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**SOCIOECONOMIC STATUS, HEALTH STATUS AND HEALTH  
EQUITY: A CASE STUDY OF ZAMBIAN HOUSEHOLDS IN  
SELECTED AREAS**

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## **List of Acronyms**

AIDS	Acquired Immunodeficiency Syndrome
BOMA	British Overseas Military Administration
CBOH	Central Board of Health
CHW	Community Health Workers
CMAZ	Churches Medical Association of Zambia
DHB	District Health Boards
HIV	Human Immune deficiency Virus
HMB	Hospital Management Boards
HPI	Human Poverty Index
MOH	Ministry of Health
NHC	Neighborhood Health Committees
PHC	Preventive Health Care
PRSP	Poverty Reduction Strategy Paper
RHC	Rural Health Centre
SES	Socioeconomic Status
SPSS	Statistical Package for Social Sciences
TB	Tuberculosis
TBA	Traditional Birth Attendants
UHC	Urban Health Centre
UNDP	United Nations Development Program

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## **Chapter 1**

### **Health Reforms in Zambia**

#### **1.1 Introduction**

Zambia has for long been experiencing high levels of poverty and inequality. This has been manifest in a number of ways, health poverty and inequality being one of them. The causes of the worsening poverty in Zambia have been clearly outlined by the Government in its Poverty Reduction Strategy Paper, PRSP. Over the years, the country has at best experienced marginal economic growth. With a population growth rate of almost 3% per year, the population has more than trebled over the last 40 years. While economic growth has been marginal, successive governments have failed to follow pro-poor strategies. Lack of sustained economic growth and inadequate pro-poor strategies together with unfavorable land ownership laws and unsupportive land tenure systems as well as the fact that most of the population lead a subsistence existence without access to credit facilities has led to a continuous decline in productivity. Above all, due to poor governance, lack of transparency and accountability, drought, unfavorable international market relations and the huge debt burden, well over 73% of the population has been living below the poverty datum line. The situation has been compounded by the HIV/AIDS epidemic that has been impeding human capital formation necessary for sustainable growth.

One of the fundamental aims of policy is to reduce poverty and inequality. Within the wide array of reforms instituted by the Zambian Government over the past decade, health reforms constitute a prominent component. The express objective of the health reforms is to provide to all Zambians equitable access to cost-effective and quality health care as close to the family as possible.

In the light of the above objective, have the health reforms been progressing in the right direction? A lot of causal empirical evidence and heuristic research seem to indicate that not only has this objective not being realized but that, despite the health reforms, the country has been moving in reverse gear in this regard. Comparative data from a series of Living Conditions Monitoring Surveys and Demographic and Health Surveys show that the incidence of diseases, morbidity and mortality have been persistently high.

In the 2001 economic report, the government does indicate that even though the delivery of basic health care services has slightly improved, the disease burden has worsened. The incidence rates for malaria, HIV/AIDS, and TB for instance have worsened between 1999 and 2001. The incidence rate for malaria increased by 2%, while those for HIV/AIDS and TB increased by 8% and 19% respectively. Admittedly, there have been some improvements in some areas. Improvements have been recorded in, among others, health expenditures per capita, number of drug kits, and health center staff loads. The question that still remains unanswered is: how equitably have the achievements been distributed? To what extent have equity issues been addressed? Are the improvements only in average figures while conditions especially for the many in poverty have worsened ?

Lack of equity is not the same as inequality. Inequalities in health exist everywhere. But when inequalities that are *avoidable* exist, they result in inequity. Such avoidable inequalities are those that are the outcomes of unequal access to resources that include education, health care, safe water, hygienic sanitation, employment, etc. In short, inequalities that are unfair and arise from social injustice and are avoidable are considered inequities.

Literature on health economics states that the issue of health equity needs to be seen in a larger ethical framework. A country's health inequities provide a barometer of its citizen's experiences of social justice and human rights. Health equity, therefore, is to be seen not as a social goal in itself but as inherently embedded in the pursuit of social justice.

Apart from the ethical argument, the case for the promotion of health equity also rests on other grounds.

*Politically*, groups that are excluded can become discontented and threaten the well-being of more privileged groups.

*Economically*, health equity is needed for long-term economic capacity and real productivity – the human capital aspect. A household's income level will be determined by the amount of inputs

(land, labour, capital, etc) it can access and effectively utilize. A household's disposable income will determine the quantity and quality of food that a household can purchase, the type of housing that it can afford, the level of education, and accessibility to health services. These together will determine the health status, which in turn will influence the amount of inputs that can be accessed by the household. If for instance a household has a low health status, it is likely to have low labour input, which will result in low income. Low income would lead to low food intake, poor housing, low or lack of education, and less access to health services. The final result would be an even worse health status. Poor health status therefore, apart from the physical pain and suffering, compromises learning, diminishes returns to human capital, and constrains environments for entrepreneurial and productive activities (Mwikisa, 2002a).

*Socially, and more broadly,* disregard for equity jeopardizes the health of everyone because of various spillover effects (crime, infectious diseases, greater costs for treatment than for prevention). Today the high levels of poverty are helping fuel the HIV/AIDS epidemic. As more and more resources are directed towards fighting the scourge, other areas, equally deserving attention, are being marginalized.

The purpose of this study is to provide some concrete analytical evidence on the failure or otherwise of the health reforms with a focus on health equity. This study examines the correlation that exists between socioeconomic status, health status and health equity. Measurable indicators of each of these concepts have been developed in the light of contemporary literature. For example, the current thinking is that, for a variety of reasons, an asset-based index rather than just income or expenditure would provide a better characterization of the socioeconomic status of households. For instance, even when households do not have much income, they may possess some durable goods and, in the rural areas, stocks of cattle and other animals that they could sell during times of economic distress. A households' living conditions, therefore, depend not only on its income level but also on the size of its asset sto

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sanitation, transport, etc.) will provide a more comprehensive picture of the living conditions obtaining in a household. The index of socioeconomic status developed and used in this study is broad-based in this sense.

On the basis of various indices and measures of correlation, the study verifies the extent to which equity exists (or does not exist) in respect of health. Specifically, do the poor or those belonging to low socioeconomic status have the same opportunities as the rich or those belonging to higher socioeconomic strata? These are the issues that are addressed in this study.

Relevant conclusions and policy recommendations have been drawn on the basis of the analysis.

## **1.2 Health Reforms in Zambia**

Health reforms in Zambia started in the late 1980s. The need to embark on reforms was caused by the declining resources in the sector while at the same time the demands for health services were increasing. This contributed to a decline in the health status of the population. While the need for reforms was realized in the late 1980s, the Government of Zambia fully embarked on a radical health reform process in 1991 when a new government came to power. The fundamental objective of providing all Zambians with equitable access to cost-effective, quality health care as close to the family as possible was to be achieved through:

- ☐ Decentralization and creation of autonomous district and hospital management boards and strengthening of local planning, budgeting and managing capacity.
- ☐ Improving financial and performance accountability by introducing better procedures, standards for reporting, and improved control systems.
- ☐ Re-direction of funding from centrally managed projects towards funding for activities defined by communities and districts.
- ☐ Defining essential packages of services and redefinition of roles for the various levels of the health service.
- ☐ Introduction of fees to share costs and to influence health seeking behaviours to the appropriate referral level.
- ☐ Enhancement of private sector involvement including traditional healers.

- Improving the technical competence of staff through training, better supervision and provision of standards and guidelines.
- Increasing community involvement and ownership through establishment of neighbourhood health committees [NHCs].
- Streamlining central bureaucracies and the creation of the Central Board of Health to promote integration of health services.
- Strengthen donor co-ordination in support of the Zambia Health Sector Investment Programme through a common "basket" of donor funds to support District Action Plans.
- De-linkage of Ministry of Health personnel from the civil service and retrenchment of surplus staff in the Ministry.

The administration of the health system has been divided into four main groups of institutions, the Ministry of Health (MOH), the Central Board of Health (CBOH), the District Health Boards (DHBs), and the Hospital Boards. There is an operational division between the MOH and the CBOH. The MOH is the policy-making body for the health sector, while the CBOH is the national administrative and health policy implementation unit. The CBOH is responsible for the overall technical management of the services that will implement and operationalise government health policies. The CBOH is responsible for the provision of health services through autonomous management boards at district, second and third referral hospital levels. It is divided into three main departments: Commissioning Health Services; Monitoring and Evaluation; and Systems Development. Under the CBOH, there are 20 Hospital Management Boards (HMBs), 72 District Health Boards (DHBs), and 12 Statutory Bodies. Below the DHBs are health centres that, apart from providing health services, monitor health posts. The lowest level in the system is the community where Community Health Workers (CHWs) and Traditional Birth Attendants (TBAs) are based.

In the public sector the levels of care include health posts, the urban and rural health centres, and the district and second / third referral hospital levels. The DHBs are commissioned by the CBOH to provide services at the district level. The second and third referral hospitals are managed by autonomous boards, which are also subcontracted by the CBOH to provide health services.

Another major provider of health services is the Churches Medical Association of Zambia (CMAZ) followed by the private sector.

The CMAZ is the national network of mission hospitals and health centres operated by a number of churches. It provides approximately 30 per cent of all health services nation-wide through a number of hospitals and rural health centres. This is in spite of the fact that mission health facilities make up only 6% (94) of the total number (1,715) of health facilities in the country. Most of the mission health facilities are in the rural areas. The MOH, through CBOH contracts with the CMAZ for provision of health services.

Though no recent work has been done on the private health sector in Zambia, its existence and increasing role in the provision of health services is undeniable. Of the total 1,715 health facilities in the country, the private sector accounts for 29 % (505). A substantial proportion of the out-of-pocket expenditures on health services is on private health facilities. Most of the private facilities are, however, mainly located in the urban areas along the line of rail. Of the 505 private health facilities 217 are in Lusaka province, 182 in the Copperbelt province, and the balance of 106 are located in the other 7 provinces. In the health reforms, the CBOH was also to contract out the private sector to provide services to communities in the same way as it contracts out health boards and mission facilities. To date, however, there are no known cases where the private sector has been contracted out to provide services to communities within which they operate.

38 years after independence and 11 years after health reforms were initiated one's expectation is that the objective of bring services close to the family has or is near to being achieved, and that there are only marginal differences in the health status, affordability, and accessibility of various socioeconomic groups. While a number of the reforms have been implemented, the MOH is yet to delink from the civil service, a move that is hoped will enable provision of better conditions of service to employees and in turn a better provision of health services. What has been the achievement to date? Earlier studies showed that some positive changes were witnessed in the early years of reform implementation. "Decentralisation led to improvements in resource use, stocking of essential drugs and raising of staff morale". The additional revenue from user

charges improved health care in some centres and hospitals through improved physical environment, staff morale and drug availability. However a reversal of the situation has in the recent years been witnessed. Persistent shortage of essential drugs has been one of the most prominent complaints in recent years (Hjortsberg and Seshamani, 2002). While demands on the health sector have been on the increase due to population growth, recurrence of diseases such as Tuberculosis and Malaria, and the HIV / AIDS scourge, financial inflows into the sector have been on the decline (Mwikisa, 2002b).

### **1.3 Report Structure**

This report is divided into five main chapters. Chapter 2 discusses the methodologies used in the report, the sample size and the different constraints encountered during the administration of the questionnaire. Chapter 3 provides brief socioeconomic outlines of the four different districts covered by the study. This is intended to put the findings of the study in context. In Chapter 4, the details of the study findings are discussed. Cross tabulations are utilised to discuss issues of socioeconomic status, health status, accessibility, and affordability. These aspects are further discussed in relation to each study area, household headship, and number of children. The conclusions and recommendations of the study are contained in Chapter 5. More information is contained in the appendices. They include details on the research instrument, methods of calculation of indices, field observations by research assistants, more tables, indices and cross tabulations, and finally pictures that were taken in the different study areas.

## **Chapter 2**

### **Methodology**

#### **2.1 Study areas, sample size and data collection**

The study was carried out by collecting first-hand data using a comprehensive questionnaire that was administered to selected households in two selected districts in each of two selected provinces. The provinces selected were Lusaka and Western and the districts selected were Lusaka and Chongwe from the Lusaka Province and Mongu and Shangombo from the Western Province.

The provinces were selected on the basis of the fact that the Lusaka Province was the best-faring and the Western Province the most ill-faring province in the country in terms of the overall incidence of poverty and level of human development. This has been seen from data from successive Living Conditions Monitoring Surveys and their analysis in several reports such as the Zambia Human Development Reports.

The districts within each province were selected by taking the respective provincial capitals, namely, Lusaka and Mongu and the other two provinces were selected away from the provincial capitals. This was done in order to ascertain the impacts of centrality and centrifugal forces. The general hypothesis in this regard is that socioeconomic conditions deteriorate with increasing distance from the centre, i.e. from the capital.

There could be significant intra district differences in socioeconomic characteristics and living conditions - an overall well-faring district could have ill-faring households and vice versa. Hence the sample of households in each district was chosen purposively in order to obtain a fair geographic representation of households from areas of varying levels of deprivation or affluence. Within each selected geographical area, cluster sampling was used to select communities of households and within the selected communities (clusters), households were selected on a random basis.

In all, data were obtained from 396 households distributed among the four districts as follows: Lusaka: 101; Chongwe: 88; Mongu: 105; and Shangombo: 102. Care was taken to ensure that in each district, all income categories were covered as well as to ensure that workable sub-samples were obtained for various tabulations and classificatory analyses (e.g. rural - urban, male-headed – female-headed).

The questionnaire used was constructed with a view to yielding information on the basis of which indices of socioeconomic status, health status and health equity could be calculated. Research assistants that were employed to administer the questionnaires were also asked to record any additional information provided by the respondents.

## **2.2 Development of indices**

Four main indices have been developed in this study: Index of Socioeconomic Status, Index of Health Status, Index of Accessibility of health services and Index of Affordability of health services.

The Index of Socioeconomic Status was constructed by averaging the values of a number of sub-indices relating to: ownership of durable goods, ownership of agricultural implements, ownership of livestock, housing, water, sanitation, transport, education, and employment.

Ten durable goods such as chairs, tables, beds, mattresses, electricity, telephone and some luxury items were included in the questionnaire to assess the extent of possession of such goods by households.

Eight agricultural implements such as farm tools, plough, carts, fishnets, etc were included. Different weights were assigned for exclusive ownership, shared ownership and the number of each item owned.

Twelve different categories of livestock, i.e. animals and birds, that are commonly kept by households were included. Here too differential weights were assigned as in the case of agricultural implements.

The quality of housing was judged by the type of flooring, roofing material, wall material and number of rooms.

Accessibility to safe water was judged by looking at which of eight alternative sources of water are available to households ranging from rivers and lakes to own tap in the household. Likewise, access to sanitation was judged by the type of toilet facility available ranging from bush to own flush toilet.

As regards transport, the survey recorded for each sampled household which of six transport facilities they owned, if at all, ranging from scotch cart to a car.

The extent of education in a household was gauged on the basis of the number of literate adults, the level of schooling of adult members and the number of children of school-going age that went to school.

Finally, information was sought on any possible employment by a household of workers from outside such as domestic help, security guard, cook, gardener, driver, farm hand etc.

On the basis of scores (again with differential weights) given to responses in respect of each of the above variables – durable goods to employment – a sub-index was prepared for each of these variables.

Each of the sub-indices as well as the overall Index of Socioeconomic Status has been constructed in such a way that its value will range between 0 and 1. As stated above, each of these sub-indices was constructed on the basis of weighted scores assigned to responses to the relevant questions relating to the variables in the questionnaire. Suitable boundaries, after taking into account the distribution of the recorded values, were then devised for the values of the Index of Socioeconomic Status in order to categorize households as belonging to Low, Moderate or High Socioeconomic Status. Thus, households for which the value of the Index fell below 0.33 were classified as belonging to Low Socioeconomic status, those having values between 0.33

and 0.76 belonged to moderate status and those having values of 0.76 or more belonged to high status.

The Index of Health Status was constructed by looking at the health condition of all the members of the sampled households to see to which of five types of health condition they belonged. These five types were: suffering ill-health beyond help, suffering fairly restrictive disability, suffering from a chronic condition of ill-health, suffering only occasional illness, and being healthy. Scores were then assigned to each of these health conditions and the Index of Health Status of a household was then computed as a weighted average of the health condition of all its members. Households were then classified as belonging to low, moderate or high health status depending on the values of the Index. The Index could take on values ranging between 0 and 4. Households for which the values were below 1.6 were deemed as enjoying low health status, those with values between 1.6 and 3.3 as enjoying moderate status and those with values exceeding 3.3 as enjoying high health status.

The Index of Accessibility was constructed on the basis of three variables: the distance from the household to the nearest health facility, the average time taken to reach the health facility and the means of transport used to commute between the household and the facility. Scores were assigned to the responses in respect of each of these variables and the index was computed by averaging the scores. Again, on the basis of the specific values of the index (that could range between 0 and 1), vis-à-vis the boundary values, households were placed in one of three categories: not having easy accessibility (values below 0.4), having moderate accessibility (values between 0.4 and 0.8) and having easy or high accessibility (values exceeding 0.8).

The Index of Affordability was calculated on the basis of cost estimates for a household to cover illness episodes and the financial strain these costs in the form of health expenditures place on the overall household expenditures. Again, depending on the specific values of the index (that could range between 0 and 1), households were classified in terms of the level of affordability of health expenditures as being: easily affordable (less than 0.45), moderately affordable (0.45 to less than 0.75) or not being easily affordable (0.75 or more).

One incidental aspect, not directly related to the main theme of the study, that was examined was the extent of preventive health care undertaken by households to keep the members healthy and minimize the probability of illness. Here eight possible alternatives were considered ranging from exercising regularly at home or at a fitness centre, using mosquito nets, dietary supplements etc. Again, on the basis of computed values, households were categorized as undertaking no (value of 0) or low preventive care (value of 0.1 or 0.2), moderate level of care (value of 0.4, 0.6 or 0.7) or high level of care (value of 0.8 or 1).

The technical details of the calculation of all the indices are provided in Appendix 2.

### **2.3 Data Analysis instruments**

Two softwares were used for data analysis, SPSS and Excel. After data was collected from all the four districts, all the questionnaires were cleaned, numbered and then entered into Excel. Excel was used to workout the indices. The data was then imported into SPSS and the programme was used to come up with the cross tabulations and other outputs deemed necessary for the study. The methodologies used to estimate the indices are included in Appendix 2.

### **2.4 Study Limitations**

Due to financial resource constraints, the study could only be carried out in two provinces and four districts, and only a total of 396 questionnaires could be administered. Coverage of more areas and a bigger sample size would have been more representative of the country as a whole.

A number of households, particularly in the high income category were not willing to be interviewed, while on the other hand those in the low income group were eager to be interviewed. This behavior can introduce some bias in the results.

Module 5 was intended to solicit information on household expenditures. Most households could, however, only give rough estimates of their monthly expenditures. This goes further to support our earlier argument that use of broader-based indices is more reliable than incomes and expenditures.

## **Chapter 3**

### **Socioeconomic Profiles of Study Districts**

#### **3.1 Chongwe District**

Chongwe district is one of the four districts in Lusaka Province, others being Kafue, Lusaka, and Luangwa. Being the administrative centre, Chongwe district council, where the survey was conducted, is only 45km from Lusaka. The Lusaka International Airport is actually located in Chongwe district. Therefore while Chongwe can be said to be rural it is very much influenced by being so near to Lusaka. A lot of the residents can and do benefit from the services available in Lusaka such as education, health, employment, and market for agricultural produce.

Chongwe district has a population of 122, 480, which accounts for 9% of the province and only about 1% of the country. The main economic activity in the district is agriculture which for the majority of the people is only subsistence. Of the 25, 059 employed in different occupations, agriculture (including forestry and fishing) accounts for 75%. This is followed by professional / technical and production / transport / labour at 5% each, while service workers account for 4% only. Agriculture is the major industry followed by community, social and personal services.

In terms of health facilities, Chongwe has a total of 27 public facilities. These are composed of one hospital, 23 Rural Health Centres (RHC), and 3 health posts.

Most of the housing stock in the district is traditional (60%). 58% of the total number of houses have grass roofs, 52% have walls made of mud bricks while 62% of all houses have floors made of mud. 56% of the water sources in Chongwe are protected. The water sources include piped sources (piped water inside the house, piped water outside the house, and communal tap), and protected wells and boreholes. While the major source of lighting is paraffin (56%), the major source of energy for cooking is wood (77%). The most common method of refuse disposal is burying / pit, while pit latrines are the most common toilets.

### **3.2 Lusaka District**

Lusaka district is the seat of the country's central administrative bodies. Being the capital city of the country most socioeconomic activities are administered from the district. This has its own advantages and disadvantages.

Being the capital city it has the highest concentration of social services, both private and public. Education and health services and organizations such as non governmental organizations whose main objectives are to assist the poor are also concentrated in the district. For instance in 1991 Lusaka alone had a total of 161 (49%) registered private clinics / hospitals, while the rest of the country had 170 (51%) only. Comparatively western province had only 4 (about 1%) registered private clinics during the same year. By 2002 Lusaka province had a total of 196 (42%) private health facilities out of the total of 470 for the whole country. Western province on the other hand still had only 4 private facilities. Lusaka urban district has a total of 10 hospitals (public and private) and 34 urban health centres (public). In terms of mission health facilities which tend to be located mainly in the rural areas, Lusaka province has only 2 hospitals and one RHC. On the other hand western province has more mission facilities, 5 hospitals and 4 RHC.

In general Lusaka has better infrastructure and facilities. Qualified human resources are also higher in Lusaka than in other areas as most people prefer urban to rural areas, and also that most jobs are available in the urban areas. The 2000 Census of population and housing showed that 223, 904 people in employment. The Community / Social / Personal industry accounted for 29% of the employment followed by the Wholesale / Retail / Hotel and Transport / Storage / Communication industries at 25% and 10% respectively. Unlike in the other areas, the agricultural industry is not the major employer.

According to the 2000 census of population and housing, 92% of households in Lusaka had safe water sources (piped / protected wells). In terms of energy both for lighting and cooking the main sources are electricity (44%) and charcoal (54%) for cooking, and electricity and candles at 47% each for lighting. The most common way of refuse disposal is burying / pit. For toilets most households use pit latrines.

Due to the better social services and higher employment opportunities Lusaka is one of the highest “in-migration” centers, making it the most populated city in the country. According to the 2000 census of population and housing, Lusaka had a population of 1, 057, 212. This was 79% of the population in the whole province, and 11% of the whole population of Zambia. This has its own problems. Due to the high concentrations of the population social problems such as crime, prostitution and street kids are more manifest in Lusaka than in other areas. Some of the biggest “squatter compounds” without proper water and sanitation, and drainage systems are in Lusaka. This has at times contributed to the outbreak of diseases such as cholera.

### **3.3 Mongu District**

Mongu is the provincial headquarters of Western Province. Therefore though Western Province is a rural province, and one of the poorest provinces in the country, Mongu district is relatively better off than the other districts in the province. According to the 2000 Census of Population and Housing, Mongu has a population of 152, 686 making up 22% of the total population in the province, and only about 2% of the total population of Zambia. The distribution of the population is determined by the availability of fertile land, the road network, water and economic activities. The areas along the flood plain edge, river valleys, dambos and the road network are comparatively more populated.

The main stay of the district and the province as a whole is cattle. For the majority of the people in the district cattle affects everything. They depend on cattle for manure that is used as fertiliser, they depend on cattle for income to their financial requirements such as education and health care services. Therefore with a declining cattle population due to diseases emanating from Angola it is becoming difficult for many families to meet the basic requirements. One entry point for improving conditions in the district is to have a viable cattle industry.

The district, like all the other districts in the province has a high potential for growing crops such as rice, maize, millet, sorghum, groundnuts, sweet potatoes, cassava and cashew nuts. This potential is, however, hardly exploited. Other economic activities include fishing, timber exploitation, and crafts. The district has abundant natural resources which are not fully exploited.

As indicated earlier, the whole province has a total of 5 mission hospitals and 4 mission Rural Health Centres (RHCs). As for public health facilities, Mongu has 1 hospital, 4 Urban Health Centres (UHCs), and 25 RHCs. While the UHCs have telephone links, only 15 of the RHCs have radio communication. The district has big health staff shortfalls. The health centres were supposed to have a total establishment of 247 staff. In 2002, only 191 or 70% were in position.

### **3.4 Shangombo District**

Shangombo is one of the seven districts in Western Province (others being Lukulu, Kalabo, Mongu, Kaoma, Senanga, and Sesheke). Once a part of Senanga district, it became a separate district in 1997 with an area of 16, 252 square kilometers. Shangombo lies on the border with the Republic of Angola. The district has a total population of 82, 353 and 13, 970 households, giving a household size of 6. In an era of Information Communication Technology, Shangombo still has not got the basic necessities. The road infrastructure is almost non existent, there are no telephones, no electricity, no television, no newspapers, and no post office. The best Shangombo can boast of is a very poor radio reception.

Shangombo also has poor education and health facilities. According to the district profile the district has 36 primary schools, 6 basic schools and one secondary school. The district has only 159 teachers of the 270 requirement, leaving a shortfall of 111 teachers. As a result some schools are managed by one or two teachers only.

The health reforms have not changed Shangombo's access to health services. With an area of 16, 252 square kilometers and a total of 13 rural health centres with radio communication systems, the district has approximately only one clinic per 1,250 square kilometers. A total of 118 beds are available. Given the poor road infrastructure, the very low levels of traffic, and the poverty in the area, most of the population in the district has very little access to health services. A good example is the situation at the district headquarters, Shangombo BOMA (British Overseas Military Administration). The clinic has no ambulance. The last time the clinic in Shangombo had a vehicle was in 1995. The other difficulty is that of low staffing levels. The clinic has an establishment of 10 members of staff (2 clinical officers, 1 accounts officer, 2 environmental health technicians, 1 Laboratory technician, 2 nurses, and 2 cleaners). Of this number the clinic

has only 4 in place, a clinical officer, an environmental health technician, a nurse and a cleaner. The clinical officer has to work in the laboratory as well as attend to patients and also has to collect revenue and take it to Senanga. When an emergency case is received a radio message has to be sent to Senanga district hospital for transport. There are 200 kilometers from Senanga to Shangombo. Given the state of the road, a comfortable ride can only be achieved at a very slow speed of 40km per hour. A minimum of 12 to 14 hours would therefore be required to move a patient to the hospital. The existence of the Zambezi river between the two districts further complicates movement. Vehicles depend on a pontoon on the Zambezi river to cross to the other side. The pontoon however only operates between 0600hrs in the morning and 1800hrs in the evening. A vehicle arriving after 1800hrs at the Zambezi river crossing has to wait till the following morning to cross the river. One can imagine the implication for a patient requiring emergency health care. The health care referral system is highly impeded by the situation. Apart from the clinic at the district administrative centre, there are 11 other clinics in the district and 1 health post. These health facilities also face the same constraints.

With regard to other services, of the almost 14, 000 households, only 400 households have access to a safe water supply (concrete lined wells), 429 households have access to pit latrines, and 348 households have access to treated bednets.

Due to the poor and underdeveloped infrastructure in the district all economic activities (forestry, game management, fishing, and agriculture) are at a subsistence level. The major crop grown is maize, while cattle is the major livestock kept by the majority of the people. Like the rest of the province cattle play a crucial role in Shangombo. Cattle are used as a store of wealth, a source of income and a supplier of draught power and manure as fertilizer for crop production. While the district has a lot of timber resources, they are mainly exploited by people from outside the district for export to other countries.

## **Chapter 4**

### **Results**

#### **4.1 Overview of results**

The results in this chapter are based on two kinds of analysis: descriptive and correlation. The descriptive analysis explains the various characteristics of the sample: demographic characteristics such as the sex and age distribution of the sample, status of children, morbidity and mortality, socioeconomic status, health status, affordability and accessibility to health care facilities, gender analysis, the impact of household size and the practice of preventive health care.

The correlation analysis that serves to portray further the equity situation in relation to health looks at the impact of the households' socioeconomic status on the health status, accessibility and affordability of health care by households. It also looks at the correlation of health status with affordability and accessibility and also the correlation between affordability and accessibility. Each correlation can provide insights into the kind of policy formulations that would be needed to address any issues that are seen to emerge.

The last sections of this chapter provide a succinct summary of the main findings derived from the analysis of the questionnaire data as well as some insightful qualitative field observations.

#### **4.2 Data descriptions**

We shall provide a description of the data obtained in our sample in terms of household demographic characteristics, morbidity and mortality, together with the socioeconomic status, overall health status, health services affordability and accessibility and levels of preventive care adopted by the households.

#### 4.2.1 Demographic characteristics

In the 396 sampled households, there were 1326 males and 1371 females, giving a total of 2697 members. The sex distribution of the population among the four districts is shown in Table 1 below.

**Table 1. Sex distribution of surveyed population**

District	Households	No. of people by Sex		
		Male	Female	Total
Lusaka	101	366	352	718
Chongwe	88	287	348	635
Mongu	105	367	360	727
Shang'ombo	102	306	311	617
Total	396	1326	1371	2697

Of the total number of 2697 members, 379 were children under five, 1042 were between the ages of 5 to 18 and the remaining 1276 were above 18 years of age. This is shown in Table 2.

**Table 2. Age distribution of Surveyed Population**

District	Households	No of people by age			Total
		<5	5 –18	>18	
Lusaka	101	82	277	359	718
Chongwe	88	105	240	290	635
Mongu	105	88	280	359	727
Shangombo	102	104	245	268	617
Total	396	379	1042	1276	2698

The age and sex distribution of the sampled population in each of the four districts is shown in Tables 3-6.

**Table 3. Age and Sex distribution of Survey population in Lusaka**

Sex	Age			
	<5	5-18	>18	Total
Male	43	143	180	366
Female	39	134	179	352
Total	82	277	359	718

**Table 4. Age and Sex distribution of surveyed population in Chongwe**

Sex	Age			Total
	<5	5-18	>18	
Male	37	117	133	287
Female	68	123	157	348
Total	105	240	290	635

**Table 5. Age and Sex distribution of surveyed population in Mongu**

Sex	Age			Total
	<5	5-18	>18	
Male	51	135	181	367
Female	37	145	178	360
Total	88	280	359	727

**Table 6. Age and Sex distribution of surveyed population in Shang'ombo**

Sex	Age			Total
	<5	5-18	>18	
Male	51	134	121	306
Female	53	111	147	311
Total	104	245	268	617

From the above four tables, it seems that the age distribution is biased towards the adult population in the capital districts of Lusaka and Mongu and biased towards the lower age groups, especially the children under 5, in Chongwe and Shangombo.

Of a total of 1936 children in the entire surveyed population, 1257 were the own children of the parents while 679 were other children. One can thus see that there is a significant percentage (35%) of children who are not living with their own parents with possible psychological implications.<sup>1</sup> And from the point of view of the households, there is an additional burden of having to support children other than one's own, with possible financial implications as well as implications for the overall living conditions of the households. **Table 7** shows the child status of the overall child population as well as in each of the four sub-populations. The burden of

<sup>1</sup> The USAID/UNICEF/SIDA/Study Fund Project report on Orphans and Vulnerable Children states that orphans have to cope with grief over loss of parents, deal with separation from siblings, the stigma of AIDS, experience being treated as second class citizens in their own homes and even physical, mental and sexual abuse.

dependence of additional children seems to be more or less evenly distributed in all the four districts with the exception of Chongwe where it seems to be much higher.

**Table 7. Child status**

District	Own children	Other children	Total
Lusaka	348	168 (32.6%)	516
Chongwe	242	183 (43.1%)	425
Mongu	358	186 (34.2%)	544
Shang'ombo	309	142 (31.5%)	451
<b>Total</b>	<b>1257</b>	<b>679 (35%)</b>	<b>1936</b>

The reasons why households are supporting some children who are not their own are shown in Table 8.

**Table 8: Why Households living with children other than own**

District	Reasons					Total
	They are orphans	Their parents cannot afford to raise them	Combination of orphans and non orphans whose parents cannot afford to look after them	Other reasons	Not applicable	
Lusaka	10 (9.9%)	17 (16.8%)	8 (7.9%)	21 (20.8%)	45 (44.6%)	<b>101 (100%)</b>
Chongwe	30 (34.1%)	13 (14.8%)	1 (1.1%)	18 (20.5%)	26 (29.5%)	<b>88 (100%)</b>
Mongu	28 (26.7%)	14 (13.3%)	4 (3.8%)	25 (23.8%)	34 (32.4%)	<b>105 (100%)</b>
Shang'ombo	25 (24.5%)	12 (11.8%)	0 (0.0%)	14 (13.7%)	51 (50.0%)	<b>102 (100%)</b>
<b>Total</b>	<b>93 (23.48%)</b>	<b>56 (14.14%)</b>	<b>13 (3.3%)</b>	<b>78 (19.7%)</b>	<b>156 (39.4%)</b>	<b>396 (100.0%)</b>

It is clear from Table 8 that orphanhood as well as economic conditions are the main reasons why the burden of supporting children other than one's own has been thrust upon households.

#### **4.2.2 Incidence of mortality and illness**

Table 9 shows the percentage of households that experienced deaths over the past one year. A larger percentage of households in Chongwe and Shangombo reported deaths than in the provincial capitals.

**Table 9. Incidence of mortality in surveyed households in the past one year.**

District	Number of Households Reporting Death		Total
	N	% Of District	
Lusaka	26	25.7	101
Chongwe	30	34.1	88
Mongu	30	28.6	105
Shang'ombo	30	29.4	102
<b>Total</b>	<b>116</b>	<b>29.3</b>	<b>396</b>

Information on the place where the deaths occurred is provided in **Table 10**.

**Table 10. Place of death with % within district (i.e. row percentages) indicated.**

District	Place where death occurred								Total
	At Home		At Home after discharge from health facility		At a health facility				
	N	%	N	%	N	%			
Lusaka	0	0	1	3.8	25	96.2			
Chongwe	5	16.7	11	36.6	14	46.7			
Mongu	3	10.0	5	16.7	22	73.3			
Shang'ombo	2	7.0	17	56.7	10	33.3			
Total	10	8.6	34	29.3	71	61.2			

The above table shows the contrasting situations in respect of access to institutional health facility. On the one hand, in Lusaka there were no patients who died that had not been admitted to a health facility. And except for one patient who was discharged and then died at home, the rest died at the facility. Of course, one does not know the exact reasons why the one patient was discharged or why the others died at the facility. The discharged patient may have been one who was suffering from an incurable terminal illness and it might have been felt better that he dies in the comfort of his home. Those who died at the facility might have been suffering from serious illnesses for which the facility might not have been able to provide adequate medical help. Be that as it may, the comforting fact is that they all have had access to the facility.

This is in sharp contrast to the other extreme situation in Shangombo where nearly 64% died at home, with some not having visited a health facility at all and a large majority of them dying after having been discharged from the facility. The latter fact may have in all probability been due to the fact that health facilities in Shangombo hardly have any of the needed medical

personnel or perquisites. Although there are many clinics in Shangombo, there are virtually no registered doctors or nurses and drugs are acutely scarce.

In Chongwe too, well over 50% of the patients died at home, with 17% of the patients not having been admitted to a health facility at all.

The above is one illustration of the impact of centrality. Lusaka is the best-faring district and Shangombo the worst. But more pointedly, Mongu, the capital of a more deprived province, fares much better than Chongwe that lies in the best-faring province.

The ineffectuality of treatment even when patients had been taken to a health facility is probably indicated by the information in **Table 11**.

**Table 11. Case fatalities from illness by cause and by district**

Cause	Lusaka	Chongwe	Mongu	Shangombo
Accident	1	0	1	0
Illness treated but not cured	23	25	23	27
Illness without prompt treatment	2	1	3	1
Lack of treatment of illness	0	4	2	1
Other	0	0	1	0

It can be noted that in all the four districts, a very large majority who died had received some treatment but were not cured. This clearly suggests that, for whatever reason, the treatment of cases was not adequate / effective. Field observations indicate for instance that drugs were not available in the health facilities, patients consequently resorted to buying cheap and expired drugs from ordinary shops or going to traditional healers for help. While the study did not seek to establish the different sources of drugs, one of the questions in the research instrument was "If you did seek medical help, which health facility did you visit?". 90% said they sought help from government health facilities, 6% from private health facilities and 4% from traditional / spiritual healers.

#### **4.2.3 Socioeconomic status**

The classification of the sampled households on the basis of their socioeconomic status is shown in **Table 12**.

**Table 12. Categorization of households on the basis of socioeconomic status**

District	Social economic Status						Total
	Low		Moderate		High		
	N	%	N	%	N	%	
Lusaka	8	7.9	85	84.2	8	7.9	101
Chongwe	43	48.9	45	51.1	0	0	88
Mongu	32	30.5	73	69.6	0	0	105
Shangombo	82	80.4	20	19.6	0	0	102
Total	165	41.7	223	56.1	8	2.3	396

As can be seen from the above table, a very large majority of the households in Shangombo fall in the low socioeconomic (SES) category. Shangombo is followed by Chongwe, Mongu and Lusaka in that ascending order of SES.

Two things are noteworthy. One, there are no households belonging to the high SES category in any district except Lusaka. Two, the percentage of households in Chongwe belonging to the low SES category is significantly higher than in Mongu. Both these facts testify to the impact of centrality. Lusaka has very few households belonging to the low SES category and even has some in the high SES category. This is obviously because Lusaka Province as a whole is the best-faring province and Lusaka district is also the provincial capital. A more striking proof of the impact of centrality is the fact that households in Mongu, the provincial capital of Western Province, on the whole seem better off than in Chongwe.

The fact that out of a total of 396 randomly sampled households, only 8 households belong to the high SES category is indicative of the overall poor socioeconomic situation in the country. Zambia has not experienced any meaningful growth in more than a decade and the overall level of development as measured by the Human Development Index has been consistently declining over the years. Consequently, one can hardly expect many households in the country to belong to the high SES category especially when the SES is defined in terms of a very large number of development-related variables listed in Section 2.2.

Notwithstanding the above, however, one would have probably expected a higher percentage of households to belong to the high SES category in Lusaka. Given that a lot of income and

infrastructure is concentrated in Lusaka, there must be a much higher percentage of households in the high SES category than just 8. This must be due to the problems faced in data collection. Enumerators have faced a considerable level of reluctance by affluent households in Lusaka to grant interviews. This would have obviously introduced some bias in terms of the representativeness of the sample for Lusaka, that was beyond redress in this research.

#### 4.2.4 Health status

The health status of the sampled households is shown in **Table 13**.

**Table 13. Categorization of households on the basis of health status**

District	Health status						Total
	Low		Moderate		High		
	N	%	N	%	N	%	
Lusaka	1	1.0	9	8.9	91	90.1	101
Chongwe	10	11.4	38	43.2	40	45.5	88
Mongu	15	14.3	35	33.3	55	52.4	105
Shang'ombo	26	25.5	55	53.9	21	20.6	102
Total	52	13.1	137	34.6	207	52.3	396

In the entire sample from all four districts, a little over 13% of the households enjoy low health status, nearly 37% enjoy moderate health status and over 50% of the households belong to the high health status category. This result is somewhat contra-intuitive. For so much has been said about the generally poor state of health services in the country that one would have expected a majority of the households to belong to the low health status category.

However, the above is no reason for too much cheer since the distribution of health status is not very equal. While over 90% of the households in Lusaka enjoy high health status, the corresponding percentage for Shangombo is only about 21%. And while only 1% of the households in Lusaka enjoy low health status, corresponding percentage for Shangombo is over 25%.

Again, one can note the manifestation of centrality. Households in Mongu enjoy a better health status than those in Chongwe.

#### 4.2.5 Accessibility to health facilities and services

The situation in respect of accessibility to health facilities is shown in **Table 14**.

**Table 14. Accessibility to health facilities by the sampled households**

District	Accessibility						Total
	Not Easily accessible		Moderately Accessible		Highly Accessible		
	N	%	N	%	N	%	
Lusaka	1	1.0	53	52.5	47	46.5	101
Chongwe	14	15.9	72	81.8	2	2.3	88
Mongu	23	21.9	74	70.5	8	7.6	105
Shangombo	48	47.12	54	52.9	0	0.0	102
Total	86	21.7	253	63.9	57	14.4	396

The above table does not present too bleak a picture in respect of accessibility to health facilities. A large majority of the households in the entire sample as well as in each of the four districts has a moderate degree of accessibility. However, once again the distribution is a problem. And yet again, the most extreme contrast is provided by the situation in Lusaka and in Shangombo. While only 1% of the households in Lusaka has a low level of accessibility, nearly half the households have low accessibility in Shangombo. And while nearly half the households in Lusaka have easy or high access to the health facilities, none of the households have easy access in Shangombo.

A very important distinction that needs to be made, however, is between access to health *facilities* and access to health *services*. Easy access to health facilities simply means that the health facility is located at a relatively short distance from the household, that it can be reached at a relatively short space of time, and at a relatively low cost. But this does not necessarily mean or guarantee access to health services if the health facility does not have the needed medical personnel, medical equipment and drugs and other medical supplies. The lack of any these things can result in lack of prompt and proper medical attention and in diagnostic and curative failure. Indeed, we had already inferred about the ineffectuality of treatment in our analysis of **Table 11**. A conclusive demonstration of the reasons for the “ineffectual treatment” can only be reached after more research.

The statistics depicting a high percentage of households enjoying moderate or easy accessibility to health services are, therefore, not of much consolation since the crux of the problem seems to lie with the provision of services. In Shangombo, for example, there is no dearth of health centres, - there are nearly three dozen of them - but there is no single registered doctor, nurse or midwife in the entire district. The supply of drugs too is sporadic and inadequate.

#### 4.2.6 Affordability of health services

The situation regarding affordability of health services is shown in **Table 15**

**Table 15. Affordability of health services**

District	Level of Affordability			
	Easily affordable	Moderately affordable	Not easily affordable	Total
Lusaka	87 (86.1%)	8 (7.9%)	6 (5.9%)	<b>101 (100.0%)</b>
Chongwe	29 (33.0%)	20 (22.7%)	39 (44.3%)	<b>88 (100.0%)</b>
Mongu	65 (61.9%)	16 (15.2%)	24 (22.9%)	<b>105 (100.0%)</b>
Shang'ombo	35 (34.3%)	21 (20.6%)	46 (45.1%)	<b>102 (100.0%)</b>
<b>Total</b>	<b>216 (54.5%)</b>	<b>65 (16.4%)</b>	<b>115 (29.0%)</b>	<b>396 (100.0%)</b>

The affordability of health services is influenced location much in the same manner in which the other variables that we have discussed. There is a high level of easy affordability among households in Lusaka and a high level of low affordability among households in Shangombo. Again, Mongu is better off than Chongwe in respect of affordability too.

#### 4.2.7 Gender analysis

Gender has a notable impact on health status as well as on the affordability of health services. The impact of gender on health status I shown in **Table 16**.

**Table 16: Health Status by Gender of Head of Household**

Sex	Health status			
	Low	Medium	High	Total
Male	31 (11.2%)	95 (34.4 %)	150 (54.3%)	<b>276 (100.0%)</b>
Female	21 (17.6%)	42 (35.3%)	56 (47.1%)	<b>119 (100.0%)</b>
<b>Total</b>	<b>52 (13.2%)</b>	<b>137 (34.7%)</b>	<b>206 (52.2%)</b>	<b>395 (100.0%)</b>

The results in the above table show clearly that the health status in the female-headed households is distinctly lower than in the male-headed households.

That the results are the same for each of the four districts can be seen from Appendix 3.1 tables on health status and gender of head of household.

The impact of gender on affordability is shown in **Table 17**.

**Table 17: Affordability by Gender of Head of Household**

Sex	Level of Affordability			
	Easily affordable	Moderately affordable	Not easily affordable	Total
Male	166 (60.1%)	41 (14.9 %)	69 (25.0%)	<b>276 (100.0%)</b>
Female	50 (42.0%)	24 (20.2%)	45 (37.8%)	<b>119 (100.0%)</b>
<b>Total</b>	<b>216 (54.7%)</b>	<b>65 (16.5%)</b>	<b>114 (28.9%)</b>	<b>395 (100.0%)</b>

As can be clearly noted from the above table, a much larger percentage of male-headed households can easily afford health services as compared to female headed households. This pattern of relation ship holds for each of the districts as well as can be seen from Appendix 3.2 tables relating affordability with gender of head of household.

#### **4.2.8 Impact of household size in terms of number of children**

The impact on the affordability of health care by households of household size in terms of the number of children is shown in **Table 18**.

**Table 18. Number of children in households and household health status**

Affordability/No. of children	1-3	4-7	>7	
<b>Easily affordable</b>	49 (36.8%)	106 (62.4%)	53(69.8%)	208
<b>Moderately affordable</b>	28 (21.1%)	29 (14.7%)	12 (15.7%)	69
<b>Not easily affordable</b>	56 (42.1%)	39 (22.9%)	11 (14.5%)	106
<b>Total</b>	133 (100%)	174 (100%)	76 (100%)	383

The above table shows a rather unusual result. The affordability of health care by a household seems to vary directly with the number of children in the households, i.e. more the children, better the affordability! For example, while only 37% of the households with one to three

children have easy affordability, this percentage increases to over 64% for households with four to seven children and further to nearly 70% for households with more than 7 children. And while 42% of the households with one to three children cannot easily afford health care, this percentage goes down to 39 for households with four to seven children and still further down to 14.5% for larger households!

The only possible explanation for the above results is that households with larger number of children would also have more number of older children who probably work and thereby increase the household income. But this would also suggest that these children would be deprived of schooling. In other words, more children in households with larger number of children are likely to be out of school than in households with fewer children.

#### 4.2.9 The practice of preventive health care

The extent to which households take measures of preventive health care is shown in **Table 19**.

**Table 19. Levels of preventive health care practised by households**

District	Level of PHC								Total
	None		Low		Moderate		High		
	N	%	N	%	N	%	N	%	
Lusaka	34	33.7	47	46.5	20	19.8	0	0	101
Chongwe	19	21.6	63	71.6	4	4.5	2	2.3	88
Mongu	33	31.4	72	68.6	0	0	0	0	105
Shang'ombo	67	65.7	32	31.4	3	2.9	0	0	102
Total	153	38.6	214	54.0	27	6.8	2	0.5	396

The above table shows that in general, that there is very little preventive care practised by households. Only Lusaka has about 20% of the households practising moderate levels of care. Two households in Chongwe are seen to practise a high level of preventive care but this is not indicative of any trend. Again, the result that no households practise high levels of preventive care may be due to the fact mentioned earlier on that households that would have come in the category of high socioeconomic status especially in Lusaka were not willing to be interviewed. Casual empirical evidence shows that there are individuals who are members of physical fitness centres and sports clubs in major urban centres such as Lusaka whose membership fees are such that they can be afforded only by the well-to-do.

### 4.3 Correlation analysis

In the following sub-sections, we analyze the relationships between the key index variables of our study on the basis of cross tabulations. Chi-square tests have been conducted to gauge the statistical significance of the relationships. However, Chi-square tests cannot be used when the expected cell frequency in any cross-tabulation is less than 5. Modifications to the tables through techniques such as Yates Correction can help only to a marginal extent. Hence, the results of the Chi-square tests have been used only in cases where they can be validly interpreted. In particular, Chi-square values have been ignored in respect of those tables where there are several empty cells.

#### 4.3.1 Socioeconomic status and health status

The distribution of households in various SES-health status categories is shown in **Table 20**.

**Table 20. Socioeconomic status and health status of the sampled households**

SES	Health Status			Total
	Low	Moderate	High	
Low	34 (20.6%)	83 (50.3%)	48 (29.1%)	165 (100%)
Medium	18 (8.1%)	54 (24.3%)	150 (67.6%)	222 (100%)
High	0 (0%)	0 (0%)	9 (100%)	9 (100%)
Total	52 (13.1%)	137 (34.6%)	207 (52.3%)	396 (100%)

The data in the above table show that the health status of the sampled households is disproportionately better than the socioeconomic status. For example while 165 out of the total of 396 households (42%) belong to the low SES category, only 52 households (13%) belong to the low Health Status category. Over 50% of the households belonging to the low SES category enjoy moderate health status while 29% of them enjoy even high health status. While 56% of the households belong to the medium SES category, 87% of the households enjoy moderate or high health status. And all the households belonging to the high SES category enjoy high health status. There are only 18 households (less than 5% of the total sample) that enjoy a lower health status than their SES status.

The above results are encouraging to the extent that, in general, a household's health status is not too adversely affected by its socioeconomic status. Although this result seems to hold for all the

individual districts as well, there is some noticeable difference in the case of Shangombo where 50% of the households belonging to moderate SES category enjoy low health status. (See Appendix 3.3 Tables on socioeconomic status and health status for individual districts).

#### 4.3.2 Socioeconomic status and accessibility to health care facilities

The impact of socioeconomic status on accessibility to healthcare facilities is shown in **Table 21**

**Table 21: Socioeconomic status and accessibility to health care facilities of the sampled households**

SES	Accessibility			Total
	Low	Moderate	High	
Low	58 (35.2%)	105 (63.6%)	2 (1.2%)	165 (100%)
Medium	28 (12.6%)	148 (66.7%)	46 (20.7%)	222 (100%)
High	0 (0%)	0 (0%)	9 (100%)	9 (100%)
Total	86 (21.7%)	253 (63.9%)	57 (14.4%)	396 (100%)

The upper triangulated matrix seen in the above table suggests results similar to those noted in **Table 20**. That is to say, socioeconomic status does not adversely affect the accessibility of households to health services. This result broadly holds for all the four districts individually as well. (See Appendix 3.4 tables on Socioeconomic status and accessibility for individual districts).

#### 4.3.3 Socioeconomic status and affordability

**Table 22** brings out the relationship between socioeconomic status and affordability of health care.

**Table 22: Socioeconomic status and affordability of health care services**

SES	Level of Affordability			Total
	Easily	Moderately	Not Easily	
Low	32 (19.4%)	40 (24.2%)	93 (56.4%)	165 (100%)
Medium	175 (78.8%)	25 (11.3%)	22 (9.9%)	222 (100%)
High	9 (100%)	0 (0%)	0 (0%)	9 (100%)
Total	216 (54.5%)	65 (16.4%)	115 (29.0%)	396 (100%)

**Table 22** clearly shows that there is a significant association between socioeconomic status and affordability of health services. Lower the SES status, lower the level of affordability. However, there is no inequity revealed in the relationship per se. This holds true both at the aggregate level as well as at the level of individual districts. (See Appendix 3.5).

#### 4.3.4 Health status and accessibility to health care facilities

The correlation between accessibility to health care facilities and health status can be gauged from the information in **Table 23**.

**Table 23: Health status and accessibility to health care facilities**

Health Status	Level of Accessibility			Total
	Not Easy	Moderate	Easy	
<b>Low</b>	23 (44.2%)	28 (53.8%)	1 (1.9%)	52 (100%)
<b>Medium</b>	38 (27.7%)	94 (68.6%)	5 (3.6%)	137 (100%)
<b>High</b>	25 (12.1%)	131 (63.3%)	51 (24.6%)	207 (100%)
<b>Total</b>	<b>86 (21.7%)</b>	<b>253 (63.9%)</b>	<b>57 (14.4%)</b>	<b>396 (100%)</b>

The above table reveals that there is a high level of association between access to health care facilities and health status. The Chi-square value of 56.288 is highly significant. This means that, in general, easier the access, better the health status. However, lack of accessibility does not commensurately tell on the health status. For example, while 86 households of the total of 396 households do not have easy accessibility to health care facilities, only 52 households enjoy low health status. And while only 51 households have easy access to facilities, 207 households enjoy high health status.

Similar results for the individual districts are given in Appendix 3.6.

#### 4.3.5 Health status and affordability of health care

Table 24 brings out the nature of the relationship between affordability and health status.

**Table24: Health status and affordability of health services**

Affordability	Health Status			Total
	Low	Medium	High	
<b>Easily</b>	24 (11.1%)	56 (25.9%)	136 (63.0%)	216 (100%)
<b>Moderate</b>	6 (9.2%)	26 (40.0%)	33 (50.8%)	65 (100%)
<b>Not Easily</b>	22 (19.1%)	55 (47.8%)	38 (33.0%)	115 (100%)
<b>Total</b>	<b>52 (13.1%)</b>	<b>137 (34.6%)</b>	<b>207 (52.3%)</b>	<b>396 (100%)</b>

It can be seen from the above table, that there is a positive relationship between affordability of health care and health status. The Chi-square value of 28.522 for the relevant degrees of freedom is again statistically significant at the 1% level of significance.

The heartening result once again is that the lack of affordability does not have a commensurate impact on health status. While 115 households out of the 396 households cannot easily afford health care services, only 52 households suffer low health status. But at the other end, while 216 households can easily afford health care services, a slightly lower number (207) enjoy high health status.

The results for the individual districts are shown in Appendix 3.7.

#### 4.3.6 Affordability of health care services and accessibility to health care facilities

Table 25 shows the relationship between affordability and accessibility

**Table 25: Health care affordability and accessibility**

Affordability	Level of Accessibility			Total
	Not Easily	Moderate	Easily	
<b>Easily</b>	32 (13.8%)	129 (59.7%)	55 (25.5%)	216 (100%)
<b>Moderate</b>	16 (24.6%)	49 (75.4%)	0 (0.0%)	65 (100%)
<b>Not Easily</b>	38 (33.0%)	75 (65.2%)	2 (1.7%)	115 (100%)
<b>Total</b>	<b>86 (21.7%)</b>	<b>253 (63.9%)</b>	<b>57 (14.4%)</b>	<b>396 (100%)</b>

Financial affordability of health care services and physical accessibility to health care facilities are conceptually independent variables by and large. So the purpose of the above table is mainly to see which is the greater constraining factor impacting on households.

As can be seen from the data in the above table, there are 115 households who cannot easily afford health care services while there are 86 households who cannot easily access health care facilities. But on the other hand, there are 216 households who can easily afford health services but only 57 households who can easily access health facilities! Hence a categorical inference as to which is a greater constraining factor cannot be drawn.

The fact, however, is that, as has already been seen from the earlier analysis of affordability and accessibility, the broad picture in respect of neither of these factors is bad. But there are marked inter-district variations. For example, 48 households out of the 86 households (56%) who cannot easily access facilities are in Shangombo. Again, Shangombo also has 46 households out of the total of 115 households (40%) in the sample who cannot easily afford health care services. Some 14% of the entire sample of households (55 out of 396) suffer from lack of both accessibility and affordability.

The situation in respect of the individual districts is shown in Appendix 3.8.

#### **4.4 Summary of the results**

The analysis of the data collected for this study provides some interesting findings. Some of them may even run counter to popular assertions based on sporadic or casual empirical observations. Indeed, the value of such rigorous research and analysis is to disprove some of the stylized notions based on shallow evidence and establish conclusions based on firmer data and analytical grounds.

The general socioeconomic status, gauged from a large number of variables related to the living conditions of households, does not present a healthy picture. But, on the face of it, the picture is not as bleak as the one that emerges from poverty data that are based on money-metric measures alone. While nearly three quarters of Zambian households are known to be poor (based on money-metric measures) from the last Living Conditions Monitoring Survey, only 42% of the households in our study sample belong to the low SES category – the equivalent of poverty. A larger percentage (56) of households belong to the moderate SES category.

The above differences may be on account of two reasons. *One*, socioeconomic status as defined in this study is a much broader measure of living conditions than one based solely on monetary variables. The latter, for example, do not take into account ownership of a variety of assets that households possess. *Two*, the results of this study are based only on 4 out of the 72 districts in the country, chosen purposively, and hence may not be fully representative of the situation in the country as a whole. For instance, poverty is known to obtain more in the rural areas than in the urban areas and a large majority of the districts in the country are rural; whereas our study is based on two urban and two rural districts. This factor alone could be responsible for an underestimate of the general situation of deprivation at the national level.

All the same, even 42% based on a comprehensive SES index is a pretty high figure.<sup>2</sup> Moreover, the positively skewed distribution (i.e. a distribution where there are more values below the mean value than values above it) is indicative of the inequity that exists in the society.

The more striking result, however, is that the inequity in socioeconomic status does not seem to be transmitted commensurately to the main health-related factors of this study, namely, health status, accessibility to health care facilities and affordability of health care services. The picture that emerges in respect of these factors is somewhat more sanguine than the one in respect of socioeconomic status. There is on the whole less positive skewness in their distributions than in the case of SES status. This is undoubtedly a sanguine result.

However, the overall picture is marred by significant geographical and gender differences. Levels of health status and of affordability of health care services are lower for female-headed households and for areas removed from administrative centres. In other words, within a given socioeconomic status category, female-headed households experience a lower health status and a lower level of affordability than male-headed households. And likewise, centrality too has a significant impact. The contrasting situations in respect of health-related factors in this study can

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<sup>2</sup> For example, while money-metric measures of poverty such as the World Bank's measure of the percentage population below \$1 a day exist, the UNDP also has a Human Poverty Index (HPI) based on multiple measures of deprivation. A 50% value for the HPI would be indicative of a far worse situation of deprivation than an 80% value for poverty based on the World Bank measure.

be seen not only in respect of Lusaka and Western provinces but also between Chongwe and Mongu.

We see a peculiar result in respect of the impact of household size (in terms of the number of children) on the affordability of health care. As we have stated, the positive impact of larger number of children on households' affordability of health care services is probably at the cost of a negative impact on schooling.

#### **4.5 Some qualitative insights**

In the course of conducting the interviews with households to elicit information based on the questionnaire, some qualitative information was also collected on the side which provides some critical insights into the mindsets of the households and the coping strategies that they adopt in difficult situations especially in respect of health-related issues.

Households in some areas displayed unwillingness to cooperate with the enumerators. The reasons for this were twofold. *One*, they have been subjected to interviews by several previous researchers and have not seen any subsequent tangible results for themselves. *Two*, even if the research outputs come up with policy prescriptions for their benefit, they do not seem to have adequate faith in the government's commitment to adopt them and ameliorate their lot. Some felt that only God, not any government, could help them out of their misery.

In many instances where the interviewed households had used institutional health facilities, they were just given prescriptions for drugs that they were required to buy from outside. In such cases, either these drugs were purchased from the shops (with the risk of obtaining expired drugs) or they were obtained free from friends and relatives (again with no guarantee of drug quality). Many households also resorted to traditional medicines that could only have a fortuitous curative effect on the patients.

Households also tend to use medicines without any institutional prescriptions. For example, chloroquin is often used for malaria without any formal medical advice. This could entail indiscriminate use of drugs resulting in resistance of the disease to the drugs over time.

Not infrequently, patients are taken to clinics only after the illness has assumed serious proportions, thereby lowering the probability of its cure.

The following two boxes illustrate some responses and reactions from the interviewed households.

**Box 1: Some field observations from Chongwe**

The questionnaires were administered in Chongwe in Chikela Village, Chishiko Village, Libuko Village and Nkholoma compound.

People in general confessed to being 'questionnaire fatigued'. The general complaint was that a lot of people had been to their places to administer similar questionnaires but no tangible results could be seen. The people were tired of seeing researchers. One householder mentioned that the next time we decided to talk to people about health, we should have a ready supply of medicines at hand to give out to sick people whom we were definitely bound to find. Another household head (female-headed) stated that the government might get the information based on the questionnaires but it could decide not to act at all. In her view, the government has decided to neglect them to die from hunger and disease. She complained that she has children who have qualified to secondary school but for lack of financial support, they are now roaming the streets of Chongwe. She also complained about a daughter who was quite sick but had no money to buy the prescribed medicine. She had gone back to the hospital, hoping her daughter could be attended to but she was sent back saying that if she did not buy the prescribed medicine, there is no way she could expect the hospital to perform a miracle and heal her daughter.

### **Box 2: Some field observations from Mongu and Shangombo**

The following observations were noted in Mongu and Shang'ombo districts during the field visits.

- i. Hunger is the most common problem being experienced because people have no jobs and money and lack farming implements to go into productive agriculture.
- ii. Most households being headed by people who work for the Government and Council complained that they always received their salaries late, and sometimes never get paid for months. Not only were the salaries received late but they were also inadequate.
- iii. Financial constraints were further compounded by the high number of orphans and runaway husbands who leave the burden of looking after the children to the women.
- iv. Lack of adequate financial resources made health facilities, education facilities and proper food inaccessible especially in Shang'ombo.
- v. Most illnesses were not attended to because people could not afford to attend the clinic despite the cost of accessing the health facilities being a nominal K500 to K 1000 in Shang'ombo. This charge would cover both OPD and IPD costs including medicines.
- vi. Transport costs to and from Senanga ranged from K90,000 to K140,000. This was unaffordable by most people.
- vii. Household heads in both Mongu and Shang'ombo who worked in health institutions or had their spouses working there enjoyed free medical services. The most common illness experienced in both districts was malaria.
- viii. Respondents who reported having attended private health institutions said they were fed up of the shoddy service, lack of drugs and the rude personnel in the government hospitals. They urged the government to come to the aid of the poor and vulnerable majority by providing free health facilities, creating employment and improving health service and staffing levels in health institutions. Government should be seen to be in the forefront in the fight against malaria by providing people with mosquito nets and fumigation equipment and drugs.
- ix. One respondent reported having lost a child at a time when doctors and nurses were on strike and had no one to attend to her child. She said that government should be responsive to needs of personnel in the health institutions so as to save lives and offer a better service.
- x. Most respondents bemoaned the unprecedented and uncontrolled price increments of goods and services and stated that trade unions had also failed to adequately represent them in their various places of work.

### Box 2 Continues

- xi. A suggestion was made by one of the respondents to have the social welfare department in the Ministry of Community Development scrapped as it served no purpose and was merely a drain on the scarce national resources.
- xii. Households in the villages that reported having no expenditure on food usually grew their own food or/and depended on vegetables in the bush (*Sishungwa*).
- xiii. Some people brewed beer in their homes in order to raise money for their survival.
- xiv. Most families with children who had completed their grade 12 could not afford to pay for their children's higher or tertiary education (college or university).
- xv. Some households preferred to buy medicine from shops and chemists because it was cheaper than going to the hospital and less time consuming. They only resorted to the hospital if the illness got serious or if the condition persisted.
- xvi. Respondents in Mongu complained of non-availability of drugs in the clinics and the general hospital.
- xvii. The road to Shang'ombo was not good enough for private transporters to be able to use their buses on it and was even worse during the rain season.
- xviii. The people in Shang'ombo complained of no electricity and stated that they would also like to watch television. There was no telephone communication in Shang'ombo and the only form of communication used was radio communication.
- xix. Most respondents in Shang'ombo complained that the area lacked a secondary school and only had a basic school.
- xx. The residents of Shang'ombo complained of inadequate staff at the clinic and that each time there was an emergency (usually in the night) the person on call at the clinic was hard to find. As a result some people even died due to lack of timely treatment. They could not, however, state the number of cases that had resulted in loss of life in this situation.
- xxi. There was inadequate safe drinking water in Shang'ombo.
- xxii. Most people in the villages were able to afford only one meal a day most of the time.

People in both Shang'ombo and Mongu districts lamented the failure by Government to adequately address their problems despite the number of studies carried out on various issues in these areas. They were however co-operative but stated that they will in future not be able to attend to people carrying out research on issues which are never addressed.

We conclude this chapter with **Box 3** that includes some trenchant observations that were made mainly by female heads of households.

**Box 3: Comments and observations by some interviewed members**

“There is loss of moral standards among girls. There is too much prostitution and abortion. Foetuses are thrown anyhow and this is a threat to public health”. - A woman in Dark City Compound, Chelston, Lusaka.

“Life is not fair with me and my family. On most occasions we go without food and do not even know where our next meal would come from as no household member works. This makes it very hard for us to have access to health facilities and services, and in the long run we resort to buying cheap and maybe expired drugs from ordinary shops”. - A female head of household, Sibanga Village, Katongo area, Mongu.

“Measures must be initiated and implemented to help the vulnerable like us have access to free health services and drugs as it used to be in the days of Dr Kenneth Kaunda”. – Another head of household, Sibanga Village, Katongo area, Mongu.

“We mainly go to private health institutions because government health institutions do not have drugs on most occasions when we visit them and they offer inadequate services”. – A head of household, Boma Area, Mongu Township.

“We challenge the Jesuits to come out in the open and help the people in Western Province to rekindle our trust and hope in the research, the government and life in general”. – A head of household in Boma Area, Mongu Township, in an apparent reference to the sponsors of this research.

## Chapter 5

### Conclusions and Recommendations

#### 5.1 Introduction

This chapter summarizes the main conclusions emerging from the study and the recommendations that can be derived therefrom. The conclusions are obtained from both the quantitative and qualitative analyses that have been carried out. It will be noted that although this study is centred on health, the conclusions relate not only to health but to broader concerns regarding the overall poverty situation in the country as well as thematic issues such as centrality, governance and the efficacy and value of the conduct of empirical research, that go beyond the issues of health. Also, health being highly inter-related to several other variables, a holistic rather than just a sector approach is needed in order to improve the efficiency and equity in the delivery of health services.

#### 5.2 Conclusions and recommendations

##### Conclusion 1

The chronic poverty of many households and communities seems to have greatly eroded their confidence in the Government and its sincerity to ameliorate their lot. "Governments may come and governments may go, but we go on for ever in the same plight" seems to be their plaintive theme song.

##### Recommendation

*Government needs to establish its credibility by producing results on the ground in terms of poverty alleviation and reduction. Now that the PRSP document exists, the projects and programmes contained therein need to be implemented as per schedule with impacts demonstrated on the basis of monitorable indicators. People will have faith in their government only when they see a concrete improvement in their lives.*

##### Conclusion 2

The growing impoverishment of households and the incidence of orphanhood due to death of parents from disease, in high probability from HIV/AIDS, have been generating growing

numbers of children dependent on other households to take care of them. This in turn leads to deterioration in the living conditions of these latter households.

The burden of supporting additional children seems to be a ubiquitous phenomenon and not something peculiar to the rural or urban households.

#### Recommendation

*As has been suggested in some earlier studies (e.g. Republic of Zambia, 1999, Serpell, 2000), poverty reduction programmes should use, for greater effectiveness, "Poverty + Health, notably HIV/AIDS" (the latter being the main cause of orphans), for targeting beneficiary groups.*

#### Conclusion 3

The study confirms the centrality thesis and the consequent inequity that emerges in terms of the distribution of development. As has been noted, as a prominent result of this study, Mongu, being the provincial capital albeit of the worst-faring Western Province fares better than Chongwe in the best-faring province of Lusaka owing to it being removed from the capital of Lusaka.

#### Recommendation

*Poverty reduction and development programmes should not be concentrated in and around the vicinity of major towns, cities and capitals. This results in an "out of sight, out of mind" approach to development! They need to be evenly spread over the entire country. Indeed, given the higher levels of deprivation already obtaining in the more remote areas in the country as a whole as well as within each province and district, there is need to focus development efforts more on these areas than on those that are already empowered to some extent in respect of various dimensions of development such as social services, employment, infrastructure, etc.*

#### Conclusion 4

The health status of Zambian households is not as bad as their socioeconomic status. However, there is geographical inequality in the distribution of health status. Remote areas like Shangombo enjoy poor health status.

### Recommendation

*The recommendation under conclusion 3 needs to be implemented specifically in respect of health.*

### Conclusion 5

There is a big cleft between accessibility to health facilities and accessibility to health services. While the situation in regard to health facilities is not too bad, the fundamental problem is in respect of adequate provision of health services.

### Recommendation

*There is no point in building more health centres or clinics even in areas where there is a shortage of such facilities if you cannot equip them properly. Existing health facilities should be adequately equipped with adequate personnel and supplies before more facilities are created. Failure to follow this principle will result in wastage of resources and inefficiency.*

*An expeditious and efficient way of improving the health services especially in the remote areas of the country would be to introduce mobile medical facilities equipped with a complement of staff and medical supplies. In India and South Africa they have mobile medical trains that go from village to village. This may not be feasible in Zambia. However, there could be mobile vans that could move within a given district with known time schedules. For example, in Shangombo there could be a van that would be stationed at a given clinic on a given day and this information should be known to all residents of the district. The scheduling could be done in such a way that the mobile van would be stationed at every clinic once in say two weeks. On any given day, a patient with a fairly serious illness could then go to the clinic where the mobile facility is stationed even if that clinic is not the one nearest to his house. And if the illness is not too serious, he could wait for the mobile facility to arrive at his nearest clinic.*

*Such mobile facilities could of course initially provide only outpatient facilities but over time their capabilities can be developed to handle more serious cases of illness.*

*These facilities could also perform the function of gathering epidemiological statistics in the district and use the data to cater to patient needs better over a period of time.*

#### **Conclusion 6**

The people do not see much benefit from the health facilities that are not adequately equipped with competent medical personnel and supplies. Respondents were concerned, in particular, with the continued lack of drugs at health facilities. This forced them to use drugs whose quality they were not sure of. They obtained drugs from relatives and friends or purchased from drug stores. They are also not aware of the right dosages of the drugs resulting often in over-consumption and consequent enfeeblement of immunity to drugs over a period of time.

It may be added in passing that a systematic supply of drugs through approved health facilities also serves to enhance the credibility of the health system. For instance, recently the CEO of a noted pharmaceutical company, Smith, Kline and French stated that they would be willing to supply African countries with the anti-retroviral drugs (ARVs) for AIDS that are otherwise very expensive, at cost price on one condition. The condition was that the drugs should be supplied only through clinics and must be accessible to the poor. Their fear is that otherwise the drugs supplied to these countries at low cost will be sold to private traders who then may re-export them to make huge profits.

#### **Recommendation**

*Adequate and continuous provision of drugs and medical supplies at the health facilities, even at a cost, will reduce the use of expired drugs and the costs of searching for drugs. Since households are already purchasing drugs, they might as well purchase them from the health facilities where they will be assured of proper quality and dosages of the drugs. They will also be able to buy the drugs at much lower prices than what are charged in other sources.*

#### **Conclusion 7**

Qualitative data suggest that there may be significant substitution impacts between the consumption of health and other goods and services. For example, if there are many sick members in a household or members who are chronically ill, even if they are receiving treatment

for which households are spending money, it does not imply that households can afford such expenditures. Often, this expenditure may be incurred by saving on food and children's education. Household may consume less food or pull children out of school so that the resultant savings may be used to treat sick members.

#### Recommendation

*The problem of health has to be addressed from a holistic perspective because of the inter-linkage of health with other dimensions such as food, nutrition, education, etc. Spending to cure the illness of the sick members of the household by reducing food and nutritional intake of other healthy members, for example, would increase the probability of the latter too falling ill and thereby warrant further future spending on curative health. Thus the affordability of health services must be gauged not by the actual spending by households on the services but in relation to the overall basic needs of the households.*

#### Conclusion 8

Gender inequity exists in respect of health status and affordability of health care. This study serves to reinforce the broader findings from numerous researches that gender differentials constitute a serious development issue that needs to be addressed.

#### Recommendation

*Health programmes and more broadly poverty reduction and development programmes must target female-headed*

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#### Recommendation

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#### Conclusion 8

Gender inequity exists in respect of health status and affordability of health care. This study serves to reinforce the broader findings from numerous researches that gender differentials constitute a serious development issue that needs to be addressed.

#### Recommendation

*Health programmes and more broadly poverty reduction and development programmes must target female-headed households.*

#### Conclusion 9

There is very little preventive health care practised by households. This warrants a much higher level of expenditure on curative care.

#### Recommendation

*There is need to encourage households to undertake preventive health care measures such as abstinence from smoking and excessive consumption of alcohol, boiling water before drinking and other such cost-less measures. The efforts under the Roll-Back Malaria Campaign*

*mentioned in recent budgets by which there could be greater and inexpensive access to mosquito nets need to be sustained.*

#### **Conclusion 10**

It is clear from the study that a broader measure of living conditions than one based solely on monetary variables gives a slightly different picture of poverty levels.

#### **Recommendation**

*In working out exemption mechanisms account should be taken of other variables other than monetary ones only. Given the scarcity of resources, use of broader variables, like the ones used in this study to construct indices, will ensure that only the needy benefit from the well intended exemption mechanisms.*

#### **Conclusion 11**

It is clear from most of the respondents that they don't see much value from the research conducted. Researchers too, like Government, seem to come and go while their plight of poverty goes on unchanged. Consequently, over time they become less willing to cooperate with researchers in the latter's data collection exercises.

#### **Recommendation**

*While it should be acknowledged that not all research does result in visible change, and that even when it sometimes does it is only after a while, efforts should be made by researchers to make this very clear to the respondents. Just as there are no quick fixes to many serious problems, there can also be no quick results from research even if they are development oriented. Researchers should also only resort to primary data collection in instances where secondary data are not available. In such instances, when feasible, use could be made of the Central Statistical Office in data collection by inputting in the process at earlier stages of formulating research instruments. Also, a modest monetary incentive to the sampling units may help in getting the needed cooperation in furnishing information.*

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## Appendixes

### Appendix 1: Research Instrument

#### SOCIOECONOMIC STATUS, HEALTH STATUS AND HEALTH EQUITY HOUSEHOLD SURVEY

##### GREETINGS, ETC....

We are a research team from the University of Zambia and the Jesuit Centre for Theological Reflection, Lusaka. We are conducting research on your living conditions especially in respect of your health. We would like to talk to you today. All the information that you provide will be kept confidential. Your answers to our questions will help us understand your problems and concerns.

##### ASK IF IT IS OKAY TO PROCEED.

If the respondent asks how this research will benefit him/her and his/her household, be honest enough to say that you do not know. A report will be prepared and presented to, among others, the Government. This may lead to improvements in policy that may eventually benefit them.

##### IF RESPONDENT SAYS OKAY, PROCEED.

---

Enumerator code:	Enumerator name:
Date of interview:	Location of household:
Household Id:	

---

##### MODULE ONE: HOUSEHOLD DEMOGRAPHIC CHARACTERISTICS

- 1.1 Name of head of household:
- 1.2 Sex of head of household:
- 1.3 Age of head of household:
- 1.4 Number of male adults in the household (above 18 years of age):
- 1.5 Number of female adults in the household (above 18 years of age):
- 1.6 Number of male children in the household (5 years to 18 years):
- 1.7 Number of female children in the household (5 years to 18 years):
- 1.8 Number of male children below 5 years:
- 1.9 Number of female children below 5 years:
- 1.10 Total number of members in the household (enumerators can count and check this):
- 1.11 Number of own children:
- 1.12 Number of children other than own:
- 1.13 Why are these children (ref: 1.12) staying with you?
  1. They are orphans;
  2. Their parents cannot afford to keep them;
  3. Other reasons.
- 1.14 Were there any deaths in the family in the last one year? (Y/N).
- 1.15 If the answer to 1.14 is Yes, what was the relationship of the deceased to you?
  1. Parent(s);
  2. Brother(s)/sister(s);
  3. Wife/husband;
  4. Grandparent(s);
  5. Orphaned child;
  6. Child of living relative;
  7. Other adult relative;
  8. Other (specify).
- 1.16 Where did the deaths occur?
  1. At home for lack of treatment;
  2. At home after being discharged at a health facility;
  3. At a health facility.
- 1.17 What was the cause of death?
  1. Accident;
  2. Illness treated but not cured;
  3. Illness without prompt treatment;
  4. Lack of treatment of illness.
- 1.18 If the cause of death was illness, please specify the illness:

1. Malaria/fever;
2. Diarrhoea;
3. Respiratory infection;
4. Tuberculosis;
5. Pneumonia;
6. Gastro enteric disorders;
7. Anaemia;
8. Malnutrition;
9. Other diseases.

## MODULE TWO: HOUSEHOLD SOCIOECONOMIC STATUS

### Ownership of durable goods:

2.1 Does your household own the following items? (Yes/No):

1. Chairs (s)
2. Table (s)
3. Bed (s)
4. Mattress(es)
5. Stove/cooker/charcoal blazer
6. Working radio
7. Working watch/clock
8. Electricity
9. Telephone
10. Luxury items (e.g. TV, fridge, freezer, cell phone)

### Ownership of agricultural implements

2.2 Does your household own/share the following?

Item	Own	How many?	Share with other households
1. Farm tools			
2. Crop sprayer			
3. Hammer mill			
4. Small cart			
5. Large cart			
6. Plough			
7. Fishing net			
8. Boat/canoe			
Storage shed/containers			

### Ownership of livestock

2.3 Does your household own/share the following?

Item	Own	How many?	Share with other households
1. Oxen			
2. Donkey			
3. Bull/heifer			
4. Calf			
5. Sheep			
6. Goat			
7. Pigs/piglets			
8. Duck/geese			
9. Rabbits			
10. Chicken			
11. Other birds			
12. Other animals			

### Housing

2.4 What is the main type of flooring in your house? (Tick one):

1. Dirt/earth
2. Wood/plank
3. Cement/tile
4. Other (specify)

**2.5** What is the main type of roofing material in your house? (Tick one):

1. Grass/straw/thatch/ earth/mud
2. Wood/planks
3. Tin/metal
4. Tiles/slates/concrete/cement
5. Other (specify)

**2.6** What is the main type of wall material in your house? (Tick one):

1. Adobe/mud
2. Matting wood/branches
3. Galvanized iron
4. Brick/concrete
5. Other

**2.7** How many rooms do you have in your house?

#### **Water**

**2.8** What is the main source of drinking water for your household most of the year? (Tick one):

1. River, lake
2. Unprotected well
3. Protected well
4. Community bore hole
5. Own bore hole
6. Public tap/neighbour's tap
7. Own tap
8. Other (specify)

#### **Sanitation**

**2.9** What toilet facility does your household use? (Tick one):

1. Bush, field
2. Communal/shared pit latrine
3. Own pit latrine
4. Communal/shared flush toilet
5. Own flush toilet

#### **Transport**

**2.10** Which of the following do you have?

1. Scotch cart
2. Own bicycle
3. Shared bicycle
4. Own motorcycle/scooter
5. Shared motorcycle/scooter
6. Car

#### **Education**

**2.11** How many adults (over 18 years) in your household are literate (know to read and write)?

Category	Yes	No	Total
Male adults			
Female adults			
Total adults			

2.12 What is the level of schooling attained by adult members (over 18 years) of your household?

Category	No schooling	Lower basic (G1-4)	Middle basic (G5-7)	Upper basic (G8-9)	Secondary (10-12)	Higher	Total
Male adults							
Female adults							
Total adults							

2.13 How many children (5 – 18 years) go to school?

Category	Number in school	Total number
Male children		
Female children		
Total children		

#### Employment of outside labour

2.14 Do you have people (other than household members) employed in your house as domestic help, security guard, cook, gardener, driver, farm hand, etc? (tick one)

1. Yes                      2. No

2.15 If your answer to 2.13 is yes, how many employees do you have?

#### MODULE THREE: HEALTH STATUS

3.1 Looking at the situation in the past one year, please tell me about the health condition household members.

Health condition	Male adults	Female adults	Male children (5-18 years)	Female children (5-18 years)	Male children below 5 years	Female children below 5 years	Total
Suffering from disease beyond the help of medicine							
Suffering from fairly restrictive disability							
Living with a chronic condition							
Encountering occasional sickness							
Healthy							

3.2 Please tell me about the health condition of different family members.

Health condition	Own family	Orphans	Children of parents not living with you	Other dependents
Suffering from disease beyond the help of medicine				
Suffering from fairly restrictive disability				
Living with a chronic condition				
Encountering occasional illness				
Healthy				

#### MODULE 4: HEALTH SEEKING BEHAVIOUR

4.1 In the last three months, did you or any of your household members fall ill?

1. Yes                      2.No

4.2 If your answer to 4.1 is Yes, then did you/he/she go to: (more than one answer possible):

1. A Government health facility?
  2. A private health facility?
  3. A Mission institution?
  4. Traditional/spiritual healer?
  5. A facility outside Zambia?
- 4.3 If your answer to 4.1 is Yes and to 4.2 No, then give reasons:
1. Did not think the illness was serious
  2. Could not afford
  3. The health facility is too far away
  4. Inadequate service at health facility
- 4.4 If your answer to 4.1 is Yes and to 4.2 is No, then did you/he/she use self-administered medicine?
1. Yes
  2. No
- 4.5 If your answer to 4.4 is Yes, from where did you get the medicine?
1. Pharmacy/chemist shop
  2. Ordinary shop
  3. Friends/relatives
  4. Other
- 4.6 If your answer to 4.1 is Yes and to both 4.2 and 4.4 is No, then does it mean that you/he/she had no treatment for your/his/her illness?
1. Yes
  2. No
- 4.7 If your answer to 4.6 is No, please explain what was done about the illness.
- 4.8 Do you take any measures to prevent illness?
1. Yes
  2. No
- 4.9 If your answer to 4.8 is Yes, then what are they?
1. I exercise daily at home;
  2. I visit a fitness centre regularly;
  3. I use mosquito nets, insecticidal sprays, repellents, etc.
  4. I supplement my diet with vitamin pills, tonic, etc.
  5. I drink only boiled/filtered bottled water.
  6. I avoid/regulate drinking and smoking.
  7. I go for regular health check ups every year.
  8. Other measures

## **MODULE 5: HEALTH EXPENDITURES AND ACCESSIBILITY**

- 5.1 What was the total expenditure for the household last month?
- 5.2 Specifically how much was spent on:
1. Food (grain, meat, vegetables, fruit, milk and milk products, salt, cooking oil, beverages, etc).
  2. Education (fees, uniforms, private tuition, books and stationery, etc)
  3. Health (medicines, fees, institutional payments, pre-payment scheme)
- 5.3 In respect of health, how much did you spend on:
1. Medicines:
  2. Doctor's fees:
  3. Institutional payments:
  4. Prepayments:
  5. Total health expenditures:
- 5.4 With respect to total health expenditure, how much in the previous year did you spend on:
1. Traditional health care
  2. Conventional health care
- 5.5 What is the distance to the nearest health facility?
- 5.6 How long would it take to reach the facility?
- 5.7 How does a patient from your household reach this facility?
1. By walking
  2. By being taken in a push cart
  3. By a scotch cart
  4. By walking some distance and hitchhiking in a truck or car
  5. By public transport

6. By own/hired bicycle
7. By own car/motor vehicle
8. By hired car/motor vehicle
9. By other means (specify)

**5.8** How much would a trip to the health facility cost (both ways)?

**THANK YOU FOR YOUR KIND COOPERATION!**

## Appendix 2: Calculation of Indices

### **MODULE 2**

#### ***Ownership of Durable Goods Index:***

2.1 Add the number of 'Yes' answers and divide by 10.

The resulting index (DGI) will be in the range of 0 to 1.

E.g. if you have ticked 'yes' on six items, the score will be  $6/10 = 0.6$

#### **Ownership of Agricultural Goods Index:**

2.2 Consider column 2 (how many do you own?)

Give weight of 0.5 to item 1 (farm tools)

Give weight of 1.0 to items 2,3,4.

Give weight of 2.0 to items 5,6,7.

Give weight of 1.0 to items 8,9 (storage shed)

This will give a score for Agricultural implements ownership (Agr. I. O)

Consider column 3 (how many do you share with household?)

Calculate the same way as above.

This will give a score for Agricultural Implements Shared (Agr. I.S)

Score for ownership Agricultural Implements, OAI, is obtained as:

$$OAI = \text{Agr I. O} + (0.5) \text{Agr I. S}$$

The Index for Ownership of Agricultural Implements, A.I.I, is obtained by:

$A.I.I = (OAI)/(OAI \text{ (max)})$ , where OAI (max) is the maximum value of OAI found in the data.

A.I.I: this will give a resulting A.I.I in the range of 0 to 1.

#### **Ownership of livestock index**

2.3 Consider Column 2

Give weight of 1.0 to item 1

Give weight of 0.8 to items 2 and 3

Give weight of 0.5 to items 4, 5, 6, and 7.

Give weight of 0.2 to items 8 and 9

Give weight of 0.1 to items 10, 11 and 12

This will give a score for L.O (owned)

Consider column 3

Do the same as above

This will give a score for L.S (shared)

The score for ownership of livestock is given as:

$$L = L.O + (0.5) L.S$$

The Index for livestock ownership is obtained as

$L.I = L/L \text{ (max)}$ , where L (max) is the maximum value found in the data

L.I: this will give an L.I index value in the range 0 to 1.

**Housing**

- 2.4: if you tick 1 or 4, the score is 1  
       If you tick 2 or 3 the score is 2 or 3 respectively
- 2.5 If you tick 1 or 5, the score is 1  
       If you tick 2, 3, or 4 the score is 2, 3, or 4 respectively.
- 2.6 If you tick 1, or 5, the score is 1  
       If you tick 2, 3, or 4, the score is 2, 3, or 4 respectively
- 2.7  $HQ, (\text{House Quality Score}) = \text{score on 2.4} + \text{score on 2.5} + \text{Score on 2.6}$

Room PC = Number of rooms as stated in 2.7 divided by number of members in the household as stated in 1.10

RPCS, Score on room PC = rooms per person  $\times 10$

Score on housing  $HS = HQ + RPCS$

Housing index  $H.I = HS/HS (\text{max})$ , where  $HS (\text{max})$ , is the maximum value found in the data.  $H.I$  will vary between 0 and 1

**Water**

- 2.8 If you take 1 or 8, the score is 1.  
       If you take 2, 3, 4, 5, 6 or 7. The score is 2, 3, 4, 5, 6 or 7 respectively.

Water Index-W.I = Score/7

W.I will range between 0 and 1.

**Sanitation**

- 2.9 For answers 1-5, give scores 1-5

Sanitation Index-S.I = Score/5

S.I will range between 0 and 1

**Transport**

2.10	<u>Answer</u>	<u>Score</u>
	1	1
	2	3
	3	1.5
	4	5
	5	2.5
	6	6

Score on transport,  $T.S = \text{Sum of the scores}$

Transport Index,  $T.I = \text{Sum of the scores, } T.S/T.S (\text{max})$

Where  $T.S (\text{max})$  is the maximum value found in the data.

$T.I$  will range between 0 and 1

**Education**

- 2.11: Score on literacy  $L.S = \text{No. of literate adults} / \text{Total No. of Adults}$

- 2.12 Score on schooling,  $S.S$ :

<u>Level</u>	<u>Score</u>
No schooling	0
G1-4	.2
G5-7	.4
G8-9	.6
G10-12	.8
Higher	1

$S.S = \text{Total Score} / \text{Total No. of adults}$

Education Index,  $E.I = (L.S + S.S)/2$

$E.I$  will range from 0-1

### **Employment**

2.14, 2.15

Employment Score, E.S= No. of employees

Employment Index, Emp I= E.S/ E.S (max)

Where E.S (max)= maximum no. of people employed by a household as found in the sample.

Emp I will vary between 0 and 1

The Socio-Economic Status Index for a household, S.E.S.I is obtained as the sum of all the component indices divided by 9.

That is;

$S.E.S.I = (DGI + AII + LI + HI + WI + SI + TI + EI + Emp I)/9$

S.E.S.I will vary from 0 – 1

### **Categorization of households on the basis of socio-economic status**

<u>S.E.S.I Value</u>	<u>S.E.S of HH</u>
<0.329999	Low
0.33 – 0.75999	Moderate
>0.76	High

### **Module 3: Health Status**

3.1 for the five categories of health conditions in ascending order group up to 'Healthy' give scores as follows;

<u>Health Condition</u>	<u>Score</u>
Suffering beyond help	0
Fairly restrictive disability	1
Chronic condition	2
Occasional illness	3
Healthy	4

If there are n individuals, take weighted average score. That is, if there are  $n_1, n_2, n_3, n_4$  and  $n_5$  individuals in the households corresponding to each of the health conditions, then the Health Status Index, HSI is

$$HSI = [(0 \times n_1) + (1 \times n_2) + (2 \times n_3) + (3 \times n_4) + 4(n_5)] / n$$

Where n = total number of members in HH=  $n_1 + n_2 + n_3 + n_4 + n_5$

HSI will vary between 0 and 4

The health status of the households is categorized as follows:

<u>HSI</u>	<u>H Status</u>
<1.5999	Low
1.6 – 3.2999	Moderate
>3.3	High

### **Module 4**

4.9 Of the 8 options, one could tick 1 or 2 but not both. One could tick any of the others. So the total number of ticks will range from 0 to 7. Hence, the index of preventive health care, PHCI, is:

$$PHCI = (\text{Total number of ticks})/7$$

Households can be categorized on the basis of the extent of preventive health care undertaken by them as follows:

<u>PHCI Value</u>	<u>Level of PHC</u>
0	No PHC
0.1 or 0.2	Low PHC
0.4, 0.6 or 0.7	Moderate PHC
0.8 or 1	High PHC

## Module 5

**\*\*Affordability:** Add the figures for 5.3:  $5 + 5.7$

Divide the sum by 5.1. This is the affordability index, Aff I, whose values

Will range from 0 upwards. It can exceed 1. This will give an idea of the extent of financial strain caused on the household budget by illness episodes. 5.7 would of course give the cost of a single round trip only; still its addition is significant.

Households can then be categorized according to their affordability of health care

<u>Aff. I</u>	<u>Level of Affordability</u>
<0.44999	easily affordable
0.45 – 0.74999	moderately affordable
0.75 – 1.0	not easily affordable

### Accessibility

#### 5.4 Distance scores

<u>Distance</u>	<u>Score</u>
1km or less	3
>1km – 5km	2
>5km – 15km	1
>15km	0

#### 5.5 Time score ST

<u>Time Required</u>	<u>Score</u>
1 hour or less	3
>1 hour – 4 hours	2
>4 hours – 8 hours	1
>8 hours	0

#### 5.6 Mean Score, SM

<u>Item Ticked</u>	<u>Score</u>
0	0
1	1
3, 4, 5	2
8, 9	3
7	4

Accessibility index, Acc I, is given by:

$$\text{Acc I} = (\text{SD} + \text{ST} + \text{SM}) / 10$$

Acc. I will be between 0 and 1

Households can then be categorized according to Accessibility as follows:

<u>Acc. I</u>	<u>Level of Accessibility</u>
< 0.399	<i>Not Easily Accessible</i>
> 0.4 – 0.799	<i>Moderately Accessible</i>
> 0.8	<i>Easily Accessible</i>

### Appendix 3: Additional Tables, Cross Tabulations

#### Appendix 3.1 Health Status by Gender of Head of Household

##### 3.1.1 Overall Sample

Sex	Health Status			Total
	Low	Medium	High	
Male	31 (11.2%)	95 (34.4%)	150 (54.3%)	276 (100%)
Female	21 (17.6%)	42 (35.3%)	56 (47.1%)	119 (100%)
Total	52 (13.2%)	137 (34.7%)	206 (52.2%)	395 (100%)

##### 3.1.2 Lusaka

Sex	Health Status			Total
	Low	Medium	High	
Male	0 (0%)	7 (10%)	63 (90.0 %)	70 (100%)
Female	1 (3.2%)	2 (6.5%)	28 (90.3%)	31 (100%)
Total	1 (1%)	9 (8.9%)	91 (90.1%)	101 (100%)

##### 3.1.3 Chongwe

Sex	Health Status			Total
	Low	Medium	High	
Male	5 (8.2%)	28 (45.9%)	28 (45.9%)	61 (100%)
Female	5 (18.5%)	10 (37.0%)	12 (44.4%)	27 (100%)
Total	10 (11.4%)	38 (43.2%)	40 (45.5%)	88 (100%)

##### 3.1.4 Mongu

Sex	Health Status			Total
	Low	Medium	High	
Male	8 (10.0%)	26 (32.5%)	46 (57.5%)	80 (100%)
Female	7 (28.0%)	9 (36.0%)	9 (36.0%)	25 (100%)
Total	15 (14.3%)	35 (33.3%)	55 (52.4%)	105 (100%)

##### 3.1.5 Shangombo

Sex	Health Status			Total
	Low	Medium	High	
Male	18 (27.7%)	34 (52.3%)	13 (20.3%)	65 (100%)
Female	8 (22.2%)	21 (58.3%)	7 (19.4%)	36 (100%)
Total	26 (25.7%)	55 (54.5%)	20 (19.8%)	101 (100%)

## Appendix 3.2 Affordability by Gender of Head of Household

### 3.2.1 Overall Sample

Sex	Level of Affordability			Total
	Easily	Moderate	Not Easily	
Male	166 (60.1%)	41 (14.9%)	69 (25.0%)	276 (100%)
Female	50 (42.0%)	24 (20.2%)	45 (37.8%)	119 (100%)
Total	216 (54.7%)	65 (16.5%)	114 (28.9%)	395 (100%)

### 3.2.2 Lusaka

Sex	Level of Affordability			Total
	Easily	Moderate	Not Easily	
Male	63 (90.0%)	5 (7.1%)	2 (2.9%)	70 (100%)
Female	24 (77.4%)	3 (9.7%)	4 (12.9%)	31 (100%)
Total	87 (86.1%)	8 (7.9%)	6 (5.9%)	101 (100%)

### 3.2.3 Chongwe

Sex	Level of Affordability			Total
	Easily	Moderate	Not Easily	
Male	21 (34.4%)	10 (16.4%)	30 (49.2%)	61 (100%)
Female	8 (29.6%)	10 (37.0%)	9 (33.3%)	27 (100%)
Total	29 (33.3%)	20 (22.7%)	39 (44.3%)	88 (100%)

### 3.2.4 Mongu

Sex	Level of Affordability			Total
	Easily	Moderate	Not Easily	
Male	56 (70.0%)	11 (13.8%)	13 (16.3%)	80 (100%)
Female	9 (36.0%)	5 (20.0%)	11 (44.0%)	25 (100%)
Total	65 (61.9%)	16 (15.2%)	24 (22.9%)	105 (100%)

### 3.2.5 Shangombo

Sex	Level of Affordability			Total
	Easily	Moderate	Not Easily	
Male	26 (40.0%)	15 (23.1%)	24 (36.9%)	65 (100%)
Female	9 (25.0%)	6 (16.7%)	21 (58.3%)	36 (100%)
Total	35 (34.7%)	21 (20.8%)	45 (44.6%)	101 (100%)

### Appendix 3.3 Socio-Economic Status by Health Status

#### 3.3.1 Overall Sample

Socio-economic Status	Health Status			Total
	Low	Medium	High	
Low	34 (20.6%)	83 (50.3%)	48 (29.1%)	165 (100%)
Medium	18 (8.1%)	54 (24.3%)	150 (67.6%)	222 (100%)
High	0 (0%)	0 (0%)	9 (100%)	9 (100%)
Total	52 (13.1%)	137 (34.6%)	207 (52.3%)	396 (100%)

#### 3.3.2 Lusaka

Socio-economic Status	Health Status			Total
	Low	Medium	High	
Low	1 (12.5%)	3 (37.5%)	4 (50.0%)	8 (100%)
Medium	0 (0%)	6 (7.1%)	79 (92.9%)	85 (100%)
High	0 (0%)	0 (0%)	8 (100%)	8 (100%)
Total	1 (1.0%)	9 (8.9%)	91 (90.1%)	101 (100%)

#### 3.3.3 Chongwe

Socio-economic Status	Health Status			Total
	Low	Medium	High	
Low	6 (14.0%)	23 (53.5%)	14 (32.6%)	43 (100%)
Medium	4 (8.9%)	15 (33.3%)	26 (57.8%)	45 (100%)
High	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	10 (11.4%)	38 (43.2%)	40 (45.5%)	88 (100%)

#### 3.3.4 Mongu

Socio-economic Status	Health Status			Total
	Low	Medium	High	
Low	11 (34.4%)	10 (31.3%)	11 (34.4%)	32 (100%)
Medium	4 (5.6%)	25 (34.7%)	43 (59.7%)	72 (100%)
High	0 (0%)	0 (0%)	1 (100.0%)	1 (100%)
Total	15 (14.3%)	35 (33.3%)	55 (52.4%)	105 (100%)

### 3.3.5 Shangombo

Socio-economic Status	Health Status			Total
	Low	Medium	High	
Low	16 (19.5%)	47 (57.3%)	19 (23.2%)	82 (100%)
Medium	10 (50.0%)	8 (40.0%)	2 (10.0%)	20 (100%)
High	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	26 (25.5%)	55 (53.9%)	21 (20.6%)	102 (100%)

## Appendix 3.4 Socioeconomic Status by Accessibility

### 3.4.1 Overall Sample

Socio-economic Status	Level Accessibility			Total
	Not easily	Moderate	Easily	
Low	58 (35.2%)	105 (63.6%)	2 (1.2%)	165 (100%)
Medium	28 (12.6%)	148 (66.7%)	46 (20.7%)	222 (100%)
High	0 (0%)	0 (0%)	9 (100%)	9 (100%)
Total	86 (21.7%)	253 (63.9%)	57 (14.4%)	396 (100%)

### 3.4.2 Lusaka

Socio-economic Status	Level Accessibility			Total
	Not easily	Moderate	Easily	
Low	1 (12.5%)	7 (87.5%)	0 (0%)	8 (100%)
Medium	0 (0%)	46 (54.1%)	39 (45.9%)	85 (100%)
High	0 (0%)	0 (0%)	8 (100%)	8 (100%)
Total	1 (1.0%)	53 (52.5%)	47 (46.5%)	101 (100%)

### 3.4.3 Chongwe

Socio-economic Status	Level Accessibility			Total
	Not easily	Moderate	Easily	
Low	8 (18.6%)	34 (79.1%)	1 (2.3%)	43 (100%)
Medium	6 (13.3%)	38 (84.4%)	1 (2.2%)	45 (100%)
High	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	14 (15.9%)	72 (81.8%)	2 (2.3%)	88 (100%)

#### 3.4.4 Mongu

Socio-economic Status	Level Accessibility			Total
	Not easily	Moderate	Easily	
Low	12 (37.5%)	19 (59.4%)	1 (3.1%)	32 (100%)
Medium	11 (15.3%)	55 (76.4%)	6 (8.3%)	72 (100%)
High	0 (0%)	0 (0%)	1 (100.0%)	1 (100%)
Total	23 (21.9%)	74 (70.5%)	8 (7.6%)	105 (100%)

#### 3.4.5 Shangombo

Socio-economic Status	Level Accessibility			Total
	Not easily	Moderate	Easily	
Low	37 (45.1%)	45 (54.9%)	0 (0%)	82 (100%)
Medium	11 (55.0%)	9 (45.0%)	0 (0%)	20 (100%)
High	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	48 (47.1%)	54 (52.9%)	0 (0%)	102 (100%)

### Appendix 3.5 Socio-Economic Status Vs Affordability

#### 3.5.1 Overall Sample

Socio-economic Status	Level Affordability			Total
	Easily	Moderate	Not Easily	
Low	32 (19.4%)	40 (24.2%)	93 (56.4%)	165 (100%)
Medium	175 (78.8%)	25 (11.3%)	22 (9.9%)	222 (100%)
High	9 (100.0%)	0 (0%)	0 (0%)	9 (100%)
Total	216 (54.5%)	65 (16.4%)	115 (29.0%)	396 (100%)

#### 3.5.2 Lusaka

Socio-economic Status	Level Affordability			Total
	Easily	Moderate	Not Easily	
Low	3 (37.5%)	2 (25.0%)	3 (37.5%)	8 (100%)
Medium	76 (89.4%)	6 (7.1%)	3 (3.5%)	85 (100%)
High	8 (100.0%)	0 (0%)	0 (0%)	8 (100%)
Total	87 (86.1%)	8 (7.9%)	6 (5.9%)	101 (100%)

### 3.5.3 Chongwe

Socio-economic Status	Level Affordability			Total
	Easily	Moderate	Not Easily	
Low	4 (9.3%)	11 (25.6%)	28 (65.1%)	43 (100%)
Medium	25 (55.6%)	9 (20.0%)	11 (24.4%)	45 (100%)
High	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	29 (33.0%)	20 (22.7%)	39 (44.3%)	88 (100%)

### 3.5.4 Mongu

Socio-economic Status	Level Affordability			Total
	Easily	Moderate	Not Easily	
Low	6 (18.8%)	8 (25.0%)	18 (56.3%)	32 (100%)
Medium	58 (80.6%)	8 (11.1%)	6 (8.3%)	72 (100%)
High	1 (100.0%)	0 (0%)	0 (0%)	1 (100%)
Total	65 (61.9%)	16 (15.2%)	24 (22.9%)	105 (100%)

### 3.5.5 Shangombo

Socio-economic Status	Level Affordability			Total
	Easily	Moderate	Not Easily	
Low	19 (23.2%)	19 (23.2%)	44 (53.7%)	82 (100%)
Medium	16 (80.0%)	2 (10.0%)	2 (10.0%)	20 (100%)
High	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	35 (34.3%)	21 (20.6%)	46 (45.1%)	102 (100%)

## Appendix 3.6 Health Status by Accessibility

### 3.6.1 Overall Sample

Health Status	Level Accessibility			Total
	Not easily	Moderate	Easily	
Low	23 (44.2%)	28 (53.8%)	1 (1.9%)	52 (100%)
Medium	38 (27.7%)	94 (68.6%)	5 (3.6%)	137 (100%)
High	25 (12.1%)	131 (63.3%)	51 (24.6%)	207 (100%)
Total	86 (21.7%)	253 (63.9%)	57 (14.4%)	396 (100%)

### 3.6.2 Lusaka

Health Status	Level Accessibility			Total
	Not easily	Moderate	Easily	
Low	0 (0%)	1 (100.0%)	0 (0%)	1 (100%)
Medium	0 (0%)	8 (88.9%)	1 (11.1%)	9 (100%)
High	1 (1.1%)	44 (48.4%)	46 (50.5%)	91 (100%)
Total	1 (1.0%)	53 (52.5%)	47 (46.5%)	101 (100%)

### 3.6.3 Chongwe

Health Status	Level Accessibility			Total
	Not easily	Moderate	Easily	
Low	1 (10.0%)	9 (90.0%)	0 (0%)	10 (100%)
Medium	11 (28.9%)	26 (68.4%)	1 (2.6%)	38 (100%)
High	2 (5.0%)	37 (92.5%)	1 (2.5%)	40 (100%)
Total	14 (15.9%)	72 (81.8%)	2 (2.3%)	88 (100%)

### 3.6.4 Mongu

Health Status	Level Accessibility			Total
	Not easily	Moderate	Easily	
Low	7 (46.7%)	7 (46.7%)	1 (6.7%)	15 (100%)
Medium	4 (11.4%)	28 (80.0%)	3 (8.6%)	35 (100%)
High	12 (21.8%)	39 (70.9%)	4 (7.3%)	55 (100%)
Total	23 (21.9%)	74 (70.5%)	8 (7.6%)	105 (100%)

### 3.6.5 Shangombo

Health Status	Level Accessibility			Total
	Not easily	Moderate	Easily	
Low	15 (57.7%)	11 (42.3%)	0 (0%)	26 (100%)
Medium	23 (41.8%)	32 (58.2%)	0 (0%)	55 (100%)
High	10 (47.6%)	11 (52.4%)	0 (0%)	21 (100%)
Total	48 (47.1%)	54 (52.9%)	0 (0%)	102 (100%)

## Appendix 3.7 Health Status by Affordability

### 3.7.1 Overall Sample

Health Status	Level Affordability			Total
	Easily	Moderate	Not Easily	
Low	24 (46.2%)	6 (11.5%)	22 (42.3%)	52 (100%)
Medium	56 (40.9%)	26 (19.0%)	55 (40.1%)	137 (100%)
High	136 (65.7%)	33 (15.9%)	38 (18.4%)	207 (100%)
Total	216 (54.5%)	65 (16.4%)	115 (29.0%)	396 (100%)

### 3.7.2 Lusaka

Health Status	Level Affordability			Total
	Easily	Moderate	Not Easily	
Low	0 (0%)	0 (0%)	1 (100%)	1 (100%)
Medium	7 (77.8%)	1 (11.1%)	1 (11.1%)	9 (100%)
High	80 (87.9%)	7 (7.7%)	4 (4.4%)	91 (100%)
Total	87 (86.1%)	8 (7.9%)	6 (5.9%)	101 (100%)

### 3.7.3 Chongwe

Health Status	Level Affordability			Total
	Easily	Moderate	Not Easily	
Low	4 (40.0%)	2 (20.0%)	4 (40.0%)	10 (100%)
Medium	13 (34.2%)	7 (18.4%)	18 (47.4%)	38 (100%)
High	12 (30.0%)	11 (27.5%)	17 (42.5%)	40 (100%)
Total	29 (33.0%)	20 (22.7%)	39 (44.3%)	88 (100%)

### 3.7.4 Mongu

Health Status	Level Affordability			Total
	Easily	Moderate	Not Easily	
Low	7 (46.7%)	1 (6.7%)	7 (46.7%)	15 (100%)
Medium	20 (57.1%)	6 (17.1%)	9 (25.7%)	35 (100%)
High	38 (69.1%)	9 (16.4%)	8 (14.5%)	55 (100%)
Total	65 (61.9%)	16 (15.2%)	24 (22.9%)	105 (100%)

### 3.7.5 Shangombo

Health Status	Level Affordability			Total
	Easily	Moderate	Not Easily	
Low	13 (50.0%)	3 (11.5%)	10 (38.5%)	26 (100%)
Medium	16 (29.1%)	12 (21.8%)	27 (49.1%)	55 (100%)
High	6 (28.6%)	6 (28.6%)	9 (42.9%)	21 (100%)
Total	35 (34.3%)	21 (20.6%)	46 (45.1%)	102 (100%)

## Appendix 3.8 Affordability by Accessibility

### 3.8.1 Overall Sample

Level of Affordability	Level Accessibility			Total
	Not easily	Moderate	Easily	
Easily	32 (14.8%)	129 (59.7%)	55 (25.5%)	216 (100%)
Moderate	16 (24.6%)	49 (75.4%)	0 (0%)	65 (100%)
Not easily	38 (33.0%)	75 (65.2%)	2 (1.7%)	115 (100%)
Total	86 (21.7%)	253 (63.9%)	57 (14.4%)	396 (100%)

### 3.8.2 Lusaka

Level of Affordability	Level Accessibility			Total
	Not easily	Moderate	Easily	
Easily	0 (0%)	40 (46.0%)	47 (54.0%)	87 (100%)
Moderate	0 (0%)	8 (100.0%)	0 (0%)	8 (100%)
Not easily	1 (16.7%)	5 (83.3%)	0 (0%)	6 (100%)
Total	1 (1.0%)	53 (52.5%)	47 (46.5%)	101 (100%)

### 3.8.3 Chongwe

Level of Affordability	Level Accessibility			Total
	Not easily	Moderate	Easily	
Easily	3 (10.3%)	25 (86.2%)	1 (3.4%)	29 (100%)
Moderate	4 (20.0%)	16 (80.0%)	0 (0%)	20 (100%)
Not easily	7 (17.9%)	31 (79.5%)	1 (2.6%)	39 (100%)
Total	14 (15.9%)	72 (81.8%)	2 (2.3%)	88 (100%)

#### 3.8.4 Mongu

Level of Affordability	Level Accessibility			Total
	Not easily	Moderate	Easily	
Easily	12 (18.5%)	46 (70.8%)	7 (10.8%)	65 (100%)
Moderate	4 (25.0%)	12 (75.0%)	0 (0%)	16 (100%)
Not easily	7 (29.2%)	16 (66.7%)	1 (4.2%)	24 (100%)
Total	23 (21.9%)	74 (70.5%)	8 (7.6%)	105 (100%)

#### 3.8.5 Shangombo

Level of Affordability	Level Accessibility			Total
	Not easily	Moderate	Easily	
Easily	17 (48.6%)	18 (51.4%)	0 (0%)	35 (100%)
Moderate	8 (38.1%)	13 (61.9%)	0 (0%)	21 (100%)
Not easily	23 (50.0%)	23 (50.0%)	0 (0%)	46 (100%)
Total	48 (47.1%)	54 (52.9%)	0 (0%)	102 (100%)

#### Appendix 4: Field Pictures



Figure 1: Chongwe District Council Offices

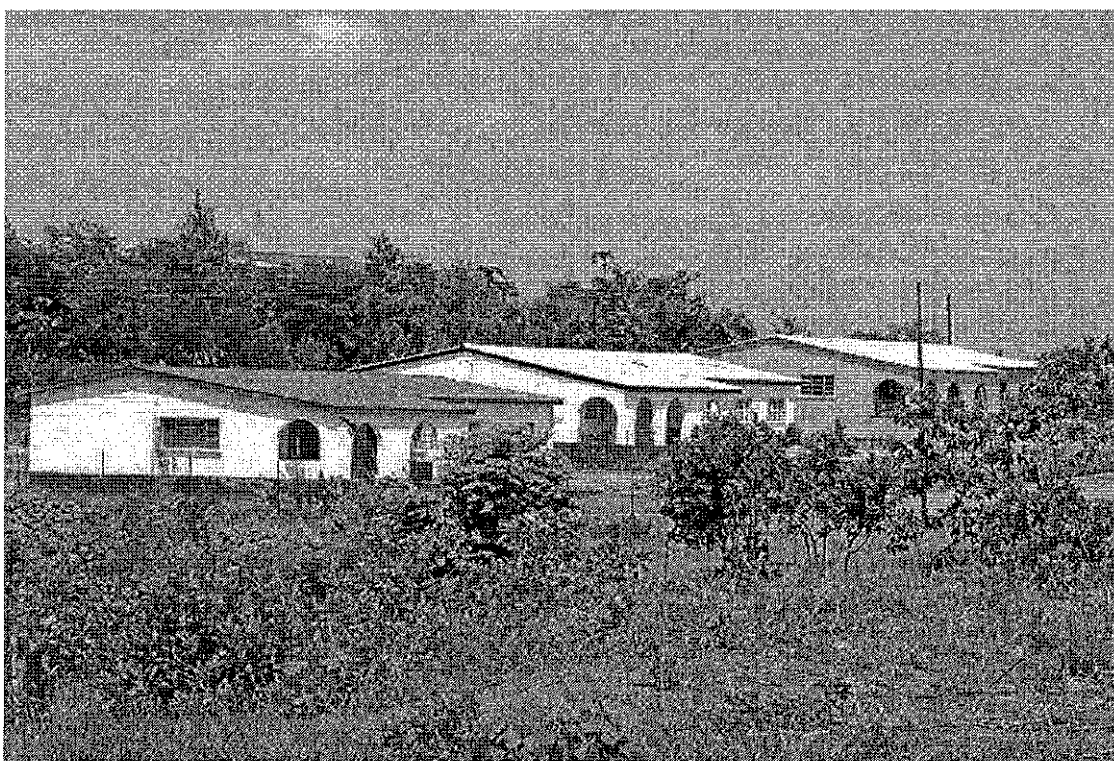


Figure 2: High cost houses - Chongwe District



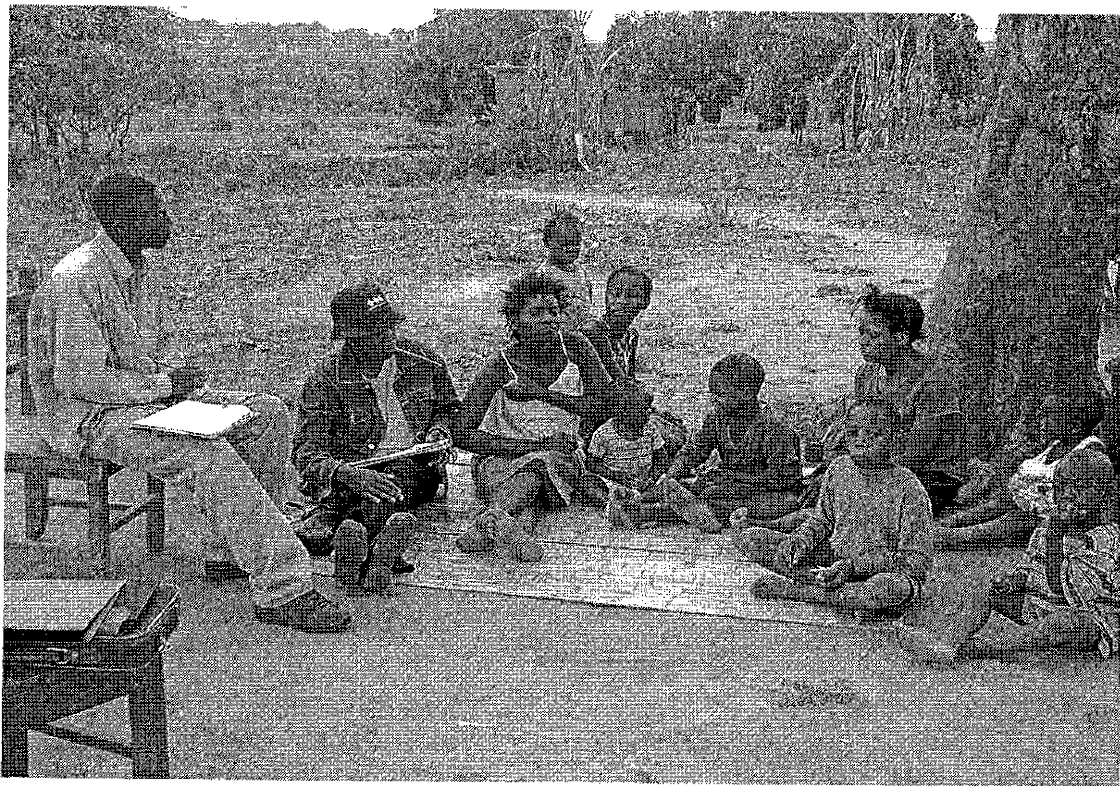
**Figure 3: Middle cost houses – Chongwe District**



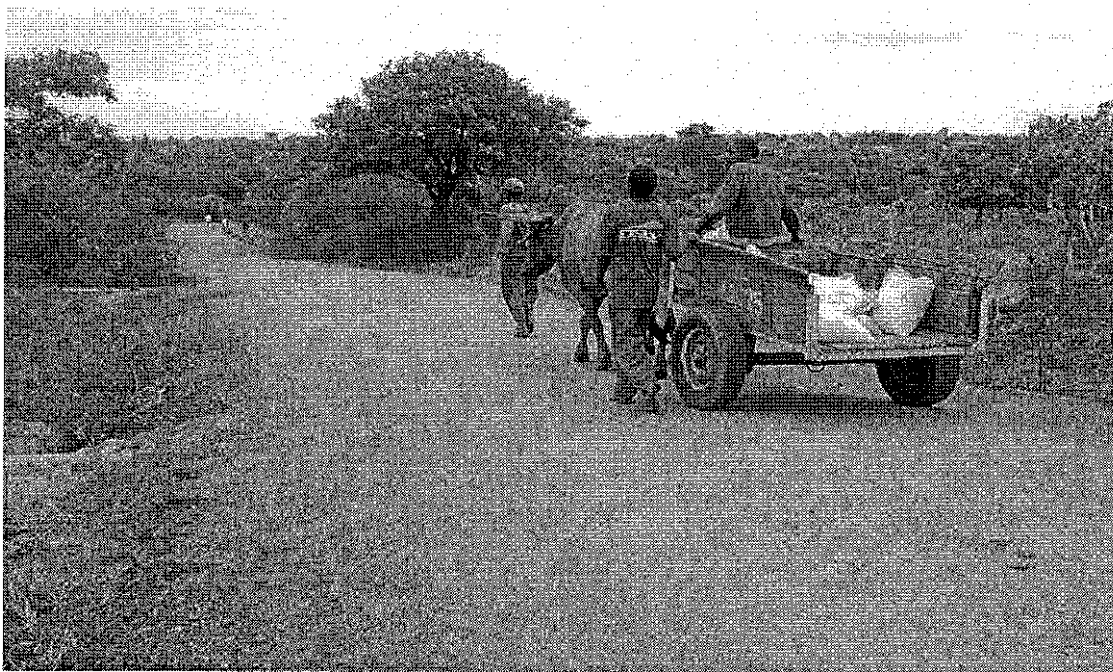
**Figure 4: Low cost housing / Traditional housing - Thatched roof, both walls and floor made of mud – Chongwe District**



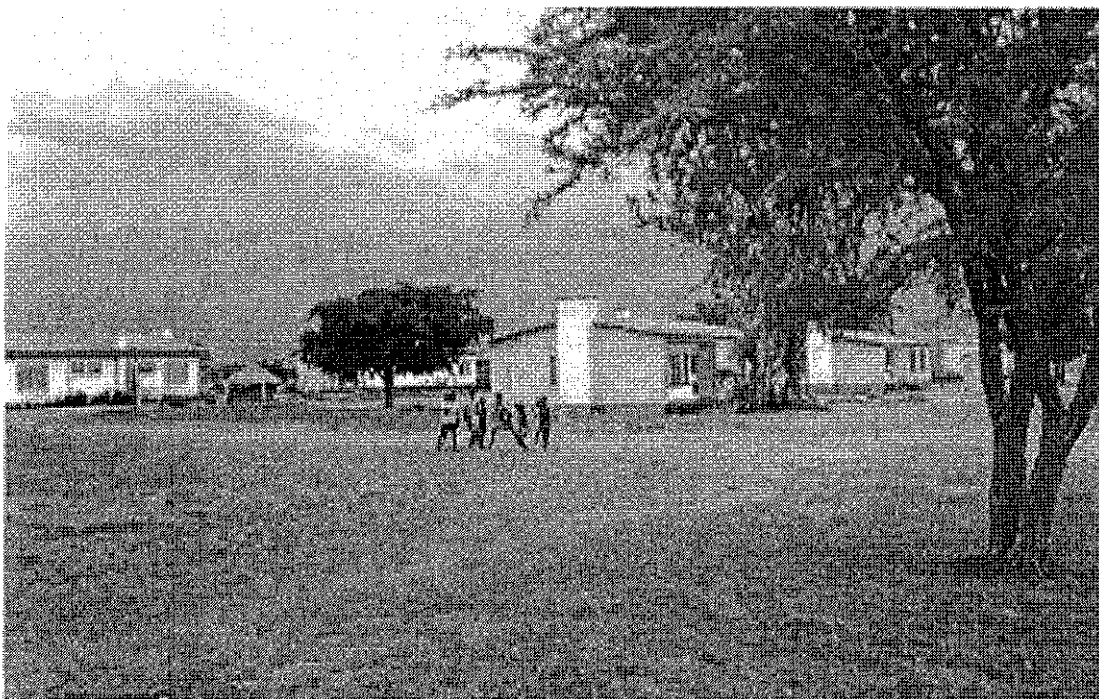
**Figure 5: A village in the outskirts of Chongwe town**



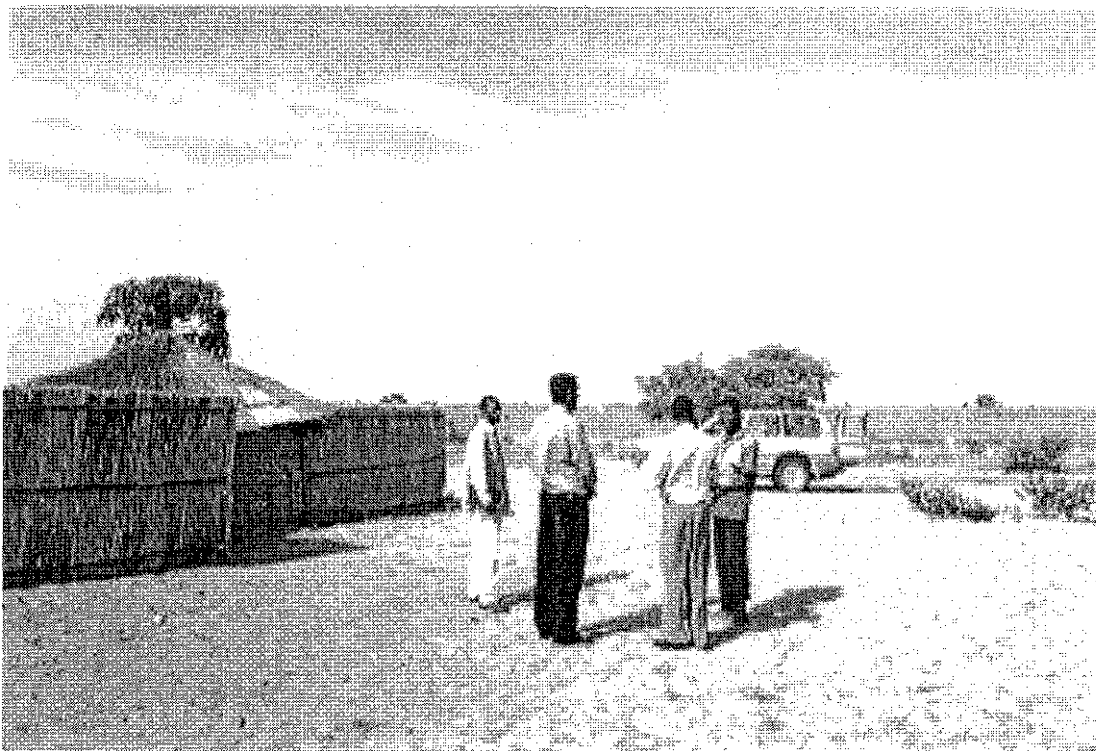
**Figure 6: Administering the questionnaire to a female headed household in Chongwe District**



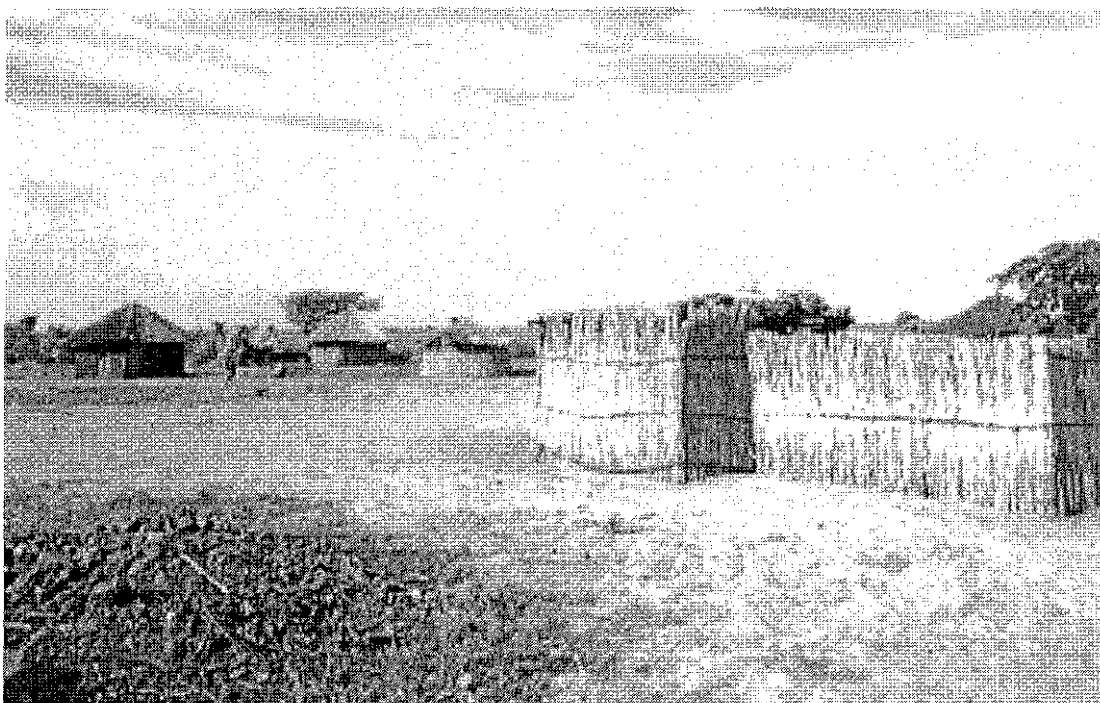
**Figure 7: Transporting maize to a hammer-mill for grinding, Chongwe District**



**Figure 8: Shangombo District Council houses**



**Figure 9: Preparatory discussions with a Village Headman before questionnaire administration in Shangombo**



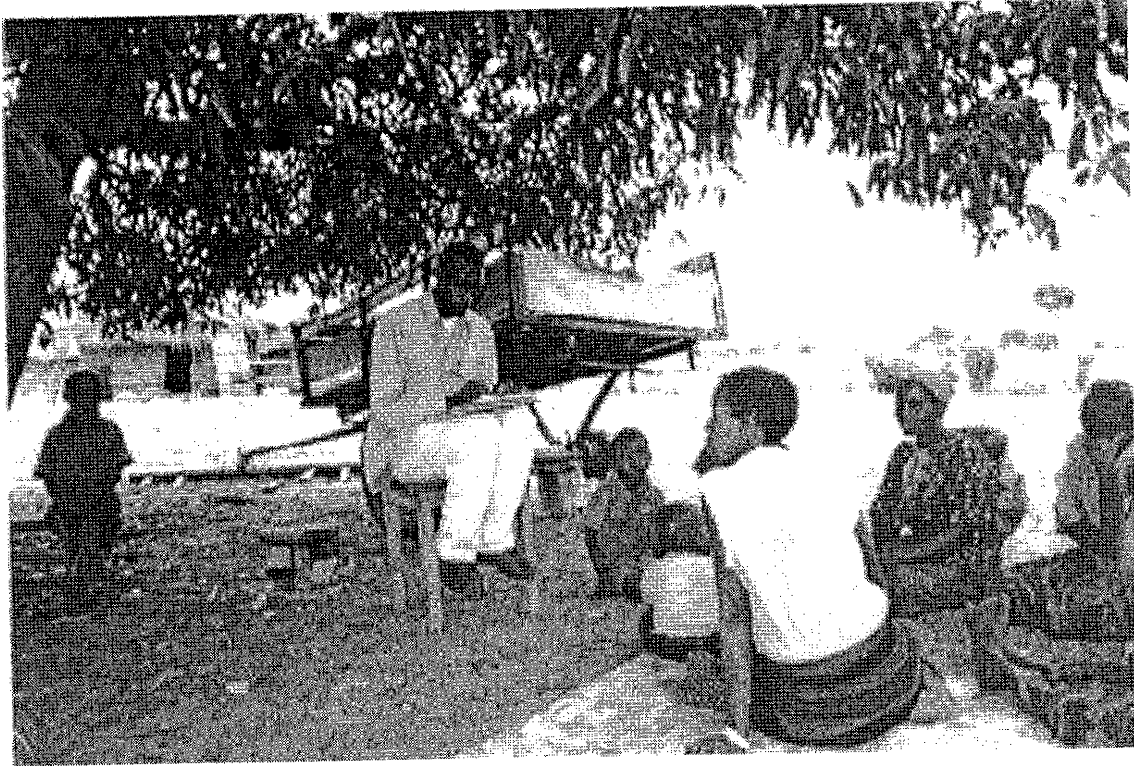
**Figure 10: A village in Shangombo**



**Figure 11: Another village in Shangombo. Note that in some cases the walls of the houses are made of reeds**



**Figure 12: Administering the questionnaire in a village in Shangombo**



**Figure 13: Administering the questionnaire in a village in Shangombo. Note the broken down means of transport (scotch cart) in the background**



**Figure 14: Crossing the Zambezi river at Kalongola, a herd of cattle being forced onto the Pontoon with assistance from one of the research assistants (right)**

A vertical strip of 15 small, square images showing the progression of a handwritten letter 'f' from a simple stroke to a complex, stylized form.