less productive fishing methods. The difference between the proportions of male- and female-headed households involved in fishing is much less in fishing communities than in agriculture communities, because households in fishing communities have limited alternatives for generating income (Figure 4.5).

The life style in fishing communities tends to be different from that in agriculture communities. Fishers do not normally stay in one place, but wander around from place to place, following news of areas where there are good catches. The common practice is for fishers to stay at fishing camps away from their homes from March to November, leaving their wives and children behind. This is the period when fishers engage in extra-marital activities, thereby putting themselves at risk to HIV/AIDS infection. In some cases, fishers bring their wives with them to the fishing camps, leaving children to fend for themselves over long periods of time. According to health personnel in Mumba community, this negligence of children has far-reaching effects on their health and education.

4.2.3 Off-farm income-generating activities

Off-farm income-generating activities (IGAs) are important to the livelihoods of many rural households in the study areas because they complement the income sourced from on-farm activities. Households taking care of PLWA and female-headed households with orphans have fewer members involved in IGAs, as they have less active labour and time available (Figure 4.6). Consequently, these households have fewer alternatives to supplement the low income earned from agriculture and fishing.

Figure 4.6: Household members involved in off-farm employment, by household type



The main sources of income, other than sale of crops and fishing, are beer brewing, charcoal burning, poaching, petty trade, piecework, sale of forest products and handicrafts. Table 4.1 shows the different off-farm IGAs in the study areas, at present and five years ago, disaggregated by household type and livelihood zone.

Table 4.1: Involvement in different IGAs, by livelihood zone and household type

Off-farm IGA	Period	Livelihood zone									
		Livelihood zone 1B					Livelihood zone 2B				
		FHH-PLWA	MHH-PLWA	FHH-O	MHH-O	Non-affected	FHH-PLWA	MHH-PLWA	FHH-O	MHH-O	Non-affected
Beer brewing	Now	37.0	44.4	57.9	26.3	41.7	42.9	48.1	46.2	50.0	47.2
	5 years ago	40.7	38.9	63.2	36.8	33.3	61.9	51.9	50.0	36.4	51.2
Charcoal burning	Now	7.4	0.0	10.5	5.3	16.7	9.5	14.8	0.0	26.9	31.8
	5 years ago	3.7	0.0	5.3	10.5	16.7	9.5	23.1	0.0	26.9	27.3
Poaching	Now	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	7.5	12.5
	5 years ago	0.0	0.0	0.0	0.0	0.0	1.5	3.5	0.0	9.0	8.7
Petty trading	Now	11.1	11.1	10.5	31.6	20.8	4.8	29.6	17.2	11.5	13.6
	5 years ago	11.1	5.6	21.1	21.1	20.8	14.3	14.8	10.3	15.4	9.1
Piecework	Now	40.7	50.0	15.8	47.4	41.7	47.6	48.1	37.9	38.5	31.8
	5 years ago	29.6	33.3	15.8	36.8	33.3	42.9	37.0	31.0	38.5	36.4
Sale of other forest products	Now	25.9	11.1	15.8	15.8	16.7	28.6	18.5	31.0	15.4	18.2
	5 years ago	14.8	5.6	10.5	15.8	16.7	14.3	11.1	24.1	15.4	9.1
Making/selling handicrafts	Now	7.4	5.6	15.8	15.8	0.0	23.8	33.3	10.3	34.6	22.7
	5 years ago	3.7	11.1	21.1	15.8	0.0	23.8	25.9	10.3	23.1	18.2

Beer brewing was found to be an important source of income and access to labour across all household types, especially those headed by grandmothers. This activity has remained a common poverty coping strategy

among households that have few resources to invest in more attractive business undertakings because it requires few inputs. The major ingredient in beer brewing is finger millet powder, to which water is added to make a very thick porridge that is then fermented into beer. There are two types of beer brews common in the province: Katata is the commercial and most common beer, while Katubi is rarely brewed for commercial purposes and is used for ceremonial events involving the dignitaries of a given clan.

Charcoal burning is practised more in the predominantly cropping communities (zone 2B), because of the available forests and markets in the surrounding towns. This activity is very labour-intensive and requires male labour. Consequently, relatively few households affected by HIV/AIDS or female-headed households with orphans are involved in charcoal burning. Non-affected households and, to a lesser extent, male-headed households with orphans are involved in charcoal burning. In addition to time, these households have greater access to bicycles for transporting the charcoal to the roadside or nearby markets.

Poaching is an important source of income among communities in the predominantly cropping communities, especially in Mpika district, and is increasingly carried out by male-headed households. Illegal hunting in government GMAs is dangerous: poachers risk being shot by game rangers and sometimes by their own self-made pistols, which may explode when shooting. In addition to these risks, the poachers have to walk long distances of up to 50 km, meaning that they often have to be away from home for seven to 21 days. Because of the risks and travelling time, female-headed households are not involved in poaching, but instead work in the fields of poachers in order to obtain game meat. Male-headed households with PLWA are also less involved in poaching, as they lack the time and/or energy, depending on who in the household is sick. The wild animals hunted are mostly duikers, buffaloes, warthogs, zebras and animals of the Impala family. When the animals are killed, the game meat is processed before being transported home for sale/consumption.

Petty trading is done by all household categories. However, few female-headed households with PLWA earn income from petty trade, as they normally do not have time to travel, leaving the sick. In contrast, male-headed households with PLWA are increasingly resorting to petty trade as an alternative income source.

Piecework is practised by many households and involves working for others in the fields, often in exchange for food. This is a particularly common coping strategy in households with PLWA. These households produce less on their own fields because they have neither the financial resources for inputs nor the necessary strength for full-time cultivation, forcing them to work for others from time to time in order to supplement the shortfall.

Collecting/sale of forest products such as mushrooms, caterpillars and wild fruits is done mostly by female-headed households in all the areas. Children are often involved in selling the products at roadside markets.

Making and sale of handicrafts is done mostly by male-headed households, especially those in the predominantly cropping areas. Basket weaving, reed mat making and woodcarving constitute the major handicrafts practised.

4.2.4 Seasonal calendars and gender division of labour

Household members in the study areas engage in both on- and off-farm activities in order to make a living. Tables 4.2 and 4.3 show the seasonality of household activities by gender in the sampled areas. On-farm activities start as early as August, before the onset of the rainy season in October/November, and take place in the permanent fields, semi-permanent fields (chitemene), gardens and winter fields.

The first activity in the permanent fields is *land preparation*, which involves land clearing and ploughing. It is carried out from October to March and is done mostly by men and boys. When virgin land is opened for the first time, it is stumped before ploughing, usually between April and May. *Planting* follows after land preparation. Unlike the fishing communities, where planting is confined to November and December, planting in the agriculture communities is done over a five-month period from November to March, because there are more crops to plant in these communities. Most planting is done by women. Crop weeding is also mostly done by women and girls, and takes place from January to April in the fishing communities and from

November to April in the predominantly cropping communities. This activity takes a little longer in the cropping communities because of the continuous planting of crops that is normally extended until March.

When sorghum is at the dough stage, there is a need to *scare away birds* in order to minimize crop damage. Bird scaring is a time-consuming activity that is mostly done by women and children, especially from April to November when the crops are maturing. This coincides with the time when men begin to construct and/or repair granaries.

Harvesting is mostly done by women, starting in May and ending around August. Unlike the agriculture communities, harvesting in the fishing communities goes on throughout the year owing to the continuous digging of cassava tubers. Cassava tubers are only lifted out when they are needed for consumption. The selling of crop produce is mostly done by men from June to December in the agriculture communities.

Chitemene is an important livelihood strategy that is performed by both men and women with the assistance of children. The cutting of branches and burning are normally done by men, while women are more involved in spreading the branches. When the chitemene fields are ready, women are mostly involved in planting, weeding and harvesting.

Gardening is a year-round activity that is mostly done by men in the fishing communities and by both men and women in the agriculture communities.

Winter cultivation is done in the wetland areas by both men and women from June to October. This activity supplements the small harvests usually obtained from rainfed crops, and contributes to household income. Winter cultivation is most prominent in the communities in Mpika district.

Overall, the community seasonal calendars across the study sites indicate that women do more work than men. This unfair distribution of roles is a reflection of the cultural norms in Zambia, and regrettably burdens women because they also do more of the household chores, including caring for the sick. It was also observed that men tend to be more involved in IGAs such as selling crops and poaching.

The busiest months of the year in the fishing communities are October, November, March and April, when farming activities coincide with fishing. In the agriculture communities, the busy period is slightly longer (from November to May). Regrettably however, the busiest months in both zones coincide with the hunger period.

Table 4.2: Seasonal calendar and labour division for zone 1B

Activity	Month												Gender division of labour			
	O	N	D	J	F	M	A	M	J	J	A	S	Men	Women	Girls	Boys
Rainy season																
Permanent fields																
Stumping													8	0	0	2
Land preparation/ploughing													4	3	2	1
Planting													2	4	2	2
Weeding (cereals)													2	3	3	2
Weeding (cassava)													2	6	1	1
Bird scaring													0	4	3	3
Ridging													4	4	1	1
Harvesting													2	5	2	1
Threshing/shelling and bagging													3	4	2	1
Selling													6	3	1	0
Making granary/storage													5	3	1	1
Gardening													5	2	1	2
Chitemene																
Cutting trees													8	0	0	2
Spreading branches													0	8	2	0
Burning													6	2	0	2
Planting													3	3	2	2
Harvesting													0	8	1	1
Selling													5	5	0	0
Winter cultivation													3	4	2	1
Off-farm activities																
Fishing																
Fishing													6	0	0	4
Buying nets													8	0	0	2
Mounting nets													8	0	0	2
Making boats													9	0	0	1
Traps													8	0	0	2
Gill netting													6	0	0	4
Basket fishing													0	5	5	0
Basket weaving													10	0	0	0
Spearing													8	0	0	2
Processing													3	5	1	1
Other																
Piecework													4	3	1	2
Mushroom gathering													2	2	3	3
Charcoal burning													5	2	0	3
Thatching grass cutting													1	7	2	0
Beer brewing													0	8	2	0
Crafts and reed mats													6	3	0.5	0.5
Fuelwood collection and selling													4	3	2	1
Brick laying (house construction)													7	0.5	0.5	2
Pit sawing/timber production													6	1	1	2
Blacksmith													7	1	0	2
Cikanda (orchids) digging													1	5	2	2
Hunger period																

Table 4.3: Seasonal calendar and labour division for zone 2B

Activity	Month												Gender division of labour			
	O	N	D	J	F	M	A	M	J	J	A	S	Men	Women	Girls	Boys
Rainy season																
Permanent fields																
Stumping													8	0	0	2
Land preparation/ploughing													4	4	1	1
Planting													2	5	2	1
Weeding (cereals)													4	4	1	1
Bird scaring													0	4	3	3
Ridging													3	3	3	1
Harvesting													2	4	2	2
Threshing/shelling and bagging													4	4	1	1
Selling													4	4	1	1
Making granary/storage													5	2	1	1
Gardening													5	2	1	2
Ifisebe (winter ploughing)													3	4	2	1
Chitemene																
Cutting trees													6	1	0	3
Spreading branches													1	5	3	1
Burning													4	3	1	2
Planting													1	5	3	1
Harvesting													3	5	1	1
Selling													5	5	0	0
Off-farm activities																
Piecework/waged labour													3	3	2	2
Mushroom gathering													2	2	3	3
Caterpillar collection													1	4	3	2
Honey collection													6	0	0	4
Charcoal burning													5	2	0	3
Thatching grass cutting													1	6	3	0
Beer brewing													2	5	2	1
Crafts and reed mats													7	3	0	0
Fuelwood collection and selling													2	5	3	0
Brick laying (house construction)													7	1	0	2
Pit sawing/timber production													7	1	1	1
Blacksmith													8	2	0	0
Cikanda (orchids) digging													0	5	4	1
Poaching													9	0	0	1
Working for food													0	5	0	5
Hunger period																

4.3 Constraints to Livelihoods and Responses

The participatory livelihood analysis included a detailed problem analysis with separate groups of women, men and village leaders in each community visited. Table 4.4 is a summary of the problems reported, which reflect community perspectives and their respective responses. The main problems, in order of importance, include: lack of agricultural inputs, especially chemical fertilizers and improved seed; poverty/lack of income; increase in diseases such as HIV/AIDS, malaria, pneumonia and TB; and the burden of fostering orphans.

Table 4.4: Synthesis of problem analysis, women's, men's and village leaders' perspectives

Problem	Cause of problem	Coping mechanisms	Solution suggested by community
1. Lack of agricultural inputs (fertilizers and improved seed)	Lack of money to purchase inputs (down payment) Lack of credit facilities High cost of inputs Distant input markets Inadequate/late delivery of inputs	Crop diversification IGAs Use of chicken manure Leaving crop residues Shift to chitemene Cultivate floodplains Grow finger millet on anthills Winter ploughing Shift from maize to cassava Recycle local seed	Join cooperatives Shift to low-input crops such as cassava and sorghum Adopt conservation agriculture Engage in more off-farm IGAs Lobby for micro-credit facilities
2. Poverty/lack of income	HIV/AIDS Increased medical expenses Low agricultural production Reduced area cultivated owing to lack of labour Lack of employment opportunities Low cash economy (dependence on bartering) Lack of credit facilities Lack of market/unfair bartering systems	Piecework/food for work Borrowing money from relatives/friends Poaching (Mpika district) Beer brewing Charcoal burning Selling caterpillars/other forest products Selling produce at lower prices/distress sale crops Bartering with traders Prostitution	Lobby for credit facilities Increase vegetable gardening IGAs, including beekeeping and fish farming Cultivate low-input demanding crops with ready market Rear small livestock
3. Increase in diseases (HIV/AIDS, malaria, pneumonia, TB)	Hunger/poverty Unbalanced diets Prostitution Unclean water/poor sanitation Mosquitoes Multiple sex partners Barter systems coupled with sex favours during price negotiations Use of contaminated razor blades/needles Excessive beer drinking Sexual cleansing Worry	Go to health clinic Drink boiled water Refrain from sexual cleansing	Good diets Ethical behaviour Improve hygiene Increase AIDS awareness Produce more food
4. Food insecurity/hunger	Lack of agricultural inputs and poor soils Labour constraints due to illness resulting in reduced area under cultivation Drought/floods Crop/animal diseases	Distress sale of assets to buy/barter for food Sell game meat Cultivate winter maize in dambos Food for work Beer brewing and other IGAs Collecting wild foods from the forest Engage in prostitution	Increase winter cultivation IGAs Cultivate early-maturing varieties Crop diversification Complement low-input crops such as sorghum and cassava with high-protein crops (soybeans)
5. Fostering orphans (additional burden)	Increased deaths/AIDS Bad behaviour Witchcraft Divorce	Rely on extended family Withdraw orphans from school Orphans assist in piecework/food for work IGAs	AIDS awareness Generate income for school fees and food Train children in IGAs Increase food production

Lack of agricultural inputs, especially chemical fertilizers and improved seed, is a universal problem among households at all the study sites visited. Table 4.4 indicates that the problem of inputs hinges mainly on households' lack of finances for buying them, and in some locations on the (periodic) unavailability of inputs. The fishing communities, which have poor road infrastructure and are located in places that are very

distant from the input delivery centres in the province, are more disadvantaged in terms of input acquisition. As observed in Chapter 3, crop production and productivity tend to be low because very few households in the province use fertilizers and improved seed. Most communities visited strongly indicated that the introduction of micro-credit facility schemes in the province was the most feasible solution to the problem of inputs, as this would enable resource-poor farmers to acquire inputs.

Lack of income or poverty was highly attributed to limited opportunities for income generation. Agriculture, which is the mainstay of the local economies, does not contribute much to incomes because of its low performance. Limited markets and limited surpluses have made it increasingly difficult for households to earn a living from agriculture. Lack of income, especially among female-headed households taking care PLWA and orphans, leaves households with no option but to engage in survival strategies such as sex work, which increase their risk of contracting HIV/AIDS. Most households respond to this problem by engaging more in piecework so that they can secure income for food and medication.

The communities at the study sites saw an *increase in diseases* such as HIV/AIDS, malaria, pneumonia and TB as a challenge that was exacerbated by poverty, promiscuity and hunger. Some households in the communities respond to this problem by observing good hygiene and ethical practices.

Food insecurity and prolonged hunger periods are caused by poor production systems and lack of resources, such as labour and cash to invest in production. Households that are affected by HIV/AIDS respond in various ways, such as engaging in food for work, distress sales of assets to buy food, and in some instances sex for cash or food. However, the communities view sustainable agricultural practices such as crop diversification and the cultivation of low-input and early-maturing crop varieties as more viable and sustainable practical solutions to the problem of hunger.

An *increase in the number of orphans*, mostly resulting from HIV/AIDS, is a growing problem that has placed a burden on households, especially female-headed ones. Owing to the non-availability of social safety nets, most households rely on extended family networks for assistance. In some instances, the withdrawal of orphans from school by overburdened households has been used as a way of easing the pressure and sparing resources for food and medication

CHAPTER 5: LIVELIHOOD OUTCOMES

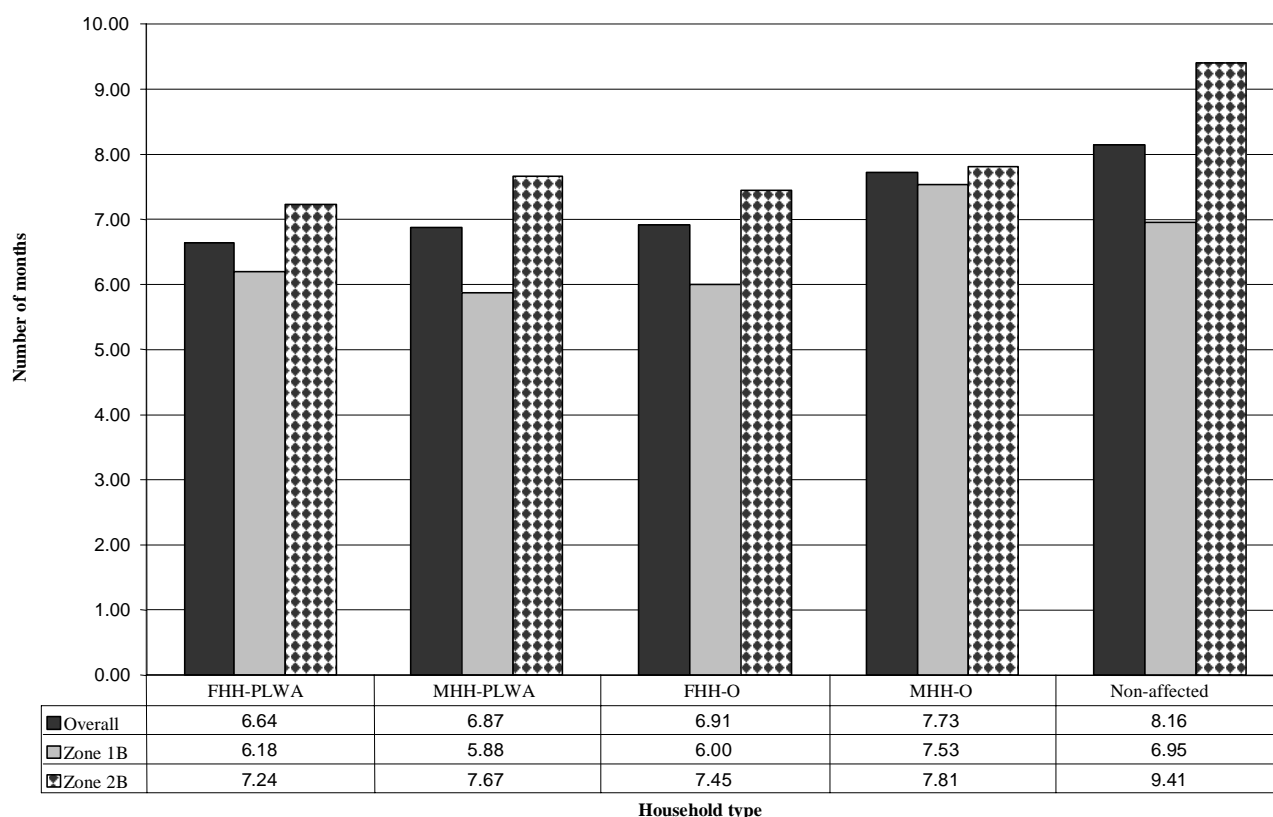
5.1 Introduction

Following on from the household livelihood strategies described in Chapter 4, Chapter 5 focuses on livelihood outcomes. In particular, it looks at household food sufficiency and future perspectives.

5.2 Household Food Sufficiency

One indicator to measure livelihood outcomes is household food sufficiency. Figure 5.1 shows the numbers of months that different household types are self-sufficient from their own produce. None of the household types interviewed produce enough food to last them all year round, implying that they have to purchase food for a period ranging from two to 4.5 months. According to the statistics indicated in the figure, the worst-affected are female-headed households, especially those caring for PLWA. These households are food-insufficient for an average of 3.4 months a year, compared with 1.9 months for non-affected households. Female-headed households with PLWA and/or orphans reduce the area under cultivation, have little access to improved technologies and are increasingly unable to cultivate under chitemene – all of which has reduced their agricultural production. In addition, these households have few income opportunities, and thus have limited disposable income for purchasing food to cover the months of food insufficiency. This makes them more likely to adopt risky survival strategies such as sex work, thus exposing them further to HIV/AIDS.

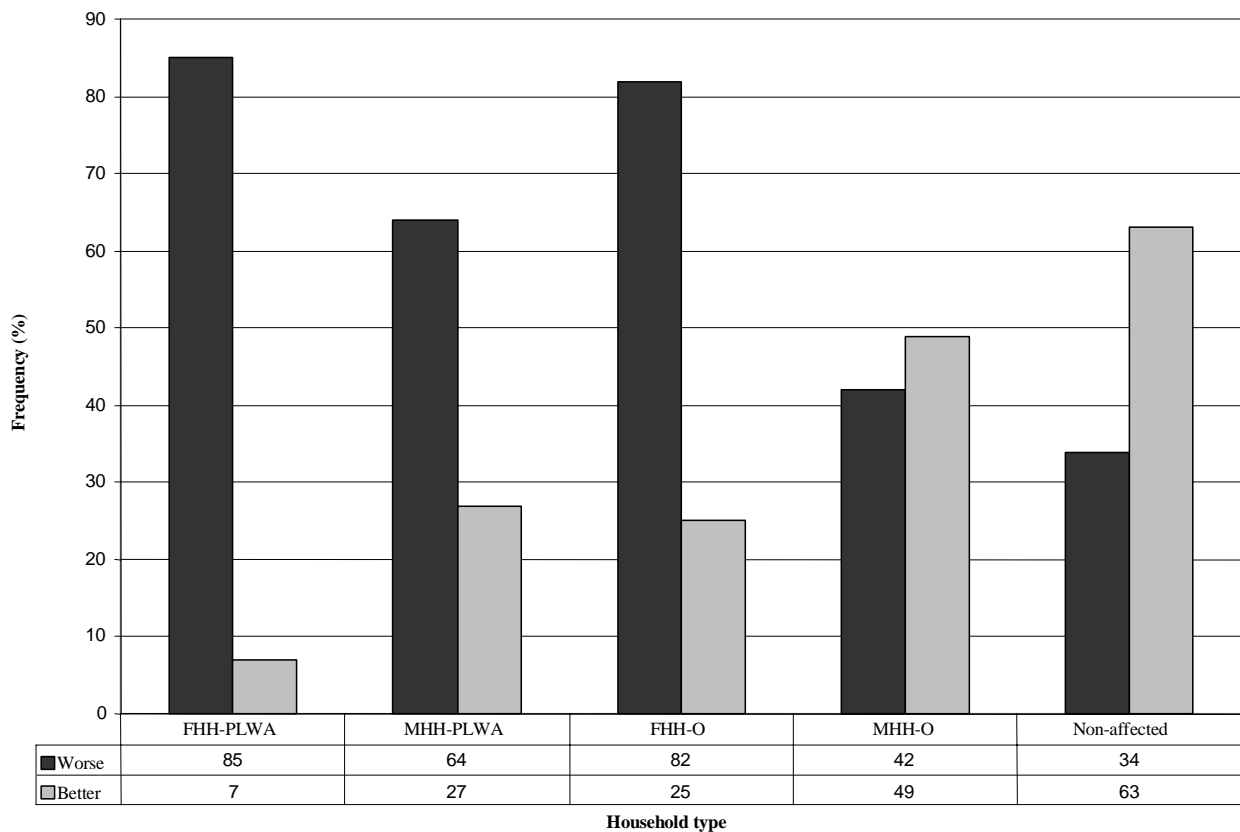
Figure 5.1: Months of food sufficiency, by household type and livelihood zone



5.3 The Future Perspective

During the livelihood analysis, 231 households were asked to assess their future outlook on an ordinal scale of worse, same or better (Figure 5.2). Some 84 percent of female-headed households with PLWA perceive the future as bleak. Most of these households are headed by grandmothers looking after grandchildren and a sick daughter or son, or by younger widows. Both categories have little hope for the future, as grandmother household heads are ageing and their grandchildren are often too young to assist in farm work; while younger widow household heads either are sick themselves or spend most of their time nursing sick children instead of working on the farm.

Figure 5.2: Households’ perceptions of their future outlooks, by household type



CHAPTER SIX: CONCLUDING REMARKS

This livelihood analysis has endeavoured to provide an understanding of the dynamics affecting assets and livelihood strategies that are induced by the presence of HIV/AIDS in communities and households in Northern Province. The findings indicate that the current HIV/AIDS prevalence rates, coupled with high levels of poverty in the province, have made it extremely difficult for households to sustain their livelihoods. The HIV/AIDS epidemic has not only undermined households' capacity to produce their own food, but it has also made it difficult for those affected by the disease to recover from its effects. The following are some of the notable effects:

- HIV/AIDS causes and exacerbates food insecurity. The loss of household labour force and agricultural expertise has resulted in reduced agricultural production and a shift to survival foods, such as cassava. The disease also diminishes investment in agriculture, as more resources are spent on medical costs, funerals and food purchases. Consequently, households face increasing difficulties in ensuring their food security.
- Food insecurity or hunger accelerates the spread of the virus and the course of the disease. Hungry people are driven to adopt risky strategies to survive. In desperation, women and children barter sex for money and food, exposing themselves to the risk of infection. For people who are already infected with HIV, hunger and malnutrition increase their susceptibility to opportunistic infections, leading to an earlier onset of full-blown AIDS.
- Community safety nets for HIV/AIDS-affected households are weak in Northern Province, and most households rely solely on reciprocal relations with the extended family for labour, food and financial assistance. Households taking care of PLWA participate relatively little in CBOs, particularly in the newly promoted farmer cooperatives. This is the result of competing labour needs, high levels of social stigma associated with HIV/AIDS and insufficient targeting by service providers. As a result, households tend to lose out on such government initiatives as access to subsidized farm inputs.
- Gender inequality has far-reaching effects among affected households. The livelihood analysis showed that female-headed households are more vulnerable to the impact of HIV/AIDS. Women bear the brunt of caring for PLWA and orphans, thus reducing their time for productive activities. In addition, HIV/AIDS worsens women's already low access to productive resources for agricultural production, such as land, livestock, implements and inputs, because of distress sales and property grabbing.
- HIV/AIDS has a greater impact on poor households, as it forces them to draw on their assets to cushion the shock. This calls for interventions to strengthen the resource base and provide the means to protect assets in order to reduce susceptibility to HIV infection and increase resilience to the impact of AIDS.

PART B

QUANTITATIVE BASELINE SURVEY



EXECUTIVE SUMMARY: QUANTITATIVE BASELINE SURVEY

1. A household baseline survey was conducted in order to collect quantitative data for selected parameters to support the qualitative findings and to be used in future monitoring activities. The baseline survey disaggregated the data analysis for the following four household categories (also called vulnerability categories): households with people living with HIV/AIDS (PLWA) and orphans; households with PLWA; households with orphans; and non-vulnerable female-headed households. The baseline survey was conducted in the same communities as the qualitative livelihood analysis (see Part A of this report). All households within the corresponding Standard Enumeration Areas (SEAs) of the Central Statistics Office were listed and, based on information from health centres, stratified according to their status regarding PLWA. All households within the PLWA strata were included in the sample (i.e. purposively selected). To select households from the non-PLWA strata, a simple circular systematic selection was applied.

DYNAMICS IN THE HOUSEHOLD RESOURCE BASE

Human capital

2. Increasing numbers of vulnerable households are headed by elderly people. While the average age for the head of non-vulnerable households is 41 years, male heads of households that take care of PLWA and orphans are on average 50 years old. Female heads of households with orphans are on average 48 years old. Moreover, vulnerable households have a higher proportion of elderly (65 +) than non-vulnerable households do.
3. Households that keep orphans have higher dependency ratios. Male- and female-headed households that take care of orphans have average dependency ratios of 1.21 and 1.16, respectively, whereas non-vulnerable households have an average dependency ratio of 1.05.
4. Female-headed households take care of greater numbers of orphans. Female-headed households host an average of 2.8 to 3.2 orphans, compared with an average of 2.2 to 2.3 in male-headed households. Grandparents take care of 28 percent of all the orphans in the sample.
5. Women are less educated than men are; however, women of the younger generation tend to be better educated than those of the older generation. Among all girls and women who attained primary education, 56 percent are aged between 15 and 49 years. In addition, among all female heads of household, 11 percent have never been to school and 21 percent have attained primary education only. For male heads, these figures are, respectively, 3 and 38 percent. Furthermore, individuals in female-headed households have lower levels of education: in female-headed households, 46 percent of all the members aged between 15 and 64 years have no education, while in male-headed households this figure drops to 13 percent.
6. Many households in Northern Province, irrespective of whether they are affected by HIV/AIDS or not, have to discontinue the schooling of some of their children at a certain age owing to lack of financial resources to pay parent-teacher association (PTA) fees (for 44 percent of respondents) and/or because the children prefer to start working (32 percent). This latter reason is particularly common among non-vulnerable households, 20 percent of which have a child who has dropped out of school to start work. Of all the children aged between five and 20 years who were ever enrolled in school, between 11 and 15 percent dropped out. The proportion of school drops-out is slightly higher for girls (15 percent) than boys (12 percent).
7. HIV/AIDS accounts for 32 percent of all reported chronic illnesses. Tuberculosis (TB) and malaria constitute 12 and 18 percent, respectively, of the total reported illnesses. In Isoka and Mpika districts there are still high degrees of stigma attached to chronic illness, which were reported as “other” by 14

and 16 percent of respondents in these districts, respectively; an additional 3 percent answered “don’t know” when asked the cause of household members’ deaths.

Physical assets

8. Overall, asset ownership is low across all vulnerability categories and districts, which reflects the general poverty status in Northern Province. There is a gender gap in asset ownership, with men owning substantially more items than women do. Female-headed households keeping PLWA are the most asset-poor of the vulnerability categories.
9. Female-headed households keeping PLWA and/or orphans experienced severe decreases in the ownership of most assets between 1999 and 2004 owing to distress sales and property grabbing.
10. Among female-headed households with PLWA and orphans, 34 percent reported that their property was grabbed after the death of the husband, compared with 12 percent of female-headed households with orphans. Property grabbing is particularly high in Chilubi and Mpika districts: 18 percent of all households in Mpika district and 19 percent in Chilubi district had property grabbed by relatives after the death of a spouse. Overall, there is still fear about openly declaring property grabbing, and only a third of the respondents were willing to answer questions about this issue.
11. Households in the sample area keep few cattle or small ruminants and concentrate mainly on poultry rearing instead. There is a strong decrease in poultry across the vulnerability categories, mainly as a result of Newcastle disease, but vulnerable households experienced a greater loss owing to the need to sell poultry to cover medical and funeral expenses. Consequently, households with PLWA keep less poultry.

Social capital

12. Membership in the Food Reserve Agency cooperatives is low across vulnerability categories and districts, with only 7.3 percent of all respondents being members. Membership among female-headed households is only half that among male-headed ones.
13. Vulnerable households, particularly female-headed ones, do not participate greatly in farmers’ groups and CBOs as a result of time and financial constraints. Only 5 percent of all female-headed households in the sample areas participate in farming groups, and 7 percent in CBOs. Membership in cooperatives, farming groups and CBOs is lowest in Chilubi district, which is not often targeted by government and non-governmental development support.

Income and expenditure patterns

14. Over the last five years, more vulnerable than non-vulnerable households have resorted to petty trading and beer brewing as income sources. On the other hand, fewer vulnerable than non-vulnerable households have invested in agricultural inputs. The number of female-headed households that burn charcoal and brew beer as sources of income has also increased.

HOUSEHOLD LIVELIHOOD STRATEGIES

15. Farming is the most important livelihood strategy for both fishing and farming communities. While male-headed households across the household categories are involved in fishing and/or trading to supplement household income; female-headed households rely mainly on beer brewing to obtain cash. In

particular, grandmothers taking care of orphans are involved in beer brewing as a livelihood strategy, especially in Chilubi and Mungwi districts.

16. Northern Province is characterized by low employment opportunities in the formal sector. In the sample area, only 3 to 14 percent of male-headed households depend on formal employment as their main livelihood strategy.
17. More children in vulnerable than in non-vulnerable households assist in farming and domestic activities.

Fishing

18. Most fishing is carried out by male-headed households that do not take care of orphans or PLWA. The main methods used by households in Northern Province include gillnetting, seine netting and the use of baskets, with only a small proportion (7 percent) of the households interviewed openly declaring the use of illegal fish poison as a method of catching fish.

Land and crop husbandry

19. Over the last five years all vulnerability categories decreased the proportion of their holdings under cultivation (leaving it fallow) by 5 to 11 percent. These decreases were greater for female-headed than male-headed households. Non-vulnerable households, on the other hand, actually increased the proportion of their holdings under crop cultivation by 5 percent.
20. Owing to lack of time and labour, fewer vulnerable than non-vulnerable households are able to ensure food security through slash-and-burn (chitemene) cultivation. At present, more than twice as many non-vulnerable as vulnerable households practise chitemene.

HOUSEHOLD COPING STRATEGIES

21. Most of the coping strategies that households in the different vulnerability categories resort to are responses to: 1) poor agricultural production, resulting from the inability to purchase inputs, and poor soil fertility status; and 2) lack of money.
22. More households taking care of PLWA resort to work for food as a coping strategy than do non-vulnerable households. This is particularly so for female-headed households.

LIVELIHOOD OUTCOMES

Food sufficiency

23. Vulnerable households, particularly those with the double burden of looking after orphans and PLWA, are less food-sufficient from their own produce than male-headed non-vulnerable households are. Vulnerable households are food-sufficient from maize production for an average of 2.6 to 4.1 months a year. Non-vulnerable households headed by men, on the other hand, produce more maize and are food-sufficient for maize for an average of 10.1 months a year.

Household food consumption

24. The period of food sufficiency from maize production is highest for male-headed households in Mpika district (7.7 months a year) and lowest for female-headed households in Chilubi district (1.4 months). All households have an average of two meals a day, irrespective of sex, age and district. In addition, all households consume protein sources such as meat, eggs and milk infrequently.

25. Seasonality, rather than vulnerability category, sex or district, seems to be the main determining factor of consumption patterns. This reflects the general poverty trend within Northern Province.

District summary

Indicator	Chilubi	Isoka	Mpika	Mungwi
Number of households in the sample	120	120	148	120
Number of female-headed households in the sample	37	48	58	41
Number of male-headed households in the sample	83	72	90	79
Proportion of individuals in productive age category (15–49 years)	45%	44%	44%	40%
Household dependency ratio for male-headed households	1.16	1.01	0.83	1.36
Household dependency ratio for female-headed households	0.90	0.97	1.16	1.39
Average number of orphans kept by male-headed households	0.6	0.5	0.5	0.6
Average number of orphans kept by female-headed households	1.4	1.7	1.8	2.1
Average age of orphans (boys)	12	11	11	10
Average age of orphans (girls)	10	11	10	11
School drop-out rate for boys	13%	18%	8%	9%
School drop-out rate for girls	16%	17%	12%	15%
School drop-out rate for orphaned boys	12%	21%	9%	8%
School drop-out rate for orphaned girls	15%	18%	8%	9%
Incidence rate of HIV/AIDS (self-reporting)	49%	22%	28%	33%
Proportion of individuals aged 15–49 years without education (men/boys)	3%	6%	1%	2%
Proportion of individuals aged 15–49 years without education (women/girls)	12%	14%	3%	7%
Adult mortality rate (35–49 years) for men	195.1	71.4	150.0	117.6
Adult mortality rate (35–49 years) for women	108.7	76.9	32.3	100.0
Average number of bicycles (transport means for marketing) per household	0.35	0.40	0.34	0.63
Mean number of poultry per household	4.9	6.6	6.4	4.3
Mean number of goats per household	0.7	0.8	0.8	0.4
Incidences of property grabbing among female-headed households	12%	6%	18%	12%
Proportion of households with membership in the food reserve agency cooperatives	0.4%	2%	3%	2%
Proportion of households with membership in CBOs	4%	5%	7%	5%
Male-headed households with formal employment as their main livelihood strategy	16%	4%	10%	4%
Female-headed households brewing beer as an important livelihood strategy	3%	25%	21%	32%
Proportion of households practising slash-and-burn cultivation (chitemene)	3%	5%	7%	7%
Number of months food sufficiency from maize produce (male-headed households)	2.8	6.3	7.7	4.0
Number of months food sufficiency from maize produce (female-headed households)	1.4	4.3	4.0	2.7

CHAPTER 7: SAMPLE DESIGN OF THE BASELINE SURVEY

A household baseline survey was conducted in order to collect quantitative data for selected parameters to support the qualitative findings and to be used in future monitoring activities. The quantitative baseline survey was conducted in February 2004, the dry/hungry season. It analysed disaggregated data for the following four household categories, also called vulnerability categories:

- **Households with PLWA and orphans** (*keeping PLWA and orphans*): male- and female-headed households that take care of orphans *and* have at least one family member between 15 and 49 years of age (productive age) who is long-term sick (for three months or longer prior to the survey) as a result of HIV/AIDS or related illnesses (malaria, pneumonia, TB).
- **Households with PLWA** (*keeping PLWA*): male- and female-headed households that take care of at least one family member between 15 and 49 years of age (productive age) who is long-term sick (for three months or longer prior to the survey) as a result of HIV/AIDS or related illnesses (malaria, pneumonia, TB).
- **Households with orphans** (*keeping orphans*): male- and female-headed households that take care of their own orphaned children and/or orphaned children from others (e.g. relatives).
- **Non-vulnerable female-headed households** (*not vulnerable*) for comparison purposes: male- and female-headed households that do not take care of orphans and that do not have members between 15 and 49 years of age who are long-term sick as a result of HIV/AIDS or related illnesses.

Sampling was done in two stages. At the first stage, sites were purposively selected. This baseline survey was conducted in the same communities as the qualitative livelihood analysis had taken place in (see Part A). At the second stage, households were stratified and then selected from the different strata in each site. For this, CSO's Standard Enumeration Areas (SEAs) covering the sample sites were used. All households living within the SEA were listed and, based on information from health centres, stratified according to PLWA: i.e. whether or not at least one household member between 15 and 49 years of age was long-term sick (for three months or longer prior to the survey) as a result of HIV/AIDS or related illnesses (malaria, pneumonia, TB). All households within the PLWA strata were included in the sample (i.e. purposively selected). For selecting households from the non-PLWA strata, a simple circular systematic selection was applied as follows:

If
N = total number of households listed within the SEA
m = number of households with patients
n = sample size
t = total number of households that have already been identified as having HIV/AIDS patients within the sample size
k = sampling interval

$$(N-m)/(n-t) = k$$

For data analysis purposes, households with orphans (and households with PLWA and orphans) were identified from the household registry within the questionnaire. The following tables describe the sample structure.

Table 7.1: Distribution of sample households by vulnerability category and sex of household head

Vulnerability category	Sex of head of household		Total
	Female	Male	
Keeping PLWA and orphans	54	25	79
Keeping PLWA	36	59	95
Keeping orphans	55	51	106
Non-vulnerable	39	189	228
Total	184	324	508

Source: ILOHAH Survey

Table 7.2: Distribution of sample households by district and sex of household head

		Sex of head of household		Total
		Female	Male	
District	Chilubi	37	83	120
	Isoka	48	72	120
	Mpika	58	90	148
	Mungwi	41	79	120
Total		184	324	508

Source: ILOHAH Survey

Table 7.3: Distribution of sample households by vulnerability category, sex of household head and livelihood zone

Vulnerability category	Sex of head of household				Total
	Female		Male		
	Livelihood zone		Livelihood zone		
	Fishing (1B)	Farming (2B)	Fishing (1B)	Farming (2B)	
Keeping PLWA and orphans	14	40	15	10	79
Keeping PLWA	12	24	17	42	95
Keeping orphans	13	42	15	36	106
Non-vulnerable	15	24	76	113	228
Total	54	130	123	201	508

Source: ILOHAH Survey

CHAPTER 8: DYNAMICS IN THE HOUSEHOLD RESOURCE BASE

In Northern Province, the estimated HIV prevalence rate ranges from 12.8 to 14.8 percent (CSO, 2000). This percentage belies the true impact of the pandemic because a far higher percentage of non-infected people are affected directly by the presence of the disease. The burden of ill health, caring for the chronically ill, premature death and caring for AIDS orphans is manifested by the depletion of human, financial and physical assets and the disruption of social support mechanisms for huge numbers of families. Furthermore, HIV/AIDS has a greater economic impact on poor than on better-off households, as it forces them to draw on their already limited household resource base or assets in order to cushion the shock of illness, death and the care of orphans.

This chapter focuses on changes in the resource base for different categories of households that are affected by HIV/AIDS either because at least one family member is sick to HIV/AIDS or related illnesses, or because the household is caring for orphaned children. In particular, this chapter presents the findings of the baseline survey of human, physical, social and financial assets.

8.1 HUMAN CAPITAL

HIV/AIDS is unique in that it attacks the most productive segment of society, thus robbing households of adult labour and knowledge. The disease also has an indirect impact on household labour availability as the time spent caring for afflicted household members takes away from the time spent on agricultural activities and other household tasks. The following section looks in greater depth at human capital – i.e. skills, knowledge, the ability to work and good health – which is an essential endowment of the household resource base. The effects on human capital are central to any measurement of the HIV/AIDS impact because preserving and enhancing human capital is essential to reducing poverty, improving sustainable rural livelihoods and ensuring food security (see www.developmentgoals.org). Information for this section was collected from the household register, in which demographic and socio-economic characteristics of the sampled population were recorded. The section looks specifically at household size and age, household dependency ratios, orphans, education and school drop-out rates, adult morbidity and adult mortality.

8.1.1 Household size and age

Information on the age and sex composition for the sampled population is the cumulative result of past trends in fertility, mortality and migration, and is thus essential to this study. Demographic indicators such as household size (average number of people living in each household) and mean age (the mathematical average age of all the members of a population) are crucial to this. The tables in this section provide baseline information on the average household size, mean age and age distribution of the sample population. In particular, the tables illustrate that vulnerable female-headed households are smaller in size, and consequently experience greater labour shortages. The household size for vulnerable male-headed households ranges from 5.1 (keeping PLWA) to 7.1 (keeping orphans), while household sizes for female-headed households within the same vulnerability categories are respectively 4.1 and 5.4. The tables also show that vulnerable households are increasingly headed by the elderly. While the average age for the head of non-vulnerable households is 41 years, male heads of households that take care of PLWA and orphans are on average 50 years of age, and female heads of households with orphans 48 years. This is further illustrated by the fact that vulnerable households have a greater proportion of elderly members (65+ years) than non-vulnerable households do. The tables also show that Mungwi district is characterized by a lower proportion of people in the productive age category compared with the other districts. This is most likely owing to a higher prevalence rate and more outmigration.

Table 8.1: Mean household size, by vulnerability category and sex of household head

Vulnerability category	Sex of head of household	
	Female	Male
Keeping PLWA and orphans	5.2	7.0
Keeping PLWA	4.1	5.5
Keeping orphans	5.4	7.1
Non-vulnerable	4.5	5.6

Source: ILOHAH Survey

Table 8.2: Mean age of household head, by vulnerability category and sex of household head

Vulnerability category	Sex of head of household	
	Female	Male
Keeping PLWA and orphans	44.8	50.1
Keeping PLWA	48.0	44.2
Keeping orphans	47.5	48.5
Non-vulnerable	43.7	40.7
Total	46.0	43.3

Source: ILOHAH Survey

Table 8.3: Age distribution of sample population, by vulnerability category and sex (Col. %)

Vulnerability category		Sex		Total
		Women	Men	
Keeping PLWA and orphans	0-14	44.2%	52.9%	48.1%
	15-49	43.4%	38.5%	41.1%
	50-64	7.6%	4.3%	6.1%
	65+	4.8%	4.3%	4.6%
	Total	100%	100%	100%
Keeping PLWA	0-14	40.4%	46.3%	43.1%
	15-49	46.7%	44.9%	45.9%
	50-64	7.5%	4.6%	6.2%
	65+	5.5%	4.2%	4.9%
	Total	100%	100%	100%
Keeping orphans	0-14	49.6%	49.8%	49.7%
	15-49	38.4%	41.7%	40.0%
	50-64	7.7%	3.6%	5.8%
	65+	4.3%	4.9%	4.6%
	Total	100%	100%	100%
Non-vulnerable	0-14	49.7%	48.6%	49.1%
	15-49	44.9%	44.3%	44.6%
	50-64	4.3%	3.9%	4.1%
	65+	1.1%	3.1%	2.1%
	Total	100%	100%	100%

Source: ILOHAH Survey

Table 8.4: Age distribution of sample population, by district and sex (Col. %)

District		Sex		Total
		Women	Men	
Chilubi	0-14	44.7%	49.4%	47.1%
	15-49	45.9%	43.0%	44.5%
	50-64	5.7%	3.5%	4.6%
	65+	3.7%	4.1%	3.9%
	Total	100%	100%	100%
Isoka	0-14	46.5%	44.5%	45.5%
	15-49	41.2%	46.8%	43.8%
	50-64	9.7%	4.5%	7.3%
	65+	2.6%	4.2%	3.4%
	Total	100%	100%	100%
Mpika	0-14	49.0%	46.8%	48.0%
	15-49	43.1%	45.5%	44.3%
	50-64	5.6%	5.3%	5.4%
	65+	2.3%	2.4%	2.3%
	Total	100%	100%	100%
Mungwi	0-14	47.9%	56.5%	51.9%
	15-49	43.4%	35.8%	39.8%
	50-64	4.2%	2.6%	3.5%
	65+	4.5%	5.2%	4.8%
	Total	100%	100%	100%

Source: ILOHAH Survey

8.1.2 Household dependency ratio

The standard dependency ratio is defined as the ratio of the combined child (0 to 14 years of age) and elderly (65 years and over) populations – i.e. persons in the “dependent” ages – to every 100 people of the intermediate age population (15 to 65 years) – i.e. “economically active” ages. The dependency ratio has been identified as one of the proxy indices for the demographic impact of HIV/AIDS, and it is often included in the array of indicators that aim to measure the loss of labour and other adverse effects of morbidity and mortality on the productive capacity of rural households. Even though the age dependency ratio is an indicator of the economic burden that the productive portion of a population carries, it must be remembered that some people defined as “dependent” by age are in fact producers, while some of those in the “productive” ages are chronically sick, and thus increasingly economically dependent. The tables in this section illustrate that households keeping orphans have a high dependency ratio. While a non-vulnerable household has an average dependency ratio of 1.05, male- and female-headed households that take care of orphans have average dependency ratios of 1.21 and 1.16, respectively. The tables show that the lowest proportion of people in the economically active age group (15 to 49) occurs in Mungwi district (see section 8.1.1), which has the highest dependency ratio of the survey districts.

Table 8.5: Standard dependency ratios, by sex of household head and vulnerability category

Sex of head of household	Vulnerability category	Dependency Ratio
Female	Keeping PLWA and orphans	1.14
	Keeping PLWA	.92
	Keeping orphans	1.16
	Non-vulnerable	1.10
	Total	1.10
Male	Keeping PLWA and orphans	1.08
	Keeping PLWA	.92
	Keeping orphans	1.21
	Non-vulnerable	1.04
	Total	1.05

Source: ILOHAH Survey

Table 8.6: Dependency ratios, by sex of household head and district

Sex of head of household			Dependency Ratio
Female	District	Chilubi	.90
		Isoka	.97
		Mpika	1.16
		Mungwi	1.39
		Total	1.10
Male	District	Chilubi	1.16
		Isoka	1.01
		Mpika	.83
		Mungwi	1.36
		Total	1.05

Source: ILOHAH Survey

8.1.3 Orphans

This section provides information about orphaned and foster children. Orphans are defined as those individuals under 19 years of age who have lost one or both parents. Foster children are children whose parents are alive but not resident members of the household. The loss of parents to AIDS has resulted in large number of orphans in Zambia, and it is estimated that there will be 974 000 orphans in 2014 (TNDP, 2003). Most of the orphans in Zambia are taken care of by their extended families, approximately 6 percent live on the streets, and 1 percent are in orphanages (TNDP, 2002). Relevant data on the numbers of orphans are important for the formulation of mechanisms to support them. Data on orphans also provide crucial information for assessing the demographic impact of HIV/AIDS. The tables in this section look at which households are caring for orphans, and the average age of the orphans. In particular, the tables show that female-headed households take care of greater numbers of orphans. On average, they host 2.8 to 3.2, while male-headed households take care of 2.2 to 2.3. Increasingly, orphans are looked after by grandparents, and 28 percent of all orphans in the sample were living in grandparent-headed households. Orphan distribution across the districts is more or less equal, but female-headed households in all districts take care of twice as many orphans as male-headed households do. The tables also show that the average age of orphaned girls and boys ranges from 10 to 11 in both male- and female-headed households.

Table 8.7: Average numbers of orphaned and foster children, by vulnerability category and sex of household head

Vulnerability category	Orphaned	Fostered	Orphaned	Fostered
	Female-headed		Male-headed	
Keeping PLWA and orphans	2.8	0.8	2.3	1.4
Keeping PLWA		0.2		0.1
Keeping orphans	3.2	1.2	2.2	1.5
Non-vulnerable		0.2		0.2
Total	1.8	0.7	0.5	0.4

Source: ILOHAH Survey

Table 8.8: Average numbers of orphaned and foster children, by district and sex of household head

District	Sex of head of household				Total	
	Female		Male		Orphaned	Fostered
	Orphaned	Fostered	Orphaned	Fostered		
Chilubi	1.4	0.8	0.6	0.6	0.8	0.6
Isoka	1.7	0.6	0.5	0.4	1	0.5
Mpika	1.8	0.7	0.5	0.4	1	0.5
Mungwi	2.1	0.7	0.6	0.3	1.1	0.5
Total	1.8	0.7	0.5	0.4	1	0.5

Source: ILOHAH Survey

Table 8.9: Mean age of orphaned children, by vulnerability category and sex

Vulnerability category	Orphaned	
	Girls	Boys
	Age at last birthday	Age at last birthday
Keeping PLWA and orphans	10	11
Keeping orphans	11	11
Total	11	11

Source: ILOHAH Survey

Table 8.10: Mean age of orphaned children, by district and sex

		Orphaned	
		Girls	Boys
		Age at last birthday	Age at last birthday
District	Chilubi	10	12
	Isoka	11	11
	Mpika	10	11
	Mungwi	11	10
Total		11	11

Source: ILOHAH Survey

8.1.4 Education and school drop-outs

Education is a key determinant of the life style and status that an individual enjoys in a society. It affects many aspects of human life, including livelihood opportunities and health behaviour. In the ILOHAH baseline survey, information on educational attainment was collected for every sampled individual. In particular, the survey gathered information on the current level of school enrolment, school attendance and school drop-outs. The drop-out rate was calculated as the total number of individuals aged between five and 20 years not enrolled in school at the time of the survey, divided by the total number of sampled individuals aged five to 20 years currently enrolled. Decreased school attendance was defined as the number of individuals aged five to 20 years who are currently enrolled in school and whose level of attendance was rated as “dropped” by the respondent, divided by the total number of sampled individuals aged five to 20 years currently enrolled in school.

The tables in this section look at the educational attainment of household heads and members, the drop-out rate and school attendance. The levels of educational attainment (none, primary, secondary and post-secondary) are aggregated categories based on the grading system present in Zambia. The tables highlight a gender gap in that women are less educated than men. Many female heads of households have low levels of education, with 11 percent never having gone to school and 21 percent having attained only primary education. For male heads, these figures are, respectively, 3 and 38 percent. Furthermore, individuals within female-headed households are less educated than individuals in male-headed households. Some 46 percent of all female-headed household members between 15 and 64 years of age have received no education, while the equivalent figure for male-headed households is 13 percent. Women and girls have especially low educational attainment in Isoka and Chilubi districts with 12 and 14 percent, respectively, of all the girls and women aged between 15 and 49 years in these districts never having been to school. The educational gap is, however, slowly closing and women of the younger generation tend to be better educated than those of the older generation. Among all the girls and women who attained primary education, 55 percent are between 15 and 49 years of age.

Irrespective of whether they are affected by HIV/AIDS or not, many households in Northern Province have to discontinue the schooling of some of their children at a certain age owing to a lack of financial resources to pay the PTA fees (44 percent) or because the children prefer to start working (32 percent). The latter cause is particularly true in non-vulnerable households, 20 percent of which have a child who has dropped out of school to start work. Of all the children aged between five and 20 years ever to have been enrolled in school, between 11 and 15 percent dropped out. The proportion of school drops-out is slightly higher for girls (15 percent) than boys (12 percent). School drop-out is higher in Isoka and lower in Mpika compared with other districts. Drop-out rates for orphans are similar to those of children whose parents are alive. In both male- and female-headed households taking care of orphans, 12 percent of the orphans between five and 20 years who were ever enrolled in school discontinued their education. More orphans drop out in Isoka than in other districts. In addition to school drop-out, 5 percent of all the children aged five to 20 years who are currently enrolled in school attend classes less frequently than they did five years ago.

Table 8.11: Individuals' levels of education, by vulnerability category, sex and age category (Col.%)

Vulnerability category		Sex								Total
		Women/girls				Men/boys				Col %
		Age category				Age category				
		0-14	15-49	50-64	65+	0-14	15-49	50-64	65+	
Keeping PLWA and Orphans	None	37.5%	7.5%	42.1%	58.3%	32.2%	5.1%	11.1%	33.3%	22.4%
	Primary	61.4%	66.4%	57.9%	33.3%	66.7%	48.1%	44.4%	33.3%	59.3%
	Secondary	1.1%	26.2%			1.1%	45.6%	33.3%	22.2%	17.3%
	Post-Secondary				8.3%		1.3%	11.1%	11.1%	1.0%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Keeping PLWA	None	38.5%	8.4%	42.1%	71.4%	35.1%	4.1%	10.0%		20.6%
	Primary	60.0%	65.5%	57.9%	28.6%	60.8%	44.3%	70.0%	77.8%	57.5%
	Secondary	1.5%	26.1%			4.1%	48.5%	10.0%	11.1%	20.6%
	Post-Secondary						3.1%	10.0%	11.1%	1.2%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Keeping orphans	None	31.5%	9.0%	40.7%	73.3%	24.1%	3.1%	9.1%	20.0%	19.2%
	Primary	67.7%	57.9%	48.1%	26.7%	74.1%	50.8%	54.5%	60.0%	60.4%
	Secondary	.8%	31.6%	11.1%		1.8%	40.6%	27.3%	13.3%	18.5%
	Post-Secondary		1.5%				5.5%	9.1%	6.7%	1.9%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Non-vulnerable	None	37.6%	9.0%	55.6%	57.1%	36.6%	1.9%	16.7%		19.0%
	Primary	61.8%	71.7%	40.7%	42.9%	62.9%	65.8%	50.0%	73.7%	65.1%
	Secondary	.5%	19.0%	3.7%		.6%	29.7%	25.0%	21.1%	14.8%
	Post-Secondary		.4%				2.6%	8.3%	5.3%	1.1%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: ILOHAH Survey

Table 8.12: Individuals' levels of education, by district, sex and age category (Col. %)

District		Sex								Total
		Women/girls				Men/boys				Col %
		Age Category				Age Category				
		0-14	15-49	50-64	65+	0-14	15-49	50-64	65+	
Chilubi	None	34.0%	11.8%	35.0%	76.9%	29.6%	3.4%	8.3%	21.4%	19.4%
	Primary	65.0%	52.8%	60.0%	15.4%	68.7%	43.5%	66.7%	64.3%	55.7%
	Secondary	1.0%	34.2%	5.0%		1.7%	47.6%	16.7%	7.1%	22.7%
	Post-Secondary		1.2%		7.7%		5.4%	8.3%	7.1%	2.2%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Isoka	None	38.6%	14.4%	69.7%	88.9%	34.4%	5.6%	14.3%		24.3%
	Primary	61.4%	61.2%	30.3%	11.1%	64.6%	54.5%	42.9%	69.2%	57.1%
	Secondary		24.5%			1.0%	37.1%	28.6%	23.1%	17.3%
	Post-Secondary						2.8%	14.3%	7.7%	1.3%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mpika	None	28.2%	2.7%	37.5%	70.0%	21.4%	1.2%	15.0%	22.2%	13.9%
	Primary	71.8%	76.1%	58.3%	30.0%	76.1%	64.5%	45.0%	55.6%	69.8%
	Secondary		21.2%	4.2%		2.6%	31.4%	30.0%	22.2%	15.3%
	Post-Secondary						2.9%	10.0%		1.0%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mungwi	None	45.7%	7.1%	20.0%	43.8%	44.2%	1.8%	12.5%	6.3%	23.6%
	Primary	51.7%	75.3%	66.7%	56.3%	55.0%	63.1%	75.0%	62.5%	62.4%
	Secondary	2.6%	16.9%	13.3%		.8%	34.2%	12.5%	18.8%	13.3%
	Post-Secondary		.6%				.9%		12.5%	.7%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: ILOHAH Survey

Table 8.13: Individuals' levels of education, by sex and age category (Row Subtable%)

Highest Level of Education Attained	Sex								Total
	Women				Men				Subtable %
	0-14	15-49	50-64	65+	0-14	15-49	50-64	65+	
None	56.6%	18.5%	14.1%	10.8%	82.9%	9.7%	4.0%	3.4%	100%
Primary	37.6%	54.5%	5.9%	1.9%	43.5%	47.4%	4.3%	4.8%	100%
Secondary	2.5%	95.1%	2.5%		2.9%	88.1%	5.3%	3.7%	100%
Post-Secondary		75.0%		25.0%		66.7%	18.5%	14.8%	100%
Total	37.5%	51.3%	7.4%	3.9%	39.8%	50.8%	4.8%	4.6%	100%

Source: ILOHAH Survey

Table 8.14: Drop-out rates, by vulnerability category and sex

Vulnerability category	Sex		Total
	Girls	Boys	
Keeping PLWA and orphans	13%	15%	14%
Keeping PLWA	16%	7%	11%
Keeping orphans	12%	11%	11%
Non-vulnerable	16%	13%	15%
Total	15%	12%	13%

Source: ILOHAH Survey

Table 8.15: Drop-out rates, by district and sex

District	Sex		Total
	Girls	Boys	
Chilubi	16%	13%	14%
Isoka	17%	18%	17%
Mpika	12%	8%	10%
Mungwi	15%	9%	12%
Total	15%	12%	13%

Source: ILOHAH Survey

Table 8.16: Orphan drop-out rates, by vulnerability category and sex

Vulnerability category	Sex		Total
	Girls	Boys	
Keeping PLWA and orphans	12%	10%	11%
Keeping orphans	12%	13%	12%
Total	12%	12%	12%

Source: ILOHAH Survey

Table 8.17: Orphan drop-out rates, by district and sex

District	Sex		Total
	Girls	Boys	
Chilubi	15%	12%	13%
Isoka	18%	21%	19%
Mpika	8%	9%	9%
Mungwi	9%	8%	8%
Total	12%	12%	12%

Source: ILOHAH Survey

Table 8.18: Reasons for dropping out of school, by vulnerability category

Vulnerability category	Lack of financial resources	Increased responsibilities	Lost interest	Other	Total
Keeping PLWA and orphans	14%	1%	1%	4%	20%
Keeping PLWA	4%	1%	7%	2%	14%
Keeping orphans	16%	1%	4%	3%	24%
Non-vulnerable	10%	1%	20%	12%	42%
Total	44%	3%	32%	21%	100%

Source: ILOHAH Survey

Table 8.19: Reasons for dropping out of school, by district

District	Lack of financial resources	Increased responsibilities	Lost interest	Other	Total
Chilubi	13%	1%	7%	5%	26%
Isoka	13%	1%	10%	7%	30%
Mpika	13%	0%	6%	5%	24%
Mungwi	6%	1%	10%	4%	20%
Total	44%	3%	32%	21%	100%

Source: ILOHAH Survey

Table 8.20: Decreased school attendance, by vulnerability category and sex

Vulnerability category	Sex	
	Girls	Boys
Keeping PLWA and orphans	7%	6%
Keeping PLWA	5%	5%
Keeping orphans	4%	1%
Non-vulnerable	5%	8%
Total	5%	5%

Source: ILOHAH Survey

Table 8.21: Decreased school attendance, by district and sex

District	Sex	
	Girls	Boys
Chilubi	2%	4%
Isoka	8%	7%
Mpika	7%	6%
Mungwi	2%	4%
Total	5%	5%

Source: ILOHAH Survey

8.1.5 Adult morbidity

Morbidity refers to diseases and illnesses, injuries and disabilities in a population. The ILOHAH survey gathered information on the different chronic illnesses among household members. In this context, a chronically ill person was defined as one who had been ill for three months or longer prior to the survey. This section looks specifically at the proportions of people to report various chronic illnesses in February 2004. According to the tables, it can be concluded that there is a remarkably high (self-)reporting rate for HIV/AIDS incidence among the sample population, as HIV/AIDS accounts for 32 percent of the chronic illnesses reported. The highest HIV/AIDS incidences are reported in Chilubi district. The tables also show a relatively high reporting rate for HIV/AIDS-related chronic illnesses: tuberculosis and malaria constitute, respectively, 12 and 18 percent of the total reported illnesses. Nevertheless, stigma levels are still high, especially in Isoka and Mpika districts, where the causes of chronic illnesses are reported as “other” in 14 and 16 percent of cases, respectively. Some of the reported deaths to unknown causes are therefore likely to have been incorrectly attributed because of prevaricating factors and stigma.

Table 8.22: Chronic illnesses, by vulnerability category (Col. %)

		Keeping PLWA and orphans	Keeping PLWA	Keeping orphans	Non-vulnerable	Total
Illness	Pneumonia			3.3%	2.3%	0.7%
	Fever/malaria	15.4%	20.5%	10.0%	25.0%	18.4%
	Tuberculosis	18.7%	13.4%			11.6%
	Asthma	1.1%	0.9%	16.7%	13.6%	4.7%
	Anaemia		0.9%		2.3%	0.7%
	Diarrhoea	2.2%	6.3%		2.3%	3.6%
	Meningitis		0.9%			0.4%
	Old age	3.3%	5.4%	23.3%	18.2%	8.7%
	Skin rash	4.4%	1.8%	3.3%	2.3%	2.9%
	Hypertension	1.1%		13.3%	9.1%	3.2%
	Diabetes		1.8%			0.7%
	Measles	1.1%			2.3%	0.7%
	HIVAIDS	46.2%	42.0%			32.1%
	Witchcraft		0.9%			0.4%
Other	5.5%	5.4%	26.7%	22.7%	10.5%	
Don't know	1.1%		3.3%		0.7%	
Total	100%	100%	100%	100%	100%	

Source: ILOHAH Survey

Table 8.23: Chronic illnesses, by district (Col. %)

		District				Total
		Chilubi	Isoka	Mpika	Mungwi	
Illness	Pneumonia	1.5%	1.3%			0.7%
	Fever/malaria	15.2%	20.8%	18.8%	18.5%	18.4%
	Tuberculosis	10.6%	7.8%	17.5%	9.3%	11.6%
	Asthma	1.5%	3.9%	6.3%	7.4%	4.7%
	Anaemia			1.3%	1.9%	0.7%
	Diarrhoea	7.6%	5.2%		1.9%	3.6%
	Meningitis		1.3%			0.4%
	Old age	9.1%	10.4%	7.5%	7.4%	8.7%
	Skin rash	1.5%	3.9%	3.8%	1.9%	2.9%
	Hypertension	1.5%	3.9%		9.3%	3.2%
	Diabetes		1.3%		1.9%	0.7%
	Measles	1.5%		1.3%		0.7%
	HIVAIDS	48.5%	22.1%	27.5%	33.3%	32.1%
	Witchcraft		1.3%			0.4%
Other	1.5%	14.3%	16.3%	7.4%	10.5%	
Don't know		2.6%			0.7%	
Total		100%	100%	100%	100%	100%

Source: ILOHAH Survey

Table 8.24: Chronic illnesses by district and age group (Table %)

			Fever/malaria	Tuberculosis	HIVAIDS	Total
District	Chilubi	0-14	2.3%		3.5%	5.8%
		15-49	2.3%	2.9%	12.2%	17.4%
		50-64	0.6%	1.2%	2.3%	4.1%
		65+	0.6%		0.6%	1.2%
	Isoka	0-14	4.1%		1.2%	5.2%
		15-49	4.7%	2.9%	6.4%	14.0%
		50-64	0.6%	0.6%	1.2%	2.3%
		65+			1.2%	1.2%
	Mpika	0-14	3.5%	0.6%		4.1%
		15-49	2.9%	7.0%	12.2%	22.1%
		50-64	1.7%	0.6%	0.6%	2.9%
		65+	0.6%			0.6%
	Mungwi	0-14	4.1%	.6%	1.2%	5.8%
		15-49	1.7%	1.7%	8.1%	11.6%
		50-64		0.6%	1.2%	1.7%
	Total			29.7%	18.6%	51.7%

Source: ILOHAH Survey

*Ex: 4 percent of all reported diseases in Mungwi are attributed to fever and malaria (age group 0-14)

8.1.6 Adult mortality

This section provides a picture of the mortality pattern for the sample population. Death rates were calculated for specific age groups in order to compare mortality at different ages. Because mortality varies greatly by sex, age-specific death rates are given separately for men and women within the different vulnerability categories. Age-specific death rates across districts are also provided.

The tables demonstrate that there are high death rates for men aged 35 to 49 years, especially in Chilubi district. They also show that early childhood mortality is high among households with PLWA. Early

childhood mortality varies substantially as an index of social and economic development and tends to be high in disadvantaged settings. Mortality during later childhood and adolescence is, on the other hand, relatively low in all societies, but begins to rise with age starting in the late teenage years. The pattern and pace of the rise in adult mortality with increasing age is tied closely to the occupational profile, fertility pattern and epidemiological characteristics of a population. The tables also give the causes of death as reported by the respondents. The main causes of death include fever/malaria, AIDS, tuberculosis and diarrhoea. In Chilubi district, 10 percent of respondents attributed witchcraft as the cause of death.

Table 8.25: Causes of death, by district (Col. %)

		District				Total
		Chilubi	Isoka	Mpika	Mungwi	
Cause of death	Pneumonia	2.5%	7.1%	5.7%		3.8%
	Fever/malaria	27.5%	17.9%	25.7%	36.7%	27.1%
	Tuberculosis	7.5%	17.9%	14.3%	33.3%	17.3%
	Anaemia	2.5%	10.7%			3.0%
	Diarrhoea	20.0%	7.1%	11.4%	10.0%	12.8%
	Meningitis	2.5%		5.7%		2.3%
	Old age	2.5%	7.1%	5.7%		3.8%
	Skin rash	2.5%		5.7%		2.3%
	Hypertension	2.5%		2.9%		1.5%
	Measles		10.7%			2.3%
	AIDS/HIV	20.0%	17.9%	14.3%	20.0%	18.0%
Witchcraft	10.0%	3.6%	8.6%		6.0%	
Total		100%	100%	100%	100%	100%

Source: ILOHAH Survey

Table 8.26: Age-specific death rates¹, by vulnerability category and sex

Age group	Keeping PLWA and orphans		Keeping PLWA		Keeping orphans		Non-vulnerable		Total
	Women	Men	Women	Men	Women	Men	Women	Men	
0-4	74.1	200	95.2	216.2	96.2	68.2	74.6	115.9	107.1
5-9		25	26.3		18.9		27.8	11	15.2
10-14		20.8			13.3		12.3	11.8	8.8
15-19	62.5				38.5		13.5		13.4
20-24	157.9				125		13.9	17.5	30.1
25-29	76.9	111.1			187.5	62.5		25.6	43.8
30-34		250	62.5	133.3	76.9	142.9			53.7
35-39	133.3	500	66.7	83.3	95.2		32.3	83.3	93
40-44	55.6	500	90.9		181.8	250			81.8
45-49	125	714.3	100		166.7	571.4			142.9
50-54		285.7	83.3		83.3	333.3	200		114.8
55-59		0	0		0	0	0	0	0
60-64		666.7	200			142.9	66.7		94.3
65-69		500	250	500		125			120
70-74		200		166.7	400		500	111.1	153.8
75-79						250			153.8
80+					250	333.3		250	200
Total	46	126.1	44.9	56.8	69.3	55	31.2	39.4	52.5

Source: ILOHAH Survey

*Death rate: Number of deaths in age group/number of people in age group x 1 000.

¹ There is likely to be an overestimation of the death rate because of the sampling strategy.

Table 8.27: Age-specific death rates, by sex

Age group	Sex		Total
	Women	Men	
0-4	82.4	132.5	107.1
5-9	20.5	9.3	15.2
10-14	8.9	8.6	8.8
15-19	26.3	0	13.4
20-24	51.9	7.6	30.1
25-29	44.4	42.9	43.8
30-34	28.6	75.9	53.7
35-39	73.2	127.7	93
40-44	61.5	111.1	81.8
45-49	100	176.5	142.9
50-54	85.7	153.8	114.8
55-59	0	0	0
60-64	57.1	166.7	94.3
65-69	38.5	208.3	120
70-74	187.5	130.4	153.8
75-79	0	222.2	153.8
80+	142.9	250	200
Total	45.3	60.2	52.5

Source: ILOHAH Survey

Table 8.28: Age-specific death rates, by district and sex

Age group	Chilubi		Isoka		Mpika		Mungwi		Total
	Women	Men	Women	Men	Women	Men	Women	Men	
0-4	149.3	140.6	63.5	137.3	61.5	128.6	50	125	107.1
5-9	18.2		20		26.7	20	15.6	16.1	15.2
10-14	21.3	16.9			13	14.5			8.8
15-19			47.6		41.7		19.6		13.4
20-24	62.5		29.4		48.8		71.4	47.6	30.1
25-29	40		52.6	66.7	90.9	35.7		83.3	43.8
30-34	55.6		71.4	58.8		210.5		45.5	53.7
35-39	90.9	166.7	71.4	90.9	33.3	153.8	125	90.9	93
40-44	71.4	76.9	62.5		50	166.7	66.7	153.8	81.8
45-49	200	312.5	111.1	100		133.3	111.1	100	142.9
50-54		125	90.9			272.7	333.3		114.8
55-59									
60-64		500	125					400	94.3
65-69				285.7	125	333.3		142.9	120
70-74		142.9	400		333.3	250		142.9	153.8
75-79				666.7					153.8
80+				333.3	500				200
Total	56.5	60.1	50.3	49.4	40.3	68.6	35.3	60.6	52.5

Source: ILOHAH Survey

8.2 HOUSEHOLD PHYSICAL ASSETS

The qualitative livelihood analysis (Part A of this report) in Northern Province indicated that different households respond differently to the effects of HIV/AIDS on their livelihoods. Households with more physical capital, and therefore a stronger resource base and safety net, are better able to cope with AIDS' impacts. This section looks at changes in households' physical capital in terms of asset ownership, including livestock, over a recall period of five years. It also provides baseline information about the extent of property grabbing within the different districts.

8.2.1 Changes in household assets

This section looks at the changes in households' physical capital, including productive tools, radios, bicycles and fishing equipment. The tables in this section provide information on the changes in the number of assets owned by each vulnerability category, and at the district level. Such data give indirect information on the extent of distress sales. In distress situations, households attempt to conserve their productive resources for as long as possible, because selling assets compromises the ability to generate income. Thus, only when saving and credit resources have been exhausted and liquid assets disposed of do households resort to selling other assets. The tables in this section show that, overall, asset ownership is low across vulnerability categories and districts, thus reflecting the general poverty status in Northern Province. The tables also illustrate a gender gap in asset ownership, with men owning substantially more items than women do. Female-headed households experienced strong decreases in the ownership of most assets between 1999 and 2004; this was the result of distress sale and some instances of property grabbing. Female-headed households keeping PLWA represent the most asset-poor category. In general, households taking care of PLWA own fewer assets than non-vulnerable households, and experienced a strong decrease in physical capital over time.

Table 8.29: Average numbers of assets per household in 2004, by vulnerability category

Asset	Keeping PLWA and orphans	Keeping PLWA	Keeping orphans	Non-vulnerable
Plough	0.00	0.07	0.01	0.03
Harrow	0.00	0.03	0.01	0.00
Cultivator	0.00	0.02	0.00	0.00
Radio	0.23	0.34	0.26	0.45
Television	0.01	0.02	0.03	0.06
Bicycle	0.30	0.41	0.38	0.49
Car	0.00	0.00	0.01	0.00
Wheelbarrow	0.10	0.06	0.08	0.03
Ox cart	0.00	0.03	0.00	0.01
Grinding mill	0.01	0.00	0.01	0.01
Axe	1.43	1.86	1.89	2.03
Hoe	3.16	3.34	4.05	3.47
Shovel	0.23	0.45	0.32	0.21
Fishing net	0.92	1.54	0.71	2.48
Fishing basket	0.34	0.20	0.20	0.21
Hook and line	0.71	1.12	0.71	1.15
Boat	0.81	0.01	0.00	0.04
Canoe	0.13	0.12	0.10	0.28
Fishing spear	0.11	0.13	0.13	0.31
Fish trap	0.39	0.19	0.17	0.71
Gun	0.00	0.04	0.01	0.02

Source: ILOHAH Survey

Table 8.30: Average numbers of assets per household in 1999, by vulnerability category

Asset	Keeping PLWA and orphans	Keeping PLWA	Keeping orphans	Non-vulnerable
Plough	0.00	0.08	0.01	0.04
Harrow	0.00	0.03	0.00	0.00
Cultivator	0.00	0.00	0.00	0.00
Radio	0.32	0.29	0.24	0.44
Television	0.14	0.00	0.04	0.05
Bicycle	0.44	0.51	0.45	0.81
Car	0.00	0.00	0.01	0.01
Wheelbarrow	0.10	0.04	0.03	0.03
Ox cart	0.00	0.03	0.00	0.01
Grinding mill	0.03	0.01	0.01	0.00
Axe	1.76	2.02	2.20	2.05
Hoe	3.58	3.46	4.28	3.10
Shovel	0.51	0.42	0.30	0.19
Fishing net	1.18	1.66	0.84	2.99
Fishing basket	0.49	0.29	0.20	0.22
Hook and line	0.67	0.13	0.67	0.95
Boat	0.05	0.01	0.00	0.05
Canoe	0.15	0.16	0.18	0.25
Fishing spear	0.11	0.13	0.13	0.27
Fish trap	0.32	0.51	0.08	0.74
Gun	0.03	0.05	0.00	0.03

Source: ILOHAH Survey

Table 8.31: Average numbers of assets per household in 2004, by sex of household head

Asset	Sex of head of household	
	Female	Male
Plough	0.03	0.03
Harrow	0.01	0.01
Cultivator	0.01	0
Radio	0.14	0.48
Television	0.03	0.04
Bicycle	0.16	0.57
Car	0	0.01
Wheelbarrow	0.04	0.07
Ox cart	0.02	0.01
Grinding mill	0	0.01
Axe	1.36	2.16
Hoe	2.98	3.82
Shovel	0.21	0.32
Fishing net	0.89	2.15
Fishing basket	0.15	0.27
Hook and line	0.63	1.19
Boat	0.34	0.04
Canoe	0.07	0.25
Fishing spear	0.11	0.26
Fish trap	0.15	0.62
Gun	0	0.03

Source: ILOHAH Survey

Table 8.32: Average numbers of assets per household in 1999, by sex of household head

Asset	Sex of head of household	
	Female	Male
Plough	0.03	0.04
Harrow	0.01	0.01
Cultivator	0	0
Radio	0.19	0.44
Television	0.07	0.05
Bicycle	0.21	0.85
Car	0	0.01
Wheelbarrow	0.03	0.05
Ox cart	0.02	0.01
Grinding mill	0	0.02
Axe	1.7	2.22
Hoe	3.49	3.49
Shovel	0.34	0.29
Fishing net	1.2	2.47
Fishing basket	0.24	0.29
Hook and line	0.13	1.02
Boat	0.02	0.04
Canoe	0.14	0.24
Fishing spear	0.12	0.23
Fish trap	0.1	0.71
Gun	0.01	0.04

Source: ILOHAH Survey

Table 8.33: Average numbers of assets per household in 2004, by district

Asset	District			
	Chilubi	Isoka	Mpika	Mungwi
Plough	0.01	0.01	0.06	0.03
Harrow	0.01	0.01	0.01	0.02
Cultivator	0.00	0.01	0.00	0.02
Radio	0.40	0.24	0.41	0.35
Television	0.08	0.00	0.03	0.04
Bicycle	0.35	0.40	0.34	0.63
Car	0.00	0.01	0.01	0.00
Wheelbarrow	0.02	0.06	0.08	0.08
Ox cart	0.01	0.00	0.02	0.02
Grinding mill	0.02	0.02	0.00	0.00
Axe	1.67	1.92	2.05	1.82
Hoe	2.64	3.92	4.39	2.93
Shovel	0.21	0.26	0.38	0.26
Fishing net	4.39	0.10	0.04	2.63
Fishing basket	0.40	0.06	0.02	0.48
Hook and line	2.95	0.11	0.06	1.03
Boat	0.08	0.50	0.00	0.04
Canoe	0.46	0.00	0.00	0.33
Fishing spear	0.35	0.02	0.00	0.52
Fish trap	1.28	0.06	0.01	0.54
Gun	0.03	0.04	0.01	0.01

Source: ILOHAH Survey

Table 8.34: Average numbers of assets per household in 1999, by district

Asset	District			
	Chilubi	Isoka	Mpika	Mungwi
Plough	0.02	0.00	0.07	0.04
Harrow	0.01	0.00	0.01	0.02
Cultivator	0.00	0.01	0.00	0.00
Radio	0.39	0.32	0.39	0.31
Television	0.08	0.01	0.08	0.03
Bicycle	0.43	0.43	0.42	1.24
Car	0.00	0.01	0.01	0.01
Wheelbarrow	0.02	0.03	0.07	0.04
Ox cart	0.01	0.00	0.02	0.02
Grinding mill	0.01	0.03	0.01	0.00
Axe	1.70	2.10	2.33	1.92
Hoe	2.39	3.98	4.31	3.09
Shovel	0.22	0.24	0.34	0.43
Fishing net	4.34	0.15	0.01	4.01
Fishing basket	0.53	0.05	0.00	0.58
Hook and line	1.93	0.11	0.03	0.86
Boat	0.08	0.00	0.00	0.05
Canoe	0.43	0.07	0.00	0.36
Fishing spear	0.29	0.02	0.00	0.49
Fish trap	1.24	0.07	0.01	0.76
Gun	0.03	0.03	0.03	0.03

Source: ILOHAH Survey

Table 8.35: Percentage changes in numbers of selected assets per household between 1999 and 2004, by vulnerability category

Asset	Keeping PLWA and orphans	Keeping PLWA	Keeping orphans	Non-vulnerable
Radio	-28.0	14.3	12.0	1.0
Television	-90.9		-25.0	8.3
Bicycle	-31.4	-18.8	-16.7	-39.1
Axe	-18.7	-7.8	-14.2	-1.1
Hoe	-11.7	-3.6	-5.5	11.9
Shovel	-55.0	7.5	6.3	9.1
Fishing net	-21.5	-7.6	-15.7	-16.9
Fishing basket	-30.8	-32.1	0.0	-3.9
Canoe	-16.7	-26.7	-42.1	10.5
Fishing spear	0.0	0.0	0.0	16.4

Source: ILOHAH Survey

Table 8.36: Percentage changes in numbers of selected assets per household between 1999 and 2004, by sex of household head

Asset	Sex of head of household	
	Female	Male
Radio	-28.6	7.6
Television	-58.3	-6.7
Bicycle	-23.1	-33
Axe	-19.6	-2.5
Hoe	-14.6	9.5
Shovel	-38.7	11.7
Fishing net	-25.8	-13
Fishing basket	-36.4	-7.4
Canoe	-50	6.5
Fishing spear	-4.5	14.9
Fish trap	55.6	-13.4

Source: ILOHAH Survey

Table 8.37: Percentage changes in numbers of selected assets per household between 1999 and 2004, by district

Asset	District			
	Chilubi	Isoka	Mpika	Mungwi
Plough	-50.0		-18.2	-20.0
Radio	2.1	-23.7	7.0	13.5
Television	0.0	-100.0	-66.7	25.0
Bicycle	-19.2	-7.7	-19.4	-49.7
Axe	-2.0	-8.7	-11.9	-5.2
Hoe	10.5	-1.5	1.7	-5.4
Shovel	-3.8	6.9	12.0	-39.2
Fishing basket	-23.8	16.7		-17.1
Hook and line	52.6	0.0	80.0	20.4
Boat	0.0			-16.7
Canoe	5.8	-100.0		-7.0
Fishing spear	20.0	0.0		5.1
Fish trap	3.4	-12.5	100.0	-28.6
Gun	0.0	25.0	-75.0	-66.7

Source: ILOHAH Survey

8.2.2 Livestock ownership

The ILOHAH baseline survey included specific questions regarding livestock, which aimed to measure changes in livestock numbers over a five-year recall period. This section includes information on livestock ownership, the changes in livestock numbers over time, and the main reasons behind these changes. The tables in this section show that, overall, households in Northern Province keep few cattle and small ruminants, and concentrate mainly on poultry rearing, particularly in female-headed households. There has been a strong decrease in poultry ownership across vulnerability categories, mainly as a result of Newcastle disease, but vulnerable households experienced a greater loss owing to the need to sell poultry to cover medical and funeral expenses. Consequently, households with PLWA keep fewer poultry. Female-headed households experienced a greater decrease in their mean number of chickens than male-headed households did because of their greater need for distress sales. The strongest decrease in poultry between 1999 and 2004 was in Isoka district, while households in Mpika district experienced fewer problems related to diseases than the other districts did.

Table 8.38: Average numbers of livestock per household in 2004 and 1999, by vulnerability category

Vulnerability category		Mean number 2004	Mean number 1999
Keeping PLWA and orphans	Oxen	0.0	0.0
	Other cattle	0.0	0.2
	Sheep	0.0	0.4
	Goats	0.1	1.3
	Pigs	0.2	0.1
	Poultry	3.5	10.5
	Other	0.0	0.2
Keeping PLWA	Oxen	0.0	0.1
	Other cattle	0.5	0.6
	Sheep	0.0	0.1
	Goats	0.6	1.3
	Pigs	0.2	0.4
	Poultry	4.9	11.2
	Other	0.2	0.1
Keeping orphans	Oxen	0.0	0.0
	Other cattle	0.3	0.4
	Sheep	0.0	0.0
	Goats	0.7	1.2
	Pigs	0.1	0.2
	Poultry	6.6	14.9
	Other	0.4	0.1
Non-vulnerable	Oxen	0.0	0.1
	Other cattle	0.3	0.3
	Sheep	0.0	0.0
	Goats	0.9	1.6
	Pigs	0.3	0.4
	Poultry	6.2	11.5
	Other	0.1	0.2

Source: ILOHAH Survey

Table 8.39: Average numbers of livestock per household in 1999 and 2003, by sex of household head

Livestock	Sex of head of household			
	Female-headed		Male-headed	
	2003	1999	2003	1999
Oxen	0	0	0	0
Other cattle	0.3	0.4	0.4	0.4
Sheep	0	0.3	0	0
Goats	0.7	1.7	0.8	1.6
Pigs	0.1	0.1	0.3	0.4
Poultry	6.3	15	6.4	13.1

Source: ILOHAH Survey

Table 8.40: Average numbers of livestock per household in 2004 and 1999, by district

District		Mean number 2004	Mean number 1999
Chilubi	Oxen	0.0	0.0
	Other cattle	0.0	0.0
	Sheep	0.0	0.0
	Goats	0.7	1.6
	Pigs	0.0	0.0
	Poultry	4.9	10.3
	Other	0.0	0.1
Isoka	Oxen	0.0	0.0
	Other cattle	0.9	0.8
	Sheep	0.1	0.1
	Goats	0.8	1.1
	Pigs	0.1	0.1
	Poultry	6.6	13.7
	Other	0.4	0.4
Mpika	Oxen	0.0	0.1
	Other cattle	0.1	0.1
	Sheep	0.0	0.0
	Goats	0.8	2.2
	Pigs	0.1	0.4
	Poultry	6.4	13.1
	Other	0.1	0.0
Mungwi	Oxen	0.0	0.0
	Other cattle	0.3	0.6
	Sheep	0.0	0.3
	Goats	0.4	0.5
	Pigs	0.8	0.7
	Poultry	4.3	10.6
	Other	0.2	0.1

Source: ILOHAH Survey

Table 8.41: Numbers of households giving selected reasons for reducing poultry ownership, by vulnerability category (Count and Col %)

Vulnerability category			Poultry	
			Count	Col %
Keeping PLWA and orphans	Reason for reduction	Killed by disease	24	57.1%
		Sold for health	1	2.4%
		Sold to solve problem	16	38.1%
		Given to relative	1	2.4%
		Total	42	100%
Keeping PLWA	Reason for reduction	Killed by disease	35	67.3%
		Sold for health	2	3.8%
		Sold to solve problem	14	26.9%
		Stolen	1	1.9%
		Total	52	100%
Keeping orphans	Reason for reduction	Killed by disease	41	57.7%
		Sold for health	3	4.2%
		Sold to solve problem	22	31.0%
		Given to relative	3	4.2%
		Stolen	2	2.8%
Total	71	100%		
Non-vulnerable	Reason for reduction	Killed by disease	76	61.3%
		Sold for health	5	4.0%
		Sold to solve problem	39	31.5%
		Given to relative	2	1.6%
		Stolen	2	1.6%
Total	124	100%		

Source: ILOHAH Survey

Table 8.42: Numbers of households giving selected reasons for reducing poultry ownership, by sex of household head (Count and Col %)

Sex of head of household			Poultry	
			Count	Col %
Female	Reason for reduction	Killed by disease	63	58.3%
		Sold for health	5	4.6%
		Sold to solve problem	35	32.4%
		Given to relative	4	3.7%
		Stolen	1	.9%
		Total	108	100%
Male	Reason for reduction	Killed by disease	113	62.4%
		Sold for health	6	3.3%
		Sold to solve problem	56	30.9%
		Given to relative	2	1.1%
		Stolen	4	2.2%
		Total	181	100%

Source: ILOHAH Survey

Table 8.43: Numbers of households giving selected reasons for reducing poultry ownership, by district (Count and Col %)

District		Poultry		
		Count	Col %	
Chilubi	Reason for reduction	Killed by disease	38	63.3%
		Sold for health	2	3.3%
		Sold to solve problem	18	30.0%
		Stolen	2	3.3%
		Total	60	100%
Isoka	Reason for reduction	Killed by disease	52	70.3%
		Sold for health	3	4.1%
		Sold to solve problem	19	25.7%
		Total	74	100%
Mpika	Reason for reduction	Killed by disease	35	39.3%
		Sold for health	6	6.7%
		Sold to solve problem	43	48.3%
		Stolen	1	1.1%
		Given to relative	4	4.5%
		Total	89	100%
Mungwi	Reason for reduction	Killed by disease	51	77.3%
		Sold to solve problem	11	16.7%
		Stolen	2	3.0%
		Given to relative	2	3.0%
		Total	66	100%

Source: ILOHAH Survey

8.2.3 Property grabbing

“Property grabbing can break up homes and leave families destitute [...] as more and more people die of AIDS, traditional practices of inheritance are becoming a source of grief and subsequent hardship for widows”.² The IHOLAH baseline survey tried to measure the extent to which a widow’s property is repossessed by her husband’s extended family subsequent to his death. In general, there is still reluctance to talk openly about property grabbing, and only one-third of respondents were willing to answer questions about this issue. This section looks at the incidence rates of property grabbing among the different vulnerability categories and districts. The tables demonstrate that there are high levels of property grabbing among female-headed households: 33 percent of female-headed households with PLWA and orphans and 12 percent of those keeping orphans reported that their property was grabbed after the death of the husband. Property grabbing is particularly high in Chilubi and Mpika districts. In Mpika, 18 percent of all male- and female-headed households reported that relatives grabbed property after the deaths of their spouses. In Chilubi district this figure was 19 percent.

Table 8.44: Incidences of asset grabbing, by vulnerability category and sex of household head (Counts and Row %)

Vulnerability Category	Sex of head of household								Total	
	Female				Male					
	Were assets grabbed?				Were assets grabbed?					
	Yes		No		Yes		No			
Keeping PLWA and orphans	14	33.3%	20	47.6%			8	19.0%	42	100%
Keeping PLWA			11	44.0%			14	56.0%	25	100%
Keeping orphans	5	11.6%	25	58.1%			13	30.2%	43	100%
Non-vulnerable			9	20.5%	3	6.8%	32	72.7%	44	100%

² See: www.aegis.com/news/irin/2002/IR021111.html.

Total	19	12.3%	65	42.2%	3	1.9%	67	43.5%	154	100%
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Table 8.45: Incidences of asset grabbing, by district and sex of household head (Counts and Row %)

District	Sex of head of household								Total	
	Female				Male					
	Were assets grabbed?				Were assets grabbed?					
	Yes		No		Yes		No			
Chilubi	5	11.6%	17	39.5%	3	7.0%	18	41.9%	43	100%
Isoka	2	6.1%	13	39.4%			18	54.5%	33	100%
Mpika	8	17.8%	22	48.9%			15	33.3%	45	100%
Mungwi	4	12.1%	13	39.4%			16	48.5%	33	100%
Total	19	12.3%	65	42.2%	3	1.9%	67	43.5%	154	100%

Source: ILOHAH Survey

8.3 HOUSEHOLD SOCIAL CAPITAL

Social capital refers to the networks, group memberships and exchange relations that people draw on to secure their livelihoods. Increasingly, evidence shows that social capital is critical for poverty alleviation and mitigating HIV/AIDS' effects on livelihoods. This section looks at household membership in relevant community groups, support groups, farming groups and the formal Food Reserve Agency Cooperatives. The latter are crucial for obtaining subsidized agricultural inputs (see Part A of this report). Information on social capital is vital to assessments of the strengths of social ties and relationships within a community. The tables in this section indicate that membership of Food Reserve Agency cooperatives is still low across vulnerability categories and districts, with only 7.3 percent of all respondents being members. Membership in the cooperatives is half as much among female-headed households as among male-headed ones. In addition, few female-headed households participate in farming groups (5 percent) and CBOs (7 percent) owing to lack of time. Membership in cooperatives, farming groups and CBOs is lowest in Chilubi district, which receives little government and non-governmental development support.

The tables also demonstrate that fewer vulnerable households participate in farming groups and CBOs than non-vulnerable ones as a result of time and financial constraints. HIV/AIDS is unusual in that it causes relatively long-term illness among those infected, requires high levels of care of the sick, and is the object of stigma in many societies. It is therefore contributing to a decline in traditional social cohesion as sick adults and their care givers are unable to participate in the traditional activities that hold societies together.

Table 8.46: Membership in Food Reserve Agency cooperatives, by vulnerability category

Vulnerability Category	FRA coop				Total	
	Yes		No		Count	Table %
	Count	Table %	Count	Table %		
Keeping PLWA and orphans	4	.8%	75	14.8%	79	15.6%
Keeping PLWA	12	2.4%	83	16.3%	95	18.7%
Keeping orphans	7	1.4%	99	19.5%	106	20.9%
Non-vulnerable	14	2.8%	214	42.1%	228	44.9%
Total	37	7.3%	471	92.7%	508	100%

Source: ILOHAH Survey

Table 8.47: Membership in Food Reserve Agency cooperatives, by sex of household head

		FRA coop				Total	
		Yes		No		Count	Table %
		Count	Table %	Count	Table %		
Sex of head of household	Female	10	2.0%	174	34.3%	184	36.2%
	Male	27	5.3%	297	58.5%	324	63.8%
Total		37	7.3%	471	92.7%	508	100%

Source: ILOHAH Survey

Table 8.48: Membership in Food Reserve Agency cooperatives, by district

		FRA coop				Total	
		Yes		No		Count	Table %
		Count	Table %	Count	Table %		
District	Chilubi	2	.4%	118	23.2%	120	23.6%
	Isoka	11	2.2%	109	21.5%	120	23.6%
	Mpika	16	3.1%	132	26.0%	148	29.1%
	Mungwi	8	1.6%	112	22.0%	120	23.6%
Total		37	7.3%	471	92.7%	508	100%

Source: ILOHAH Survey

Table 8.49: Membership in farming groups, by vulnerability category

Vulnerability Category		Farming group				Total	
		Yes		No		Count	Table %
		Count	Table %	Count	Table %		
Keeping PLWA and orphans		10	2.0%	69	13.6%	79	15.6%
Keeping PLWA		20	3.9%	75	14.8%	95	18.7%
Keeping orphans		25	4.9%	81	15.9%	106	20.9%
Non-vulnerable		48	9.4%	180	35.4%	228	44.9%
Total		103	20.3%	405	79.7%	508	100%

Source: ILOHAH Survey

Table 8.50: Membership in farming groups, by sex of household head

Sex of head of household		Farming group				Total	
		Yes		No		Count	Table %
		Count	Table %	Count	Table %		
Female	Male	24	4.7%	160	31.5%	184	36.2%
	Female	79	15.6%	245	48.2%	324	63.8%
Total		103	20.3%	405	79.7%	508	100%

Source: ILOHAH Survey

Table 8.51: Membership in farming groups, by district

District		Farming group				Total	
		Yes		No		Count	Table %
		Count	Table %	Count	Table %		
District	Chilubi	16	3.1%	104	20.5%	120	23.6%
	Isoka	27	5.3%	93	18.3%	120	23.6%
	Mpika	33	6.5%	115	22.6%	148	29.1%
	Mungwi	27	5.3%	93	18.3%	120	23.6%
Total		103	20.3%	405	79.7%	508	100%

Source: ILOHAH Survey

Table 8.52: Membership in CBOs, by vulnerability category

Vulnerability Category		CBOs				Total	
		Yes		No		Count	Table %
		Count	Table %	Count	Table %		
Keeping PLWA and orphans		16	3.1%	63	12.4%	79	15.6%
Keeping PLWA		24	4.7%	71	14.0%	95	18.7%
Keeping orphans		23	4.5%	83	16.3%	106	20.9%
Non-vulnerable		40	7.9%	188	37.0%	228	44.9%
Total		103	20.3%	405	79.7%	508	100%

Source: ILOHAH Survey

Table 8.53 Membership in CBOs, by sex of household head

		CBOs				Total	
		Yes		No		Count	Table %
		Count	Table %	Count	Table %		
Sex of head of household	Female	33	6.5%	151	29.7%	184	36.2%
	Male	70	13.8%	254	50.0%	324	63.8%
Total		103	20.3%	405	79.7%	508	100%

Source: ILOHAH Survey

Table 8.54 Membership in CBOs, by district

		CBOs				Total	
		Yes		No		Count	Table %
		Count	Table %	Count	Table %		
District	Chilubi	18	3.5%	102	20.1%	120	23.6%
	Isoka	23	4.5%	97	19.1%	120	23.6%
	Mpika	37	7.3%	111	21.9%	148	29.1%
	Mungwi	25	4.9%	95	18.7%	120	23.6%
Total		103	20.3%	405	79.7%	508	100%

Source: ILOHAH Survey

8.4 HOUSEHOLD INCOME AND EXPENDITURE PATTERNS

The ILOHAH baseline survey collected information on changes in income and expenditure sources over a five-year recall period. Variations in income and expenditure patterns across vulnerability categories and districts can shed light on households' levels of welfare and deprivation. For instance, loss of on- and off-farm income sources has been identified as one of the major threats to household food security posed by AIDS, and can generate a consequent livelihood crisis (Rugalema, 1999). The tables in this section show that over the last five years more vulnerable households have resorted to petty trading and beer brewing as income sources. On the other hand, fewer vulnerable households have invested in agricultural inputs compared with non-vulnerable households. The number of female-headed households that burn charcoal and brew beer as sources of income has increased since 1999.

Table 8.55: Percentage changes in numbers of households indicating selected sources of income between 1999 and 2004, by vulnerability category

Sources of income	Keeping PLWA and orphans	Keeping PLWA	Keeping orphans	Non-vulnerable
Sale of crops	5.5	2.8	0.0	4.7
Sale of livestock	-42.9	-7.1	-30.0	0.0
Sale of chickens	5.0	10.8	-8.9	-8.2
Sale of charcoal		0.0	0.0	20.0
Sale of other forest products	16.7	40.0	0.0	42.9
Remittances	16.7	23.5	20.0	26.3
Pensions	0.0	0.0	0.0	16.7
Business/shop	33.3	33.3	0.0	50.0
Wage labour	0.0	50.0	45.5	13.0
Sale of handicrafts	25.0	-33.3	0.0	3.4
Petty trading	80.0	50.0	15.4	25.0
Sale of game meat		100.0		-20.0
Sale of fish	0.0	11.8	0.0	4.5
Sale of beer	10.7	10.5	17.1	6.7

Source: ILOHAH Survey

Table 8.56: Percentage changes in numbers of households indicating selected sources of income between 1999 and 2004, by sex of household head

Sources of income	Sex of head of household	
	Female	Male
Sale of crops	0.8	5.1
Sale of livestock	-35	0
Sale of chickens	-10	0
Sale of charcoal	60	4.8
Sale of other forest products	6.3	71.4
Remittances	19.5	24.2
Pensions		7.1
Business/shop	100	17.6
Wage labour	30.8	19.4
Sale of handicrafts	-25	5.4
Petty trading	33.3	38.7
Sale of game meat		16.7
Sale of fish	0	5.9
Sale of beer	14.7	7.4

Source: ILOHAH Survey

Table 8.57: Percentage changes in numbers of households indicating selected sources of income between 1999 and 2004, by district

Sources of income	Chilubi	Isoka	Mpika	Mungwi
Sale of crops	-1.5	7.2	7.6	-2.4
Sale of livestock	-31.3	5.9	-6.3	-15.4
Sale of chickens	-21.4	-7.7	12.2	-15.6
Sale of charcoal	0.0	12.5	0.0	42.9
Sale of other forest products		0.0	30.8	25.0
Remittances	12.5	27.3	43.5	4.2
Pensions	0.0	0.0	16.7	0.0
Business/shop	50.0	40.0	0.0	33.3
Wage labour	9.5	16.7	40.0	28.6
Sale of handicrafts	-14.3	9.1	-14.3	0.0
Petty trading	45.5	15.4	75.0	15.4
Sale of game meat		-50.0	66.7	0.0
Sale of fish	12.5	-16.7	0.0	-1.9
Sale of beer	-3.3	12.8	22.6	3.7

Source: ILOHAH Survey

Table 8.58: Percentage changes in numbers of households indicating selected expenditure items between 1999 and 2004, by vulnerability category

<i>Expenditure items</i>	Keeping PLWA and orphans	Keeping PLWA	Keeping orphans	Non-vulnerable
Food	7.1	4.5	2.1	9.4
Basics	5.4	6.9	2.9	7.6
Paraffin	0.0	3.8	0.0	5.8
Medical bills	4.3	13.0	0.0	6.5
School fees	-4.2	-12.5	-6.7	-12.5
Clothes	-7.6	0.0	-1.1	5.8
Agricultural inputs	-7.1	-5.9	4.7	7.1
Labour	10.0	11.8	-18.8	9.4
Livestock	0.0	-16.7	66.7	8.3
Farm implements	7.7	-15.0	0.0	0.0
Fishing equipment	0.0	7.7	0.0	4.5
Luxury goods	-42.9	8.3	-6.7	16.2
Cosmetics	-6.4	3.4	5.3	3.4
Jewellery	0.0	0.0	33.3	-20.0
Transport	9.4	15.8	7.5	17.0
Funerals	-4.0	18.5	6.9	4.0
Family support	16.7	35.0	20.0	22.2
Leisure	0.0	21.7	10.7	11.8
House maintenance	7.7	-5.0	-8.7	-11.9

Source: ILOHAH Survey

Table 8.59: Percentage changes in numbers of households indicating selected expenditure items between 1999 and 2004, by district

<i>Expenditure items</i>	Chilubi	Isoka	Mpika	Mungwi
Food	5.5	4.6	10.9	4.5
Basics	5.4	6.3	8.0	4.4
Paraffin	1.1	3.9	3.2	4.8
Medical bills	6.3	3.8	10.3	2.9
School fees	-7.0	-5.9	-14.3	-10.3
Clothes	2.0	1.9	-0.8	2.1
Agricultural inputs	-7.1	2.1	-1.3	15.0
Labour	7.7	-11.1	10.3	6.7
Livestock	-20.0	33.3	-28.6	75.0
Farm implements	0.0	0.0	-7.9	4.8
Fishing equipment	8.1	0.0	0.0	0.0
Luxury goods	-5.0	0.0	20.0	0.0
Cosmetics	2.3	3.6	1.0	3.5
Jewellery	-20.0	0.0	0.0	25.0
Transport	12.2	15.2	15.9	10.4
Funerals	10.3	-2.9	18.9	-3.3
Family support	20.8	27.6	15.4	32.1
Leisure	9.4	16.7	6.3	17.5
House maintenance	-4.3	-23.8	6.7	-12.5

Source: ILOHAH Survey

Table 8.60: Percentage changes in numbers of households indicating selecting expenditure items between 1999 and 2004, by sex of household head

<i>Expenditure items</i>	Sex of head of household	
	Female	Male
Food	4.8	7.6
Basics	4	7.4
Paraffin	2.1	4
Medical bills	2.6	7.8
School fees	-7.3	-11
Clothes	-3.8	4.2
Agricultural inputs	-10.7	7.5
Labour	0	5.7
Livestock	100	-11.1
Farm implements	-2.8	-1.5
Fishing equipment	11.8	1.8
Luxury goods	-28.6	12.3
Cosmetics	-0.8	4.4
Jewellery	33.3	-11.1
Transport	7	16.3
Funerals	3.7	7.8
Family support	20	24.2
Leisure	21.7	10.2
House maintenance	2.7	-13.1

Source: ILOHAH Survey

CHAPTER 9: HOUSEHOLD LIVELIHOOD STRATEGIES

9.1 LIVELIHOOD STRATEGIES

This chapter looks at the different livelihood strategies pursued by male- and female-headed households across vulnerability categories and districts. Specifically, the chapter examines the livelihood strategies of heads of households, the average ages of individuals involved in various activities, and fishing and crop cultivation.

9.1.1 Livelihood strategies of household heads

The ILOHAH baseline survey included a number of questions within the demographic register related to the first and second most important livelihood strategies for the sampled individuals. This section provides information on the main livelihood strategies for male- and female-headed households within the different vulnerability categories and districts. By disaggregating livelihood data by sex and vulnerability category, this section provides indirect information on the livelihood options for widow-headed households, households with orphans and households that take care of PLWA. The tables in this section show that farming is the most important livelihood strategy for both fishing and farming communities. While male-headed households across the household categories are involved in fishing and/or trading to supplement household income, female-headed households rely mainly on beer brewing as an additional source of income. This section reconfirms the findings of the qualitative livelihood analysis by showing that across vulnerability categories and districts households have only few opportunities to diversify their livelihoods. Most households depend on a combination of farming, fishing, trading and beer brewing. The tables also show that female-headed households have particularly few options for earning income, and consequently many female-headed households depend on beer brewing to secure their livelihoods, especially in Mungwi, Isoka and Mpika districts. The tables in this section also highlight the low employment opportunities in the formal sector. Only 3 to 14 percent of the households (most of them male-headed) depend on formal employment as their main livelihood strategy.

Table 9.1. First and second most important livelihood strategies for household heads, by vulnerability category and sex of household head

Vulnerability category	First important strategy		Second important strategy	
	Female-hh	Male-hh	Female-hh	Male-hh
Keeping PLWA and orphans	Farming 78%)	Farming 76%)	Beer brewing (20%) Trading (9%)	Fishing (16%) Trading (16%)
Keeping PLWA	Farming 89%)	Farming 83%)	Beer brewing (19%) Trading (14%)	Fishing (9%), Trading (9%)
Keeping orphans	Farming (87%)	Farming (71%)	Beer brewing (19%) Trading (6%)	Fishing (12%) Trading (12%)
Non-vulnerable	Farming (85%)	Farming (73%)	Beer brewing (21%) Trading and piecework (5%)	Fishing (14%) Trading (9%)

Source: ILOHAH Survey

Table 9.2. First and second most important livelihood strategies for household heads, by district and sex of household head

District	First important strategy		Second important strategy	
	Female-hh	Male-hh	Female-hh	Male-hh
Chilubi	Farming (68%) Fishing (14%)	Farming (53%) Fishing (22%) Formal employment (16%)	Farming (16%) Fishing (11%) Trading (8%)	Farming (31%) Fishing (27%)
Isoka	Farming (92%)	Farming (88%)	Beer brewing (25%)	Trading (14%)
Mpika	Farming (90%)	Farming (88%) Formal employment (10%)	Beer brewing (21%) Trading (14%)	Trading (14%)
Mungwi	Farming (83%)	Farming (70%) Fishing (20%)	Beer brewing (32%) Trading and piecework (5%)	Farming (27%) Fishing (24%), trading (8%)

Source: ILOHAH Survey

9.1.2 Livelihood strategies and age

This section looks at the demographic profile of the sample population in terms of second most important livelihood strategy. The section focuses on the younger population (under 16 years of age) and on the mean ages of the individuals involved in selected activities in order to provide a picture of child involvement and gender roles. In particular, the tables in this section show that significantly more children in vulnerable households assist in farming and domestic activities than do in non-vulnerable households. HIV/AIDS results in lost household labour availability, directly through sickness and death and indirectly, as the time spent caring for afflicted household members takes away from the time spent on agricultural activities and household tasks. Consequently, children in these households have to assist more in taking care of younger siblings and in food production. The tables also demonstrate that elderly people, especially grandmothers with orphans, are involved in beer brewing as a livelihood strategy. Trading and piecework is predominantly done by younger men in the households.

Table 9.3: Distribution of individuals (under 16 years of age) by second most important activity, by vulnerability category and sex (Col %)

		Keeping PLWA and orphans		Keeping PLWA		Keeping orphans		Non-vulnerable		Total
		Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Col%
Second most important activity	Farming	11.3%	21.6%	8.5%	17.5%	10.6%	19.5%	7.4%	9.0%	12.1%
	Fishing								1.1%	.2%
	Beer brewing	.9%								.1%
	Trading			1.1%	1.0%	.6%		1.9%	.4%	.7%
	Household chores	15.1%	17.6%	23.4%	15.5%	22.9%	18.3%	18.6%	15.0%	18.1%
	Attending school	1.9%			2.1%			.7%		.5%
	Caring for sick			1.1%						.1%
	None	70.8%	60.8%	66.0%	63.9%	65.9%	62.2%	71.4%	74.4%	68.2%
Total		100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: ILOHAH Survey

Table 9.4: Mean age of individuals, by second most important activity and vulnerability category

		Keeping PLWA and orphans	Keeping PLWA	Keeping orphans	Non-vulnerable	Total
		Second most important activity	Beer brewing	38	35	44
	Piece work	28	37	27	28	28
	Trading	39	30	32	28	30
	Household chores	24	25	25	24	24
	Formal employment			26	31	29
Total		28	27	27	26	27

Source: ILOHAH Survey

Table 9.5: Mean age of individuals, by second most important activity, by sex

		Sex		Total
		Women	Men	
Second most important activity	Beer brewing	38	36	37
	Piece work	27	28	28
	Trading	28	32	30
	Household chores	26	21	24
	Formal employment		29	29
Total		28	24	27

Source: ILOHAH Survey

Table 9.6: Mean age of individuals, by second most important activity, by district

		District				Total
		Chilubi	Isoka	Mpika	Mungwi	
Second most important activity	Beer brewing	40	35	36	40	37
	Piece work	33	31	26	22	28
	Trading	33	32	28	34	30
	Household chores	22	27	26	25	24
	Formal employment		26		31	29
Total		24	29	28	28	27

Source: ILOHAH Survey

9.2 FISHERIES

The quantitative baseline survey looked into the different fishing methods used across the different household categories and sexes of heads in order to identify possible entry points for improving livelihood strategies in fishing communities. The survey looked particularly at the main, second and third methods of fishing in order to study possible variations across vulnerability categories. The tables in this section confirm that fishing is predominantly done by non-vulnerable male-headed households. The fishing methods used in Northern Province do not vary much across vulnerability category or sex of household head. The main methods used include gillnetting, seine netting and the use of baskets. Only a small proportion (7 percent) of the households interviewed openly declared using illegal fish poison as a method of catching fish.

Table 9.7: Distribution of households by main, second and third methods of fishing, by vulnerability category (Subtable %)

		Keeping PLWA and orphans	Keeping PLWA	Keeping orphans	Non-vulnerable	Total
Main method	Gillnetting	4.1%	9.0%	10.7%	43.4%	67.2%
	Seine netting	2.5%	3.3%	1.6%	4.9%	12.3%
	Baskets	4.9%	3.3%	1.6%	2.5%	12.3%
	Hook and line	1.6%			0.8%	2.5%
	Fishing traps	0.8%	0.8%		2.5%	4.1%
	Spear				0.8%	0.8%
	Fish poisoning				0.8%	0.8%
Total		13.9%	16.4%	13.9%	55.7%	100%
Second method	Gillnetting	1.6%			0.8%	2.5%
	Seine netting	0.8%	0.8%		0.8%	2.5%
	Baskets	2.5%	2.5%	1.6%	8.2%	14.8%
	Hook and line	0.8%	2.5%	6.6%	13.1%	23.0%
	Fishing traps	2.5%	4.9%	1.6%	16.4%	25.4%
	Spear	0.8%			7.4%	8.2%
	Fish poisoning	1.6%	1.6%	1.6%	1.6%	6.6%
	None	3.3%	4.1%	2.5%	7.4%	17.2%
Total		13.9%	16.4%	13.9%	55.7%	100%
Third method	Gillnetting	0.8%				0.8%
	Seine netting		0.8%	1.6%	1.6%	4.0%
	Baskets	1.6%	0.8%		5.6%	7.9%
	Hook and line		0.8%	0.8%	10.3%	11.9%
	Fishing traps	1.6%	1.6%	2.4%	5.6%	11.1%
	Spear	1.6%		2.4%	2.4%	6.3%
	Fish poisoning	1.6%				1.6%
	None	6.3%	11.9%	7.9%	30.2%	56.3%
Total		13.5%	15.9%	15.1%	55.6%	100%

Source: ILOHAH Survey

Table 9.8: Distribution of households by main, second and third methods of fishing, by sex of household head (Subtable %)

		Sex of head of household		Total
		Female	Male	
Main method	Gill netting	11.5%	55.7%	67.2%
	Seine netting	2.5%	9.8%	12.3%
	Baskets	8.2%	4.1%	12.3%
	Hook and line		2.5%	2.5%
	Fishing traps		4.1%	4.1%
	Spear		.8%	.8%
	Fish poisoning		.8%	.8%
Total		22.1%	77.9%	100%
Second method	Gill netting	.8%	1.6%	2.5%
	Seine netting		2.5%	2.5%
	Baskets	4.9%	9.8%	14.8%
	Hook and line	4.9%	18.0%	23.0%
	Fishing traps	2.5%	23.0%	25.4%
	Spear	1.6%	6.6%	8.2%
	Fish poisoning	2.5%	4.1%	6.6%
	None	4.9%	12.3%	17.2%
Total		22.1%	77.9%	100%
Third method	Gill netting	.8%		.8%
	Seine netting	.8%	3.2%	4.0%
	Baskets	.8%	7.1%	7.9%
	Hook and line	1.6%	10.3%	11.9%
	Fishing traps	2.4%	8.7%	11.1%
	Spear	1.6%	4.8%	6.3%
	Fish poisoning		1.6%	1.6%
	None	14.3%	42.1%	56.3%
Total		22.2%	77.8%	100%

Source: ILOHAH Survey

Table 9.9: Distribution of households with members involved in fishing, by vulnerability category and sex of household head (Table%)

Vulnerability category	Are there any members of the household involved in fishing?		Total
	Female Headed	Male Headed	Table %
Keeping PLWA and orphans	6.5%	7.3%	13.8%
Keeping PLWA	5.7%	9.8%	15.4%
Keeping orphans	4.1%	9.8%	13.8%
Non-vulnerable	5.7%	51.2%	56.9%
Total	22.0%	78.0%	100%

Source: ILOHAH Survey

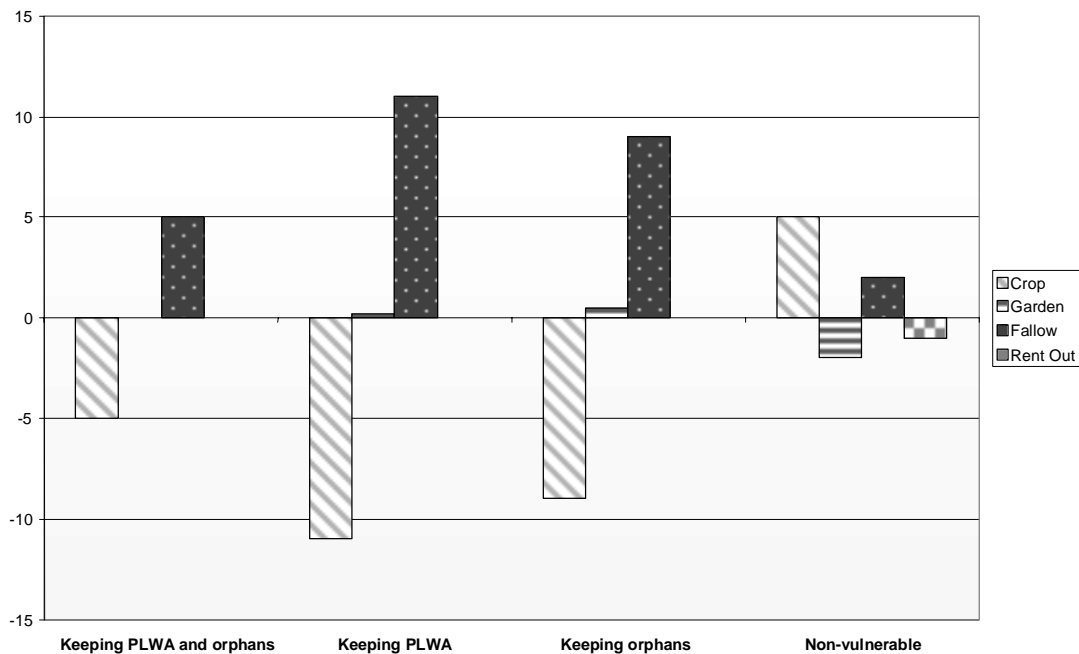
9.3 LAND AND CROP HUSBANDRY

Many studies have indicated that as a direct result of decreased labour availability caused by HIV/AIDS, households often choose to plant smaller areas of land. Furthermore, the inability to purchase important inputs such as fertilizer (see paragraph 8.4), coupled with poor land management owing to time constraints, might lead to reduced soil fertility. This paragraph looks specifically at the changes in land use and soil fertility across the different household categories.

9.3.1 Land use changes

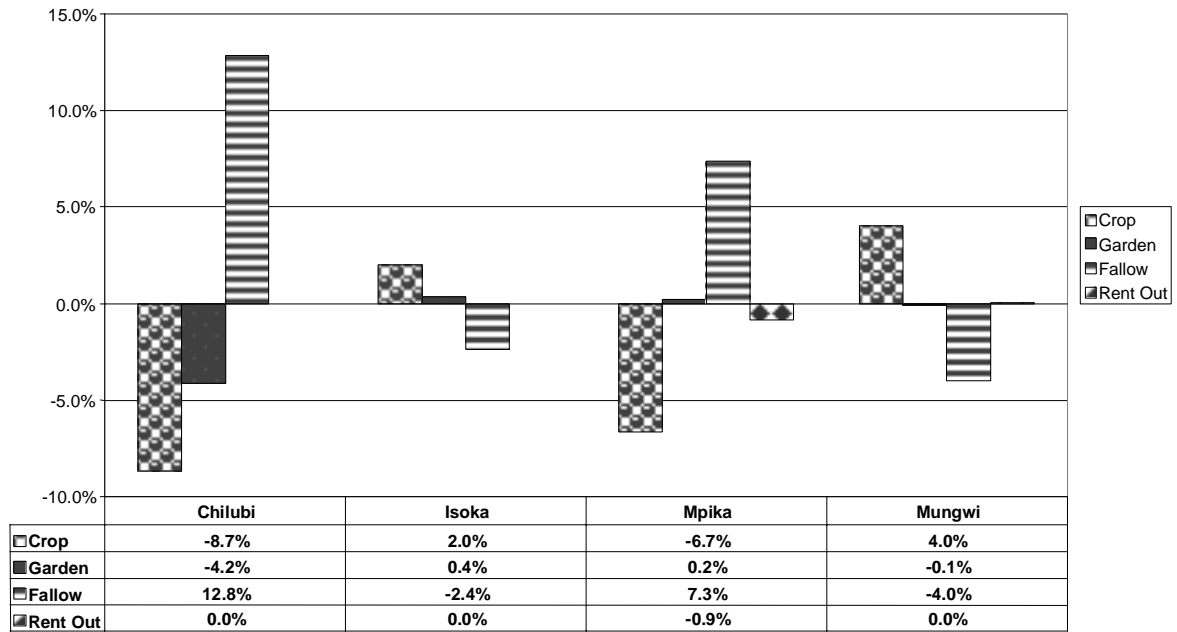
Research in sub-Saharan Africa (see www.fao.org/hiv/aids) has shown that owing to a reduced labour force, HIV/AIDS-affected households tend to cultivate less land and shift to low-input crops such as cassava. This section provides information on the changes in area cultivated. The figures in this section illustrate a decrease in land areas cultivated among vulnerable households. Over the last five years, all vulnerable household categories decreased the proportion of their holdings under cultivation (leaving it fallow) by 5 to 11 percent. These decreases were greater in female-headed than male-headed households. Non-vulnerable households, on the other hand, actually increased the proportion of their holdings under crop cultivation by 5 percent during the same period.

Percentage changes in land use, by vulnerability category (1998–2003)



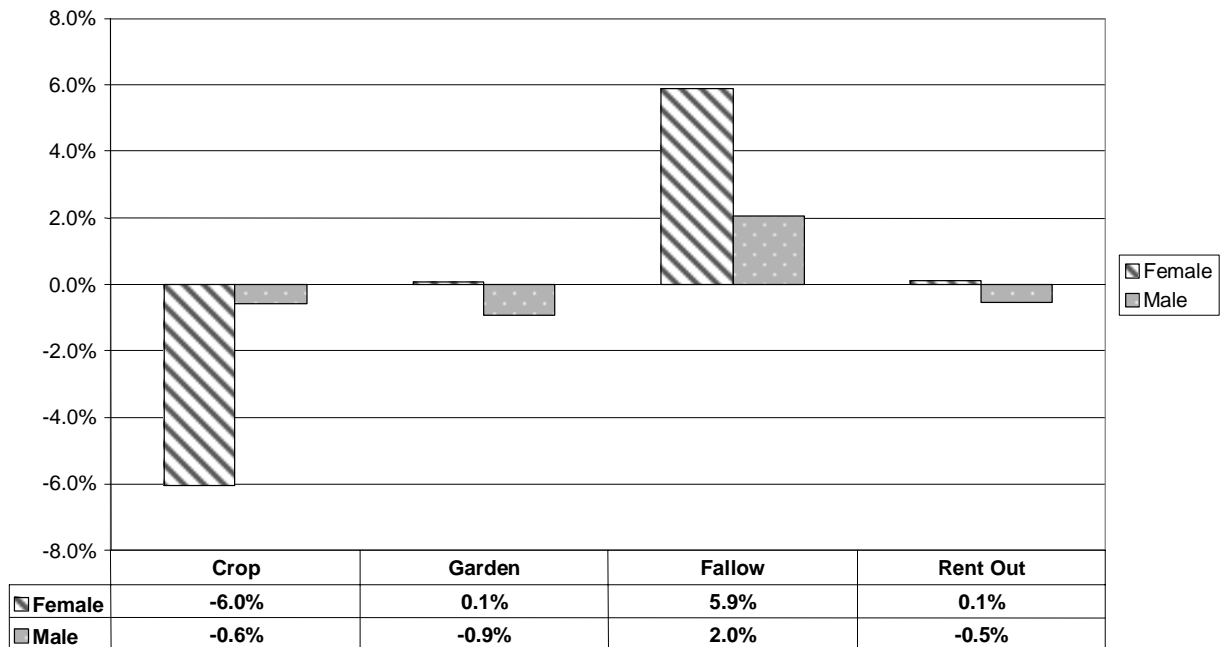
Source: ILOHAH Survey

Percentage changes in land use, by district (1998–2003)



Source: ILOHAH Survey

Percentage changes in land use, by sex of household head (1998–2003)



Source: ILOHAH Survey

9.3.2 Changes in soil fertility status

The ILOHAH baseline survey asked respondents to assess the status of soil fertility for their land parcels compared with five years ago, and to state the main reason for any reported decline or increase. It is important to monitor changes in soil fertility because a decline in household natural capital will reduce a household's ability to adjust to future shocks, and thus increase its vulnerability. The tables in this section show a decrease in soil fertility across districts and vulnerability categories: 39 percent of the households reported decreased soil fertility, irrespective of vulnerability category and district. This figure reflects the general poor soil conditions in Northern Province. Most households, particularly vulnerable ones, reported old fields and the inability to purchase chemical fertilizers as the reasons for decreased soil fertility. The use of old fields was reported more frequently by female-headed households. Households that experienced increased soil fertility in their parcels mentioned that this is mainly owing to crop rotation and, in some communities, conservation farming practices.

Table 9.13: Changes in level of soil fertility between 1998 and 2004, by vulnerability category (Row % Cases)

Vulnerability Category	Level of soil fertility				Total
	Increased	Decreased	Same	Don't know	
Keeping PLWA and orphans	10.9%	40.5%	35.6%	13.0%	100%
Keeping PLWA	14.9%	37.5%	30.7%	16.8%	100%
Keeping orphans	11.2%	38.6%	34.5%	15.8%	100%
Non-vulnerable	11.4%	39.4%	33.6%	15.6%	100%
Total	11.9%	39.0%	33.5%	15.5%	100%

Source: ILOHAH Survey

Table 9.14: Changes in level of soil fertility between 1998 and 2004, by district (Row % Cases)

		Level of soil fertility				Total
		Increased	Decreased	Same	Don't know	
District	Chilubi	10.7%	35.7%	36.4%	17.2%	100%
	Isoka	11.2%	41.6%	32.6%	14.6%	100%
	Mpika	15.5%	36.5%	33.3%	14.8%	100%
	Mungwi	7.8%	42.6%	33.0%	16.5%	100%
Total		11.9%	39.0%	33.5%	15.5%	100%

Source: ILOHAH Survey

Table 9.15: Reasons for decreased fertility, by district and sex of household head (%)

District	Sex of head of household		Total
	Female	Male	
	Old field	Old field	
Chilubi	38%	31%	33%
Isoka	42%	26%	33%
Mpika	33%	37%	35%
Mungwi	32%	34%	33%
Total	36%	32%	34%
	Female	Male	
	Lack soil fertility skills	Lack soil fertility skills	
	Chilubi	5%	
Isoka	6%	18%	13%
Mpika	16%	19%	18%
Mungwi	5%	13%	10%
Total	9%	14%	12%
	Female	Male	
	Less manure now	Less manure now	
	Chilubi		
Isoka	13%	7%	9%
Mpika	10%	10%	10%
Mungwi	7%	4%	5%
Total	8%	7%	7%
	Female	Male	
	Death of knowledgeable member	Death of knowledgeable member	
	Isoka		
Mpika	2%	2%	2%
Mungwi		1%	1%
Total	1%	2%	1%
	Female	Male	
	Unable to purchase chemical fertilizer	Unable to purchase chemical fertilizer	
	Chilubi		
Isoka	13%	28%	22%
Mpika	17%	19%	18%
Mungwi	5%	16%	13%
Total	10%	17%	14%

Source: ILOHAH Survey

Table 9.16: Reasons for decreased fertility, by vulnerability category and sex of household head (%)

Vulnerability Category	Sex of head of household		Total
	Female	Male	
	Old field	Old field	
Keeping PLWA and orphans	33%	20%	29%
Keeping PLWA	39%	25%	31%
Keeping orphans	29%	31%	30%
Non-vulnerable	46%	37%	38%
Total	36%	32%	34%
	Female	Male	
	Lack soil fertility skills	Lack soil fertility skills	
	Keeping PLWA and orphans	7%	
Keeping PLWA	8%	22%	17%
Keeping orphans	5%	14%	9%
Non-vulnerable	15%	12%	13%
Total	9%	14%	12%
	Female	Male	
	Less manure now	Less manure now	
	Keeping PLWA and orphans	9%	
Keeping PLWA	6%	10%	8%
Keeping orphans	11%	6%	8%
Non-vulnerable	5%	5%	5%
Total	8%	7%	7%
	Female	Male	
	Death of knowledgeable member	Death of knowledgeable member	
	Keeping orphans	2%	
Non-vulnerable		2%	2%
Total	1%	2%	1%
	Female	Male	
	Unable to purchase chemical fertilizer	Unable to purchase chemical fertilizer	
	Keeping PLWA and orphans	15%	
Keeping PLWA	3%	20%	14%
Keeping orphans	9%	24%	16%
Non-vulnerable	10%	14%	13%
Total	10%	17%	14%

Source: ILOHAH Survey

Table 9.17: Reasons for increased fertility, by vulnerability category and sex of household head (%)

Vulnerability Category	Sex of head of household		Total
	Female	Male	
	Crop rotation	Crop rotation	
Keeping PLWA and orphans	43%	36%	41%
Keeping PLWA	31%	44%	39%
Keeping orphans	42%	33%	38%
Non-vulnerable	33%	42%	41%
Total	38%	41%	40%
	Female	Male	
	More manure	More manure	
	Keeping PLWA and orphans	6%	
Keeping PLWA	11%	7%	8%
Keeping orphans	11%	6%	8%
Non-vulnerable	8%	5%	6%
Total	9%	6%	7%
	Female	Male	
	Use of chemical fertilizer	Use of chemical fertilizer	
	Keeping PLWA and orphans	6%	
Keeping PLWA	3%	8%	6%
Keeping orphans	2%	10%	6%
Non-vulnerable	5%	7%	7%
Total	4%	7%	6%
	Female	Male	
	Improved fallowing	Improved fallowing	
	Keeping PLWA and orphans	9%	
Keeping PLWA	11%	19%	16%
Keeping orphans	15%	8%	11%
Non-vulnerable	13%	8%	9%
Total	12%	10%	10%
	Female	Male	
	Conservation farming	Conservation farming	
	Keeping PLWA and orphans	6%	
Keeping PLWA	6%	5%	5%
Keeping orphans	13%	2%	8%
Non-vulnerable	21%	16%	17%
Total	11%	13%	12%

Source: ILOHAH Survey

Table 9.18: Reasons for increased soil fertility, by district (%)

District	Sex of head of household		Total
	Female	Male	
	Crop rotation	Crop rotation	
Chilubi	19%	17%	18%
Isoka	42%	51%	48%
Mpika	50%	61%	57%
Mungwi	34%	33%	33%
Total	38%	41%	40%
	Female	Male	
	More manure	More manure	
	Chilubi	8%	
Isoka	8%	4%	6%
Mpika	12%	7%	9%
Mungwi	5%	5%	5%
Total	9%	6%	7%
	Female	Male	
	Use of chemical fertilizer	Use of chemical fertilizer	
	Chilubi		
Isoka	6%	8%	8%
Mpika	5%	12%	9%
Mungwi	2%	5%	4%
Total	4%	7%	6%
	Female	Male	
	Improved fallowing	Improved fallowing	
	Chilubi	8%	
Isoka	4%	14%	10%
Mpika	17%	13%	15%
Mungwi	17%	9%	12%
Total	12%	10%	10%
	Female	Male	
	Conservation farming	Conservation farming	
	Chilubi	19%	
Isoka	10%	13%	12%
Mpika	5%	10%	8%
Mungwi	12%	10%	11%
Total	11%	13%	12%

Source: ILOHAH Survey

9.3.2 Changes in chitemene cultivation

The qualitative livelihood analysis (Part A of this report) indicated that slash-and-burn (chitemene) cultivation is becoming increasingly important to food security owing to households' reduced access to inorganic fertilizers. In the sample areas, as in most parts of Northern Province, forest areas in the vicinity of homesteads are becoming scarce, and households are having to search increasingly further afield to open up new fields. This section looks at the changes in proportions of households to practise chitemene over a five-year time interval. The tables in this section show a decrease in chitemene cultivation among vulnerable households. Chitemene is very labour-intensive, both for opening new fields and in terms of the distances walked to fields, so vulnerable households with labour constraints are less able to ensure food security through chitemene. This is especially true of female-headed households.

Table 9.19: Households practising chitemene in 2004 and in 1999, by vulnerability category

		Keeping PLWA and orphans	Keeping PLWA	Keeping orphans	Non-vulnerable	Total
Practise chitemene now?	Yes	2.6%	4.2%	4.6%	9.2%	20.5%
	No	13.1%	14.3%	16.1%	35.9%	79.5%
Total		15.7%	18.5%	20.7%	45.0%	100%
Practised chitemene five years ago?	Yes	3.0%	4.6%	5.2%	8.4%	21.2%
	No	12.8%	14.0%	15.4%	36.7%	78.8%
Total		15.8%	18.6%	20.6%	45.1%	100%

Source: ILOHAH Survey

Table 9.20: Households practising chitemene in 2004 and in 1999, by district

		District				Total
		Chilubi	Isoka	Mpika	Mungwi	
Practise chitemene now?	Yes	2.8%	4.6%	6.6%	6.6%	20.5%
	No	20.9%	19.3%	21.9%	17.3%	79.5%
Total		23.7%	23.9%	28.5%	23.9%	100%
Practised chitemene five years ago?	Yes	2.4%	4.2%	8.8%	5.8%	21.2%
	No	21.4%	19.8%	19.8%	18.0%	78.8%
Total		23.8%	24.0%	28.5%	23.8%	100%

Source: ILOHAH Survey

CHAPTER 10: HOUSEHOLD COPING STRATEGIES

Household coping strategies are important proxy indicators for HIV/AIDS impacts and for assessing how resilient different households are to the effects of the disease on their livelihoods. Mutagandura, Mukurazita and Jackson (1999) divided coping strategies into three main categories: 1) strategies aimed at improving food security; 2) strategies aimed at raising and supplementing income so as to maintain household expenditure patterns; and 3) strategies aimed at alleviating the loss of labour. The methodological issue resides in the fact that it is difficult to differentiate the impact of HIV/AIDS from other shocks to household. This chapter provides information on the different coping strategies that households resort to. The tables in this chapter show that most households in the sample resort to strategies that increase food security in response to poor agricultural production, and strategies that raise income. The tables illustrate that more households taking care of PLWA resort to work for food as a coping strategy than do non-vulnerable households. This is particularly so for female-headed households.

Table 10.1: Percentages of households resorting to selected coping strategies, by vulnerability category

<i>Coping strategy</i>	Keeping PLWA and orphans	Keeping PLWA	Keeping orphans	Non-vulnerable
Crop diversification	64.6	70.5	68.9	69.3
Use chicken manure	6.3	3.2	7.5	2.6
Leave crop residues in field	59.5	68.4	62.3	64.0
Chitemene	22.8	29.5	26.4	27.6
Cultivate in floodplain	11.4	21.1	22.6	25.0
Grow millet on hill	7.6	6.3	9.4	9.6
Winter ploughing	5.1	9.5	8.5	7.0
Shift from maize to cassava growing	49.4	54.7	44.3	57.5
Use recycled seed	73.4	82.1	76.4	82.9
Resort to piecework	51.9	41.1	48.1	50.4
Borrow money	51.9	62.1	48.1	59.2
Poaching	2.5	3.2	2.8	4.4
Beer brewing	36.7	43.2	42.5	38.2
Charcoal burning	1.3	7.4	11.3	10.5
Selling caterpillars	12.7	22.1	16.0	13.6
Distress sale of produce	26.6	27.4	21.7	28.1
Bartering with traders	40.5	47.4	44.3	50.4
Going to clinic	51.9	51.6	47.2	37.7
Drink boiled water	27.8	18.9	23.6	22.4
Distress sale of assets	16.5	8.4	14.2	17.1
Sell game meat	1.3	4.2	2.8	2.6
Cultivate winter maize in dambos	13.9	21.1	25.5	31.1
Work for food	41.8	38.9	28.3	37.3
Collect wild fruits	39.2	41.1	39.6	40.4
Rely on extended family	40.5	32.6	29.2	19.7
Withdraw orphans from school	15.2	2.1	7.5	0.4
Orphans assist in piecework	11.4	4.2	7.6	0.0

Source: ILOHAH Survey

Table 10.2: Percentages of households resorting to selected coping strategies, by sex of household head

<i>Coping Strategy</i>	Female-headed	<i>Coping Strategy</i>	Male-headed
Use recycled seed	79.9	Use recycled seed	79.9
Crop diversification	66.3	Crop diversification	70.1
Leave crop residues in field	62.5	Leave crop residues in field	64.5
Borrow money	53.3	Borrow money	58.0
Resort to piecework	51.6	Shift from maize to cassava growing	54.0
Shift from maize to cassava growing	51.1	Bartering with traders	50.0
Collect wild fruits	47.8	Resort to piecework	46.6
Going to clinic	44.6	Going to clinic	44.4
Beer brewing	41.8	Beer brewing	38.6
Bartering with traders	41.8	Collect wild fruits	35.8
Work for food	41.8	Work for food	33.3
Rely on extended family	37.5	Chitemene	29.3
Distress sale of produce	24.5	Cultivate winter maize in dambos	28.4
Chitemene	22.8	Distress sale of produce	27.5
Drink boiled water	21.7	Drink boiled water	23.5
Cultivate winter maize in dambos	20.1	Cultivate in floodplain	22.8
Cultivate in floodplain	19.6	Rely on extended family	21.6
Selling caterpillars	16.8	Distress sale of assets	17.6
Orphans assist in piecework	10.4	Selling caterpillars	14.8
Withdraw orphans from school	10.3	Charcoal burning	11.4
Distress sale of assets	9.8	Grow millet on hills	10.2
Grow millet on hills	6.0	Winter ploughing	9.3
Use chicken manure	4.3	Poaching	4.9
Winter ploughing	4.3	Use chicken manure	4.3
Charcoal burning	3.8	Sell game meat	3.7
Poaching	1.1	Withdraw orphans from school	1.2
Sell game meat	1.1	Orphans assist in piecework	0.6

Source: ILOHAH Survey

Table 10.3: Percentages of households resorting to selected coping strategies, by district

Coping Strategy	District			
	Chilubi	Isoka	Mpika	Mungwi
Crop diversification	39.2	85.0	82.4	65.0
Use chicken manure	2.5	6.7	4.7	3.3
Leave crop residues in field	43.3	78.3	73.0	58.3
Chitemene	15.8	29.2	34.5	26.7
Cultivate in floodplain	6.7	35.8	20.3	24.2
Grow millet on hills	0.0	18.3	6.1	10.8
Winter ploughing	3.3	11.7	7.4	7.5
Shift from maize to cassava growing	54.2	50.0	45.3	64.2
Use recycled seed	70.0	85.0	79.7	85.0
Resort to piecework	40.0	47.5	52.7	52.5
Borrow money	57.5	55.8	54.1	58.3
Poaching	0.8	2.5	8.1	1.7
Beer brewing	26.7	35.0	44.6	51.7
Charcoal burning	0.8	8.3	14.2	10.0
Selling caterpillars	1.7	12.5	36.5	6.7
Distress sale of produce	23.3	20.0	36.5	23.3
Bartering with traders	37.5	39.2	59.5	49.2
Going to clinic	33.3	52.5	51.4	39.2
Drink boiled water	20.8	27.5	28.4	13.3
Distress sale of assets	15.8	10.8	17.6	14.2
Sell game meat	0.0	4.2	5.4	0.8
Cultivate winter maize in dambos	4.2	30.8	39.2	24.2
Work for food	25.8	38.3	41.9	38.3
Collect wild fruits	20.0	40.0	56.8	40.0
Rely on extended family	29.2	29.2	28.4	22.5
Withdraw orphans from school	4.2	5.0	5.4	3.3
Orphans assist in piecework	3.3	3.3	6.8	2.5

Source: ILOHAH Survey

CHAPTER 11: LIVELIHOOD OUTCOMES

The ILOHAH baseline survey gathered information for specific aspects of food security and consumption at the household level. The current definition of household and individual food security, embraced initially by the World Bank (1986) and then by FAO during the 1996 World Food Summit, states that “food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life”. Poverty, lack of productive assets and reduced human capital are recognized as key determining factors for household food insecurity. This chapter provides information on household food insecurity by looking specifically at the differences in food sufficiency and consumption patterns among the different vulnerability categories.

11.1 FOOD SUFFICIENCY

In the ILOHAH baseline survey, a number of questions were asked to measure food security in terms of food availability and access to food stocks. Months of food sufficiency were calculated for maize, as a proxy indicator for food security. The tables in this section show that vulnerable households, particularly households with the double burden of looking after orphans and PLWA, are less food-sufficient from their own maize produce than male-headed non-vulnerable households are. Vulnerable households are food-sufficient from their maize produce for an average of 2.6 to 4.1 months per year. This small period of food sufficiency is a result of the overall reduction in maize cultivation owing to loss of labour and the inability to purchase inputs. Non-vulnerable households headed by men, on the other hand, produce more maize and are food-sufficient for maize for an average of 10.1 months a year. Among vulnerable households, the duration of food sufficiency from maize produce is highest for male-headed households in Mpika district (7.7 months) and lowest for female-headed households in Chilubi district (1.4 months).

Table 11.1: Number of months of household food sufficiency (maize), by vulnerability category and sex of household head

Vulnerability category	Sex of head of household	Months of Food Sufficiency												
		One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	Eleven	Twelve	Average
Keeping PLWA and orphans	Female	1		1	1	2	2	8	9	6		1	1	3.2
	Male						2	3	2	3		3		2.6
Keeping PLWA	Female			4	2	1	2	3	3	2		2	2	2.3
	Male			2	1	5	1	8	3	6	1	9	4	4.0
Keeping orphans	Female			1		3	5	8	6	4	1	3	1	3.6
	Male		2			4	3	5	6	7	2	1	7	4.1
Non-vulnerable	Female	1		1	1	5	3	2	1	4		1	1	2.0
	Male	5	4	2	4	13	11	18	13	18	2	13	19	10.2
Total		7	6	11	9	33	29	55	43	50	6	33	35	26.4

Source: ILOHAH Survey

*Food sufficiency might be underreported across vulnerability categories due to expectations of food availability.

Table 11.2: Number of months of household food sufficiency (maize), by district and sex of household head

District	Sex of head of household	Months of Food Sufficiency												
		One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	Eleven	Twelve	Average
Chilubi	Female	1		3	1	2	1	1	1				1	1.4
	Male	1			2	5	1	6	1	4	1	2	5	2.8
Isoka	Female			2		5	3	8	8	5		1	2	4.3
	Male			1	1	7	9	10	5	13	2	9	6	6.3
Mpika	Female	1		1	2	4	3	8	8	8	1	6	2	4.0
	Male		3		1	4	3	11	11	14	2	11	17	7.7
Mungwi	Female			1	1		5	4	2	3				2.7
	Male	4	3	3	1	6	4	7	7	3		4	2	4.0
Total		7	6	11	9	33	29	55	43	50	6	33	35	26.4

Source: ILOHAH Survey

11.2 HOUSEHOLD FOOD CONSUMPTION

This section looks at the mean numbers of daily meals eaten by adults and children, and the frequency of consumption of various types of food items as proxy indicators for food security. The tables in this section show that all households consume an average of two meals a day, irrespective of sex, age and district. The tables also show that most households consume protein sources such as meat, eggs and milk infrequently. According to the tables, seasonality rather than vulnerability category, sex or district seems to be the main determining factor for consumption patterns. This reflects the general poverty trend within Northern Province.

Table 11.3: Mean numbers of meals eaten by adults and children on day prior to survey, by vulnerability category

Vulnerability category	Adults	Children
Keeping PLWA and orphans	1.7	1.8
Keeping PLWA	1.8	1.7
Keeping orphans	1.9	1.8
Non-vulnerable	1.8	1.7

Source: ILOHAH Survey

Table 11.4: Mean numbers of meals eaten by adults and children on day prior to survey, by sex of household head

Sex of head of household	Adults	Children
Female	1.7	1.6
Male	1.9	1.9

Source: ILOHAH Survey

Table 11.5: Mean numbers of meals eaten by adults and children on day prior to survey, by district

District	Adults	Children
Chilubi	1.9	1.8
Isoka	1.8	1.8
Mpika	1.7	1.7
Mungwi	1.9	1.8

Source: ILOHAH Survey

Table 11.6: Mean numbers of days households had selected food items during week prior to survey, by vulnerability category

<i>Food items</i>	Keeping PLWA and orphans	Keeping PLWA	Keeping orphans	Non-vulnerable
Cereal	3.9	3.0	3.6	3.4
Cassava	5.2	5.6	5.4	6.0
Irish potatoes	1.0	.8	.5	1.0
Sweet potatoes	.2	.2	.3	.3
Sugar	1.8	1.1	1.5	1.3
Legumes	1.8	1.8	1.9	1.8
Vegetables	6.0	6.0	6.5	6.4
Fruits	.9	.9	.5	.5
Meats	.7	.5	.7	.7
Eggs	.1	.2	.2	.1
Fish	2.4	2.2	2.3	2.4
Cooking oil	3.1	3.1	3.1	3.4
Milk	.1	.2	.4	.2

Source: ILOHAH Survey

Table 11.7: Mean numbers of days households had selected food items during week prior to survey, by sex of household head

<i>Food items</i>	Sex of head of household	
	Female	Male
Cereal	3.1	3.8
Cassava	5.7	5.4
Irish potatoes	0.9	0.7
Sweet potatoes	0.2	0.3
Sugar	1	1.9
Legumes	1.7	1.9
Vegetables	6.4	6.1
Fruits	0.6	0.9
Meats	0.5	0.7
Eggs	0.1	0.2
Fish	2.1	2.6
Cooking oil	3	3.4
Milk	0.1	0.3

Source: ILOHAH Survey

Table 11.8: Mean numbers of days households had selected food items during week prior to survey, by district

<i>Food items</i>	District			
	Chilubi	Isoka	Mpika	Mungwi
Cereal	1.7	4.3	5.4	2.5
Cassava	6.6	5.7	3.5	6.5
Irish potatoes	.2	.1	2.8	.1
Sweet potatoes	.0	.1	.6	.3
Sugar	1.2	1.6	1.7	1.3
Legumes	1.3	2.1	1.8	2.1
Vegetables	6.6	6.3	6.0	6.1
Fruits	.6	.5	.8	1.0
Meats	.8	.7	.6	.5
Eggs	.1	.2	.1	.1
Fish	3.7	.9	1.8	2.9
Cooking oil	2.8	3.2	3.3	3.5
Milk	.1	.5	.1	.1

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Annex 1: Institutional Mapping Matrix

Institution	District	Objectives/activities	Beneficiaries	Comparative advantage for possible follow-up interventions
Agricultural Support Programme (ASP)	Kasama, Mpika, Isoka, Mbala	Support agricultural development	Farmers	Experience in group mobilization and promoting market linkages
Central Statistical Office (CSO)	Kasama	Data/statistics generation and dissemination	All interested	Government institution for data generation and dissemination at the provincial level
Cinci Wababili	Mungi	Promotion of sustainable agriculture and linkages to markets	Poor rural farmers	Many years experience in different aspects of agriculture, including sustainable farming methods
Department of Community Development	All districts	Improve the well-being of communities through their participation in sustainable human development focused on sustainable development. It mobilizes communities and resources to undertake self-help projects aimed at improving life, reducing illiteracy, increasing the capacity of NGOs and CBOs, and providing and facilitating access to social and economic empowerment of vulnerable people	Communities and vulnerable households	Wide geographical coverage and government institution
Department of Social Welfare	All districts	Administration of juvenile delinquency, family and child welfare and running of the Public Welfare Assistance Scheme for assisting the vulnerable and destitute, as well as the Community Bursary Scheme for supporting schoolchildren from poor families	The poor and vulnerable	Wide geographical coverage and government institution
Department of Youth Development	All districts	Empower young out-of-school people economically for employment creation through the Constituency Youth Development Fund and community-based youth projects	Out-of-school youths	Wide geographical coverage and government institution
Department of Child Affairs	All districts	Child rights advocacy, advisory and extension services	Children	Wide geographical coverage and government institution
Department of water Affairs	All districts	Building of infrastructure and other contractual civil engineering works, as well as regulating the use and development of water resources, flood control and drought management measures, etc.	Communities	Wide coverage
Development of People's Empowerment (DOPE)	Mpika	Enhancement of awareness among less privileged communities, formation of formal groups to increase representation (increase bargaining power)	The less privileged in society	Experience in group mobilization
District councils	All districts	Responsible for appropriate water and sanitation, public health, maintenance of roads and drainage	District residents	Government-supported and formed by an act of parliament
District Health Management Board	All districts	Promote health through reducing fatality rates from diseases such as malaria, reduce malnutrition and incidence of sexually transmitted illnesses (STI)/HIV/AIDS/TB, promote maternal health and promote preventive health through various community health practitioners	Communities	Wide, grassroots presence through rural health centres, neighbourhood health committees, (NHCs), CHWs, TBAs, peer educators, home-based care providers, etc.
District HIV/AIDS Task Force	All districts	Information generation and development; interpreting the implications of HIV/AIDS projects in development; and mainstreaming HIV/AIDS in health packages. Members from GRZ departments, NGOs, parastatals	All residents	Has been deliberating on HIV/AIDS for more than two years and has government support
District Development Coordinating Committee (DDCC)	All districts	Coordination of district development through providing an institutional framework for the coordinated planning, implementation, monitoring and evaluation of district development projects and programmes	Communities	Strong linkages with government bodies and other stakeholders

Institution	District	Objectives/Activities	Beneficiaries	Comparative advantage for possible follow-up interventions
Elias Mutale Youth Skills Training Centre	Kasama	Empowers poor and marginalized youth, women and men through teaching in organic farming, life skills and entrepreneurship	The poor and marginalized	Vast experience in imparting skills for sustainable livelihoods
FAWEZA	Kasama and most of the province	Empowerment of women	Disadvantaged women	Experience in mobilizing women
Forestry Department	Kasama and most of province	Promote sustainable forest management and utilization through the active participation of all stakeholders with a view to obtaining a sustainable forest reserve, and ensure sustainable supply of wood and non-wood forest products and services, while ensuring protection and maintenance of biodiversity	Communities in general, and those living near forest reserves in particular	Experience in dealing with conflict issues among communities and the requirements of the law of the land
Food Reserve Agency (FRA)	Kasama, but covering whole province	Input (fertilizer) distribution, crop marketing in remote areas, and maintaining strategic food reserves	Communities	Government support and wide coverage
Kasama Archdiocese Centre	Kasama	Sustained poverty reduction through skills training, rehabilitation of orphans and vulnerable children (OVCs) and providing material aid to schoolchildren and the aged	The vulnerable in society	Experience in imparting skills for sustainable livelihoods for the vulnerable
Kasama Child Crisis Centre	Kasama	Care and support to OVCs through providing inputs to foster parents, HIV/AIDS education, supporting babies in crisis	OVCs and their foster parents	Experience in supporting OVCs
Micro-Projects Unit (MU)	Kasama and most of Province	Reduce the rate of decline in social and economic welfare standards for poor and vulnerable people in Zambia	Communities in need	Wide coverage and government initiative
Ministry of Agriculture and Cooperatives (MACO)	All districts	Promotion of agricultural development providing research and extension services in crop production, animal production and health, fisheries and cooperatives and marketing, and disseminating information through its information wing NAIS	Agricultural communities	Wide coverage and representation at the grassroots level
Ministry of Education	All districts	Provision of education at all levels	Communities	Wide coverage and grassroots presence through schools
North Luangwa Conservation and Community Livelihood Programme (NLCCLP)	Mpika	Livelihoods improvement	Poor rural communities	Experience in group mobilization and community development
Office of the District Administrator	All districts	Administer the districts and coordinate all development activities, including the District Planning Unit	Communities	Government supported and formed under an act of parliament
Office of the Vice President, Provincial Administration	Kasama	As above, but at the provincial level, including the Provincial Planning Unit (PPU)	As above, but at the provincial level	Government supported and formed under an act of parliament
OMNIA Small Scale	All districts	Input (fertilizer) distribution	Farmers	Wide provincial coverage with links to headquarters in Lusaka
Planned Parenthood Association of Zambia (PPAZ)	Kasama and most of the districts	Addressing high STI/HIV/AIDS infection rates, teenage and unwanted pregnancies, unsafe abortion, general inequality, low access to sexual and reproductive rights	Women and youth	Experience in youth and reproductive health
Programme Against Malnutrition (PAM)	All districts	Input and relief food distribution, promoting crop diversification	Small-scale farmers, vulnerable in society	Wide coverage and many years experience in dealing with the vulnerable in society, especially in rural areas
Provincial HIV/AIDS Task Force	Kasama	As above, but at the provincial level	All residents	Has been deliberating on HIV/AIDS for more than two years and has government support
Society for Family Health	All districts	Promote family health through distribution of condoms	Communities	Wide coverage

Institution	District	Objectives/Activities	Beneficiaries	Comparative advantage for possible follow-up interventions
Tetekela, Help African Child projects	Kasama	Provides scholarships to vulnerable children, and counselling, skills and material assistance to OVCs	OVCs	Experience in dealing with OVCs
Young Women's Christian Association (YWCA)	Kasama and most of the province	Women's empowerment and human rights	Abused women and youth	Vast country-wide experience of intervening for women's rights when abused by husbands (or relatives of husbands in case of widows), and economic empowerment
World Vision Zambia	Mpika, Mbala, Nakonde	Area development projects encompassing group formation, agriculture, health, education, hammer mill promotional	Vulnerable in society	Experience in agriculture development
Zambia Civic Education Association (ZCEA)	Kasama	Sensitization in civic matters; helps orphans in schools with school prerequisites and food; orphans out of school with life skills and other materials; assists HIV/AIDS patients with drugs, food and psychological and moral support	Orphans, HIV/AIDS patients and the community in general	Has vast experience in advocacy and working with orphans
Zambia Information Services (ZIS)	All districts	Information dissemination	Communities	Wide geographical representation
Zambia Policy Victim Support Unit (VSU)	All districts	Supporting victims of domestic violence, abuse and property grabbing	Communities	Many years experience in handling issues of victims of abuse, violence, etc., and has wide coverage
Zambia Red Cross	Kasama and most of the province	Support the needy through material and financial assistance; prepare and manage disasters	The vulnerable in society	Vast experience in mitigating problems of the vulnerable in society, and has wide coverage
Zambia Social Investment Fund (ZAMSIF)	Whole province	Financing community-managed projects such as basic social and economic infrastructure, natural resources management, capacity building, training of trainers for facilitation of modules in maintenance, environment, gender, HIV/AIDS and poverty monitoring	Communities in need	Wide coverage and government initiative
Zambia Wildlife Authority (ZAWA)	Kasama and most of the province	Conservation of wildlife	Communities near game parks or those in game management areas	Experience in wildlife conservation issues

