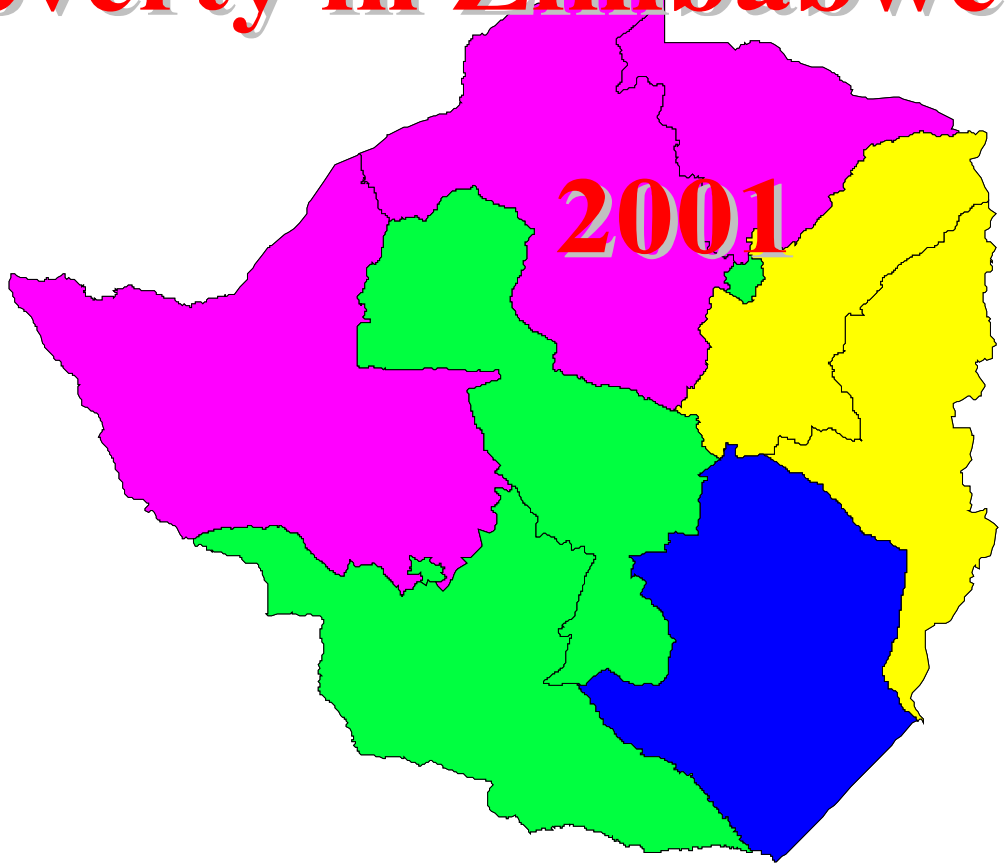
ZIMBABWE

Poverty in Zimbabwe



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Preface

The Central Statistical Office (CSO) issues the second publication "Poverty In Zimbabwe" based on the 2001 Income, Consumption and Expenditure Survey (ICES). Previously, the 1998 Poverty In Zimbabwe report based on the 1995/1996 ICES and a report on inequalities among households in Zimbabwe based on the 1990/1 ICES was published by the Office in Collaboration with Oxford University.

The report covers such topical issues as poverty datum lines, prevalence of poverty and other analytical issues.

This report is issued after every Income, Consumption and Expenditure Survey carried out by Central Statistical Office every five years.

Poverty is a multi disciplinary subject and as such the Central Statistical Office worked closely with users of statistics through various means including consultations and discussions. These were mainly the Ministry of Public Service, Labour and Social Welfare, Ministry of Health, Ministry of Agriculture. Ministry of Education, and other users who provided useful comments and ideas at workshops on poverty analysis.

The Office received technical and financial assistance from the World Bank and UNDP. I am grateful for the assistance given by these organizations. Further I would like to thank government ministries and departments, private sector institutions and individuals for providing the basic data for the completion of the work. My thanks also go to all those who contributed to the production of the report.

The CSO would welcome views and comments that would improve the country's statistics on poverty and indeed, other statistics.

M. Nyoni
ACTING DIRECTOR OF CENSUS AND STATISTICS

1. ZIMBABWE IN CONTEXT

1.1 Overview of the Country

Zimbabwe is situated in the southern part of Africa. It borders Mozambique, South Africa, Botswana and Zambia to the east, south, west and north, respectively. The country is land locked with a total area of approximately 390 757 square kilometres, and, it had a population of 11 631 657 persons in 2002. The country has an average inter censal annual growth rate of 1.1 percent.

The country became independent in 1980, and is classified as a low-income country by the World Bank. Initially, a model of central planning was followed in the 1980s, but the economy began to be liberalised in the early 1990s.

Zimbabwe is divided into 10 provinces of which two, Harare (the capital city) and Bulawayo, are essentially urban provinces whilst the rest are mixed. There are four main rural land use areas and five ecological regions. The main land use areas are large and small scale commercial farms, resettlement and communal areas. The other land use areas are national parks, state land, forest land, etc. Since independence, there was a major effort to redistribute land equitably, with resettlement and land acquisition plans being priority areas in the agriculture sector. These large scale commercial farms are now divided into A1, A2 and remaining large scale commercial farms.

Agriculture forms the backbone of the economy. Most of the agriculture in Zimbabwe is rainfall dependent and subject to frequent droughts. The largest foreign currency earner is tobacco and cotton is the second major cash crop. Mining and manufacturing sectors also play a major role in foreign trade. The main staple food is maize and is widely grown by both commercial and communal farmers.

The formal education system is divided into primary, secondary and tertiary schools while the health sector consists of primary level care provided by clinics, secondary care provided by district hospitals, tertiary services provided by provincial and general hospitals and the quaternary level catered for by six central hospitals in Chitungwiza, Bulawayo, Mutare and Harare. Government, church missions, local governments and private players (predominately in urban areas) are also involved in the provision of health services.

1.2 Historical Background of Poverty in Zimbabwe

Poverty in Zimbabwe is closely linked to the country's colonial history. The pre-independence social, economic and political climate tended to bestow economic and political benefits on whites as opposed to blacks. Blacks were settled on poor quality and small portions of land whilst whites occupied vast tracts of fertile land. Blacks were denied equal education and employment opportunities and even salaries for the same job differed with race. These policies introduced great inequalities and also perpetuated poverty among blacks.

A prolonged liberation struggle from the mid 1960s led to independence in 1980. The war had adverse effects on the entire population and the resulting economic hardships

were felt most severely in rural areas. The imposition of sanctions on the then Rhodesian regime affected the entire country including the poor.

At independence in 1980, Government gave first priority to the reduction of poverty. Although some industries were nationalised, the private sector remained in the hands of minority whites and multi-national companies. Government embarked on policies of rapid expansion of rural infrastructure (education, health and transport systems), and of narrowing the gap between rich and poor by setting up minimum wages and effecting real wage increases.

Government accorded a high proportion of its expenditure to social sectors. Social sector spending that is (Health and Child Welfare; Education Sports and Culture; Higher Education; Public Service, Labour and Social Welfare; and Public Construction and National Housing) as a share of total Government expenditure rose from 25.7 percent in 1980/81 to 34.9 percent in 1990/91. At the same time, total real expenditure by Government was increasing. This expenditure resulted in dramatic improvements in health and education accessibility and availability and better indicators of health, education and nutrition.

Unfortunately, imbalances between central government expenditure and revenue compromised the sustainability of the spending programme. Central government expenditure as a share of the national economy was always high by international standards, and revenue fell short of expenditure through the 1980s. At independence, central government expenditure accounted for about 35 percent of GDP, and partially due to the social sector investments of the 1980s, this share rose to 47.4 percent by 1988/89. The gap between expenditure and revenue grew throughout the 1980s, and interest payments on the national debt began to consume a greater share of the government budget. Budget deficits also crowded out private investment and created inflationary pressures.

The policies of the 1980s were also not conducive to sustained economic growth, and the Zimbabwean economy began to stagnate in the mid to late 1980s. Government recognised the need for a strong economy that could provide resources necessary to combat poverty and redress the imbalances of the past. As a result of deteriorating economic growth, high inflation rates, high levels of unemployment, and increasing fiscal budget deficits, Zimbabwean authorities fell under pressure to abandon the interventionist policies of the early-1980s in pursuit of market-oriented reforms.

The Economic Reform Programme

Zimbabwe Programme for Economic and Social Transformation (ZIMPREST) was launched as the second phase of the social and economic reforms in (1996 – 2000) after Economic Structural Adjustment Programme (ESAP) (1991-1995) that ran concurrently with the Second Five Year Development Plan. Whilst ESAP was aimed at promoting economic growth by de-regulation of the domestic economy, de-regulation of prices and wages, reduction of public spending and central government's budget deficit ZIMPREST intended to provide the economy with a firm basis for sustainable growth, greater employment and equitable distribution of incomes.

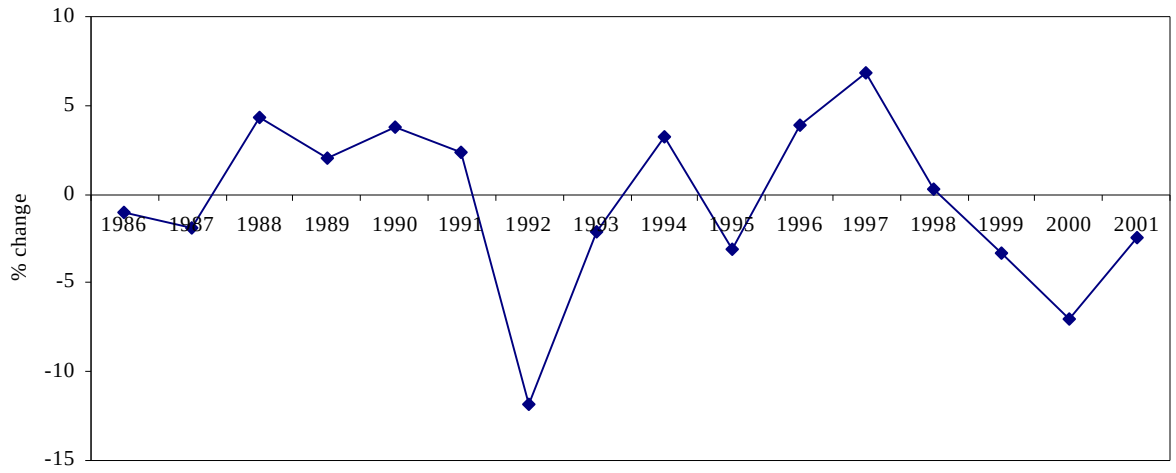
A review of the first phase of the reforms (1991-1995) indicates that much was accomplished in areas such as dismantling and removal of controls relating to the fixing

of commodity prices, determination of wages in both public and private sector and the remittability of profits and dividends. The government also deregulated by-laws in governing transport to allow for greater competition.

With the significant progress having been made in defining and promoting the associated roles of Government and private sector, ZIMPREST sought to elevate the importance of the private sector in the production and distribution of goods and services with the primary role of government being that of a facilitator enabling the private sector to play a leading role in economic growth and employment creation.
In line with the market economies principles, the Government policy was to improve the conditions that enable new firms, particularly the small and medium sized enterprises to enter all sectors of the economy through the removal of the then existing barriers and provision of incentives.

Government increased the share of social sectors from 30 percent of *discretionary* funds in 1990/91 to 38 percent as of 1996. The share of discretionary budget going to health and education has never been higher than it was in 1996. However, a shrinking total resource pool (i.e., fewer real discretionary expenditure) during the same period led to a 40 percent decline in real per capita and real per pupil resources in the health and education sectors, respectively. During ESAP, interest payments on central government debt rose to 22 percent of *total* government expenditure, more than expenditure on health and education combined.

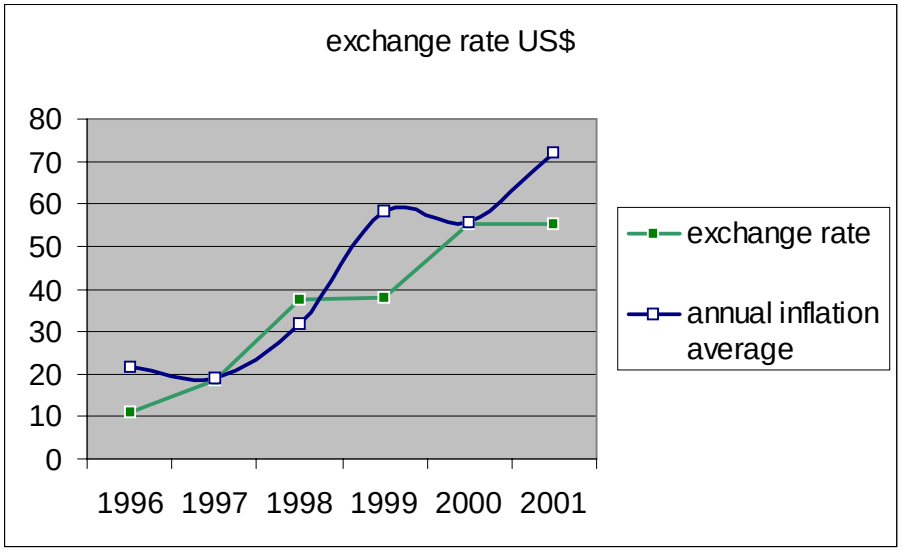
Figure 1.2.1 *Year to Year Changes in Real GDP Per Capita*



Source: Central Statistical Office (2001).

ESAP was successful in liberalising the economy, removing foreign trade and foreign exchange restrictions. However, some of the government fiscal targets were not met and continuing budget deficits may have contributed to the slowdown in growth in late 1997 and early 1998. The intended macro economic stability was not achieved as evidenced by the increase in the rate of inflation, interest rates and a falling exchange rate see figure."

Figure 1.2.2 inflation and exchange rates development



1.2.1. Poverty Analysis in Zimbabwe

There has been two broad types of poverty studies in Zimbabwe. The first type has concerned itself with determining the level of income or consumption below which a family is deemed poor. These studies construct a poverty datum line (PDL), and have been used by policy makers to target specific assistance to the poor and to determine appropriate wage and price policies. These studies have not generally attempted to quantify national poverty, and have not been based on representative data. The second type of study often begins by constructing a PDL, and uses the PDL to measure and analyse poverty by examining the characteristics of poor households.

Known efforts of the first type date back to 1944 when a study was conducted by Professor Baston of Cape Town University. This study was followed by a study by Bettison of Rhodes Livingstone Institute of Lusaka in 1958. Studies by Verity Cubitt and Roger Ridell cover the years 1974, 1979 and 1994 and were designed to construct and update the PDL.

A fully documented study by Verity Cubit in 1994 entitled *The Urban Poverty Line in Zimbabwe: A Study of the Minimum Consumption Needs of Families* focused on the urban poverty datum line. The study paid particular attention to low-income groups in urban areas. The main emphasis of the study was updating earlier research by re-calibrating the PDL; the methodology was consistent with earlier studies of 1974 and 1979. McGarry (1996) employed the Cubitt and Ridell methodologies to create a poverty datum line for a variety of rural areas.

There has been a number of studies of the second type, (i.e., studies that have attempted to quantify and analyse poverty) but few have been national in scope. Studies by Stenflo and Namfua represent the first known attempts to systematically measure and analyse national poverty. These efforts were hampered by incomplete analysis, and their results were difficult to replicate. In 1995 the Ministry of Public Service, Labour and Social Welfare (MPSLSW) conducted Poverty Assessment Study Survey (PASS) which was carried out with the express purpose of measuring and analysing poverty in

Zimbabwe. The PASS used money-metric and non money-metric approaches and provides detail on the poor that is disaggregated to the district level.

The Office published the *1998 Poverty in Zimbabwe,* builds on these earlier studies to create a comprehensive profile of the poor. The CSO publications use consumption rather than income to rank individuals and households in the welfare distribution, provides a profile of poverty based on information collected from January to December 2001(the PASS data were collected from August to November 1995), and analyses in greater detail some of the determinants of poverty.

Before the 1990s, analysis of poverty in Zimbabwe was not progressive in nature. The results of studies cannot be easily compared because of differences in definitions and methodologies. It is not known, for example, whether poverty has increased or decreased over time because of differences in survey methodologies. However, the studies provide insights into important questions such as:

§ How is poverty distributed throughout the country, and which areas suffer from the worst poverty?
§ What are the characteristics of the poor?
§ How good is the access of the poor to public services and facilities?

1.2.2 Institutional Efforts to Alleviate Poverty

In the 1980s and 19990s, Zimbabwe faced a major challenge in dealing with the problem posed by poverty because it inherited distorted social and economic structures from past imbalances. In fact, the challenge the country faced was to formulate poverty-sensitive policies. At the same time, it was recognised that long-term poverty reduction is difficult without a strong and growing economy.

As noted above, government spending was dramatically reoriented towards social sectors following independence. This reorientation helped the country achieve stunning results in health and education in the short run. Some of these policies were changed with the advent of ESAP in 1991, and government was faced with the challenge of formulating poverty-reduction strategies within the context of a liberalised economy.

The Poverty Alleviation Action Plan

The Zimbabwe Government adopted the programme of economic reform with a formal commitment to protect the poor and the vulnerable groups from the negative impacts of ESAP via the Social Dimension Adjustment Programme (SDA). A surveillance programme (Sentinel Site Surveillance) was put in place to monitor SDA, whose centerpiece is a direct transfer programme – the Social Development Fund under the Ministry of Public Service, Labour and Social Welfare.

The SDF aims to protect the poor from the negative impact of subsidy removal, introduction of fees and unemployment. It has two components, namely:

- direct transfers to support health and school fees payment for the same households; and

- employment and training programmes to retrain retrenched workers.

The Social Dimension Adjustment Programme was narrow in its approach. A broad concept of poverty alleviation was, therefore, developed through the Poverty.

Alleviation Action Plan (PAAP) that was launched by the MPSLSW in February, 1994 in conjunction with United Nations Development Programme (UNDP). The PAAP includes reform of SDF, and also more systematic efforts to monitor poverty and address poverty analysis. These efforts include building the capacity of communities to generate income and tap more benefits from the public service provision system. PAAP encourages the integration and participation of vulnerable groups into the mainstream of economic activity.

1.3 Economic Activity and Employment

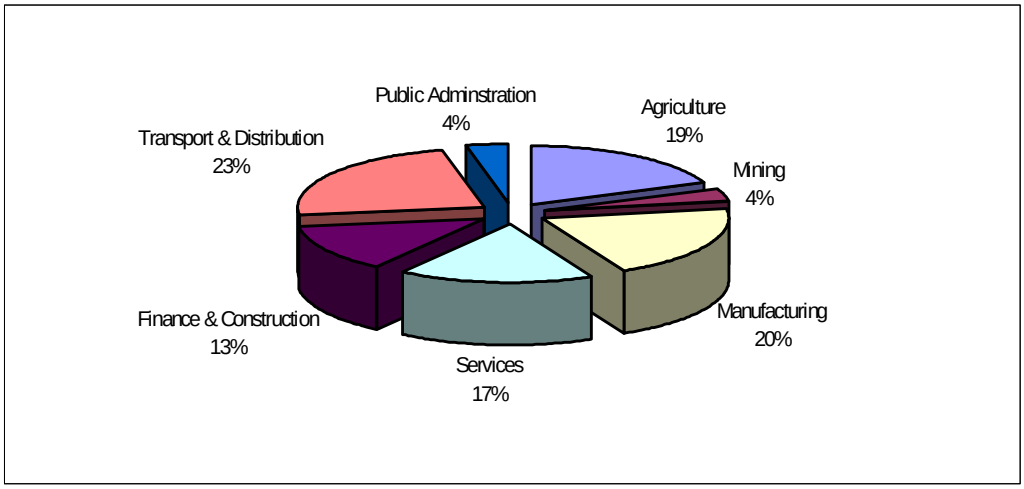
Zimbabwe had an estimated GNP per capita of $1895.00 in 2001. Between 1996 and 2001, real GDP per capita fell from Z$2103[1] to Z$1895 (CSO, 2003). Some of the slow growth can be attributed to shocks caused by drought, some to delayed and incomplete implementation of ESAP, and to persistent structural deficiencies in the economy. This lack of growth has hampered efforts to reduce poverty.
The economy is characterised by sharp swings in annual output (figure 1.2.1); these swings are associated with an agricultural-based economy where a large part of the production is dependent on rainfall.

1.3.1 Structure of the Economy

There was a slight decline in the contribution of transport and distribution, and finance while an increase was recorded in services and agriculture as shown on the pie chart below, Although Zimbabwe is classified as a low-income country (figure 1.3.1), its economic structure more closely resembles that of a lower middle-income country. GNP is relatively evenly distributed among the sectors of agriculture, manufacturing, and other services. Agriculture is clearly an important sector, yet its contribution to GDP is far below the average for lower-income countries. The relatively low contribution of agriculture to GDP is deceptive since agriculture provides employment and livelihood for approximately 70 percent of the population and provides raw materials for the majority of the country's manufactured goods and exports. Agricultural exports consistently represent between 40 and 50 percent of the country's exports (figure 1.3.2).

Figure 1.3.1 Percentage distribution of GDP by sector, 2001

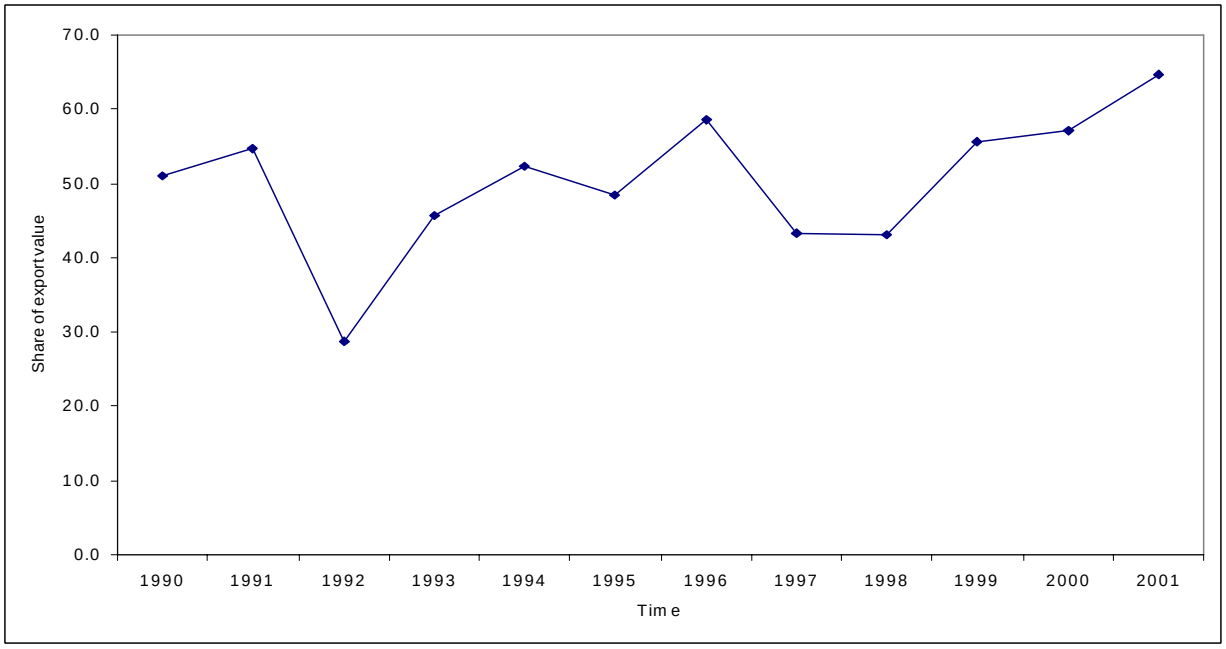
[1] at 1990 prices.



Source CSO (2001)

The economic diversity evident in figure 1.3.2 is partly a product of Zimbabwe's isolation during the 1960s and 1970s. During that period, local manufacturing was promoted to provide goods that were not available in the country. Following independence, government tried to sustain employment and output in manufacturing by protecting the sector from imports and increasing government ownership of manufacturing concerns. These policies prolonged inefficiencies in many industries and eventually led to the retrenchments and restructuring of the 1990s.

Figure 1.3.2 Share of agricultural export value to GDP 1990 - 2001



Source: Central Statistical Office, 2001

Economic Activities

The changes that took place in the Zimbabwean economy during the 1990s had a major impact on employment and the potential for generating incomes from different activities. About 80 percent of workers in urban areas of Zimbabwe are either permanent or temporary employees. This figure is quite high for a low-income country and indicates dependence on formal-sector employment. A substantial portion of urban residents also consists of own-account workers, although the share of own-account work in Zimbabwe is lower than is typically found in a low-income country. These urban own-account workers are mostly confined to the informal sector, where remuneration is likely to be low (see Annex E table E.1.1).

1.3.2 Agriculture, Land and Drought

Zimbabwe is primarily a rural country, as about 67 percent of the people live in rural areas. The rural economy is dominated by agriculture. The share of agriculture in GDP is however lower than its share of employment. Productivity and incomes in agriculture are thus lower than in other sectors of the economy. In fact, most poverty studies have found that, partly because of the low income-generating potential of agriculture, poverty is much more prevalent in rural areas of Zimbabwe than it is in urban areas (World Bank, 1996; MPSLSW; CSO, 1998).

Agriculture in Zimbabwe has two broad distinguishing factors: natural regions and land use. (See box 1). The majority of people in rural areas are engaged in communal farming, characterised by low productivity and minimal use of purchased inputs and capital. Resettlement areas represent an attempt by government to address land distribution problems by resettling the rural poor on under-used commercial farmland (see box 2). While A1 and A2 farms and remaining Large Scale Commercial farms represent the results of land reform which started in 2000/2001.

Box 1: The Natural Regions of Zimbabwe

Zimbabwe has five natural regions distinguished by annual rainfall and productive potential of the soils. Intensity of farming activities varies across these natural regions.

Region one *(specialised and diversified intensive farming*): The region receives more than 1000 mm of rainfall per annum. The main agricultural activities include forestry, fruit production and intensive livestock rearing. It covers 7 000 km^2 (less than 2% of total area).
Region two *(Intensive farming):* The region receives between 750-1000mm of rainfall per annum. It specialises in crop farming and intensive livestock breeding, and covers 58 600 km^2 (15% of total area).
Region three *(semi-intensive farming):* It receives between 650-800mm of rainfall per annum and specialises in livestock breeding, fodder and cash crops. It has marginal production of maize, tobacco, and cotton and covers 72 900 km^2 (19 % of total area).

Region four (extensive farming): NR IV receives 450-650mm of rainfall per annum. It specialises in extensive livestock breeding and drought-resistant crops. It covers 147 800 km^2 (38 % of total area).
Region five (semi-extensive farming): The region receives too low and erratic rains for even drought-resistant crops. It specialises in extensive cattle and game ranching and covers 104 400 km^2 (27 % of the total area).

Government policy towards agriculture since independence paralleled its treatment of social sectors. Immediately after independence, government formulated policies designed to address the imbalances created by colonialism. The major focus of agricultural policy following independence was to achieve equity and efficiency gains through the reallocation of land to smallholder producers, development of marketing infrastructure and marketing services for smallholder producers, and re-orientation of research and development and extension services towards the needs of smallholders.

The policies resulted in impressive increases in agricultural output in communal and resettlement areas, and growth in incomes for some of the poorest producers. Real agricultural output grew at about 4 percent per year through 1987, with much of the growth attributable to smallholder farms. Since the late 1980s, however, growth in agriculture stagnated, leading to persistent questions about whether the expansion during the 1980s was a one-off phenomenon achieved by transferring technologies and services to previously neglected areas (Eicher). During much of the past decade, government support to agriculture moved away from core services (research, extension, pest and animal disease control, and agricultural education), towards subsidies to producers and consumers, support to loss-making parastatals, and short-term drought-relief measures. Dwindling support to core services may account for the slowdown in agricultural growth.

Subsidies to grain millers and (largely urban) consumers accounted for about 70 percent of the Ministry of Agriculture expenditure in 1991-93, while drought relief exceeded the research budget in 3 out of 4 years between 1992 and 1994[2]. Drought relief measures were clearly needed but much of the expenditure was achieved by reducing other high-priority expenses.

Drought has become a regular feature of Zimbabwean agriculture, and drought prevention and relief should occupy a permanent position in government planning.

Box 2: Land Reform and Resettlement

During 1980-84, 35 000 households were settled by government on approximately 2 million hectares of land. Since 1984, about 20 000 additional households have been resettled. Most of the resettled households were among the poorest in the country prior to resettlement, and it was hoped that allocation of fixed quantities of land, and provision of agricultural support services to these areas would help alleviate poverty among the rural households with very little or no land. Evidence shows that some gains have been made by resettled households, but that resettlement areas still suffer from pervasive poverty. Land reform started in 2000/2001

Brief Overview of Land Distribution and Use

In 2001, large-scale commercial farms were spread through all natural regions of Zimbabwe. These farms were mainly extensive operations, producing drought-resistant crops such as millet and sorghum for sale, and breeding herds of cattle and

[2] The lion's share of the subsidies on food products during the 1980s and early 1990s did not reach the poor due to lack of targeting, and allocation of expenditure away from core functions may have compromised long-term efforts to use agriculture as an engine of poverty reduction.

goats. Communal areas represent more than 85 percent of households in the lower-potential regions III and IV (table 1.3.2).

Table 1.3.1 Distribution of Rural Households by Land Use Area and Natural Region

Natural Region	Communal Areas	Small-scale Commercial Farms	Large-scale Commercial Farms	Resettlement Areas	Total
Region I	43.89	10.08	46.04	-	100
Region II	62.92	4.82	29.75	2.51	100
Region III	81.24	-	8.36	10.4	100
Region IV	94.12	3.11	1.72	1.05	100
Region V	78.55	-	20.05	1.4	100
All Rural	78.42	2.79	15.71	3.08	100

Source: 2001 ICES.

These numbers are households, and since LSCFs and SSCFs can have many Households on a single farm, the table cannot be used to determine the number of farms.

Although 44 percent of the *households* in NR I and 63 percent in NR II are in communal areas, it cannot be concluded that large proportions of land in NRs I and II are held in traditional tenure.

Most of the land in high-potential Natural Regions I and II is commercial farmland ie now A1, A2 and remaining large scale commercial farms (table 1.3.2). The majority of the households and land in low-potential Natural Regions IV and V are communal. These regions represent around 65 percent of Zimbabwe's land area (see box 1), but most of this land is used for grazing and communal woodlands. Household land holding sizes for communal and resettlement farms tend to be relatively constant across natural regions.

Communal lands are allocated to households using traditional rules. Since most communal cultivation is by hand-hoes and animal-drawn ploughs, households are limited in their capacity to engage in extensive production and holding sizes are fairly uniform across the country. Since land quality varies significantly across natural regions, patterns of poverty are likely to follow natural regions. Households in NRs III, IV and V that depend on agriculture are more likely to be poorer than households in NRs I and II. In addition, poverty status of the household is also determined by the number of workers and dependants per household rather than holding size. Finally, it is expected that households with access to off-farm income in CAs and RAs will be less likely to be poor than other households without access to such income.

Table 1.3.2 Distribution of Land by Natural Region and Land Use.

Natural Region	Large scale commercial farms	Small scale Commercial Farms	Communal Areas	Resettlement Areas	Total
Region I	54.0	1.9	36.0	8.0	100
Region II	63.9	3.9	22.0	10.2	100
Region III	34.8	6.3	40.8	18.0	100
Region IV	22.0	4.3	66.4	7.3	100
Region V	31.1	1.2	59.9	7.8	100

Source:Rukuni Mandivamba .
Zimbabwe: Report of the Commission of inquiry into appropriate agricultural land tenure systems October 1994.

Table 1.3.3 Mean Holding Size (in hectares), Communal and Resettlement **Areas, by Natural Region**

Natural Region	Communal Areas	Resettlement Areas
Region I	1.29	-
Region II	1. 59	3.92
Region III	2.47	3.48
Region IV	2.12	4.66
Region V	2.19	5.06

Source: 2001 ICES

Resettlement area households represent a small proportion of rural households and are mostly confined to regions II and III. Both communal areas and resettlement farms have a relatively constant mean holding size across natural region and province (table 1.3.4). This result is not surprising in that households in RAs were allocated a fixed area (5 hectares) regardless of the land's potential.

Agriculture and Drought

Zimbabwean agriculture is highly dependent on rainfall. Most of the communal and resettlement areas depend entirely on rainfall for crop production. Large and small scale commercial farms usually have irrigation facilities but this irrigation potential is limited. Dependency on rainfall makes the sector and the entire economy highly vulnerable to drought.

In 1992, Zimbabwe experienced one of the most severe droughts in decades which also affected the whole of Southern Africa. The drought had a major impact on the entire economy but its impact on agricultural earnings was even more dramatic. Agriculture's contribution to GNP fell from about 14 percent to less than 7 percent.

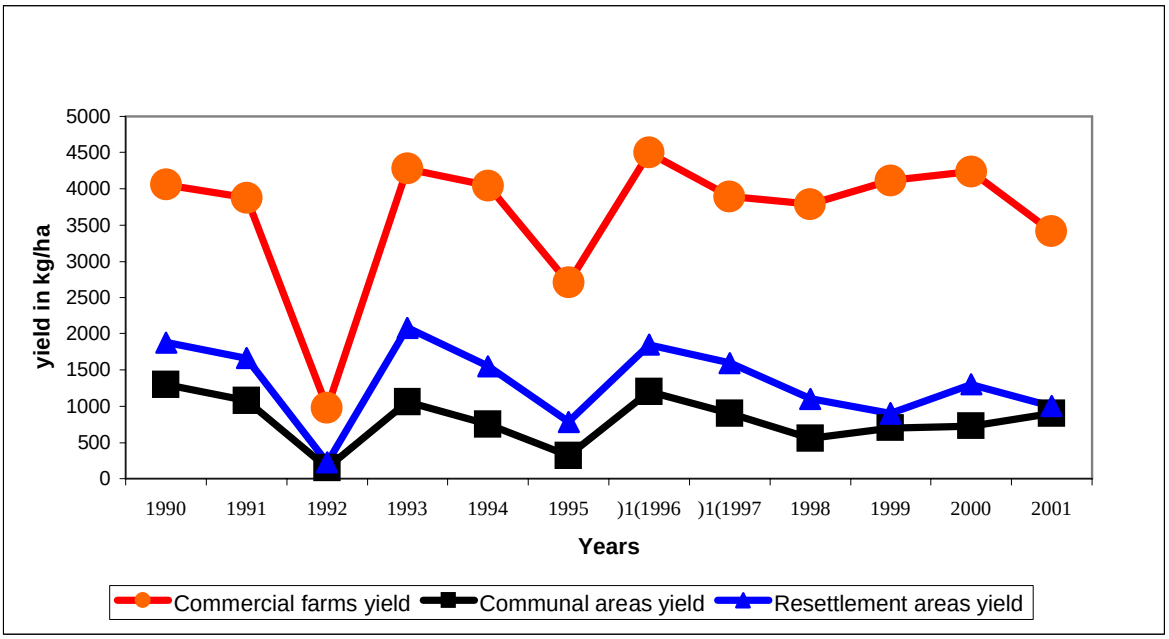


Figure 1.3.3 Maize Yields by Sector, Various Years

Source: Central Statistical Office (2001).

Land quality, rainfall and access to irrigation make commercial farms more productive than communal and resettlement areas, and less prone to drought. Maize yields on commercial farms are more than double yields on resettlement and communal farms (figure 1.3.3). These higher yields are reflective of the better-quality soils and higher productive potential of SSCF and LSCF areas, and of higher capital and technology usage on commercial farms.

Communal and resettlement areas are also relatively more sensitive to abnormal rainfall than commercial farms. As seen in figure 1.3.3, there were major declines in output in all land use areas in 1992, 1995 and 2001. The relative declines in maize yields on RAs and CAs during the three years far surpassed the declines on commercial farms. Thus, households in CAs and RAs were likely to have suffered more from the drought. The impact of the drought on RAs and CAs is likely to have been worse than is indicated by their losses in maize[3]. Yields of irrigated crops did not fall as much as those of maize during these drought years. The maize yield decline, which is shown to be relatively worse in RA and CA farms, had a larger relative impact on total revenue from agriculture in RAs and CAs because maize constitutes a larger share of acreage and revenue for these households. Thus RAs and CAs were likely to be much more adversely affected by the droughts than commercial farms.

The drought of 1995 affected both incomes and consumption expenditures, especially in communal and resettlement areas. Results from household surveys, such as the ICES 2001/2002, are likely to reflect these declines. Estimates of poverty from such surveys are thus likely to be higher than they would be in a "normal" crop year.

[3] Maize is rarely grown under irrigation even on commercial farms.

The drought had a longer-term impact on rural poverty via its impact on livestock as livestock numbers fell dramatically following the 1992 drought. Some of these declines are attributable to deaths and some to distress sales. Herd sizes recovered strongly in 1994, leveled off in 1995 and are likely to have fallen again in 1996, following the 1995 drought. Livestock is a major form of wealth storage, especially for poor households, and the drops in livestock numbers are likely to have an adverse effect on rural poverty.

Agriculture needs separate attention in a study of poverty, because it occupies such an important position in the economy of Zimbabwe. Indeed, other analyses of poverty (specifically World Bank, 1996; MPSLSW; CSO, 1998; and Kinsey) have examined rural poverty and revealed a number of findings. These include:

- a high prevalence of poverty in RAs and CAs;
- lower prevalence of poverty in LSCFs, but serious reservations about the distribution of the poor within LSCFs (see, particularly, World Bank, 1996, for a review of the issues);
- access to land, per se, is not closely associated with poverty status in rural areas; and,
- the ability to accumulate assets largely determines the poverty-reducing potential of agricultural areas dependent on rainfall.

Some of these findings will be investigated in detail below.

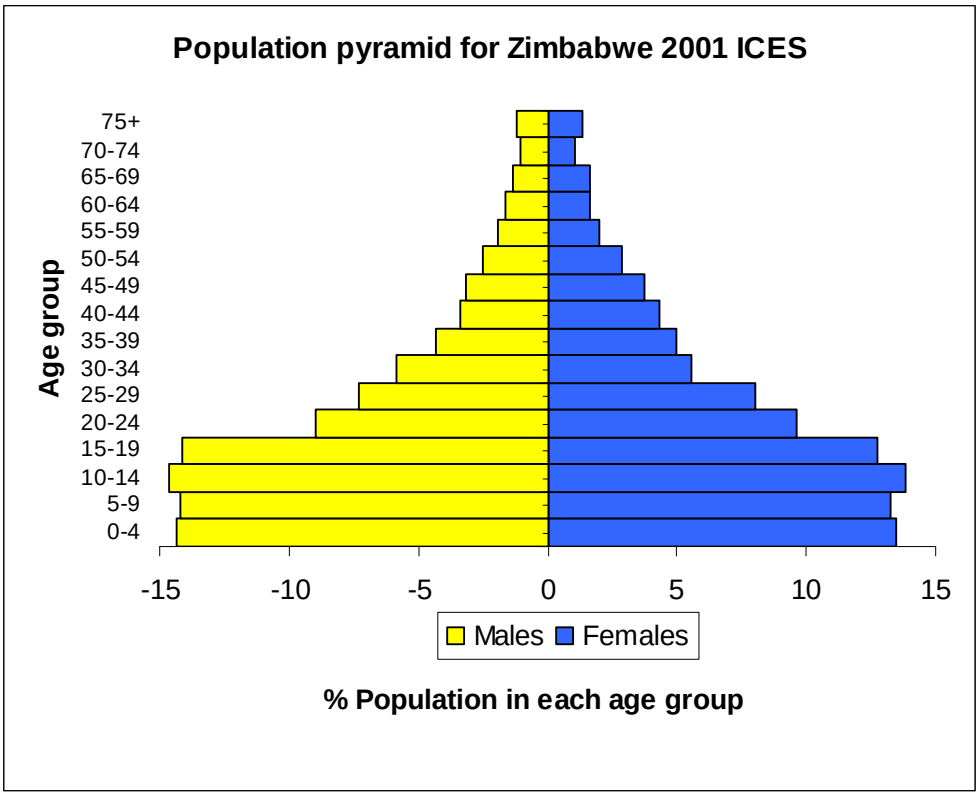
1.4 Human resources and social Services in Zimbabwe

1.4.1 Population and demographics

The population pyramid for Zimbabwe is broad based and narrows at the bottom (figure 1.4.1). About 44 percent of the population is below the age of 15 which means that there is a large proportion of young children relative to adults. There are more people in the ten to fifteen year age group than in any other age group due to high fertility levels.

The age-sex structure implies a young growing population. The fact that a large percentage is young and economically dependent has economic implications for savings and the provision of public services. Zimbabwe, therefore, requires high social spending as young and old people are intensive users of public services like education and health. The provision of public services is strained because of a smaller base of earners who can pay for the infrastructure and services compared to the large number of users. The savings are also very low due to the young population. There is need for a high rate of economic growth in line with the rate of population increase of 1.3 percent if poverty reduction is to be achieved.

Figure 2.4.1 Population pyramid for Zimbabwe



Source ICES 2001

Trends in dependency ratios

The dependency ration in Zimbabwe has been on a downward trend since 1982. That is from 102.9 in 1982 to 94.4 in 1994 and further decline to 81 in 2001. While a downward trend indicates a decline in dependency, it should be noted that this dependency ratio does not capture other factors like unemployment, diseases such as HIV and AIDS and the fact that some of the people who are above 16 years may still be full time students. Little is known about the economic dependency ratio.

There is higher dependency in rural areas where the ratio is 108 than in urban areas where it is 62. A high dependency ratio is associated with more poverty since it implies that there are relatively more dependants than the working population. As a result the rural people are more likely to be poorer than their urban counterparts.

Zimbabwe is mostly a rural country. Sixty three percent of the households in reside in rural areas and thirty seven percent in the urban areas. Large households are more prevalent in the rural areas than in the urban centres. The mean household size has gone down from 4.6 in 1995 to 4.35 in 2001. The rural and urban and mean sizes are 4.9 and 4.1 respectively.

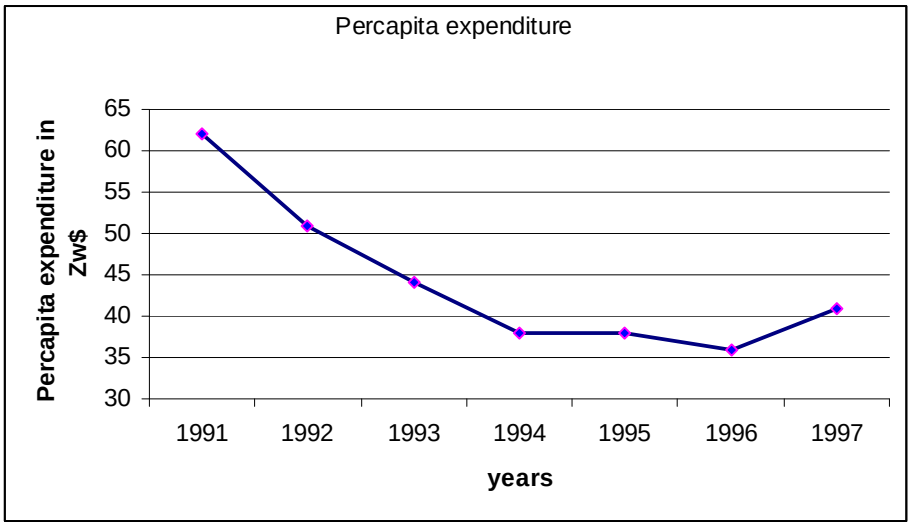
1.4.2 Health

For nearly a decade after independence, Zimbabwe made remarkable gains and consistent progress in health and nutrition. The government's health focus emphasized primary and preventive health care, notably maternal and child health,

nutrition and family planning. As a result of government investment in primary and preventive health the infant mortality rate (IMR) dropped from about 80 to 60 between 1981 and 1988 and further down to 53 by 1994. Child immunization rose from 25 percent to 80 percent in the same period.

The prevalence of malnutrition dropped over the same period from 22 percent to 12 percent. Since 1991 the government adopted the least – cost means of health care provision and reallocating investment from expensive tertiary based care towards cost effective primary health care

Figure 1.4.2 Trends in Real government Expenditure on Health



Source: Ministry of health, The National Health profile 2002

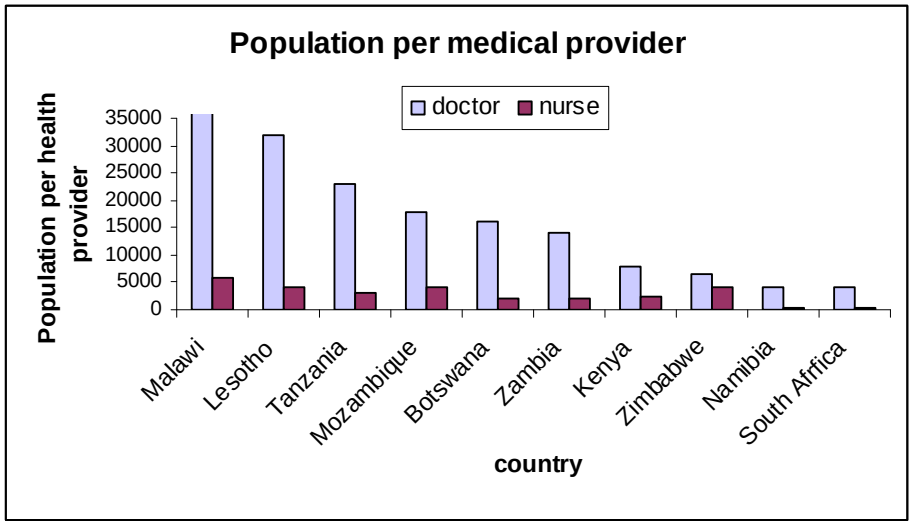
Government expenditure on health

Health expenditure rose by 94 % from 1980 to 1988 and by 48% in real per capita terms. The percentage share of health expenditure to GDP also rose by 0, 8 percentage point by the end of the decade. Real per capita expenditure by government and other health service providers has been declining through the 1990s and started to rise in 1997 (figure 1.4.2). Real per capita expenditure declined from $61 in 1991 to $36 in 1996 and has consistently remained below the 1991 levels. This decline was experienced against a background of sharply rising health care demand partly because of HIV and AIDS.

Health Personnel

Zimbabwe was better off than other countries in the region in terms of the population per medical practitioner, despite the decline in public expenditure. Only Namibia and South Africa had lower populations per doctor ratios than Zimbabwe whilst the population per nurse compared well with that of the other countries.

Figure 1.4.3

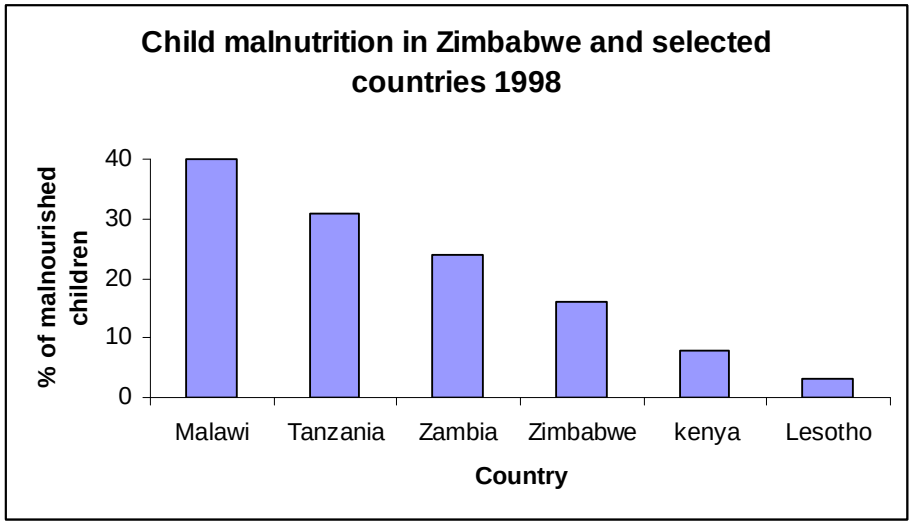


Source World bank: *World Development Report 1995*

Malnutrition and infant mortality

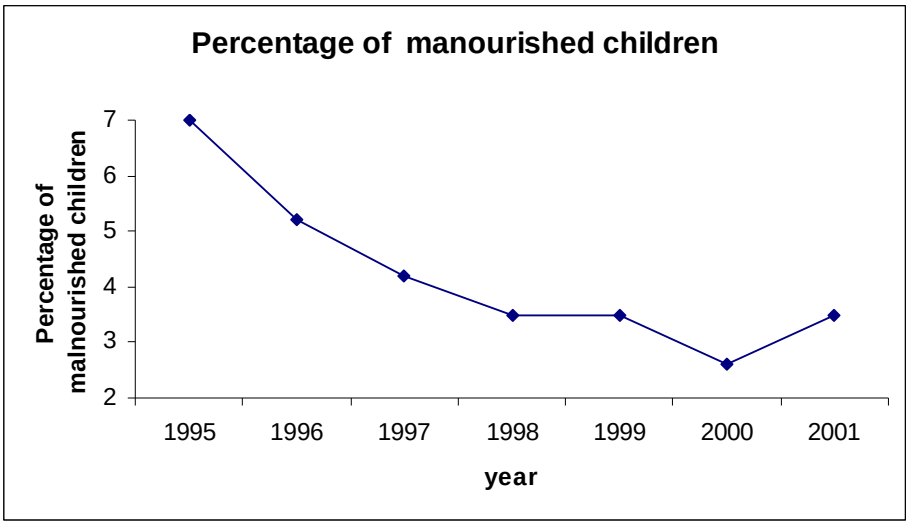
Zimbabwe made great strides in reducing child malnutrition especially compared to neighboring countries (figure 1.4.4). Malnutrition has a downward trend from 1995 to 2000 but rose in 2001 probably due to floods among other factors (figure 1.4.5).

Figure 1.4.4



Source World bank: *World Development Report 2001*

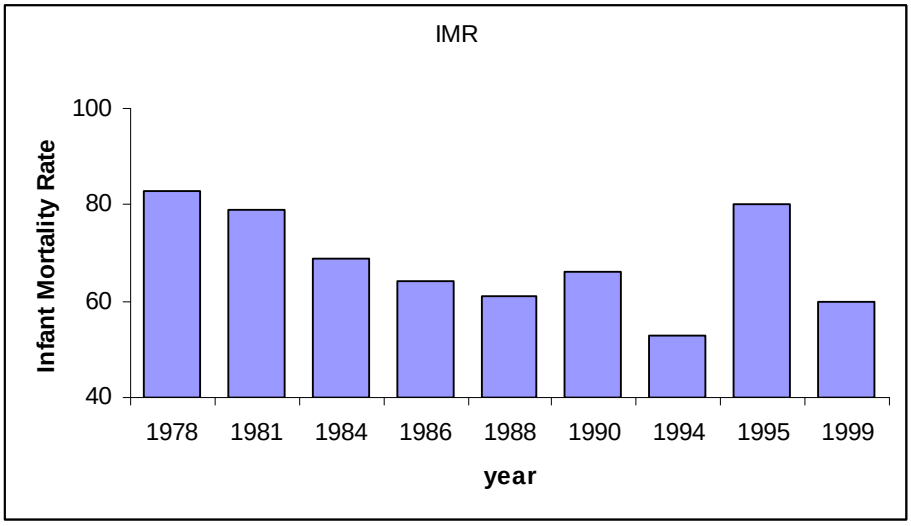
Figure 1.4.5 Trends in child malnutrition in Zimbabwe



Source: Ministry of health, The National Health profile 2002

Both the infant and child mortality rates (IMR and CMR) peaked during the 1970s and then steadily declined through the 1980s. IMR reached a lowest level in 1994 of 53 per 1000 live births and CMR fell to 65 (ZDHS 1999). From then on, both indicators ceased to decline and the ZDHS IMR for 1995 rose slightly to 54 (ZDHS, 1999).
The IMR for Zimbabwe compared well with other countries in the region.

Figure 1.4.5 trends in Infant Mortality Rate in Zimbabwe

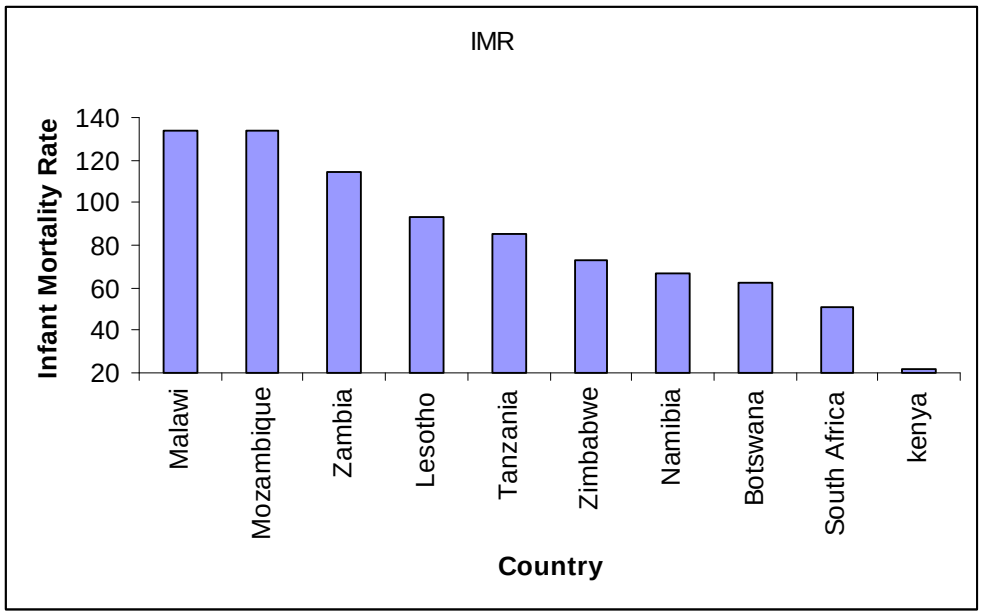


Source: Ministry of Health, The National Health Profile2002 and ZDHS 1999

The AIDS Epidemic
Zimbabwe faces challenges in areas of communicable infections, parasitic, respiratory, maternal and peri-natal conditions. The Human Immuno Virus (HIV) and Acquired Immuno Deficient Syndrome (AIDS).pandemics have taken a heavy toll on morbidity and mortality. To preserve the gains Zimbabwe has made to date will require an aggressive and far reaching campaign against the pandemics.

The prevalence of AIDS and related cases has shown an upward rend in the recent years. This trend has implications for the wellbeing of many households in that there is loss of breadwinners, increased dependency and increased health care expenses. The effects of HIV and AIDS will soon be felt on the economically productive population e.g by way of low productivity per worker and/or shrinking skills base. In addition to the direct medical costs of AIDS, huge indirect cost will disproportionately fall on women as they are the major caregivers to the ill and as care givers to the AIDS orphans.

Figure 3.4.6 Infant mortality rates for Zimbabwe and selected countries



Source World bank: *World Development Report 2001*

Implications on Health Outcomes

Although Zimbabwe's health infrastructure and health outcomes compare satisfactorily to other countries in the region, there is need to analyse the decline in public expenditure on health and the effect it has on the health status of the poor. Zimbabwe made striking advances in its health care system since independence, but there is reason for concern due to increasing pressure on the system in recent years. Recent increase in IMR and AIDS epidemic are two troubling trends in health outcomes.

Among other things poor harvests, low economic performance and shrinking government investment in the health sector have reduced public and household resources available for basic health care. There is also need to examine closely the accessibility and affordability of health facilities by the poor.

Water and Sanitation

Access to good – quality housing, clean drinking water and sanitation facilities affects the overall well being of households and particularly their health status. Poor quality housing and water and sanitation services not only indicate poor living conditions but

also help perpetuate the vicious cycle of poverty. Poor living conditions are associated with more frequent illness, malnutrition, and overall discomfort that lower earning potential among adults and adversely affect a child's ability to learn.

Table 3.2.2 Access to Sanitation Urban and Rural

Type of Toilet facility	Place of Residence (% households)		
	Rural	**Urban**	**All Zimbabwe**
Flush	3.78	96.12	35.72
Blair toilet	43.17	2.34	29.05
Pit latrine	9.22	1.44	6.53
None	43.5	0.05	28.47
Other	0.33	0.05	0.23
Total	100	100	100
Water facility			
Safe Water	72.05	99.82	81.65
Specific Water Sources			
Piped inside house	2.16	35.9	13.83
Piped outside house	3.08	56.97	21.72
Communal tap	16.32	5.84	12.69
Borehole	50.49	1.11	33.41
Unprotected well	17.99	0.09	11.8
River/Stream	9.7	0.03	6.35
Other	0.27	0.05	0.2
Total	100	100	100

Source: 2001 ICES.

Access to safe water is defined as either piped water inside household, or piped water outside household, communal tap, protected well, or borehole within 1km of the household.
Sanitation is clearly better in urban than in rural areas. Flush toilets are almost exclusively found in urban areas while more than 44 percent of households in rural areas have no toilet at all. Ninety-three percent of households in urban areas have access to piped water, while only five percent of rural households do. About 28 percent of rural households rely on water supplies that are unsafe, according to Ministry of Health conventions (table 3.2.2); virtually no urban households have unsafe water.

Households in communal areas are least likely to have good quality sanitation and water. Nearly 50 percent of households in CAs have no toilet and more than 34 percent receive their water from unprotected wells or a surface water supply (table3.2.3). In contrast, resettlement areas are bestowed with reasonably good water supplies and sanitation. Access to safe water in RAs is far better than the rural average, and about 62 percent of the houses there have a Blair toilet.

Table3.2.3 Access to Sanitation by Land Use Area, Rural Zimbabwe

Type of facility	Land Use(% households)			
	Communal	Small-Scale	Large-Scale	Resettlement

	Areas	Commercial Farms	Commercial Farms	Areas
Toilet facility				
Flush	1.09	5.56	13.91	0.82
Blair toilet	39.86	51.62	48.91	61.58
Pit latrine	8.53	15.74	11.94	3.61
None	50.2	27.08	24.73	33.99
Other	0.32	-	0.5	-
Total	100	100	100	100
water				
Safe water	65.51	63.89	94.59	81.93
Specific Water Sources				
Piped inside house	0.64	3.24	7.88	0.49
Piped outside house	1.78	8.56	7.25	1.31
Communal tap	1.72	13.66	73.55	0.49
Borehole	61.37	38.43	5.91	79.64
Unprotected well	21.76	34.72	3.39	9.85
River/Stream	12.52	1.16	1.42	8.21
Other	0.21	0.23	0.59	-
Total	100	100	100	100

Source: 2001 ICES,

Access to safe water is defined as either piped water inside household, or piped water outside household, communal tap, or borehole within 1 km of the household.

On average, households in LSCF areas have the best sanitation, about 63 percent have flush or Blair toilets, and about 12 percent have pit latrines. The majority of households in LSCF areas are served by piped water or communal taps.

Implications on Poverty Analysis

Issues of interest for poverty analysis include:
- An analysis of the frequency of illness and of the type of health facilities visited by the poor,
- Distance traveled by the poor for health services.
- Proportions of total consumption expenditure going to health care by the poor, and the share of transfers in these expenditures. This analysis will provide information about the impact of cost recovery measures on the poor and the degree to which poverty-oriented transfers lessen these impacts, and
- Analysis of the incidence of benefits of social expenditure on health

1.4.3 Education

One of the major determinants of a nation's well being is the educational status of its human resources. Efforts towards poverty eradication yield more benefit in a literate society as the society tends to appreciate the need for change in their life styles.

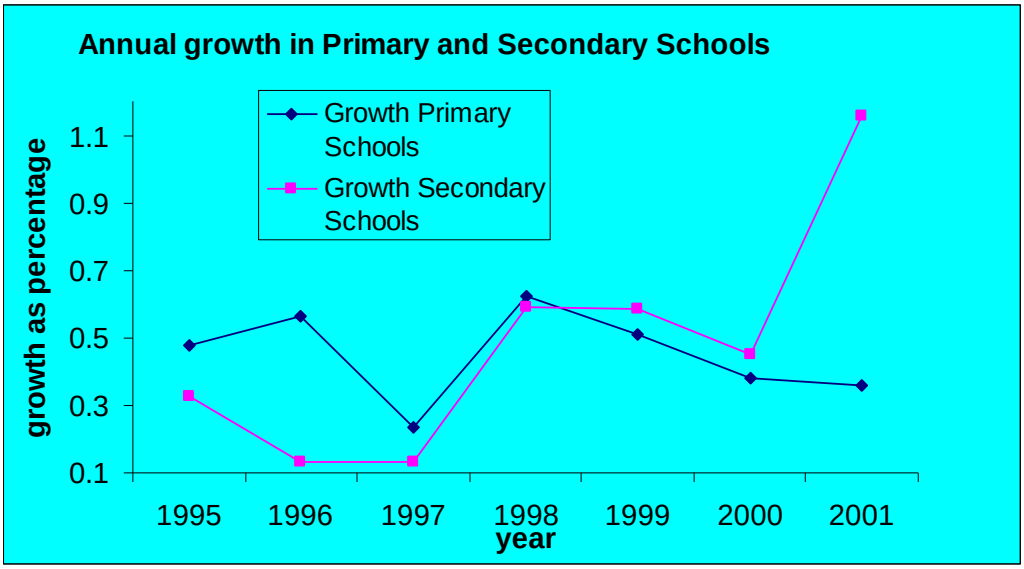
Inputs into Education

Zimbabwe's education sector grew rapidly after independence particularly in the early 1980s, and stabilised thereafter (figure 1.4.8). The rapid expansion was due to several factors

- The need to remove pre-independence imbalances;
- Increased accessibility to education as a result of government's free education policy and
- The need to clear the backlog caused by closure of schools during the war and bottlenecks that existed and limited progression from one level to the other.

The rapid expansion of primary school infrastructure and enrolment led to an even higher growth rate of secondary and tertiary education. The expansion in tertiary education infrastructure was mainly a consequence of Government's endeavours to cope with the increasing demand for qualified teachers and other trained personnel at all levels of the education system and other sectors.

Figure 1.4.8 Annual Growth in numbers of Primary and secondary Schools



Source: Zimbabwe Basic Facts on Education, Ministry of Education, Sport and Culture (MOSEC) and CSO, Education report 2001

National government expenditure on education increased from 1994 to 1997 and steadily declined in real terms there after (figure 1.4.10). This trend in public expenditure corresponds with the school enrolments which continued on an upward trend (fig 1.4.11).

Box 3: Education- the key to Zimbabwe's Human Development Strategy
Zimbabwe considered human resources development as a central component of its development strategy. Considerable resources have been allocated to this sector since independence, and its achievements in education put it at, or, near the top in rankings of African nations for most indicators.

The strategy of human resources development through investment in education was realised through the key fiscal and policy measures.

Fiscal Measures

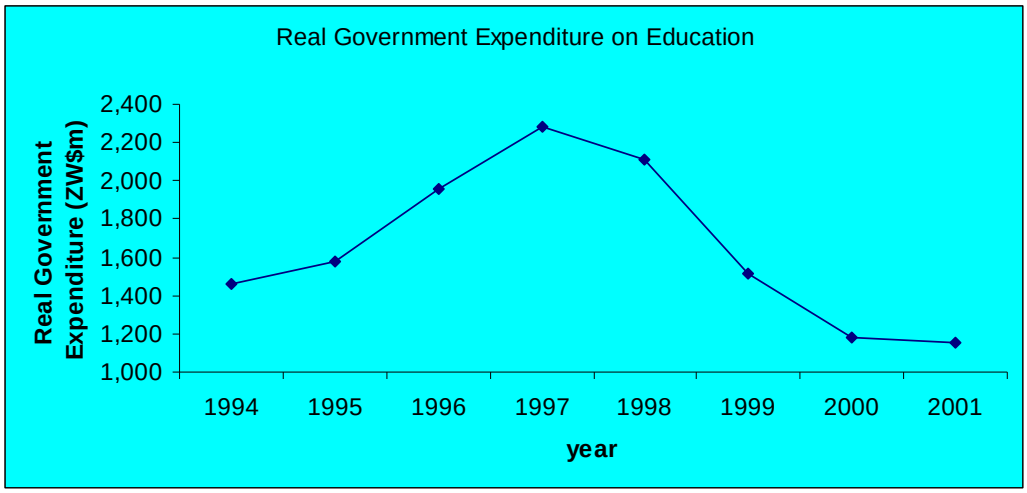
- Since independence education was among the top three priority sectors (which include defense and health) in government budget allocations.
- In the face of a shrinking revenue base, the largest component of the education budget was going towards teachers' salaries and this component has been increasing over the years. Government took over the responsibility to pay teachers' salaries from all school authorities so that they could divert their resources towards infrastructure development and quality service provision.

Policy measures

- Zimbabwe abolished primary school fees at independence, but reintroduced them in urban schools in 1992 as a fiscal measure.
- Education infrastructure development was decentralised and the burden to provide and maintain the infrastructure was shifted to rural district councils (RDCS) and school development associations (SDAS). The establishment of these new structures encouraged community participation in the construction and maintenance of schools.
- Despite the need to reduce the civil service, the teaching posts at all levels were exempted from the restructuring exercise. This has helped maintain constant primary school teacher pupil ratio of 1:39 and 1:28 for secondary schools over the economic reform period.
- It is government policy that all children of school going age be enrolled in school. Poor results at any intermediary examinable grade should not hinder the progression of the child to the next level. The previous policy that did not allow children with poor results at an intermediary level to proceed to the next level has been the key factor for high drop out rates in the past.
- The Government put in place social safety nets to assist vulnerable groups with the payment of school and examination fees in secondary and urban primary schools. Households with monthly incomes were below Z$400.00 qualified for assistance under these social safety nets.
- In order to protect children from dropping out of school due to financial constraints, it was also policy that no child should be sent away from due to failure to pay school costs. Instead, the school authorities should deal with the parent, not the child.
- The provision of university education, which used to be the domain of Government, was opened to other providers. The roll of the church is now increasing in this sub sector of education.

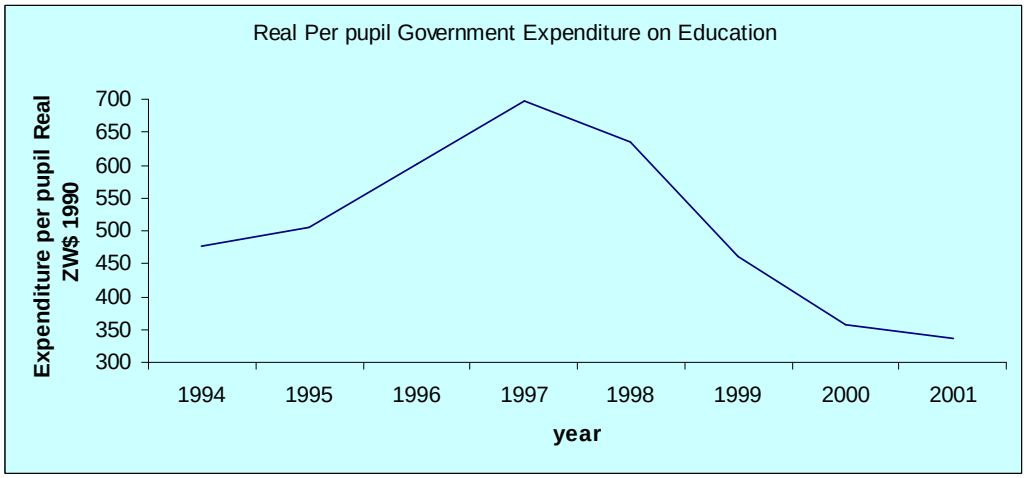
All these and other fiscal and policy measures have been pivotal for the continued increase in school enrolments and expansion of infrastructural base of the education system. There are also deliberate efforts to equity in the sector which was once characterized by racial and class barriers.

Figure1.4.9 Trends in Real Government Expenditure on Education



Source: Zimbabwe Basic Facts on Education, MOESC and UNICEF (1997)

Figure 1.4.10 Trends in Real Per Pupil Government Expenditure on Education



Source: Zimbabwe Basic Facts on Education, MOESC and UNICEF, 1997

Enrolment and Educational Outcomes

Despite the recent downward trend in Government expenditure on education, education infrastructure and school enrolments continued to grow without causing pressure on the system. Most of the funds allocated to the sector were being increasingly channelled towards salaries and expenses of teachers and administrators in the sector.

The channelling of more resources towards the recurrent needs of the sector in support of decentralisation of finance for capital educational infrastructure enabled the sector to continue growing. The trend of declining government expenditure on infrastructure could have resulted in the collapse of the education system if Government had not adopted the policy to decentralise the provision of infrastructure to the communities.

School enrolment status of children in various poverty categories is of significance for educational policy formulation as well as in the design of targeting mechanisms for measurement programmes and assistance. The two widely used indicators for measurement of differences in the enrolment status of children are gross and enrolment ratios. Gross and net primary school enrolment ratios (GER and NER)[5] remained high during these years, ie they remained far above the NERs, despite the continued cuts in public expenditure on education and cost recovery introduced in secondary and urban primary schools in the 1990s. Teacher-pupil ratios in both primary and secondary schools remained generally constant at about 39 and 27 pupils per teacher, respectively.

Implications

Education has undergone massive restructuring. The impact of this restructuring on the poor is, however, largely unknown. There is need, therefore, to

- Examine the impact of restructuring in education on the poor. The relationship between poverty and education needs to be examined in detail.
- Examine poverty groups by place of residence in terms of gross and net enrolment ratios, age-grade mismatch, proportion of household expenditure on education, etc
- Establish the average cost of schooling at various education levels and by poverty group in order to assist Government rationalise its assistance package to the poor.
- Carry out a benefit incidence analysis to establish the proportion of public expenditure reaching the poor.
- Examine the impact of decentralisation on access to schooling by the poor.

[5] **Gross Primary enrolment ratio**- is the proportion of all children in school to the number of children of school-going age group(ages 6-19 in Zimbabwe). A high primary school GER(GER>100) implies that either children overstay in primary school, or, they are enrolled late. This translates to high age-grade mismatch. A lower ratio implies that all children in primary school are of primary going age.

Net primary enrolment ratio is the proportion of children of primary school-going age in primary school to the total number of children of that age group in and out of primary school.

2 POVERTY PROFILE FOR ZIMBABWE 2001

2.1 Poverty Concepts and Measurement

Measures of Well-being and Welfare

Poverty studies attempt to assess or measure well-being and establish a level of measured well-being at which a person can be said to be poor, and make comparisons of well-being across subgroups of the population. Poverty is generally defined as the inability to attain a level of well-being constituting a realistic minimum as defined by society. Some studies utilise money-metric measures of well-being while others use non money-metric approaches. Among money-metric measures are income and consumption expenditures adequately deflated to reflect differences in needs across households.

Money-metric approaches allow quantification of the depth and severity of poverty and allow consistent comparisons to be made across subgroups of households. For example, specific information can be generated about the size of the transfer to the poor necessary to eliminate poverty (the poverty gap). Or, for specific groupings of households, measures of the size of the shortfall of welfare below the poverty line can be obtained. Money-metric approaches also can be used to quantify the degree of inequality among household groups.

Non money-metric means of examining poverty also exist. They include measures of access to social services, qualitative assessments, and participatory assessments. Non money-metric approaches can provide rich detail about the poor, the conditions they face, and some non-financial dimensions of poverty. They recognise that poverty is a social state that cannot often be defined in terms of dollars alone. Non money-metric measures do not allow the analyst to quantify the depth and severity of poverty. They also have limitations for tracking changes in poverty over time or making comparisons between population sub groups. For example, if there is information on access to services over time, without a precise means of identifying "poor" households or regions and quantifying their access to these services, changes in access over time or space will be difficult to interpret.

A combination of money and non-money metric approaches will be used in this report. The report's primary measure of well-being – consumption expenditures – will be used to quantify the prevalence, depth, and severity of poverty. In addition, comparisons will be made between poor and non-poor households in terms of household characteristics, asset ownership, access to social services, and other factors. The money-metric measure of welfare (consumption expenditures) provides the base upon which the analysis is built.

Measures of Welfare: Incomes, Wealth and Consumption Expenditures

To measure and compare poverty among subgroups, a means of ordering and quantifying household well-being is needed. There are several money-metric options for such measurement including household income, wealth, expenditures, and consumption. These operational measures are often selected for convenience (ease of

collection), or availability (in a given survey), but the critical issue is how closely the measure corresponds to the concept (well-being).

Most poverty analysts prefer current consumption expenditures to income or wealth as an indicator of well-being. Wealth and income form the basis over which an individual or household commands resources. These resources are transformed, either through market transactions, or household production, into commodities that are consumed. This consumption, then, determines well-being, so that the value of consumption is most closely aligned with the money-metric concept of well-being.

It is generally recognised that wealth and income are more difficult to measure than expenditures or consumption, especially in a developing country context. Wealth is difficult to measure because measurement requires valuation of assets including real property, household assets, and livestock; few surveys provide such details. Even if the survey covered all assets owned by the household, it would be difficult to value the assets without detailed information on their attributes. Markets for many assets are thin or non-existent; imperfect markets compound the problem of asset valuation.

Income, especially when large proportions are derived from the informal sector or through sporadic activities, can be difficult to measure. Recall problems, either due to the irregularity of earnings or strategic responses on the part of respondents, can increase the difficulty of measurement. Measurement of income from household enterprises requires careful distinction between net incomes and changes in the asset value of the enterprise. Few informal enterprises in a developing country possess the accounting skills necessary to determine net enterprise income.

Finally, income tends to fluctuate both seasonally and annually due to the vagaries of the production cycle. Seasonal and annual fluctuations in income are normal in rain-fed agriculture, and rain-fed agriculture dominates rural Zimbabwe. Typically, the poor can smooth consumption through savings, storage, insurance schemes, etc., so that consumption (and well-being) will fluctuate less than incomes. Ravallion (1994) concludes that: a) current consumption is almost certainly better than current income as an indicator of current standard of living; and, b) current consumption may also be a good indicator of long-term standard of living.

The choice of the best indicator may also depend on other constraints such as survey structure and timing, but there is little doubt that consumption expenditures are preferred when compared to other alternatives as a measure of welfare. In addition to consumption expenditures, data for poverty analysis should include information on household structure and demographics, and prices faced by different households. Asset ownership, sources of income, and access to social services can also help complement the poverty profile. The Income Consumption and Expenditure Survey (ICES), conducted by the Central Statistical Office, is a data set that contains much of the necessary information and is well suited for poverty analysis.

An Overview of the ICES 2001 Data

The Central Statistical Office (CSO) conducted the fourth ICES in 2001. Household data on socio-demographic characteristics, incomes, receipts, and consumption expenditures were collected on a weekly and monthly basis for certain items. Each

selected household was monitored for a complete month during which household consumption expenditures were recorded in a daily record book. Weekly visits to the households were used to transcribe the daily records and to check for recording consistency.

The objectives of the Survey were to provide data to enable:
estimation of private consumption and expenditure of the disposable income of the household sector for the National Accounts;
compilation of weights for the Consumer Price Index (CPI);
production account of the agriculture sector in communal lands; and,
measurement of inequality and poverty.

A nationally representative sample was drawn from the 2000 Revised Zimbabwe Master Sample. The population was stratified into land-use groupings, namely communal lands, large-scale commercial farming areas, small-scale commercial farming areas, resettlement areas, and urban and semi-urban areas. The survey enumerated 22 758 households in a total of 395 enumeration areas.

Although it was not designed specifically for measurement of poverty, the ICES is well suited for such measurement because it can be used to construct a good measure of household consumption. In addition to market purchases of goods, the survey collects rich detail on own-consumption, payments in kind, and gifts and transfers of all goods. Ownership of assets can be used to impute consumption flows from these assets, and information on housing values and characteristics can be used to construct an imputed flow of consumption from owner-occupied housing (see annexes A-C for details on use of the ICES for poverty analysis and on data processing). The ICES can be combined with CPS (Consumer Price Survey) data to create a poverty datum line used to distinguish poor and non-poor households (see annex D).

The Poverty Datum Line

A poverty line represents the cost of a given level of living which must be attained if a person is deemed not to be poor. The idea is not simply to produce a figure defining the poor at a particular point in time but instead, to enable consistent comparisons across subgroups of the society, such as by sectors, regions, or over time. This study uses two poverty lines: the Total Consumption Poverty Line (TPL) and the Food Poverty Line (FPL).

The FPL represents the minimum consumption expenditure necessary to ensure that each household member can (if all expenditure were devoted to food) consume a minimum food basket representing 2100 calories. Households or people (when consumption expenditures are measured on a per-capita basis) below the FPL are said to be very poor or extremely poor. The TPL includes an allowance for non-food minimum need requirements such as housing, clothing, transportation, health care, etc. The TPL naturally exceeds the FPL, and households or people whose consumption is less than the TPL are deemed poor. Each of these poverty lines varies by region and month as prices change. See annex D for details on how the poverty datum lines used in this study were constructed.

Poverty Measures

In order to make poverty comparisons across population subgroups or over time, data on individual or household consumption expenditures and the levels of such consumption relative to the poverty lines must be aggregated over people or households in the subgroups. The *prevalence* (or *incidence*) of poverty is one example of such an aggregation. The prevalence (also known as the *headcount index*) represents the total population (either people or households) whose consumption expenditures fall below the poverty line as a proportion of the total population. For example, the prevalence of poverty in a region is the number of people (or households) below the poverty line divided by the total population (individual or households) in the region. The prevalence of poverty is especially useful for targeting regions and subgroups; a basic principle of targeting is to target groups or regions whose poverty prevalence is highest[4].

The prevalence of poverty does not, however, provide complete information about the degree of poverty felt by different subgroups. For example, the prevalence does not inform about the *depth of poverty*, or the mean shortfall of the poor's consumption expenditures below the poverty line. The depth of poverty is interesting because it shows how much of a transfer would be necessary to alleviate poverty if the transfer were targeted perfectly. It is also interesting because the prevalence might be deceptive. One region (or subgroup) may have a high proportion of people whose consumption expenditures fall just below the poverty line. Another region might have a slightly lower proportion or prevalence of the poor, but the people's consumption might fall far below the poverty line. The prevalence would indicate that poverty is worse in the first region, while the second region clearly has a worse problem in that the depth or poverty gap in the second region is much greater. The depth of poverty is measured using the *poverty gap index*.

A third means of aggregating individual or household poverty takes into account the degree of inequality among the poor. The *poverty severity index* is useful because the depth measure ignores some of this inequality. Take, for example, a transfer of income from one very poor family to another family that was poor, but less poor, than the first. Most would agree that poverty has worsened because of the transfer. Yet the poverty depth (or poverty gap) measure would indicate no change in poverty. The mean gap of the poor's expenditures as a fraction of the poverty line is unchanged. The poverty severity index incorporates the premise that society should concern itself with the improvement of the poorest of the poor and is sensitive to distribution among the poor themselves.

Each of these measures (prevalence or headcount index, poverty gap index, and the poverty severity index) can be easily computed using data on household consumption

[4] The explanation for this principle follows. If membership in the subgroup or residence in the region is the only means of targeting the poverty reduction programme, then there will be a larger percentage transfer to the poor (and fewer leakages to the non poor) if the subgroup or region with the highest prevalence is targeted first. In some situations, it may be possible to target within subgroups or regions; in such cases, it may be interesting to know which subgroup or region contains the largest number or percentage of the poor.

expenditures. They belong to a class of poverty indices known as the Foster, Greer, Thorbecke (FGT) indices.

The following analysis will be conducted on a household basis. Since the ultimate interest of the policy maker is reduction of poverty among people, results will also be presented for people. When there are qualitative differences between the results (expressed on an individual or household basis), the differences will be noted.

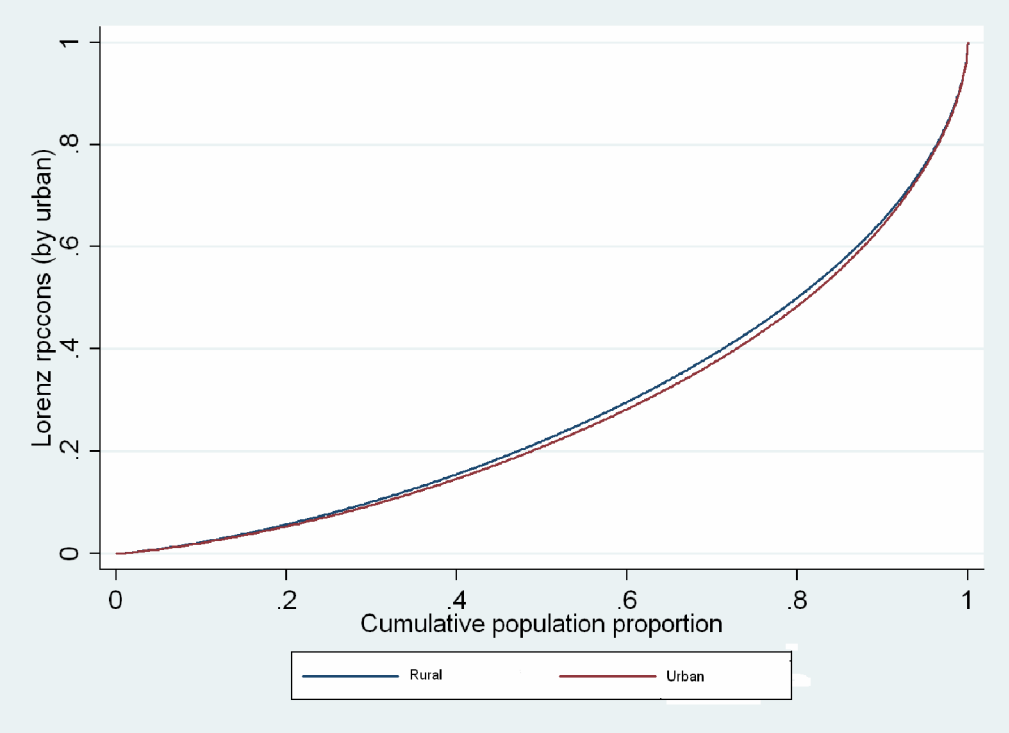
2.2 Levels of Well Being

Levels of well being, as measured by consumption expenditures per person, are very low and distributed unequally. The national mean consumption per person per month (based on the value of the dollar in January 2001) was Z$ 2251.74 and median consumption was Z$1311.26. Individual well being is skewed and highly unequal as indicated by the Lorenz curve in figure 2.1.1. The national Gini coefficient is .489[5], indicating substantial inequality in well being. The Gini coefficient is close to estimates for neighbouring countries, and it is within the range of countries considered to be highly unequal[6].

Part of this inequality is manifested in disparities between rural and urban areas; real levels of well being are far lower in rural compared to urban areas. The urban mean and median levels of monthly consumption per person are Z$ 3509.81 and Z$ 2214.54, respectively. In rural areas, they are Z$1667.50 and Z$1032.62[7]. Inequality varies by place of residence and is slightly higher (Gini is .452) in urban than in rural areas (.434). There is substantial inequality throughout Zimbabwe, but the fact that the countrywide Gini coefficient is so much higher than it is in rural and urban areas is an indication of the large gap in median consumption expenditures between rural and urban areas. These gaps in well being between urban and rural areas create incentives to migrate to urban areas and place pressure on public services in the latter.

[5] This Gini coefficient was constructed using real consumption per person as the welfare measure and using the ICES population weights to reach nationally representative estimates.
[6] Recent estimates of Gini coefficients are: .61 (South Africa); .62 (Malawi); .44 (Zambia); and .41 (Uganda). Sources are: Republic of South Africa, 1995; World Bank, 1995; Chen, et. al. The Republic of South Africa and Malawi Gini coefficients are computed over households (the Ginis reported above are over individuals). Thus, inequality in Zimbabwe is far worse than in Zambia or Uganda, and slightly lower than in South Africa and Malawi.
[7] These differences exist after adjusting for temporal and spatial differences in costs of living to the degree that it is possible using the CSO price series.

Figure 2.2.1 Lorenz Curve for Zimbabwe



Source: CSO, ICES 2001

Spatial patterns of individual and household poverty follow those of mean levels of consumption, and poverty is far worse in rural than in urban areas of Zimbabwe. While 60.6 percent of all Zimbabwean households have per capita consumption expenditures below the upper poverty line (the TPL), 73.0 and 33.8 percent, respectively, of rural and urban households are deemed poor. The majority of all households (about 67 percent) are located in rural areas, and the indices of poverty show that prevalence, depth, and severity of rural poverty are much worse than those of urban poverty. In fact, 76.2 percent of Zimbabwe's poor and 89.5 percent of the extremely poor households are found in rural areas.

About 10 percent of urban households are below the lower poverty line (FPL), indicating a low prevalence of extremely poor households in urban areas. About 15 percent of Zimbabwe's total poor households are found in the major cities, Harare and Bulawayo; so the vast majority of poor people and households are outside of major

urban centres. Extreme poverty is common in rural areas; about 42 percent of rural households do not have resources to meet minimum food needs (table 2.1.1).

Table 2.2.1 Poverty Indices by Place of Residence

	Prevalence (%) of		Poverty Indices	
Residence	**Poverty**	**Extreme Poverty**	**Poverty Gap Index**	**Poverty Severity Index**
Households				
Rural	73.0	42.3	36.1	21.6
Urban	33.8	10.5	11.7	5.5
All Zimbabwe	60.6	32.2	28.3	16.5
People				
Rural	82.4	52.4	43.4	27.0
Urban	42.3	14.5	15.5	7.6
All Zimbabwe	70.9	41.5	35.4	21.4

Source: 2001 ICES. Poverty refers to the prevalence of households or people in households whose consumption expenditures per capita are below the upper poverty line (the TPL). Extreme poverty represents a shortfall below the lower poverty line (FPL). The poverty gap and the severity indices are the Foster, Greer and Thorbecke α=1 and α=2 measures, respectively (see Ravallion, 1992 for details). These indices are computed using the upper poverty line.

Because poor households tend to have more members than non-poor households, the prevalence of poor *people* is in all areas higher than the prevalence of poor *households*. About 71 percent of all Zimbabweans are poor, and 42 percent are extremely poor. About 83 percent of Zimbabwe's poor and slightly more than 90 percent of its extremely poor people are found in rural areas.

2.3 Countrywide Picture of Poverty

Poverty among households varies significantly across and within provinces of Zimbabwe. The prevalence of household poverty ranges from a low of 29 percent in urban Harare, to more than 75 percent in Matabeleland North—which is primarily rural. According to all indices, Matabeleland North province has the highest poverty in Zimbabwe. Manicaland also has a relatively high prevalence of poverty and, because of its relative dense population, it is the rural province where the most poor households are found (table 2.3.1)[8].

[8] For the purposes of targeting poverty alleviation programmes, it is preferred to target based on a higher prevalence or incidence of poverty. The reason for this preference is that there will be fewer "leakages" to non-poor households in high-prevalence subgroups. However, some policymakers wish

There is a consistent picture of poverty in the provinces as provincial rankings by each of the indices (i.e., the prevalence, depth index and severity index) are relatively unchanged across the indices. For example, Matabeleland North is worse off according to each index (the incidence of extreme poverty and the depth and severity indices), followed by Manicaland, Masvingo and Mashonaland East. Thus, those provinces with a high prevalence of poverty are also those with the deepest and most severe poverty.

Table 2.3.1 Household Poverty Indices by Province

		Prevalence of (%)		Poverty Indices	
Province	**Percent Poor Households**	**Poverty**	**Extreme Poverty**	**Poverty Gap Index**	**Poverty Severity Index**
Manicaland	24.7	73.1	45.6	38.0	23.5
Mashonaland Central	8.6	63.9	25.6	25.3	12.8
Mashonaland East	10.7	67.3	37.9	32.0	18.5
Mashonaland West	10.9	62.0	28.3	26.3	14.2
Matabeleland North	6.3	75.4	51.1	41.8	27.6
Matabeleland South	5.8	66.9	38.5	32.9	19.4
Midlands	11.1	58.0	29.8	26.8	15.4
Masvingo	12.6	71.5	41.0	35.3	21.3
Bulawayo	2.9	33.9	10.5	20.1	11.6
Harare	6.5	29.3	8.5	9.9	4.7
Total	**100**				

Source: 2001 ICES. The poverty gap and the severity indices are the Foster, Greer and Thorbecke α=1 and α=2 measures, respectively (see Ravallion, 1992 for details). These indices are computed using the upper poverty line (the TPL). Prevalence of poverty refers to the percentage of households whose consumption expenditures per capita fall below the upper poverty line (the TPL). Extreme poverty refers to households below the lower line (the FPL).

Outside of Harare and Bulawayo, the lowest incidences of household poverty are found in Midlands. The existence of low levels of poverty in Midlands is partly explained by the province's relatively high proportion of urban households. When the rural population alone is examined, the prevalence of poverty in Midlands rises above rural areas of Mashonaland East, West, and Manicaland (rural poverty is examined in more detail in the following chapter). Patterns of people in poverty by province follow those of household poverty (see annex table 1).

to know the subgroups containing the largest percentages or numbers or poor, and for this purpose we report the distribution of poor by province.

The geographic pattern of poverty is partly explained by the degree of rurality, land quality in rural areas, and proximity to major urban centres. As seen above, poverty is far worse in rural areas, and the overall level of poverty is positively related, holding other factors equal, to the proportion of the provincial population that lives in rural areas. Thus, Midlands and Mashonaland West, two of the most urbanized provinces, have relatively lower levels of poverty.

The major cities have lower prevalence of poverty than the other provinces, which are predominantly rural, and the patterns of poverty across the large cities are similar. Bulawayo is worse off than Harare according to all the indices. Harare has a large percentage of households whose monthly consumption falls between the two poverty lines (the TPL and the FPL), since the measured prevalence of poverty drops dramatically when the lower line is used in place of the upper line. This drop indicates a bunching of household consumption expenditures between the two poverty lines, and the potential to change each measure of poverty fairly dramatically in case of a change (upward or downward in well-being).

These findings illustrate the importance of clarifying one's objectives when measuring poverty or when deciding upon a poverty reduction policy. The different dimensions of poverty (depth, severity, and prevalence) differ in urban areas, and it becomes difficult to determine where poverty is "worse" unless one clarifies which dimensions of poverty are important. If distributionally neutral increase in income occurs, then the measured prevalence of poverty among households in Harare is likely to drop quickly. A large number of households whose consumption expenditures are right below the TPL will be lifted out of poverty. If transfers and safety nets are targeted to the poorest of the poor in Harare, then these programmes are not likely to significantly lower the prevalence of poverty in Harare. The use of all indicators together leads to an equal emphasis on the two cities, as poverty levels are roughly equal in them.

2.4 Characteristics of Poor Households

Poor households in Zimbabwe are characterised by high dependency ratios, more household members, and, on average, older heads of households than non-poor

households (table 2.4.1). Poor households have about 16 percent more dependents per worker compared to households that are not classified as poor. Urban households have much lower dependency ratios than those in rural areas. Rural poor households have about 9 percent more dependants per household member than the urban poor. For all Zimbabwean households, the mean size is 4.4, yet for non-poor households, the mean size is only 3.3 members. Poor households have a mean size of 4.6, while extremely poor households average 5.7 members.

Table 2.4.1 Dependency Ratios and Age of Household Head, by Poverty Status

Poverty Status	Dependency Ratio	Mean Household Size	Mean Age of Household Head
National			
Non Poor	0.287	3.3	40.1
Poor	0.465	4.6	44.0
Extremely Poor	0.553	5.7	47.7
Rural			
Non Poor	0.308	3.1	42.0
Poor	0.488	4.5	45.6
Extremely Poor	0.566	5.7	48.3
Urban			
Non Poor	0.269	3.5	38.5
Poor	0.400	4.7	39.6
Extremely Poor	0.438	5.6	42.8

Source: 2001 ICES. Poor households are those below the upper poverty line (the TPL), and poorest have consumption expenditures below the lower poverty line (the FPL). Dependency ratios here are the mean dependency ratio (number of dependants divided by the total number of household members) for households in the particular poverty group.

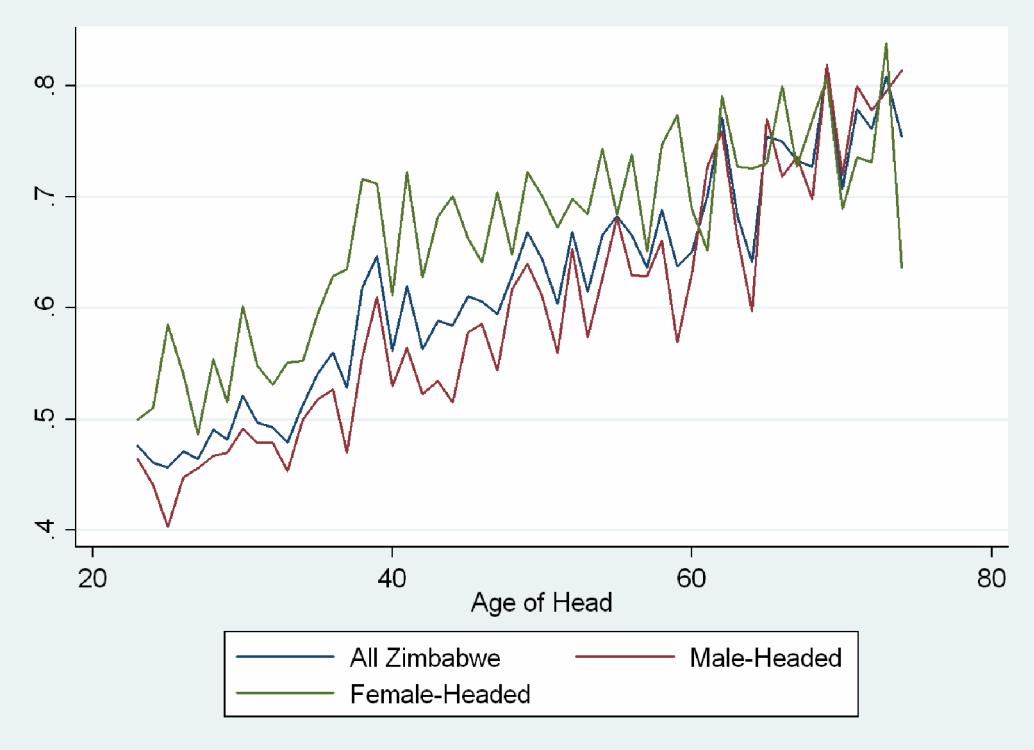
Household structure is closely associated with poverty, particularly in rural areas. Rural poor households have more members, on average, than the urban poor, while urban non poor have larger household sizes than their rural counterparts. There is also a dramatic difference in ages of household heads across urban and rural areas. On average, poor households (in all areas) have older heads of household than non poor households, and extremely poor households tend to be headed by even older people. This disparity in age of the head by household poverty status is further symptomatic of a dependency problem. Older household heads are associated with higher poverty and higher dependency.

The relationship between age of the household head and the likelihood that the household is poor is not constant over the age of the household head (figure 2.4.1). The likelihood of being poor is high for households with a head who is very young,

falls slightly for households that are headed by someone in their late 20s and early 30s, and then grows rapidly until the head's age is about 50 years. At that point, the prevalence of poverty stabilises at very high levels. Households headed by younger people are less likely to be poor than those headed by elderly people.

The relationship between poverty status and age of the household head follows a consistent pattern regardless of the sex of the household head; rural and urban households (not shown) have a similar age/poverty pattern, with the rural prevalence being greater than the urban prevalence for all ages of the household head.

Figure 2.4.1 Profile of Head's Age and Household Poverty Status



Source: 2001 ICES. Prevalence refers to the percentage of households whose consumption expenditures fall below the upper poverty line (the FPL).

Sex of Household Head

Sex of the household head is important since it influences the ability of the household to source income. For example, wage income can be more accessible to men than it is to women, especially in rural areas. Headship also influences access to assets such as land that have a direct bearing on the poverty status of a household. Male-headed households constitute about 65 percent of all households in Zimbabwe. Of the 35

percent of female-headed households, 28 percent are female *de-jure* heads, i.e. women who are single, widowed or divorced, and 72 percent are female *de-facto*. De-facto female headship means that the woman is head of the household because her husband is absent. This distinction has implications for poverty: households that are headed de-facto by female may be better off than de-jure female head because they might receive remittances from absent spouses while the female de-jure heads have to stand on their own.

Male-headed households are generally better off than female-headed households, with lower indices of poverty, but there are startling differences among different types of female-headed households. Although male-headed households have a lower overall prevalence of poverty and extreme poverty than female-headed households, the depth and severity indices show only small differences depending on whether the head is male or female (table 2.4.2).

Table 2.4.2 Household Poverty by Household Headship

	Prevalence (%) of		Poverty Indices	
Headship	**Poverty**	**Extreme Poverty**	**Depth Index**	**Severity Index**
Male-headed	57.5	29.1	26.2	15.1
Female-headed	66.5	38.0	32.4	19.3
Defacto	69.6	38.9	33.2	19.4
Divorced	50.5	28.9	24.5	14.4
Widowed	72.4	42.6	36.2	21.9
Never Married	34.4	15.7	15.0	8.6

Source: 2001 ICES. The poverty gap and the severity indices are the Foster, Greer and Thorbecke $\alpha=1$ and $\alpha=2$ measures, respectively. These indices were computed using the upper poverty line.

Poverty also varies by female head type and is in some cases lower for the female-headed subgroup than for male-headed households. For example, the prevalence of poverty and extreme poverty are higher for male-headed households than they are for divorced female-headed households. The depth and severity indices are also slightly lower for the divorced female-headed households compared to male-headed households. The never married group of female-headed households experience far lower poverty indices than our other groups, and these households represent about 5.8 percent of the total sample.

Adding to the relatively high depth and severity of poverty among male-headed households, note that a much higher percentage of poor households are male-headed rather than female-headed[9]. These points illustrate the danger of targeting poverty-reduction programs by headship alone. Clearly, female-headed households are worse off on average, but there is substantial poverty among male-headed households and heterogeneity of poverty among female-headed households.

De-facto female-headed households have the second highest prevalence of poverty and extreme poverty among female-headed households (after widowed female-headed households). The depth and severity indices also show these households to be very worse off. This is consistent with earlier findings from Zimbabwe, but is in contrast to findings from other countries showing that de-facto female-headed households tend to be better off than de-jure female-headed households[10]. The breakdown of de-jure headship into its component parts begins to reveal some details.

Large differences are found in the prevalence, depth, and severity of poverty among de-jure female-headed households, depending on the type of female headship. Female widows are clearly worst off, while divorced and never-married female household heads tend to be far less poverty prone. The depth and severity indices for divorced female heads show, however, that, although poverty prevalence is relatively low for divorced female household heads, the depth and severity is nonetheless often high. There is substantial heterogeneity among female-headed households, and targeting any programme based on household headship alone will be imperfect.

Probably the biggest factor determining the high rate of poverty among de-facto female-headed households is their overwhelming tendency to be found in rural areas. About 87 percent of de-facto female-headed households are in rural areas, while about 72 percent of the de-jure female-headed households are rural. Because rural poverty is so widespread, the group of households with much higher likelihood of being found in rural areas is also the group most likely to be poor. These households are

[9] Since 65 percent of households are male-headed, 57.5 percent of male-headed households are poor, and 60.6 percent of all households are poor, about 62 percent (=67*57.5/60.6) of all poor households are male-headed. Thirty-eight percent of the poor households are thus female-headed.

constrained by far fewer earning opportunities than households in urban areas. Headship affects the potential to source earnings, but does not overcome differences due to geography.

Employment and Income Sources

Access to employment for the household head is closely associated with household poverty status. In rural and urban areas, households headed by someone working on own-account or by a retired person are most likely to suffer from poverty and extreme poverty. Casual and temporary employees, similarly suffer from high rates of poverty. Households headed by a permanent paid employee or by a person who employs others have the lowest likelihood of being poor. Clearly, households of communal and resettlement own-account farm workers suffer from the greatest poverty (table 2.4.3).

Table 2.4.3 Prevalence of Household Poverty by Main Activity of Household Head

	Place of Residency		
Main Activity	**Rural**	**Urban**	**All Zimbabwe**
Permanent paid employee	48.1	26.3	36.4
Casual/temporary employee	59.1	38.9	49.4
Employer	33.9**	18.8	24.2
Communal/resettlement own-account worker	82.7	33.5	82.6
Other own-account worker	67.1	44.6	51.1
Retired	65.7	39.8	47.2
Other	70.1	43.1	51.6

Source: 2001 ICES. Prevalence refers to the percentage of households whose consumption expenditures per capita fall below the upper poverty line. **Small number of cells for employers in rural areas make the prevalence difficult to interpret.

Households headed by government workers are least likely to be poor or very poor in both urban and rural areas (table 2.4.4). The impact of government employment on poverty status is relatively equal across rural and urban areas, and extreme poverty is very unlikely (less than 5 percent prevalence) among households headed by a government worker in urban areas. Parastatal workers have similar patterns of poverty as own-account other workers. Rural households headed by a either a parastatal or other own-account worker are much more likely to be poor than urban

[10] See, for example, World Bank, 1995.

households. The difference between the effect on poverty of parastatal and government work between rural and urban areas might be attributed to remuneration packages. Government workers tend to be paid equally in urban or rural areas. Parastatal workers are more likely to be well compensated if they live and work in urban centres, but are still much more likely to be poor than government workers.

Households headed by someone who is employed in the private formal sector are more likely to be poor than households headed by a government worker, but less likely than one headed by a parastatal worker. There is substantial heterogeneity in poverty among households headed by parastatal workers (leading to high poverty severity indices for these households). In both urban and rural areas, households headed by formal sector employees have lower indices of poverty than informal sector households. Urban informal households are, however slightly less likely to be poor and extremely poor than urban households headed by parastatal workers; the urban informal sector appears to be generating reasonable earnings opportunities.

Table 2.4.4 Prevalence of Household Poverty by Sector of Employment of the Household Head

	Rural		Urban	
Employment Type	**Poor**	**Extremely Poor**	**Poor**	**Extremely Poor**
Own-account communal or resettlement farmer	82.7	51.7	N/A	N/A
Government worker	21.0	6.0	17.9	4.0
Parastatal worker	63.8	33.8	39.1	12.0
Private Sector				
Formal Sector	56.3	22.5	32.0	8.4
Informal Sector	68.7	35.0	36.5	11.6

Source: 2001 ICES. Government workers include Central and Local government Workers; parastatals include cooperative employees; formal sector includes registered establishments; informal sector includes unregistered establishments.

The impact on poverty of household access to employment in a "formal" sector (government, parastatal, or private formal sector) is strong. If any member of the household (not just the head) is employed in one of the formal sectors, the household prevalence of poverty is 42 percent for all Zimbabwe; and 54 and 30 percent, respectively, for rural and urban areas (table 2.4.5). For households without access to formal employment, the prevalence of poverty is 81 percent and 40 percent for rural

and urban areas, respectively. All the indices of household poverty are much lower for households with at least one member having formal sector employment. To the extent that economic reforms introduced during the 1990s reduced employment in government and among parastatals, it is likely to have increased poverty; however, employment in the private formal sector has increased through the 1990s, which has helped moderate these increases.

Table 2.4.5 Household Poverty Indices by Household Member's Employment

	Prevalence (%) of		Poverty Indices	
Employment Status	**Poverty**	**Extreme Poverty**	**Poverty Depth Index**	**Poverty Severity Index**
At Least One Household Member with Formal Employment				
Rural Areas	54.1	24.3	23.2	12.7
Urban Areas	30.4	8.2	9.9	4.4
All Zimbabwe	42.2	16.2	16.5	8.6
No Member with Formal Employment				
Rural Areas	80.8	49.6	41.4	25.3
Urban Areas	39.6	14.3	14.8	7.3
All Zimbabwe	72.7	42.7	36.1	21.7

Source: 2001 ICES. The poverty gap and the severity indices are the Foster, Greer and Thorbecke α=1 and α=2 measures, respectively. These indices were computed using the Upper poverty line. Formal sector means that household has at least one member with Government, parastatal, or formal sector employment.

Consistent with the above findings, households whose head receives his/her main source of earnings from salaries and wages are least likely to be poor in Zimbabwe. The prevalence of poverty among such households is less than 38 percent, and the prevalence of extreme poverty is lower than 13 percent. As expected, households that earn most of their money from communal/resettlement farming are the poorest, and have the deepest and most severe poverty (table 2.4.6). People in households that rely on gifts and transfers are also likely to be poor and extremely poor, while owners of businesses are a mixed bag. About ½ of this latter group is poor, and less than 20 percent are extremely poor. The evidence at this point is that own employment outside of agriculture, whether in the formal or informal sector, is associated with lower levels of poverty.

Table 2.4.6 Household Poverty Indices by Household Head's Main Source of Income

Main Source of Income	Prevalance (%) of		Poverty Indices	
	Poverty	Extreme Poverty	Poverty Depth Index	Poverty Severity Index
Salary and Wages	38.0	13.0	14.0	6.9
Gifts and Transfers	79.0	43.0	38.0	22.2
Own Business	47.3	19.1	18.4	9.5
Communal/Resettlement Farming	82.5	51.8	42.9	26.4
Other/NA	54.2	26.0	23.9	13.3

Source: 2001 ICES. The poverty gap and the severity indices are the Foster, Greer and Thorbecke α=1 and α=2 measures, respectively. These indices were computed using the upper poverty line.

In rural areas, the only group of households with a relatively low prevalence of poverty is those headed by a person whose main source of income is salaries and wages (table 2.4.7). The prevalence of poverty for this group is about 17 percentage points below the next best source of earnings, and the prevalence of extreme poverty is about ½ of the next best group (own business). Households headed by salary and wage workers also do much better in urban areas than the other groups (gift and transfer-dependent households make up too small a group to make comparisons possible). Although there is a large number of households in rural and urban areas that are headed by businesspeople, these households, on average, do worse than employee-headed households. These results reflect the narrow base of private enterprise in Zimbabwe. Some small business owners do well, but the majority of businesses do not provide even a minimum livelihood for a family.

Table 2.4.7 Household Poverty Prevalences by Main Source of Income by Residence

	Rural		Urban	
	Prevalance (%) of			
Main Source of Income	Poverty	Extreme Poverty	Poverty	Extreme Poverty
Salary and Wages	49.2	19.0	27.8	7.5
Gifts and Transfers	80.3	43.8	29.3**	12.2
Own Business	66.4	44.3	43.0	13.4
Communal/Resettlement Farming	82.5	51.8	38.9**	0.01
Other/NA	86.7	61.4	47.0	17.6

Source: 2001 ICES. Poor refers to households whose per-capita consumption expenditures are below the upper poverty line (the TPL). Very poor households are below the lower line (the FPL).** means too few observations in the cell to make comparisons useful.

Access to a salaried/wage position by any member of the household has a strong effect on prospects for the household. The prevalence of household poverty is about

40 percent for households where at least one member has access to such a positions, while it is 75 percent for households with no such worker (table 2.4.8). In both rural and urban Zimbabwe, there are strong poverty-reducing impacts of access to a regular-paying job. Results relative to sources of income hint that there are strong forces for greater inequality in the country as household that can source regular and formal employment will do much better than others. In particular, rates of extreme poverty are far lower for those households with at least one member who has access to salary/wage employment. In addition, the evidence hints of strong returns to education, especially if education is rewarded through access to formal sector employment opportunities.

Table 2.4.8 Prevalence of Household Poverty and Extreme Poverty by Whether any Household Member Avails of Salaries and Wages

	Salaried/wage Worker		**No Salaried/wage Worker**	
	Poverty	**Extreme Poverty**	**Poverty**	**Extreme Poverty**
All Zimbabwe	40.3	14.4	75.3	45.0
Rural	52.1	21.0	82.0	51.3
Urban	29.3	8.1	43.5	15.4

Source: 2001 ICES. Cells contain prevalence of household poverty depending on whether any member of the household has salaries or wages as a main source of income.

Food Security

Food shares of total consumption expenditures are naturally higher for the poor than they are for the non poor. In rural areas, these consumption differences are less dramatic than in urban areas; the poor in rural areas only devote about 6 percent more of their budget to food than do non-poor households. Maize shares of food consumption are higher for the poor, but only small differences are found in the maize proportion of the consumption basket in both rural and urban areas.

Own-production of maize and reliance on non-market purchased foods is markedly higher for the poor compared to the non poor. About 36 percent of maize consumption by the rural poor comes from own-production, and more than 47 percent of their total food budget comes from non- market sources. This high percentage reflects a number of factors. First, the poor in rural areas might be less sensitive to

changes in market prices, because much of the food they eat comes from non-market sources, particularly own consumption. Even non-poor households in rural areas receive more than 30 percent of their total food expenditures from non-market sources. Second, it is important to examine the income side of the equation and determine the net sales position of the rural poor. If they sell large quantities of maize and other products, increases in maize prices may benefit them over time. This position is examined to the degree possible in the chapter on rural poverty and agriculture.

Table 2.4.9 Food Shares and Own-Production by Poverty Status

	All Zimbabwe		Rural		Urban	
	Poor	**Non-poor**	**Poor**	**Non-poor**	**Poor**	**Non-poor**
Food shares	.604	.428	.639	.505	.440	.360
Maize Shares	.094	.080	.089	.073	.118	.087
Own-production/maize	.268	.086	.364	.210	.029	.018
Non-market food	.395	.163	.471	.301	.044	.042

Source: 2001 ICES.
Food shares are total (market and non-market) value of food consumption divided by total consumption; **maize shares** are the share of maize consumption in total food consumption**; own-production** is the share of maize consumption coming from own production; and **non-market food** is the share of own-production, gifts and transfers, and payments in kind in the total value of food consumption.

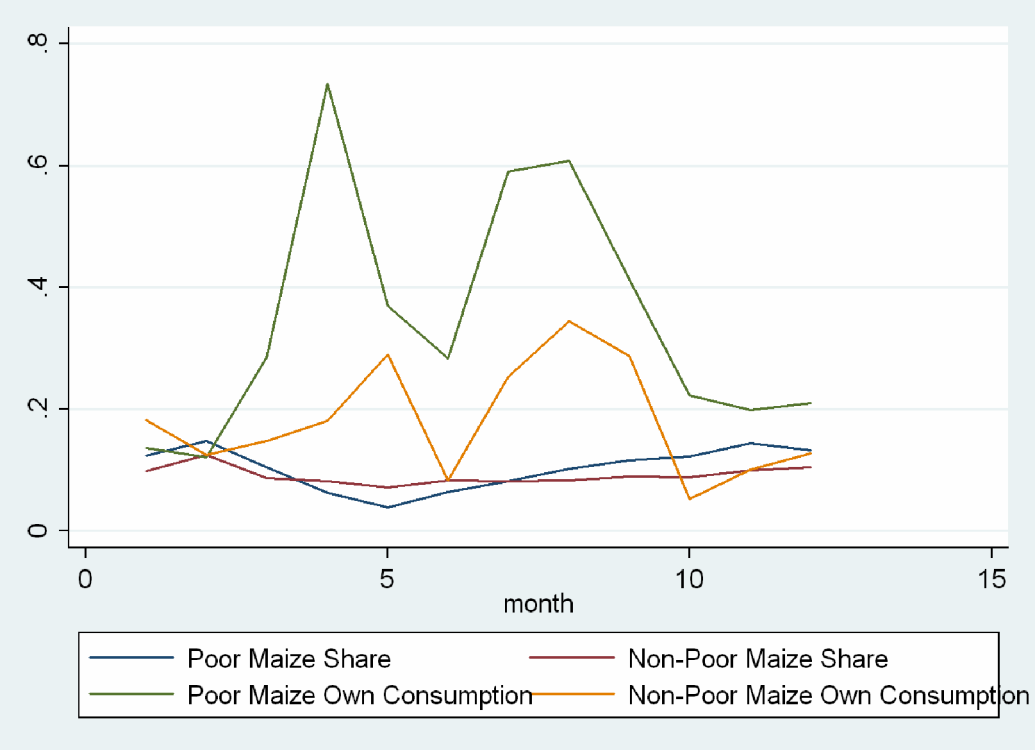
Third, subsidies for consumption of basic food that were utilised through the early 1990s did not benefit rural areas as much as they benefited urban consumers. Rural households, and especially the rural poor purchase much smaller quantities of maize and other basic foodstuffs than do urban consumers, and the subsidies thus transferred much more income to the latter group.

The maize shares of the poor and the shares of own-maize consumption in total maize consumption varies seasonally, as shown in figure 2.4.2. Differences between poor and non poor rural households in the seasonal profile are not that great, but the poor seem to begin consumption of their harvest at an earlier date than do the non-poor. This early consumption of own-produce might be due to desperation on the part of the poor; they cannot afford to wait for a mature harvest. On the other hand, it might just

reflect earlier results showing that rural poverty tends to be found in the drier regions of the country where the harvest season begins earlier than in the high-rainfall zones.

The rural poor are clearly more vulnerable to maize price increases during the earlier months of the year (January through May), when their own food stocks are depleted and they rely on markets for purchase of food.

Figure 2.4.2 Rural Food Shares by Month



Source: 2001 ICES. The month of the interview is provided along the horizontal axis.

Asset Ownership and Poverty

Ownership of certain assets is widespread in Zimbabwe, and patterns of ownership follow expectations, as non-poor households are more likely to own key assets than are the poor and very poor. About 54 percent of all Zimbabwean households report owning a radio, 26 percent own a stove and slightly more than 21 percent own bicycles and televisions. About 67 percent of non-poor households own radios, while only 54 percent of the extreme poor do so, yet the radio is the most commonly owned

asset of the extreme poor, with about 39 percent of extremely poor households reporting radio ownership (table 2.4.10).

Bicycle ownership is not closely associated with poverty status, although non-poor households are slightly more likely to own bicycles than are the poor and very poor. About 22 percent of non-poor households report owning a bicycle, compared to 23 and 18 percent, respectively, of the poor and extremely poor. Radio ownership follows a similar pattern, with relatively higher percentages of poor and extremely poor households reporting owning a radio compared to the other assets examined.

Table 2.4.10 Percentage Households Owning Selected Assets, by Poverty Status

	Poverty Status of the Household			
Percent owning	**Non poor**	**Poor**	**Extremely Poor**	**All Zimbabwe**
Radio	67.0	53.8	38.7	54.1
Television	39.2	18.1	6.1	22.5
Refrigerator	24.6	6.1	1.4	11.9
Stove	48.1	20.1	5.4	26.4
Heater	13.7	3.5	1.1	6.8
Bicycle	22.4	23.1	18.3	21.3
Automobile	10.4	0.4	0.0	4.2

Source: 2001 ICES. Poor households have consumption expenditures below the upper poverty line (TPL), while the extremely poor are below the lower poverty line (FPL).

Television, refrigerator, stove, heater and automobile ownership is closely correlated with poverty status. Only about 1 percent of very poor households report owning either a refrigerator or a heater, while none of the extremely poor own automobiles. Non-poor households are three times as likely as poor households to own televisions and stoves, five times as likely to own refrigerators and heaters, and more than ten times as likely to own an automobile.

Asset ownership more clearly distinguishes poor and non-poor households in rural areas compared to urban areas (table 2.4.11). Much of the ownership patterns noted above are related to the much higher prevalence of poverty in rural areas, and the fact that rural electrification is limited in Zimbabwe. Far smaller percentages of rural households own assets such as televisions, refrigerators, etc., and the rural poor have virtually none of these assets. The rural non-poor are ten times as likely as the poor to

own a refrigerator, eight times as likely to own a stove, and about thirty times as likely to own an automobile. Very few moderately poor households in any location, in fact, own automobiles.

In urban areas, ownership of refrigerators and automobiles most clearly distinguishes poor from non-poor households. Nearly 14 percent of urban non-poor households own automobiles, and close to 40 percent own refrigerators. Virtually no urban poor families own automobiles, while only 21 percent of the moderately poor own refrigerators. Large percentages of urban poor households own televisions, stoves, and radios, but ownership of all these assets is more likely for non-poor households. Roughly equal percentages of poor and non-poor households own bicycles in both rural and urban areas.

Table 2.4.11 Percentage Household Ownership of Assets by Poverty Status, Urban and Rural Areas

Asset	Rural		Urban	
	Moderate Poor	**Non Poor**	**Moderate Poor**	**Non poor**
Radio	49.7	56.4	65.3	76.3
Television	8.3	18.5	45.9	57.4
Refrigerator	0.9	8.8	20.7	38.5
Stove	1.6	10.4	72.6	81.2
Heater	0.3	3.8	12.3	22.4
Bicycle	24.6	24.2	18.8	20.9
Automobile	0.2	6.4	0.1	13.8

Source: 2001 ICES. Poor households have per-capita consumption expenditures that are below the upper poverty line (the TPL). Very poor households are below the lower line.

There are major differences in use of energy by poor and non-poor households in Zimbabwe; these differences are partly due to the higher prevalence of poverty in rural compared to urban areas. Nationally, about 59 percent of the non-poor households have access to electricity, while only 20 percent of the poor do. However, in urban areas, the difference between poor and non-poor households is much smaller. More than 82 percent of urban poor households claim access to electricity. In contrast, in rural areas, 23 percent of non-poor and only 7 percent of the poor have access to electricity. In rural areas, virtually all the poor use fire wood to cook (99.2 percent), while about 86 percent of the non poor use fire wood. Use of fire wood to cook by the poor is extensive throughout Zimbabwe; nationally more than 86 percent

of the poor cook with wood fuels. Such use for cooking places pressure on natural resource bases, particularly in peri-urban areas surrounding major cities.

Table 2.4.12 Percenage Access by Households to Energy Sources by Poverty Status, Rural and Urban Zimbabwe

Energy Sources	Rural Areas		Urban Areas		All Zimbabwe	
	Poor	Non Poor	Poor	Non Poor	Poor	Non Poor
Access to Electricity	7.0	22.8	82.2	91.6	20.3	59.4
Cooking Fuel						
Electricity or Gas	0.6	10.2	65.8	82.1	12.1	48.5
Paraffin	0.2	3.3	8.1	6.2	1.6	4.8
Wood or Coal	99.2	86.5	25.9	11.7	86.2	46.7
Other	0.0	0.0	0.2	0.0	0.0	0.0

Source: 2001 ICES. Poor households have per-capita consumption expenditures below the upper poverty line (the TPL).

Housing

Poor households are much more likely to own/occupy their own home than any other form of housing/tenure arrangements. Overall, about 77 percent of poor households own their own dwelling, while non-poor households are split among the other tenure types (table 2.4.13). Much of this relationship, however, is due to the rural/urban distribution of poor households. In rural areas, especially in resettlement and communal areas, virtually all households own their own dwelling. The prevalence of household poverty is very high in these areas. In urban areas, there are only minor differences in tenure patterns by poverty status. Forty-two percent of the urban poor own their own dwelling, while 39 percent of the non-poor do.

Table 2.4.13 Distribution of Household Tenure Status, by Urban/Rural and *Poverty Status (percentage of households in each class)*

Tenure Status	Rural Areas		Urban Areas		All Zimbabwe	
	Poor	Non Poor	Poor	Non Poor	Poor	Non Poor
Owner/purchaser	84.4	52.2	41.8	38.8	76.8	45.1
Tenant or Lodger	0.5	2.1	47.3	44.8	8.8	24.8
Tied Accomodation	14.7	45.1	9.4	14.8	13.8	28.9
Other	0.3	0.6	1.6	1.6	0.5	1.1
Total	100	100	100	100	100	100

Source: 2001 ICES. Poor households have per-capita consumption expenditures below the upper poverty line (the TPL).

3 SECTORAL PROFILE OF POVERTY

Poverty is not uniformly distributed throughout Zimbabwe. Differences emerge based on degree of rurality, the type of land use and agro-ecological conditions such as rainfall and soil quality. In addition, poor households have differential access to productive assets rely on different livelihood strategies, and different attainments of human capital and other assets. Access to public services such as education and health distinguish the poor from others in Zimbabwe. In order to formulate an effective poverty reduction strategy, it is necessary to understand the relationships between poverty status and household location, other household characteristics, access to assets and services, degree of dependence on different livelihood strategies, and other key correlates of poverty. This section of the report examines some of these relationships.

3.1 Rural Poverty and Agriculture

Poverty, as seen above, is more prevalent, deeper and more severe in rural areas than it is in urban areas of Zimbabwe. It is also irregularly distributed among rural areas. Matebeleland North has the highest prevalence of poverty, followed by rural Manicaland, Masvingo and Matebeleland South (table 3.1.1). Matebeleland North, Matabeleland South and Masvingo are among the driest and most drought-prone areas of the country. Rural poverty is worst in Matabeleland North. Sixty two percent of rural households in Matebeleland North are extremely poor, and the depth and severity indices there are worse than for the other provinces. Because of its relatively high population density and its high prevalence of poverty, rural Manicaland houses more rural poor households than any other province in Zimbabwe[11]. Matebeleland North, on the other hand, has an extremely low population density and even though poverty indices there are the worst in all Zimbabwe, very few poor people are found there.

[11] Patterns of poverty among "people" mirror those among households.

Table 3.1.1 Household Poverty by Province, Rural Zimbabwe

		Prevalence (%) of		Indices of	
Province	**% Poor Households**	**Poor**	**Extreme Poor**	**Poverty Depth**	**Poverty Severity**
Manicaland	20.0	78.4	50.9	42.1	26.5
Mashonaland Central	13.8	66.3	27.1	26.5	13.5
Mashonaland East	15.3	68.7	39.2	32.9	19.1
Mashonaland West	13.8	68.5	33.6	30.1	16.5
Matabeleland North	3.5	84.1	61.9	49.1	33.1
Matabeleland South	6.7	73.2	43.6	36.8	21.9
Midlands	13.3	70.0	38.5	33.8	19.8
Masvingo	13.7	74.2	43.4	37.1	22.5
Total	**100%**	73.0	42.3	36.1	21.6

Source: 2001 ICES. Poverty refers to the prevalence of households or people in households whose consumption expenditures per capita are below the upper poverty line (the TPL). Extreme poverty represents a shortfall below the lower poverty line (FPL). The poverty gap and the severity indices are the Foster, Greer and Thorbecke α=1 and α=2 measures, respectively (see Ravallion, 1992 for details). These indices are computed using the upper poverty line.

In rural areas, resettlement and communal farming areas have the highest prevalence of household poverty, and are far worse than commercial farms by all measures (table 3.1.2). Resettlement areas (RAs) have the highest overall prevalence of poverty, and the depth and severity indices in RAs are higher than in communal farming areas (CAs). Conditions in RAs have apparently deteriorated between 1994/95, when the last ICES was conducted, and 2001 (compare findings here with those of Government of Zimbabwe, 1998). Conditions on both small and large scale commercial farms (SSCFs and LSCFs, respectively) are considerably better than in either communal or resettlement area farms. Part of the lower poverty indices in the former is due to their favorable location, but, in particular, extreme poverty and poverty severity are very low on large scale commercial farms.

Agricultural dualism is evident in the differences in the severity of poverty between communal and resettlement areas and commercial farms. These differences reflect fundamental conditions in the different land use areas—commercial farms, because of their favourable location and better access to productive services, generally have less poverty than communal and resettlement area farms. Commercial farms also have far lower indices of poverty severity, indicating that the poor on commercial farms have relatively equal levels of consumption expenditures. We find evidence of dualism

within dualism—workers on commercial farms are homogenously poor, while owners and managers tend not to be—some prosper, while others are poor.

Table 3.1.2 Rural Household Poverty Indices by Land Use Areas

	Prevalence (%) of		Poverty Indices	
Land Use Area	**Poverty**	**Extreme Poverty**	**Poverty Gap Index**	**Poverty Severity Index**
Communal Areas	77.2	47.1	39.4	24.1
Small scale Commercial Farms	62.0	34.8	29.2	17.3
Large scale Commercial Farms	54.7	21.1	21.6	11.0
Resettlement Areas	87.8	56.7	46.1	27.8

Source: 2001 ICES. Poverty refers to the prevalence of households or people in households whose consumption expenditures per capita are below the upper poverty line (the TPL). Extreme poverty represents a shortfall below the lower poverty line (FPL). The poverty gap and the severity indices are the Foster, Greer and Thorbecke α=1 and α=2 measures, respectively (see Ravallion, 1992 for details). These indices are calculated using the upper poverty line.

Government should examine conditions on resettlement area farms; levels of poverty there are troubling and suggest that the resettlement schemes favoured in the 1980s and early 1990s have not contributed to poverty reduction. Issues such as access to markets, technical assistance and productive inputs on resettlement farms should be examined.

Table 3.1.3 Poverty by Natural Region in Rural Areas

	Prevalence (%) of		Poverty Indices	
Natural Region	**Poverty**	**Extreme Poverty**	**Poverty Gap Index**	**Poverty Severity Index**
NR I	63.9	40.4	34.6	22.0
NR II	67.6	36.3	30.8	17.4
NR III	75.2	42.3	36.7	21.7
NR IV	76.9	46.7	39.4	24.1
NR V	75.7	47.8	40.2	25.3

Source: 2001 ICES. The poverty gap and the severity indices are the Foster, Greer and Thorbecke α=1 and α=2 measures, respectively (see Ravallion, 1992 for details). These indices are calculated using the upper poverty line.

A strong relationship is observed between land quality and all the aggregate measures of poverty in rural areas. The prevalence of household poverty increases from better productive lands in natural region I through the low-potential lands in region V. The prevalence of extreme poverty and the depth and severity indices show an even stronger association with land quality. Values of extreme poverty and the depth and severity indices increase monotonically (except for natural region II) as land quality

(reflected by natural region) decreases (table 3.1.3). The relationship between land quality and the type of land use in each region explain much of the relationship between land use and poverty. Since the best land (NR I &II) contains the highest proportion of commercial farms, poverty on commercial farms tends to be lower than that on communal and resettlement area farms.

Household size and poverty in rural areas

Households in rural areas generally have more members than those in urban areas. As seen above, poverty throughout Zimbabwe is closely related to household size. In rural areas, this relationship is especially strong and is related to access to productive assets (land) per household member. The pattern of household size by land use is further evidence of dualism within the agricultural sector. On commercial farms, small-sized households are common. Fifty-nine percent of households in large scale commercial farms have three or fewer members and 41 percent of small scale commercial farms have similar sizes. In communal and resettlement areas, average household sizes are larger, and small-sized households are much less common. As will be seen, the household size is a major determinant of poverty status among rural households in Zimbabwe.

Table 3.1.4 Distribution of Households by Size and Rural Land Use

Household Size	Communal Areas	Small scale Commercial Farms	Large scale Commercial Farms	Resettlement Areas	Total Rural
	(%)	(%)	(%)	(%)	(%)
1	6.4	17.4	27.3	0.3	10.4
2 -3	23.8	23.6	31.7	3.4	25.0
4 – 5	33.8	31.3	26.2	17.7	32.0
6 – 7	22.4	14.8	11.1	24.9	20.2
8+	13.6	13.0	3.7	26.6	12.2
Total	100	100	100	100	100
Mean Size	4.9	4.4	3.3	5.9	4.9

Source: 2001 ICES.

In rural areas, resettlement areas are characterised as having larger sized households. Fifty-two percent of households in RAs have 6 or more members, while only 36 percent of communal households are that large (table 3.1.4). Resettlement areas are

likely to be more prone to poverty given the difficulty to accumulate wealth often associated with large households.

Table 3.1.5 Prevalence of Household Poverty by Size and Rural Land Use

Household Size	Communal Areas	Small scale Commercial Farms	Large scale Commercial Farms	Resettlement Areas	Total Rural
1	26.7	20.0	14.1	30.5	20.4
2 -3	64.1	45.5	53.0	85.8	61.5
4 – 5	82.2	76.3	77.9	91.3	81.6
6 – 7	90.1	87.6	90.8	90.3	90.0
8+	91.2	84.4	96.7	91.5	91.3

Source: 2001 ICES. Prevalence of poverty refers to the proportion of total households whose per capita consumption expenditures are below the upper poverty line (the TPL).

The poverty status of the household is closely related to household size in all land use areas of rural Zimbabwe (table 3.1.5). The prevalence of poverty grows consistently with household size, and the other indices (extreme poverty, depth, and severity), which are not shown, increase in a similar manner. Very large households in every area are almost uniformly poor. In large scale commercial farms, there is a very low prevalence of poverty for very small households, and smaller households everywhere are generally better off. There is a significant jump in the likelihood that a household is poor as the household size grows beyond three members, as the prevalence and other indices increase dramatically at that point.

The dependency picture in rural areas is similar to that for Zimbabwe as a whole. Rural poor households are characterised by much higher dependency ratios than non-poor households, and dependency is highest for poorest households. There are also stark differences in patterns of household dependency across land use areas. Non-poor households in LSCF areas are likely to be single-person families; as soon as a dependent is present, there is a much higher likelihood of poverty (table 3.1.6). Small scale commercial farms also have relatively fewer dependents compared to communal area and resettlement farmers; low dependency among commercial farmers helps explain lower rates of poverty in these areas.

Table 3.1.6 Dependency Ratios by Poverty Status in Rural Areas

	Non Poor	Poor	Extremely Poor	All Households
Communal Areas	0.382	0.519	0.574	0.514
Small scale Commercial Farms	0.242	0.448	0.552	0.406
Large scale Commercial Farms	0.161	0.381	0.495	0.305
Resettlement Areas	0.395	0.472	0.563	0.514
All Rural	0.309	0.488	0.566	0.473

Source: 2001 ICES. Poor households have per-capita consumption expenditures below the upper poverty line (the TPL). Extremely poor households are below the lower line (the FPL).

Employment, Incomes, and Wealth

The vast majority of rural workers are own-account workers or paid employees. On communal farms, about 90 percent of all workers are own-account workers or unpaid family workers, and on resettlement farms, this proportion reaches 95 percent. As seen in chapter 2, in rural areas these occupations are most likely to be associated with poverty. There are few permanent paid employees in rural areas, and virtually all of these are found on large scale commercial farms (LSCFs)[12]. Employers make up a less than one percent of all workers on LSCFs.

Table 3.1.7 Prevalence of Household Poverty by Main Activity of the Household Head, Rural Zimbabwe

	Land Use Area			
Main activity	**Communal Areas**	**Small scale Commercial Farms**	**Large scale Commercial Farms**	**Resettlement Areas**
Permanent paid employee	34.7	36.6	55.0	44.3**
Casual/temporary employee	65.6	82.9**	53.2	65.8**
Employer	64.7**	0.0**	0.9**	N/A
Communal/resettlement own-account worker	82.5	72.7	58.7**	89.1
Other own-account worker	64.2	76.3	33.4	87.1**
Other	71.5	49.7	72.2	89.2**

Source: 2001 ICES. Prevalence is the percentage of households below the upper poverty line (the TPL). ** Refers to small numbers of observations in the cells, and numbers should be interpreted cautiously.

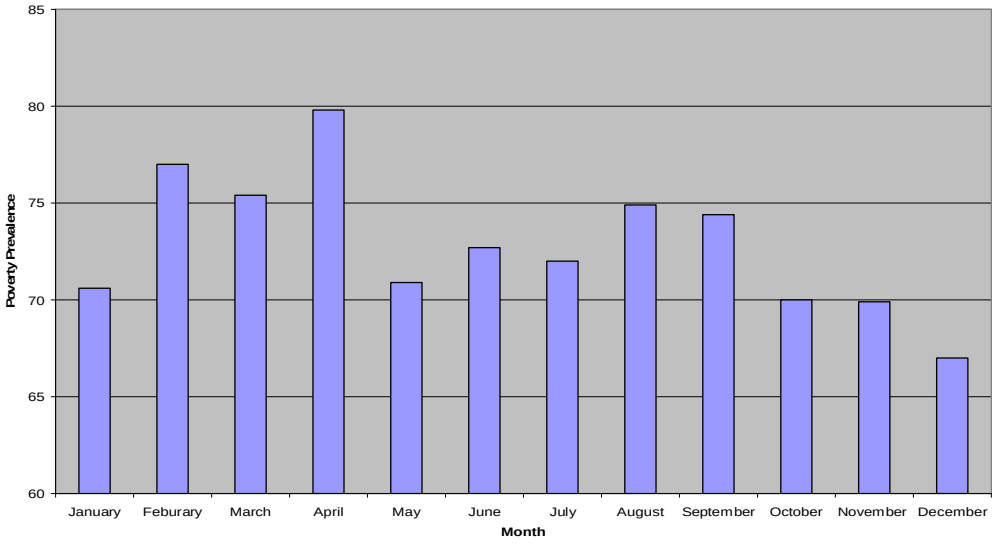
[12] It is important to recognise that the ICES interviews many more workers and employees than employers on commercial farms. Few farm owners enter the sample in the commercial farming areas.

As in urban areas of Zimbabwe, the poverty status of rural households is closely associated with the main source of employment of the household head. A household whose head has communal/resettlement farming as a main activity is much more likely to be poor and very poor than a household headed by a permanent or even casual employee (table 3.1.7). The relationship between the main activity of the household head and likelihood of household poverty that was observed in chapter 4 continues for all rural areas of Zimbabwe.

Seasonality

Poverty follows a predictable seasonal pattern in rural areas of Zimbabwe. Poverty is lowest in the months immediately preceding and following the harvests (May and June). The prevalence of measured poverty grows toward the end of the year, but drops in December as consumption rises during the holiday seasons. It continues to increase through January and February, when it begins to drop again as harvests approach and green maize begins to be available (figure 3.1.1).

Figure 3.1.1 Seasonal Poverty in Rural Zimbabwe



Source: 1995/96 ICES. The information is on the prevalence of moderate and extreme rural poverty according to the month of the interview. The ICES is representative on an annual basis and was not intended to be statistically representative on a monthly basis; this figure is illustrative only.

Land and Agriculture

The seasonal pattern of rural poverty is mainly due to the agricultural cycle, and, as we see below, agriculture dominates the rural economy. Land and access to land is often discussed as a close correlate of poverty in rural areas, but evidence discussed above indicates that land holdings alone may not be determine poverty; factors such as land quality and number of dependents are also important.

Table 3.1.8 Land, Household Size, and Household Poverty in Rural Areas

	Land (Hectares)		**Land per Worker**		**Land per Person**	
	Poor	**Non Poor**	**Poor**	**Non Poor**	**Poor**	**Non Poor**
Communal Areas	2.32	1.82	1.15	1.03	0.50	0.63
Resettlement Areas	8.18	6.91	3.77	3.08	1.72	2.11
Natural Region 1						
Communal Areas	1.35	1.05	0.80	0.81	0.31	0.44
Resettlement Areas	-.-	-.-	-.-	-.-	-.-	-.-
Natural Region 2						
Communal Areas	1.78	1.35	0.88	0.76	0.39	0.47
Resettlement Areas	4.00	3.55	1.55	1.60	0.71	0.98
Natural Region 3						
Communal Areas	2.83	2.05	1.40	1.20	0.61	0.73
Resettlement Areas	10.58	9.65	5.07	4.00	2.33	2.89
Natural Region 4						
Communal Areas	2.35	1.89	1.17	1.01	0.50	0.63
Resettlement Areas	4.89	3.58	1.76	1.48	0.74	0.90
Natural Region 5						
Communal Areas	2.47	2.20	1.19	1.32	0.51	0.84
Resettlement Areas	5.07	5.00	2.08	3.53	0.97	1.71

Source: 2001 ICES. Poor households have per-capita consumption expenditures below the upper (TPL) poverty line.

Interestingly, land holdings per household in RAs and CAs are fairly constant, whether the household is poor or not. In fact, poor households in both RAs and CAs tend to have access to more land than non-poor households. Even using natural regions to control for land quality, the poor have roughly equal or better access to land than the non poor (table 3.1.8). Land holdings for poor households do not vary much between natural regions, but those in the less favorable (for agriculture) natural

regions enjoy more land than those in natural regions 1 and 2. This finding reflects the nature of land allocation for both RAs and CAs (see chapter 1). It also explains the close correspondence between poverty and natural region for resettlement and communal area farm families shown above. However, as seen below, household size and dependency are as important as land quality in explaining rural poverty.

The key variables that determine the relationship between land availability and household poverty status are the number of workers and number of total people in the household per unit of land[13]. Non- poor households have more land per worker and more land per person than poor households in both resettlement areas and communal areas across all natural regions of Zimbabwe (table 3.1.8).

Even controlling for land quality (using natural regions as a rough proxy for land quality), the poor in CAs and RAs are distinguished by high dependency and small holdings per household member. These findings highlight a number of important implications for policymakers. First, the land/poverty relationship is confounded by household size and the number of dependants. The concept of land scarcity needs to be defined in terms of people and workers, and not in terms of land holding per household. Poor households are land scarce in the sense that they have inadequate land per person. They face a land shortage and not a labour constraint. This finding helps explain findings from other studies of poverty in Zimbabwe (such as the 1996 PASS study) that people often do not think that access to land is an important determinant of poverty status. Here we see that access to land, conditioned on the size of the household, is closely related to poverty.

The second implication is that high rates of rural population growth will lead to increased impoverishment, unless means of increasing land productivity are found or alternative sources of income generation emerge in CAs and RAs. As over crowding occurs in communal and resettlement areas, the potential of the land base to support households with more members is compromised. Means are needed of increasing the productivity of existing land through, for example, better water management, improved varieties of drought-tolerant crops, expanded irrigation, extension of winter crops.

Agriculture has to figure prominently in plans for rural poverty reduction. Without substantial growth in agricultural productivity, livelihoods in rural areas are not likely to improve substantially in the short-to-medium run. Two basic means exist for ensuring more sustained growth in traditional agriculture: 1) removal of structural constraints, such as addressing inequity in control of land; and 2) sustained productivity increases on existing holdings. The second means can only be attained with an active agricultural research complex providing a steady flow of useable technologies to traditional farmers. Alternatively, off-farm income opportunities or migration to urban areas may release some of the population pressures in rural areas. Although it is beyond the scope of this profile, evidence shows that migration has helped lower land pressures in poorer rural areas.

Third, too much rigidity exists in land markets. This rigidity keeps holding sizes in communal and resettlement areas constant while population grows. Government should investigate means of promoting land transfers in these areas. Such transfers would be consistent with resettlement and land taxation policies which are designed to promote more intensive use of under-used farmland. An example would be to provide land titles to communal farmers on a pilot basis.

Fourth, agricultural resettlement schemes ought to be flexible; uniform land allocations and inability to transfer or acquire additional lands in resettlement areas hamper the poverty-reducing potential of these schemes. Those households that are better able to farm should be allowed to consolidate their holdings and accommodate increased household sizes. The possibility of acquiring more land enables more efficient farmers to prosper.

Fifth, if a targeted poverty alleviation programme is considered, it should not be targeted based solely on holding size, but should also consider household size and land holding per person in the household. Land holding per household is an inappropriate indicator of poverty. Sixth, mechanisms should be worked out to

[13] Of course, off-farm income sources are an important determinant of household poverty status (e.g. Kinsey), but here we are referring to the relationship between *holding size* and poverty.

facilitate the shedding off of mature children from resettlement households. Households in these areas tend to have most member probably because young families do not easily separate from their parents' household as land is not available to them either through resettlement mechanisms or traditional land allocation mechanisms.

Asset Ownership in Rural Areas

Households in rural areas tend to store their wealth in livestock. Households in all land use areas own more poultry (on average) than other types of livestock, followed by cattle and goats. Resettlement farmers, on average, own more livestock than farmers in other land use areas; their cattle holdings are more than double the average in communal areas.

Table 3.1.9 Livestock Ownership by Land Use Area

	Mean Household Ownership (No. Heads)			
Livestock	**Communal Areas**	**Small scale Commercial Farms**	**Large scale Commercial Farms**	**Resettlement Areas**
Cattle	3.5	5.0	2.8	7.3
Poultry	11.8	13.4	10.1	14.0
Pigs	0.1	0.1	0.0	0.1
Sheep	0.2	0.6	0.1	0.6
Goats	0.5	0.3	0.0	0.6
Other livestock	0.1	0.5	0.8	0.2

Source: 2001 ICES

A close correspondence is observed between ownership of livestock and household well being in all rural land use areas (table 3.1.10). Ownership of cattle is a strong indicator of household well being in resettlement area and large scale commercial farms, but in the other land use areas, poor households own, on average one to two fewer heads of cattle than non-poor households. The large difference between livestock ownership of poor and non-poor households on large scale commercial farms is further indication of the dualism within dualism noted above. In fact, the differences observed in table 3.1.10 are likely to be more indicative of differences in farm type (e.g. tobacco versus grain farms) rather than inherent indicators of general patterns of livestock ownership on commercial farms.

Table 3.1.10 Livestock Ownership by Land Use and Household Poverty Status

Mean Ownership of	Communal Areas		Small scale Commercial Farms		Large scale Commercial Farms		Resettlement Areas	
	Poor	Non Poor	Poor	Non Poor	Poor	Non Poor	Poor	Non Poor
Cattle	3.2	4.7	4.6	5.8	0.8	6.4	6.7	11.8
Poultry	11.1	14.6	13.6	12.9	8.7	12.6	12.8	23.0
Pigs	0.1	0.1	0.1	0.2	0.0	0.0	0.1	0.1
Sheep	0.2	0.3	0.6	0.6	0.0	0.4	0.2	2.8
Goats	0.5	0.5	0.3	0.2	0.0	0.0	0.5	0.9
Other Livestock	0.1	0.1	0.5	0.3	0.8	0.7	0.2	0.0

Source: 2001 ICES. Poor households have per-capita consumption expenditures below the upper poverty line (the TPL).

A wide degree of variation in productive asset ownership is observed across rural areas of Zimbabwe (tables 3.1.11 and 3.1.12), but asset ownership is not closely associated with rural poverty. Households in resettlement areas are fairly well-endowed with productive assets, such as ploughs, scotch carts and wheel barrows. Ownership rates on RAs are higher than other rural areas for all assets except for tractors and grinders, which are not widely owned in rural Zimbabwe outside of small scale commercial farms.

Many assets have been accumulated by resettlement area farm households, but a paradox emerges since, as noted above, RAs also have high levels of poverty. A partial explanation may be found by examining particular assets by household poverty status. Poor households in RAs are much more likely to own ploughs than non-poor households. If plough ownership is an indication of specialisation, then poor RA households might be more completely specialised in agriculture than non-poor households. Poor RA households, however, also tend to own other assets, such as bicycles, scotch carts, and wheelbarrows. These results are consistent with an improving asset position among RA households; however this improving position is not reflected in substantial reductions in poverty. Ownership of productive assets in resettlement area farms does not vary depending on whether the household is poor or not (table 3.1.11). A critical question that needs to be answered is why poverty continues to be so high in RA households.

Table 3.1.11 Percentage Households Owning Productive Assets in Rural Areas

Percent owning	Communal Areas	Small scale Commercial Farms	Large scale Commercial Farms	Resettlement Areas
Plough	52.5	35.3	1.5	78.5
Tractor	0.5	5.2	0.6	2.8
Bicycle	21.7	19.8	21.5	36.6
Scotchcarts	24.5	24.5	0.7	55.4
Wheel barrow	43.2	40.1	2.7	57.1
Grinder	0.6	1.9	0.1	0.6

Source: 2001 ICES.

Plough ownership is not associated with poverty in any land-use area; higher percentages of poor households own ploughs than do non-poor households. Taking plough ownership as an indication of specialisation in agriculture, these findings indicate that in rural Zimbabwe, households that specialise in agriculture are most likely to be poor; non-poor households generally have some non-agricultural sources of incomes.

Table 3.1.12 Productive Asset Ownership by Poverty Status, Rural Zimbabwe

	Communal Areas		SSCFs		LSCFs		Resettlement Areas	
	Poor	**Non Poor**	**Poor**	**Non Poor**	**Poor**	**Non Poor**	**Poor**	**Non Poor**
Plough	54.4	45.7	37.1	32.2	1.1	1.9	78.9	75.9
Tractor	0.4	0.6	3.8	7.6	0.0	1.2	2.3	6.3
Bicycle	20.4	26.1	19.4	20.6	22.4	20.4	37.1	33.0
Scotch Cart	23.8	27.1	25.8	22.4	0.8	0.6	55.0	57.9
Wheel barrow	42.5	54.7	43.8	35.9	1.9	3.7	55.4	69.4
Grinder	0.5	1.0	0.7	3.7	0.0	0.3	0.0	5.3

Source: 2001 ICES. Poor households are defined as households whose per-capita consumption expenditures fall below the upper poverty line (the TPL).

Bicycle ownership is associated with higher levels of consumption expenditures in communal areas and on small scale commercial farms, but not in the other land-use areas. This finding might be attributed to bicycles being a normal good; as incomes increase there is more demand for bicycle ownership. Alternatively, bicycles might allow households better access to off-farm opportunities in rural areas, and thus be a source of higher incomes. On LSCFs, single-member households have, by far, the lowest prevalence of poverty. Since the presence of children in households tends to be correlated with bicycle ownership, the negative correlation between bicycle

ownership and well being on LSCFs may be related to household structure. On RAs, the lack of correlation is more difficult to explain, but households of smaller size (and hence, less likely to have children of bicycle-riding age) are also less likely to be poor.

The asset position of residents on LSCFs is consistent with expectations. Because there are many workers on each large scale commercial farm (and only 1 owner or manager), average asset ownership in this "sector" is low. Most of these workers do not possess tools because they use the commercial farm's implements to conduct their work. While many of these workers are allocated small plots of land to cultivate and produce for their families, total output on these plots is likely to be low due to the lack of capital goods[14].

3.2 Health and Poverty

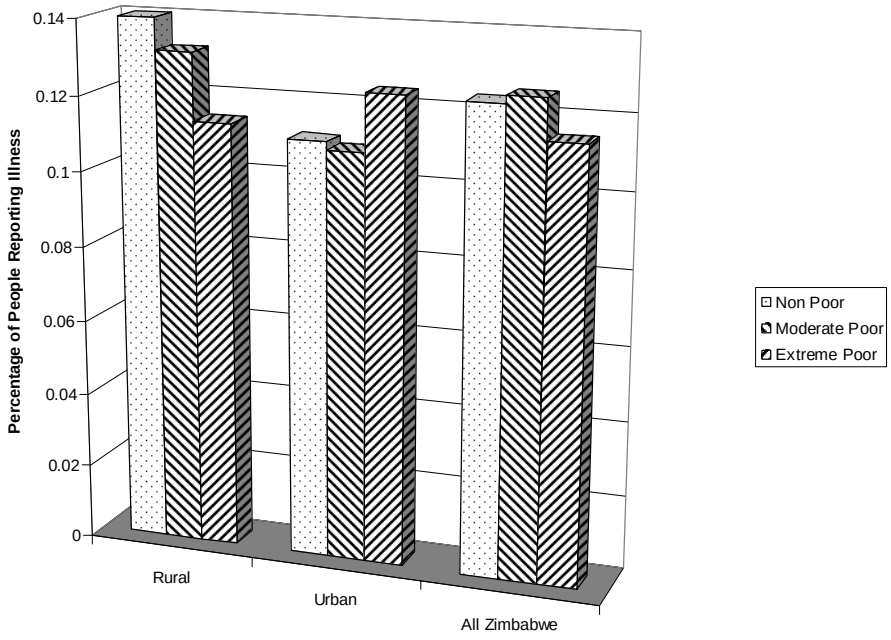
The information presented above shows that poverty in Zimbabwe is extensive and deep. It is closely related to household characteristics, including household size, dependency, location and livelihood strategies. In order to formulate effective anti-poverty strategies within the health sector, it is necessary to understand how health status and access to health care infrastructure is related to poverty status. In this section of the report, we examine the relationship between household poverty and: (i) health status, (ii) access to health care treatment, and (iii) barriers to treatment. We also investigate access to sanitation and potable water by poverty category and place of residence.

Self-reporting of illnesses varies by location in Zimbabwe and by the poverty status of households. For all Zimbabwe, the non-poor and people from moderately poor households are about equally likely to report being ill, and those from extremely poor households are least likely to report an illness (figure 3.2.1). The differences in illness reporting are small, but may indicate subjective differences in what in means to be ill based on socioeconomic status. The poor may be less likely to recognise an illness, either due to lower levels of education, or less ability to afford an illness.

[14] The fact that there is a plausible relationship between individual worker plot production and poverty status among workers on LSCFs supports the argument that the ICES should attempt to collect information on family plot size for LSCF (and SSCF) workers.

When we differentiate by place of residence, we see a strong relationship between self-reported health status and poverty in rural areas, but a different pattern in urban areas. Non-poor and moderately poor people in rural areas are more likely to report being ill in the past month than their counterparts in urban areas, but the extremely poor in urban areas are more likely than those in rural areas. These differences may be due to differences in access to clean water and modern sanitation by socioeconomic stratum, which will be investigated below.

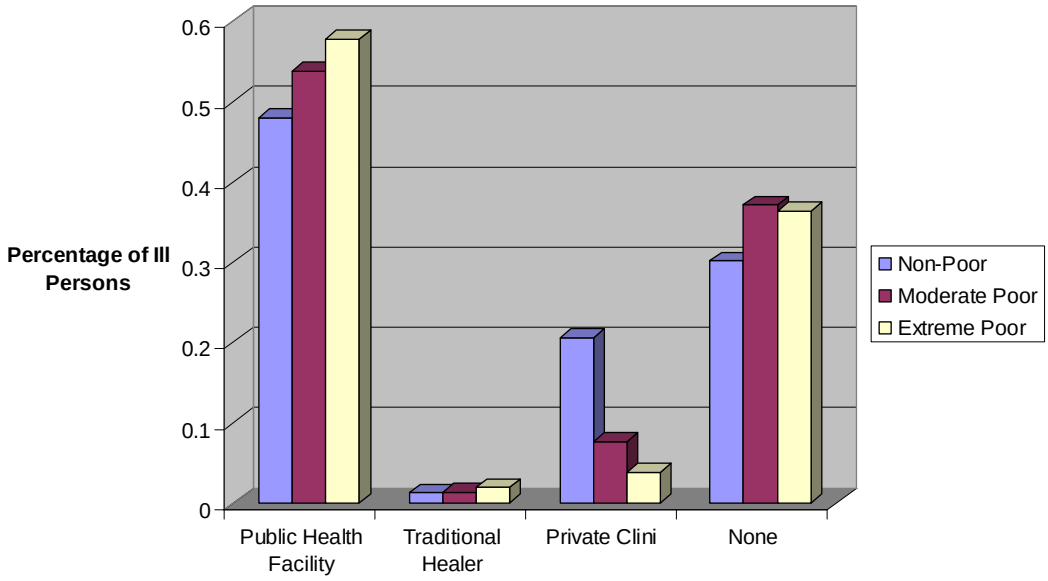
Figure Prevalence of Illness by Poverty Status



Source: 2001 ICES. The percentages are of people in each poverty group who report being ill in the past 30 days. Moderate poor people are from households whose per-capita consumption expenditures are below the upper poverty line (the TPL) yet above the lower poverty line (the FPL). Extreme poor have consumption below the lower line.

Females are more likely to report being ill than males. Overall, 13.2 percent of females reported being ill in the past month, compared to 10.7 percent of males. The pattern of illness by sex follows the same pattern as the population in general: poor people, regardless of sex are less likely to report an illness than the non-poor, and illness in rural areas is more likely than in urban areas. In all cases, the percentage of females reporting an illness exceeds the percentage of males.

Figure 3.2.2 Method of Treatment of Illness, by Poverty Group



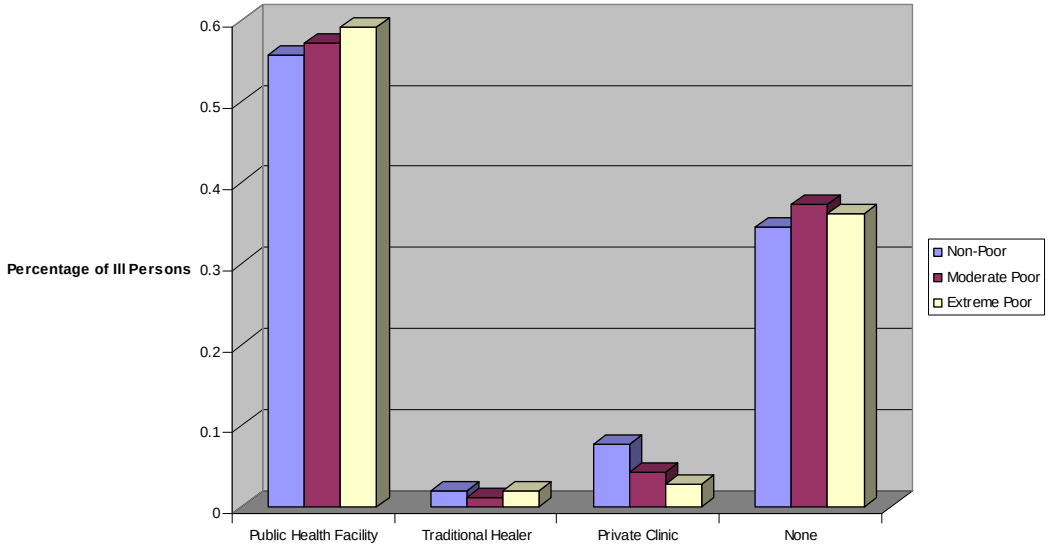
Source: 2001 ICES. Cells are the percentage of people in each poverty group who were in the past 30 days and sought the specific treatment. Moderate poor people are from households whose per-capita consumption expenditures are below the upper poverty line (the TPL) yet above the lower poverty line (the FPL). Extreme poor have consumption below the lower line.

The poor and poorest people are slightly more likely to seek treatment in a Public Health Facility than are the non poor (figure 3.2.2). Almost 58 percent of the poorest people who were ill used Public Health Facilities for treatment, while about 48 percent of the non poor went to such facilities. Non-poor people are most likely to substitute care in private clinics for the services of a public health facility. Almost 21 percent of non-poor people who reported being ill sought help in a private clinic, while slightly under eight percent of the moderately poor and less than four percent of the extremely poor sought private care. Roughly equal percentages of people from each poverty group did not seek any care, but the poor are slightly more likely not to seek care than the non poor.

Public health facilities in rural areas serve a roughly equal percentage of people from each poverty group, while urban public facilities are much more likely to provide services to the poor than the non poor. Approximately 57 percent of rural residents

who were ill sought treatment in a public health facility and the non poor were slightly more likely (59 to 57 and 56 percent, respectively) to seek treatment in a public facility than the moderate and extreme poor (figure 3.2.3). In urban areas, about 40 percent of the non poor who were ill went to public facilities while 43 and 47 percent of the moderate and extreme poor, respectively sought treatment in a public facility (figure 3.2.4).

Figure 3.2.3 Method of Treatment of Illness for Rural Households, by Poverty Category

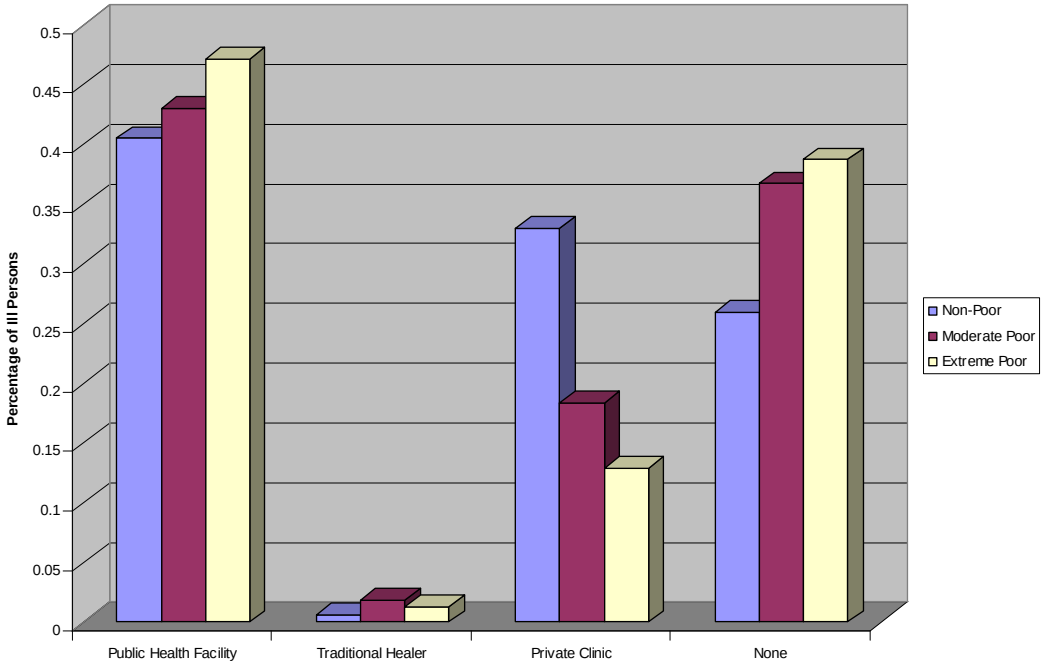


Source: 2001 ICES. Cell entries are percentages of people who were ill and used the type of treatment specified. Moderate poor people are from households whose per-capita consumption expenditures are below the upper poverty line (the TPL) yet above the lower poverty line (the FPL). Extreme poor have consumption below the lower line.

Provision of free primary care services has benefited all rural Zimbabweans who are relatively intensive users of public health facilities. In urban areas, the poor benefit relatively more than the non poor from government expenditures on public health services. In urban areas, the non poor substitute private clinics for public facilities, but even high percentages of poor and very poor people are treated in private facilities. Few rural residents from any poverty category seek care in a private clinic. This result reflects the relative scarcity of private health care facilities in rural

Zimbabwe, and also shows that rural areas are likely to be more vulnerable to spending cutbacks than are urban areas.

Figure 3.2.4 Method of Treatment of Illness for Urban Households, by Poverty Category



Source: 2001 ICES. Cell entries are percentages of people who were ill and used the type of treatment specified. Moderate poor people are from households whose per-capita consumption expenditures are below the upper poverty line (the TPL), yet above the lower poverty line (the FPL). Extreme poor have consumption below the lower line.

The finding that households from all poverty categories (non-poor, moderate poor, extreme poor) benefit from public health expenditures has several implications for policy. First, all households are affected by quality of service within the public sector, and all will benefit from improvements in quality and suffer from cutbacks. Second, public health spending does not appear to be well targeted (from a poverty perspective). More benefits will flow to the poor through improved targeting. Third, given some of the cutbacks that might result from government budget deficits and the challenges posed by the AIDS epidemic, improved targeting might be desirable. Cost-savings through enhanced targeting could provide better access to the rural poor who face many constraints to access to health care (see below).

Slight differences are seen in whether treatment was sought for a reported illness based on the sex of the person in question. Females are slightly more likely not to seek care than males (35.4 versus 33.8 percent). Poor households are slightly more likely to deny treatment to females. Males in non-poor households did not receive care in 29.2 percent of the cases, while 30.9 percent of females from non-poor households did not receive care. Almost 39 percent of females from poor households did not receive care, compared to about 35 percent of males from poor households. These results might indicate a bias among poor households against seeking care for ill females. This bias might result from a more acute resource constraint in poor households; these households have tough choices to make regarding treatment and might be more likely to discriminate against their female members. The differences, however, are not great.

There are fairly large differences in access to and use of health facilities for the treatment of illnesses in rural Zimbabwe (table 3.2.1). Residents in commercial farming areas have substantially better access to private health facilities than residents of other areas. We find about equal access, however, to public facilities across the land use areas, except in resettlement areas, where the extreme poor have relatively good access to public facilities. About 66 percent of the extreme poor who reside in resettlement areas who reported an illness received care in public facilities; about 60 percent of the same poverty category in communal areas had such access. Poor and extreme poor people who reside on commercial farms have lower access to public facilities than do their counterparts in communal and resettlement areas. However, due to the mix of private and public facilities, lower percentages of the extreme and moderate poor on large scale commercial farms had no treatment at all for their reported illness.

Very small proportions of people from all poverty categories claim that distance to the health service provider is the main constraint to seeking treatment for their illness. The poor and extreme poor are more likely than the non-poor to claim distance is a problem, but only about three and four percent of the moderate and extreme poor, respectively, claim distance is a problem. The non-poor are most likely to use home treatment or claim that treatment is not necessary. This finding may help explain the positive association between illness and household consumption expenditures found

above. The poor are less likely to claim to be ill than the non-poor. Non-poor households are more likely to claim an illness, but many of these reported health problems are probably minor and do not require professional treatment.

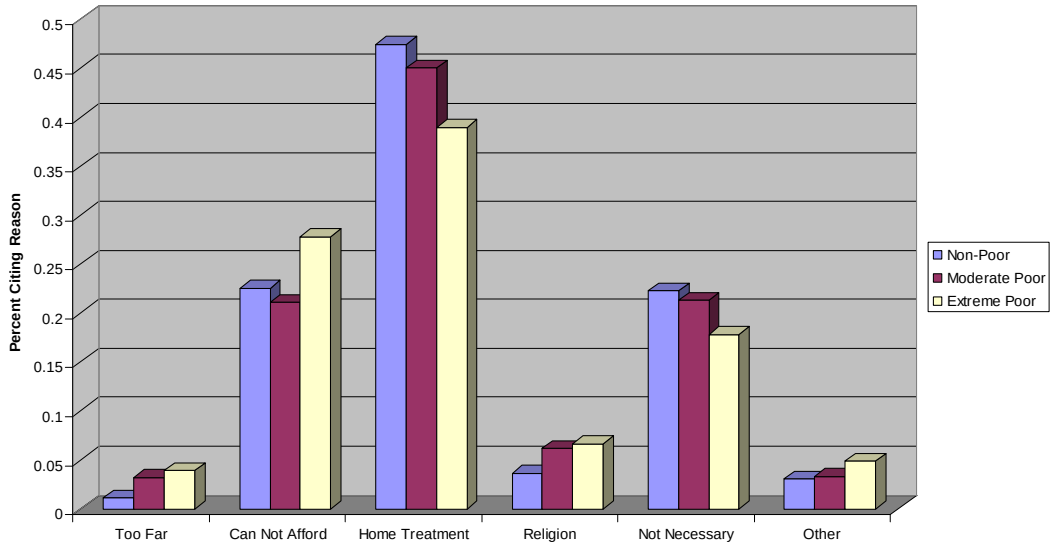
Table 3.2.1 Method of Treatment Sought by Poverty Category and Land Use Area

	Method of Treatment			
	Public Health Facility	**Traditional Healer**	**Private Clinic**	**Did Not Seek Care**
Communal Areas				
Non Poor	56.4%	2.4%	5.1%	36.1%
Moderate Poor	57.0%	1.4%	2.7%	38.9%
Extreme Poor	59.4%	2.0%	1.5%	37.1%
Small Scale Commercial Farms				
Non Poor	59.4%	0.0%	13.7%	26.9%
Moderate Poor	68.2%	1.5%	0.0%	30.3%
Extreme Poor	50.2%	2.9%	1.8%	45.1%
Large Scale Commercial Farms				
Non Poor	53.1%	0.7%	16.3%	30.0%
Moderate Poor	57.0%	0.5%	14.9%	27.6%
Extreme Poor	54.9%	1.9%	16.7%	26.6%
Resettlement Areas				
Non Poor	54.6%	2.4%	9.1%	33.9%
Moderate Poor	54.4%	0.0%	0.0%	45.6%
Extreme Poor	65.6%	3.3%	0.0%	31.1%

Source: 2001 ICES. Cell entries are percentages of people who were ill and used the type of treatment specified. Moderate poor people are from households whose per-capita consumption expenditures are below the upper poverty line (the TPL), yet above the lower poverty line (the FPL). Extreme poor have consumption below the lower line.

The extreme poor are more likely than people in the other poverty categories to claim that inability to afford treatment is the main reason for not seeking treatment for an illness. Almost 28 percent of the extreme poor identified this financial barrier to treatment, compared to about 22 percent of people in the other poverty categories. This represents a significant change from the 1998 analysis of poverty, which showed that the poor faced relatively fewer financial barriers to illness treatment than the non-poor. It may reflect a deterioration in access to health care, or increased reliance on cost recovery in the largely public health care system.

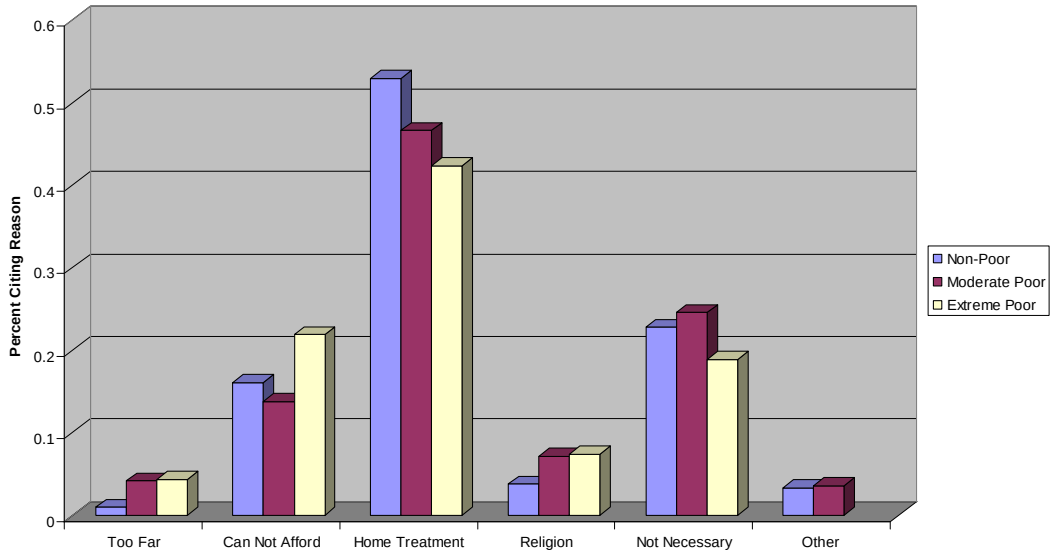
Figure 3.2.5 Reason for not Seeking Medical Treatment for People Who Were Ill but did Not Treat Their Illness



Source: 2001 ICES. Cell entries are percentages of people who were ill and used the type of treatment specified. Moderate poor people are from households whose per-capita consumption expenditures are below the upper poverty line (the TPL), yet above the lower poverty line (the FPL). Extreme poor have consumption below the lower line.

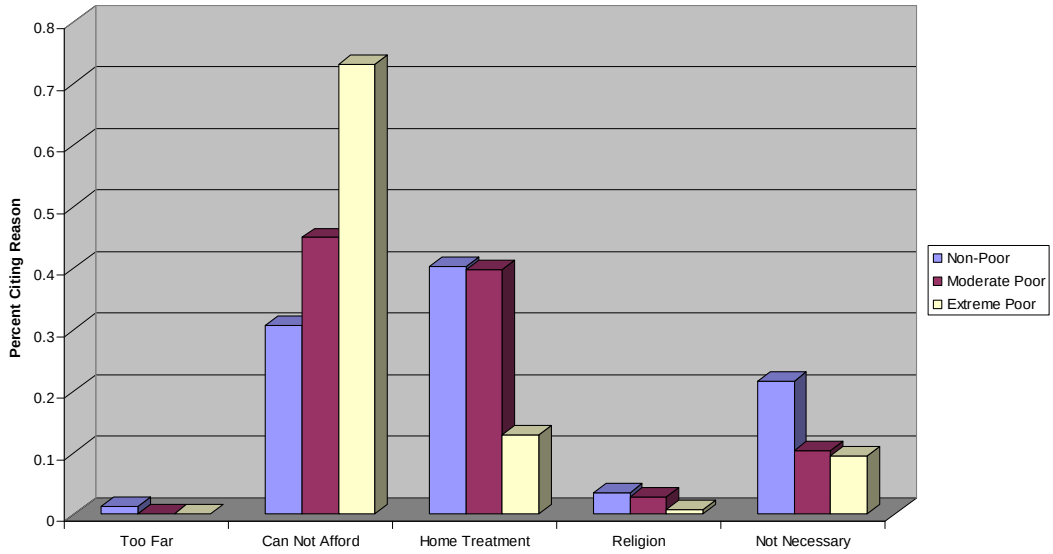
In rural areas of Zimbabwe, distance to health service providers is a slightly more important barrier to health care than urban areas (compare figures 3.2.6 and 3.2.7). Virtually none of the non-poor people in urban areas who did not seek care claimed that distance to the facility prevented them from doing so, while small percentages of the rural poor identified distance as a problem. In urban areas, affordability is a problem, and it tends to be more of a problem for the poor. About 73 percent of the extreme urban poor did not receive treatment because they could not afford it, and about 45 percent of the moderate urban poor reported the same problem. This represents a huge increase in claimed problems of affordability compared to the 1998 report and may signal an important crisis in urban health care in Zimbabwe. In rural areas, affordability is less of a problem, but it still poses more of a problem for the rural poor than it does for the non poor.

Figure 3.2.6 Reason for not Seeking Medical Treatment for People Who Were Ill but did Not Treat Their Illness, Rural Zimbabwe



Source: 2001 ICES. Cell entries are percentages of people who were ill and used the type of treatment specified. Moderate poor people are from households whose per-capita consumption expenditures are below the upper poverty line (the TPL), yet above the lower poverty line (the FPL). Extreme poor have consumption below the lower line.

Figure 3.2.7 Reason for not Seeking Medical Treatment for People Who Were Ill but did Not Treat Their Illness, Urban Zimbabwe



Source: 2001 ICES. Cell entries are percentages of people who were ill and used the type of treatment specified. Moderate poor people are from households whose per-capita consumption expenditures are below the upper poverty line (the TPL), yet above the lower poverty line (the FPL). Extreme poor have consumption below the lower line.

Housing and Sanitation

Access to good-quality housing, clean drinking water, and sanitation facilities affects the overall well being of households and particularly their health status. Poor quality housing and water and sanitation services not only indicate poor living conditions but also help perpetuate the vicious cycle of poverty. Inadequate living conditions are associated with more frequent illness, malnutrition, and overall discomfort that lower earning potential among adults and adversely affect a child's ability to learn.

Sanitation is clearly better in urban than in rural areas. Flush toilets are almost exclusively found in urban areas, while about 41 percent of households in rural areas have no toilet at all (table 3.2.2). Ninety-four percent of households in urban areas have access to piped water, while only seven percent of rural households do. About 25 percent of rural households rely on water supplies that are unsafe, such as unprotected wells or rivers, according to Ministry of Health conventions; virtually no urban households have unsafe water.

Table 3.3.7 Access to Sanitation by Urban/rural

	Place of Residency		
Type of facility	**Rural**	**Urban**	**All Zimbabwe**
Toilet	% households	% households	% households
Flush	4.4	95.7	33.3
Blair toilet	44.1	2.8	31.4
Pit latrine	9.8	1.4	7.1
None	41.3	0.0	28.2
Other	0.4	0.1	0.3
Total	**100%**	**100%**	**100%**
Specific Water Sources			
Piped inside house	2.7	28.5	10.1
Piped outside house	3.4	66.0	23.2
Communal tap	14.6	4.3	11.3
Borehole	53.3	1.1	36.8
Unprotected well	18.0	0.0	12.3
River/Stream	7.7	0.0	5.3
Other	0.3	0.1	0.2
Total	**100%**	**100%**	**100%**

Source: 2001 ICES.

In rural areas, houses in communal areas are least likely to have good quality sanitation and water. More than 47 percent of households in communal areas report

having no toilet and more than 30 percent receive their water from unprotected wells or a surface water supply (table 3.2.3). In contrast, resettlement areas seem to be bestowed with reasonably good water supplies and sanitation. Access to safe water in RAs is far better than the rural average, and about 55 percent of the houses there have either a flush or Blair toilet.

On average, households in large scale commercial farming areas have the best sanitation; 18 percent have flush toilets, and 61 percent have Blair toilets or pit latrines. Almost 90 percent of households in large scale commercial farming areas are served by piped water or communal taps. Small scale commercial farming area households also have better access to high-quality water and sanitation services than households in communal or resettlement farming areas.

Table 3.2.3 Access to Sanitation by Land Use, Rural Zimbabwe

	Land use			
Type of facility	**Communal Areas**	**Small-Scale Commercial Farms**	**Large-Scale Commercial Farms**	**Resettlement Areas**
Toilet	% households	% households	% households	% households
Flush	1.2	8.0	17.8	0.6
Blair toilet	41.6	55.9	50.6	54.1
Pit latrine	9.6	19.2	10.2	3.4
None	47.3	17.0	20.5	42.0
Other	0.4	0.0	0.9	0.0
Total	**100%**	**100%**	**100%**	**100%**
Water Sources				
Piped inside house	0.9	5.2	10.5	0.4
Piped outside house	1.9	14.9	7.9	0.9
Communal tap	2.4	2.7	70.7	0.9
Borehole	64.1	39.8	6.9	74.5
Unprotected well	21.0	36.3	2.5	16.0
River/Stream	9.6	0.9	1.0	7.4
Other	0.2	0.2	0.6	0.0
Total	**100%**	**100%**	**100%**	**100%**

Source: 2001 ICES.

There is a clear and strong relationship between household poverty status and access to safe drinking water, especially in rural areas of Zimbabwe. The rural poor are much less likely than the non-poor (70 versus 85 percent) to have access to safe water. Virtually everyone in urban areas has access to safe water, with the poor only slightly less likely to have safe water than the non-poor. The concept of safe water has a

different meaning in urban areas than rural areas since very few households in urban areas will need to travel more than one kilometre to fetch water (table 3.2.4).

Similarly, in rural areas, the poor are much less likely than the non-poor to have either a flush toilet or a Blair toilet (42 percent compared to 67 percent). About 47 percent of the rural poor reported having no access to a toilet facility at all. About 24 percent of the rural non-poor do not have toilet facilities. While sanitation is worse for the poor, there is substantial need for improvement in all income categories in rural areas.

Table 3.2.4 Percent Households with Access to Safe Water and Sanitation, by Urban/Rural and Poverty Status

	Rural Areas		**Urban Areas**		**All Zimbabwe**	
Type of Facility	**Poor**	**Non Poor**	**Poor**	**Non Poor**	**Poor**	**Non Poor**
Toilet						
Flush	1.5	12.2	94.5	96.3	18.0	57.0
Blair toilet	40.2	54.8	3.3	2.6	33.7	27.0
Pit latrine	10.3	8.5	1.9	1.1	8.8	4.6
None	47.6	24.2	0.1	0.0	39.2	11.3
Other	0.4	0.4	0.1	0.0	0.4	0.2
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Water Sources						
Piped inside house	0.8	7.7	21.6	32.0	4.5	20.7
Piped outside house	2.1	6.8	71.0	63.4	14.3	37.0
Communal tap	12.0	21.6	5.5	3.6	10.9	12.0
Borehole	55.2	48.3	1.6	0.9	45.7	23.0
Unprotected well	20.9	10.4	0.0	0.1	17.2	4.9
River/Stream	8.8	4.8	0.0	0.0	7.2	2.3
Other	0.3	0.4	0.2	0.0	0.3	0.2
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

.Source: 2001 ICES.

In contrast, sanitation appears to be of good quality in urban areas (note that the ICES does not go into much detail about the quality of the water or sanitation, other than its type), with the poor only slightly less likely to have safe water or sanitation than the non-poor. However, in rural areas, there are clear signs that access to good quality sanitation differs depending on the poverty status of the household.

3.3 Education and Poverty

Studies in Africa and elsewhere in the world consistently show that educational attainment is a critical determinant of household well-being and poverty. Since labor

is one of the few assets available to extremely poor households, its productivity helps determine livelihood strategies and the level of income generation. Both of these affect well-being and poverty. Investments in education help increase productivity of labor and lead to improvements in quality of life on their own. In this section of the report, we examine the link between education and poverty. We begin by examining how household poverty is associated with the educational attainment of the household head. We then investigate differential access to educational services by poverty and socioeconomic status of households. We conclude by discussing some of the implications of our findings for educational policy.

3.3.1 Profile of Poverty by Household Head's Educational Attainment

A strong association is observed between educational attainment of the head of household and household poverty (table 3.3.1). All the indices of poverty decline as the household head's educational attainment rises. There is a discrete increase in the likelihood of household poverty when the household head has less than secondary school education. Households headed by someone who has at least some secondary education are more than 20 percentage points less likely to be poor and extremely poor than households whose head has only primary school education. This association between head's education and poverty holds for all types of headship, regardless of whether poverty is measured among households or people. In female-headed households, the education of the household head is closely associated with poverty status. Even for widowed female heads, the prevalence of poverty declines dramatically for those household heads with secondary education.

Table 3.3.1: Poverty by Education of the Household Head

	Prevalence (%) of		Poverty Indices	
Education of Household Head	**Poverty**	**Extreme poverty**	**Poverty Depth**	**Poverty Severity**
None	0.810	0.523	0.433	0.273
Primary School	0.716	0.405	0.348	0.206
Secondary School	0.491	0.205	0.198	0.105
Post-secondary	0.150	0.027	0.043	0.018

Source: 2001 ICES.

The association between head's education and household poverty status holds across all areas of Zimbabwe. There are strong "returns" to education in both rural and

urban areas. In both areas, the prevalence of household poverty is reduced by about 60-70 percentage points as the education of the head rises from none to post-secondary. Returns to education do not, however, accrue evenly in rural and urban areas. The fact that the head attended primary school is associated with only a small decline in household poverty in rural areas, while even small amounts of education are associated with substantial reductions in household poverty in urban Zimbabwe (about a 20 percentage point drop in poverty). The decline in the prevalence of poverty in rural areas as the head's education rises from none through secondary school is not nearly as dramatic as the decline in urban areas. In fact, returns to education through secondary school in rural areas are not great (table 3.3.2); the prevalence of poverty for households headed by someone with secondary education is around 64 percent in rural areas, compared to 34 percent in urban areas. The low return to primary education exists for all households, whether headed by males or females.

Table 3.3.2: Prevalence of Household Poverty by Household Head's Education, Rural and Urban Areas

	Prevalence of Poverty (%)	
Education of Household Head	**Rural**	**Urban**
None	82.6	62.2
Primary School	79.1	42.5
Secondary School	64.5	33.6
Post-secondary School	20.1	11.0

Source: 2001 ICES. Poverty refers to households with per-capita expenditures below the upper poverty line (moderate and extreme poor).

Low returns to primary education in rural areas provide a strong rationale for central government support to education in these areas. Communities in rural areas may tend to undervalue education since returns to rural education will only be realised through migration to urban areas. This brain drain is rational from the individual and household perspective, but could create incentives for communities to under invest in the education of their children. If government does not intervene, gaps in well being between rural and urban areas will grow over time.

3.3.2 Participation in Education by Poverty Status

Participation in education at the primary and secondary school levels declines as poverty increases. The school enrolment rate (SER) and net enrolment rate (NER),

indicators of age-grade matching (see box 5 for a discussion of these concepts) decline as poverty worsens (moving from non-poor to moderate poor to extreme poor) (figure.3.3.1). The low SER for the poor translate into relatively higher gross enrolment rates (GERs), but these remain lower than those of children from non-poor households due to high dropout rates for children in extremely poor households. Overall, net enrolment rates for the poor are also low due to the low SER. The relationship between poverty and enrolment is more pronounced in secondary education where NERs are 37 percent for the non poor children as compared to 26 percent for children from the poorest households (figure 3.3.2).

Primary school entrance rates show that children from non-poor households tend to enter the school system earlier than those from poor households. The pattern has several alternative implications. Firstly, households in different poverty categories have different perceptions of the concept "child too young". Poor households might withhold their children from school from the ages 6-8 years as they might regard them as too young to go to school.

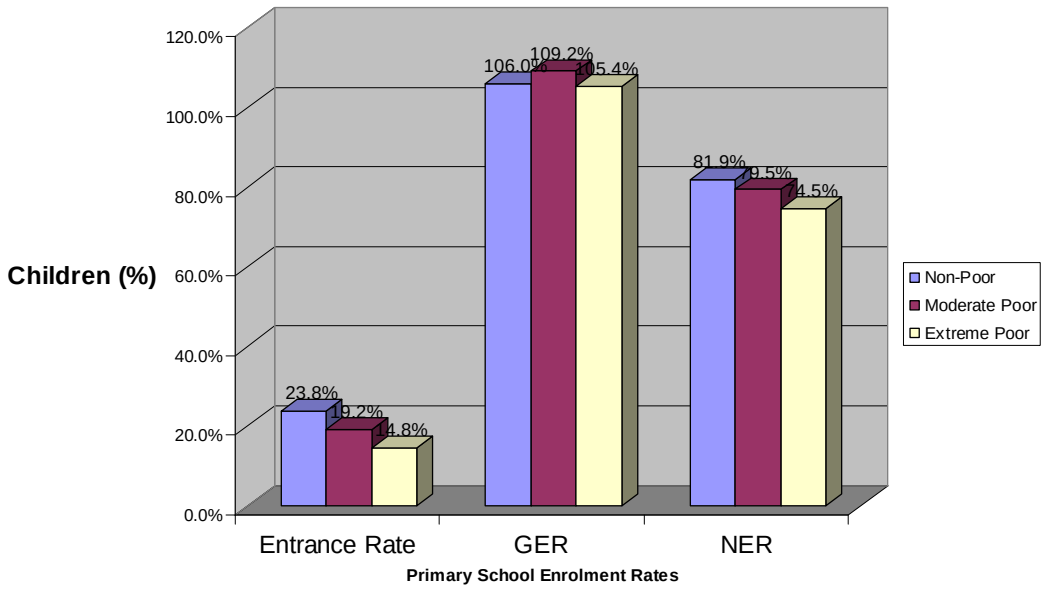
Box 5: Enrolment Status and Poverty

Enrolment ratios are a good indicator of the participation of the various poverty groups in formal education. The gross enrolment ratio (GER) is an indicator of the overall participation in education by children who are within the official school-going age limits[15]. This ratio is computed as the proportion of all children in school to the number of children of school-going age and is influenced by three factors: school entrance rates (SER), drop-out rates, and complete non enrolment of some children. The SER is defined as the proportion of children on the lower school-going age limit (6 and 13 years in Zimbabwe for primary and secondary school, respectively) who are enrolled in school to their total population in the age group.

The school net enrolment ratio (NER), computed as the proportion of children of school-going age in school to the total number of children of that age group in and out of school, is a function of SER, dropout rate and early enrolment in primary school. For example, children who enrol at the age of five complete primary school early and this results in a lower NER. . A GER greater than the net enrolment rate implies that either children overstay in school, or, are enrolled late. This translates to high age-grade mismatch.

Figure 3.3.1 Primary School Enrolment Ratios by Poverty Categories

[15] In Zimbabwe, the official school-going age is 6 – 19 years

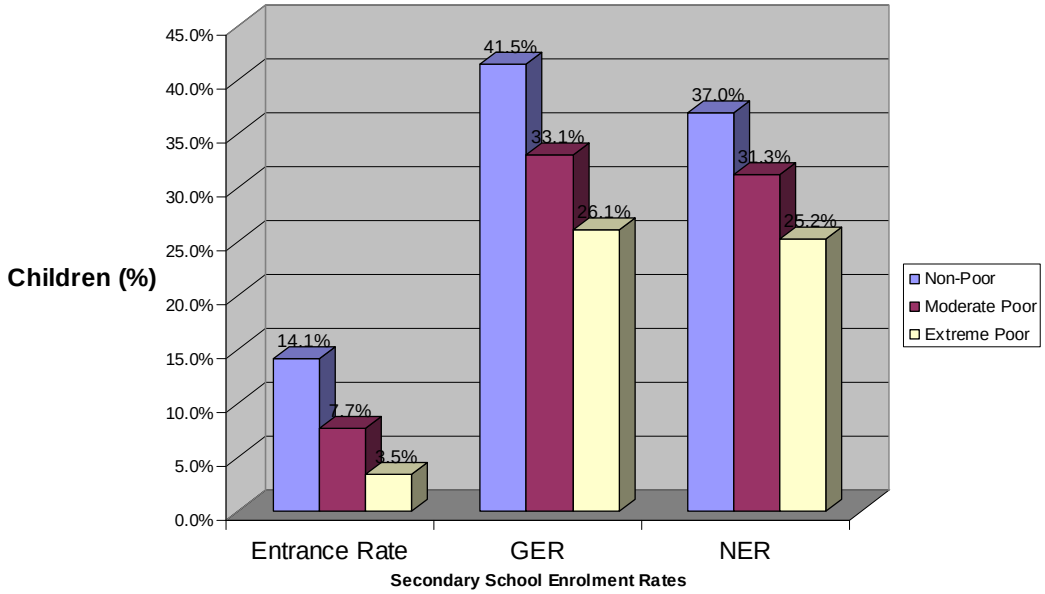


Source: ICES 2001. Moderate poor are children from households whose per capita consumption is lower than the upper poverty line but above the food poverty line. Extreme poor are from households below the food poverty line.

Secondly, everything else being equal, children from poor households might enrol in school late due to resource constraints. Despite the adoption of the free primary school tuition in rural areas, most poor households still hesitate to enrol their in school because they find difficulties in mobilising financial resources to pay for other school costs like uniforms, levies, etc. This is most likely valid for secondary school enrolments where entrance rates are as low as 3.5 percent for the poor, as compared to 14 percent for the non poor (figure 3.3.2).

Thirdly, children from poor households participate in household chores at an earlier age than their counterparts in non-poor households. Hence, a large proportion of poor children have delayed enrolment as parents try to avoid the vacuum they would leave if they enrolled in school. However, due to social norms some of the children from poor households eventually enrol in school, though late despite financial constraints and their participation in household chores.

Figure. 3.3.2: Secondary School Enrolment Rates by Poverty Categories

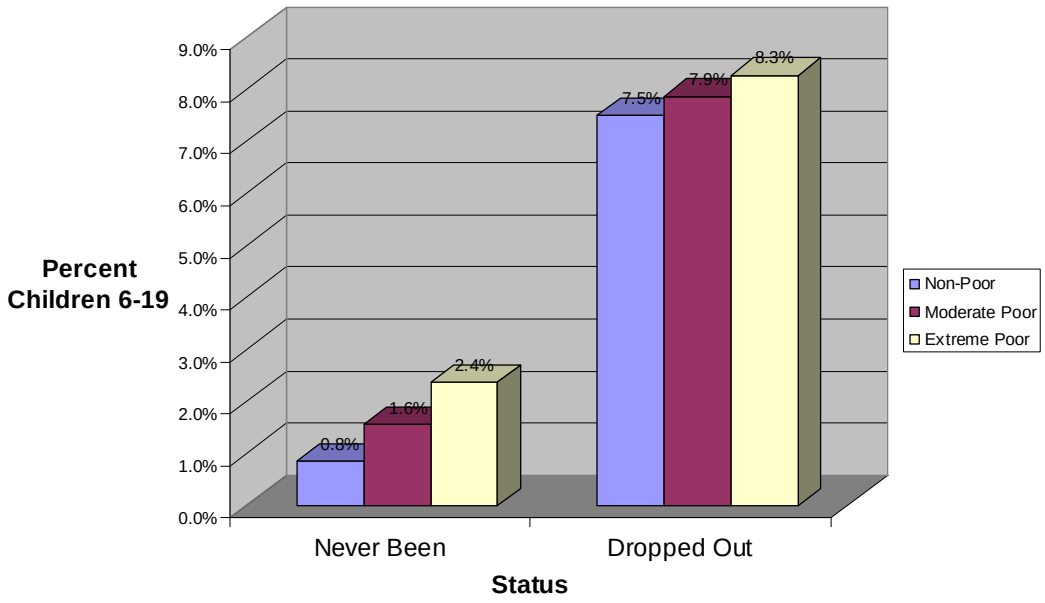


Source: ICES 2001. Moderate poor are children from households whose per capita consumption is lower than the upper poverty line but above the food poverty line. Extremely poor are from households below the food poverty line.

Children from poor households have greater risk of not receiving education as compared to those from non-poor households where gross and net enrolment ratios are highest. The high gross and net enrolment ratios for the latter reveal that although children from non-poor households might have delayed enrolment, they will at one time or another be enrolled and stay in school for longer periods without dropping out. On the other hand, children from poor households may have their enrolment delayed forever, or, if they enrol, many eventually drop out.

The low primary school enrolment ratios for the poor translate into very low net secondary school entrance rates and enrolment ratios (figure 3.3.2). Secondary school enrolment rates also fall dramatically as household poverty status increases. A large proportion of poor children drop out of school upon completion of primary education, and higher percentages of children from poor and extremely poor households drop out.

Figure 3.3.3 Proportion of Children of School-going Age who are Not in School, by Poverty Group



Source: ICES 2001. Moderate poor are children from households whose per capita consumption is lower than the upper poverty line but above the food poverty line. Extreme poor are from households below the food poverty line.

Some of the factors that determine the overall school enrolment rates of children are the proportion of children who have never been to school and the school dropout rates. These two indicators also worsen as poverty increases (figure 3.3.3). These two factors, compounded with the low SER, cause both NER and GER to decline as poverty increases.

Poverty and Rural/Urban School Enrolments

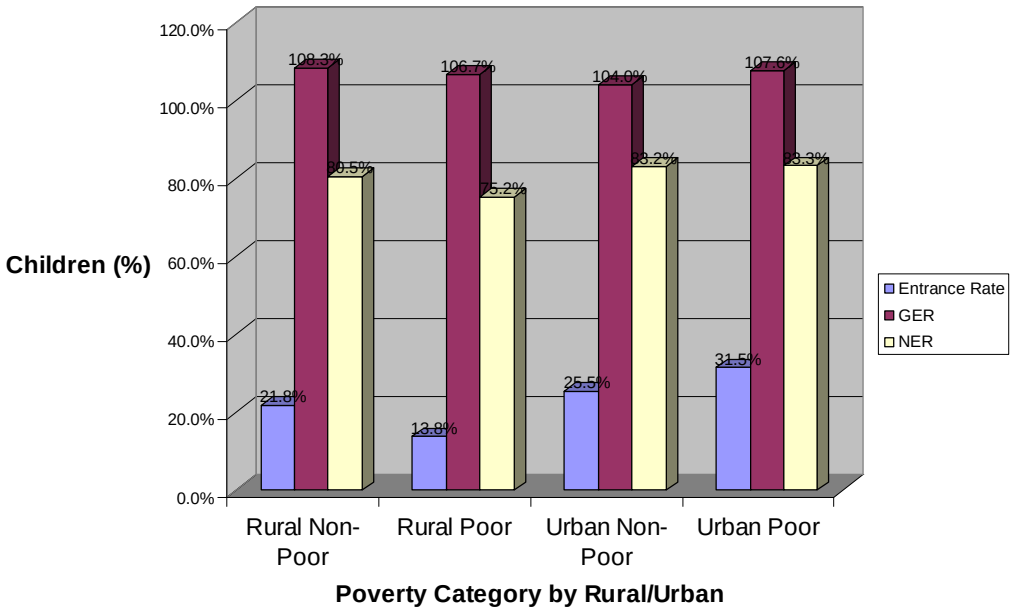
Poverty is an important correlate of participation in education, especially in rural areas. In both rural and urban areas, striking differences are found in the school enrolment rates of six-year olds depending upon whether a household is poor or not (figure 3.3.4). Twenty-one percent of six-year old children from non-poor rural households attend school and 13 percent of children from poor households do. The high gross enrolment rates in rural areas are a reflection of correspondingly low

school entrance rates, but differences between GERs by the poverty status of the family are not very pronounced.

There are only small differences in primary school gross and net enrolment ratios in urban areas across poverty groups, and the primary SER for the urban poor is about 6 percentage points higher that of the urban non poor. Primary SER are much higher for the urban poor than for the rural poor. Children from all urban households who exceed the age of six without enrolling in school eventually enter school.

In rural areas, children from non-poor households have greater chance than those from poor households of having an education. The low primary school entrance rates in rural areas also translate into very high gross primary school enrolment ratios and high age-grade mismatch due to late enrolment. The rural non-poor are less likely to show this age-grade mismatch and their NER exceeds that of poor children by about five percentage points.

Figure 3.3.4 Primary School Enrolment Ratios by Poverty Category in Rural and Urban Areas

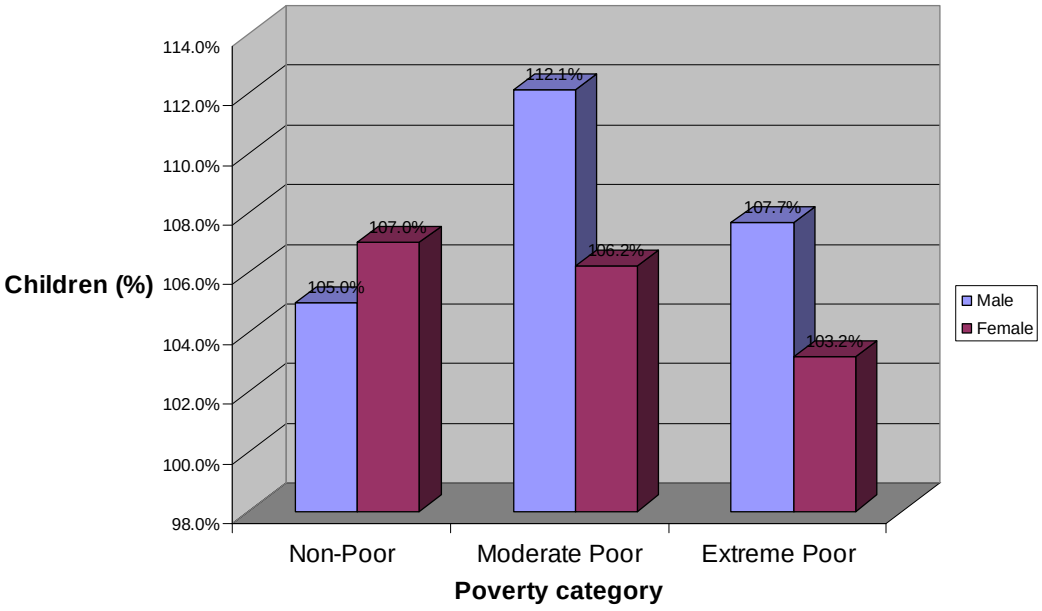


Source: ICES 2001. Poor children are from households whose per capita consumption is lower than the upper poverty line.

Poverty and School Enrolments by Gender

The relationship between poverty and school enrolment status is more pronounced for girl children at both primary and secondary school levels. This is manifested by the patterns of gross enrolment rates, which is the indicator of overall participation in education. The GER for girls are far lower than those of boys in all the poverty groups; however for non-poor girls, their GER is higher compared to boys. The male-female difference in GER increases with poverty (figure 3.3.5), although the GER for females exceed 100 percent in all cases.

Figure 3.3.5 Primary School GER by Gender and Poverty

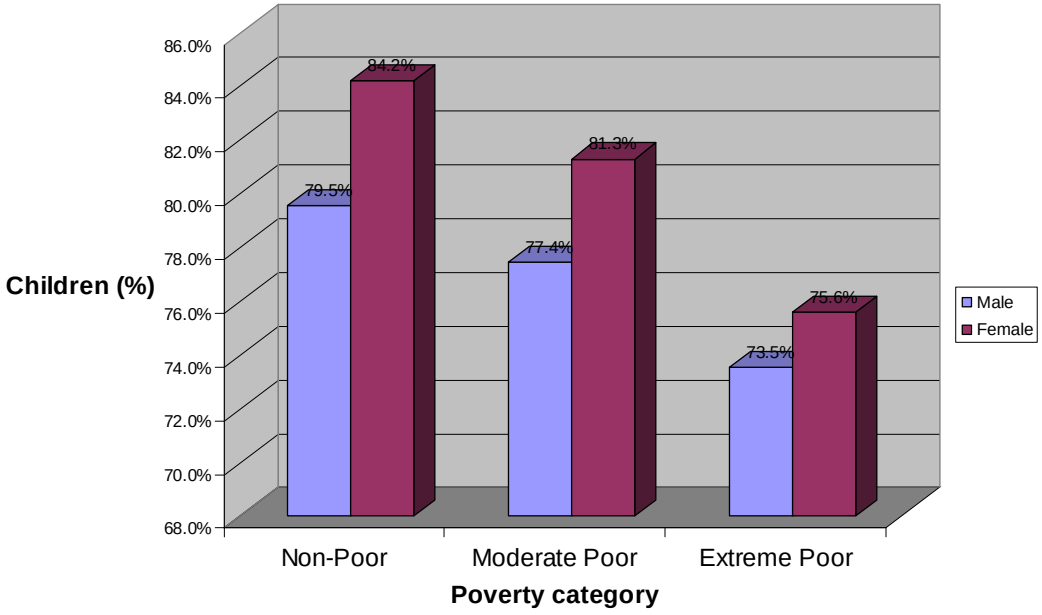


Source: ICES 2001. Moderate poor are children from households whose per capita consumption is lower than the upper poverty line but above the food poverty line. Extreme poor are from households below the food poverty line.

Although primary school NER also tend to decline with poverty, the gender bias is reversed in the net enrolment for all the poverty groups (figure 3.3.6). Girls have higher net enrolment rates than boys for all categories of households, but moderate and severe household poverty is associated with lower enrolment rates for boys and girls. Boys and girls in each poverty group have relatively equal access to primary education and same risk of delayed enrolment and dropping out of school. The decline

in the NER for all poverty categories indicates and increasing age-grade mismatch for boys and girls as poverty increases.

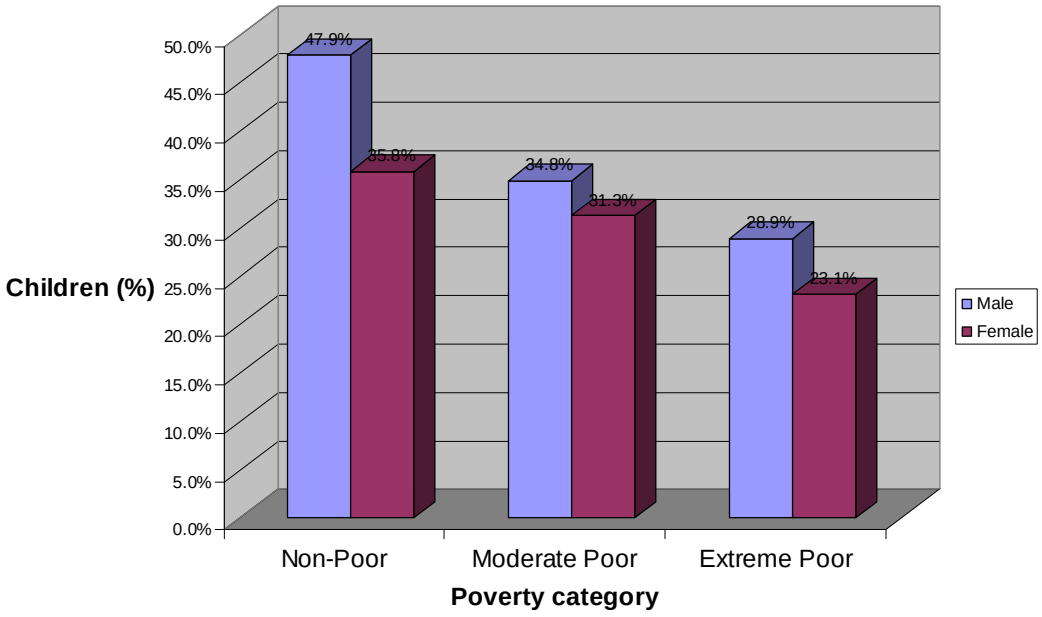
Figure 3.3.6 Primary School NER by Sex and Poverty



Source: ICES 2001. Moderate poor are children from households whose per capita consumption is lower than the upper poverty line but above the food poverty line. Extreme poor are from households below the food poverty line.

Secondary school enrolment rates fall substantially as household poverty increases, and smaller proportions of girls than boys are enrolled in secondary school regardless of household poverty category. There are also large differences in access to secondary education between children from poor households and those from non-poor households. Secondary school GERs for boys are 14 and 27 percentage points higher for the non poor compared to the moderate and extreme poor, respectively (figure 3.3.7). Poverty-based differentials for female children are much lower than the differences for male children. Sex-related differences in secondary school NERs are similar to the GERs, but the NERs for both sexes are substantially lower than the GERs (figure 3.3.8). Male children are much more likely than females to attend secondary schools for every poverty category, but moderately poor and extremely poor households exhibit less sex bias than the non-poor in terms of secondary enrolments.

Figure 3.3.7 Secondary School GER by Sex and Poverty

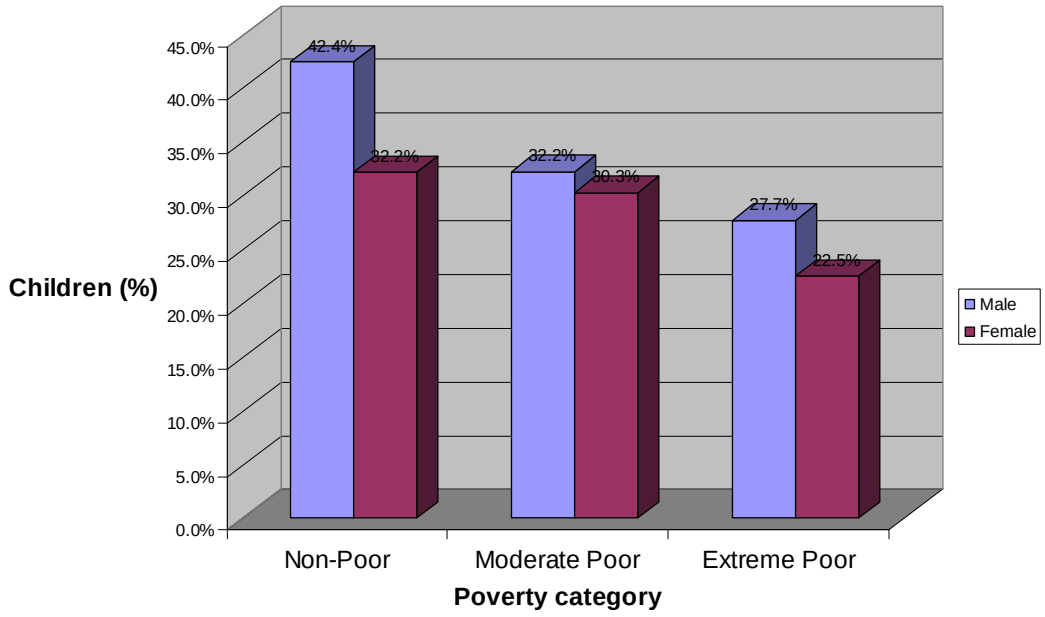


Source: ICES 2001. Moderate poor are children from households whose per capita consumption is lower than the upper poverty line but above the food poverty line. Extreme poor are from households below the food poverty line.

Poverty and School Enrolments by Location of Household

Slight differences in primary school enrolment patterns are observed across rural and urban areas. Gross enrolment rates for males in rural areas do not differ by household poverty status, but rates for rural girls are lower (by about four percentage points) when the household is poor compared to non-poor households. Gross enrolment rates in primary school are lower for girls compared to boys in rural areas. In urban areas, GERs for poor males are higher than for the non-poor, while the pattern is reversed for females— poor girls have lower GERs. It is impossible to reach concrete conclusions based on this data, and more analysis is clearly needed (figure 3.3.9).

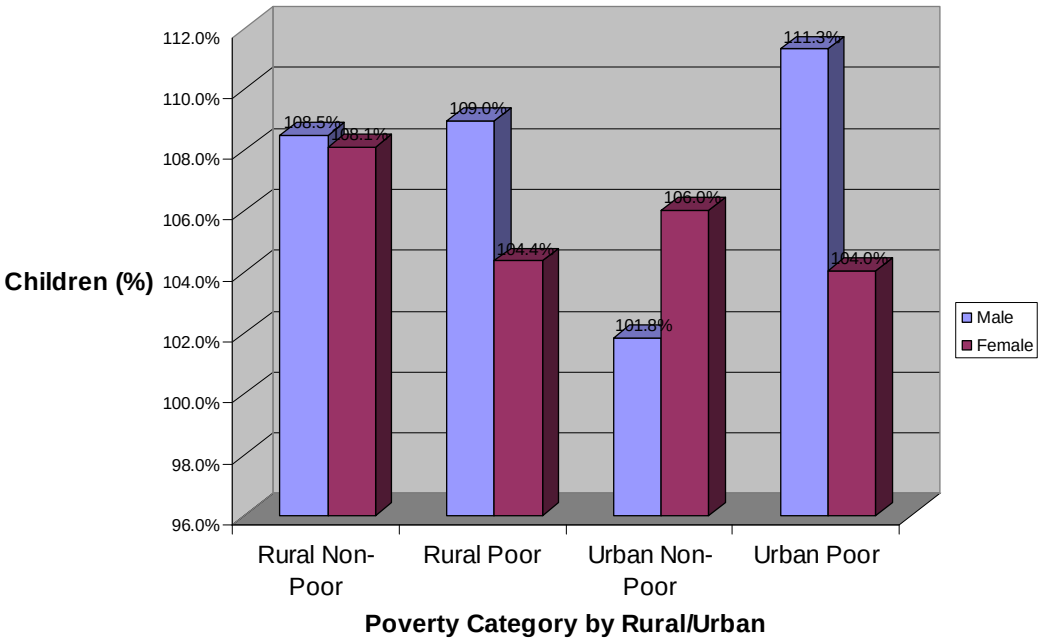
Figure 3.3.8 Secondary School NER by Sex and Poverty



Source: ICES 2001. Moderate poor are children from households whose per capita consumption is lower than the upper poverty line but above the food poverty line. Extreme poor are from households below the food poverty line.

Primary school NERs for girls are higher on average than boys for all poverty categories and regardless of place of residence (figure 3.3.10). The gap between girls and boys is smaller for poor compared to non-poor households. Net enrolment rates in primary schools are also much higher for urban areas, compared to rural areas, regardless of gender and poverty status.

Figure 3.3.9 Primary School GER vs Poverty Group by Rural/Urban

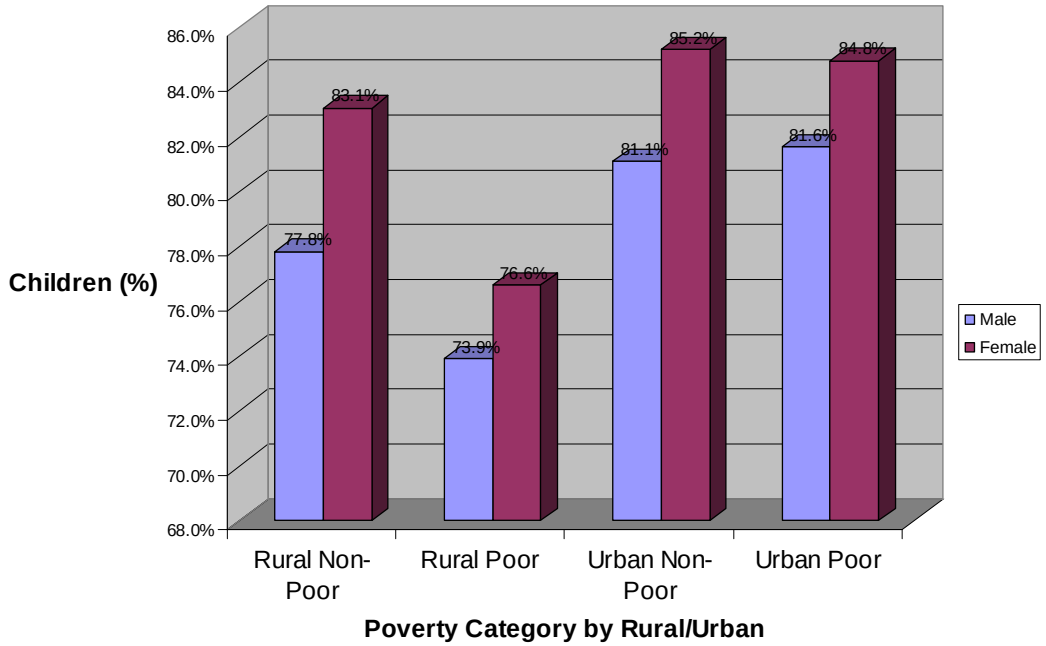


Source: ICES 2001. Poor children are from households whose per capita consumption is lower than the upper poverty line.

Poverty and Types of Schools Attended

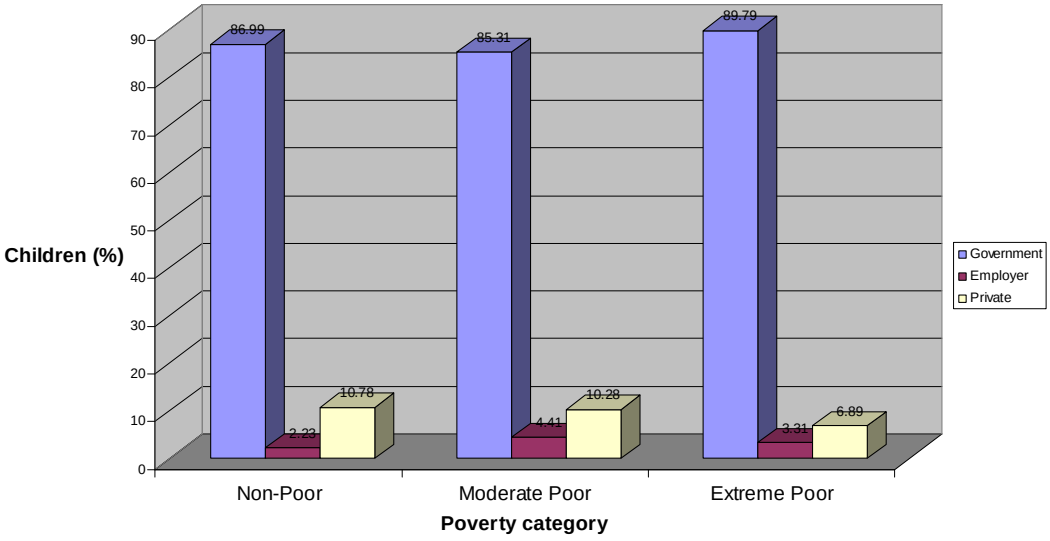
Primary and secondary schools provided by local and central government authorities enroll the largest proportions of children from all poverty groups. Central and local government schools constitute about 85 percent of primary schools and 83 percent of secondary schools (1998 report). The proportion of extremely poor children who are enrolled in government schools is highest, but more than 85 percent of non-poor and moderately poor children are also enrolled in government schools (figure 3.3.11). Private schools are the next most common type of school and while children from all poverty categories attend private schools, proportionally fewer of the extreme poor attend them.

Figure 3.3.10 Primary School NER and Poverty by Rural/Urban



Source: ICES 2001. Poor are children from households whose per capita consumption is lower than the upper poverty line.

Figure 3.3.11 Proportion of Children in Each Poverty Category Enrolled in School vs Category of Education Provider



Source: ICES 2001. Moderate poor are children from households whose per capita consumption is lower than the upper poverty line but above the food poverty line. Extreme poor are from households below the food poverty line.

Box 6: Education Providers in Zimbabwe

Three major providers of education are found in Zimbabwe: local and central government; employers and other private organisations. Employers who provide schools for their employees' children include mining companies and large scale commercial farms. Local authority providers consist of municipalities and rural district councils (RDC). Churches, especially the Roman Catholic Church, run more than 350 schools and other private voluntary organisations more than 500 schools, including some LSCF and mining schools. Whilst before 1994, the provision of tertiary education was the domain of central government, the subsector has now opened up for other providers.

Eighty-six percent of the children in rural local and central government schools are extremely poor, as compared to only 47 percent in urban local and central government schools. Urban private schools are less likely to enroll children from poor and extremely poor households since their main target group consists of children from elite households. Only ten percent of students in urban private schools are extremely poor. In rural areas, poverty is high among children in all school types; 54 percent of children in rural private schools are extremely poor (table 3.3.3). In urban areas, the prevalence of poverty among private school attendees is much lower than poverty for attendees of government and employer schools. Children in urban employer-provided schools tend to be among the poorest in urban areas. In rural areas, attendance in different types of schools is not associated with the poverty condition of the family.

Table 3.3.3 Prevalence of Poverty by Type of School

Prevalence (%) of	Rural School Type			Urban School Type		
	Govt	Private	Employer	Govt	Private	Employer
Poverty	86.1%	84.7%	88.5%	46.8%	38.2%	66.8%
Extreme Poverty	57.1%	46.6%	48.9%	15.7%	11.8%	31.5%

Source: 2001. Poor children are from households whose per-capita consumption expenditures are lower than the upper poverty line (the TPL). Extremely poor children are from households below the lower line (the FPL).

Local and Central Government Schools

Rural central government and rural district council (RDC) schools enroll large proportions of children from poor and very poor households compared to urban schools. While in each of these school categories about 55 percent of the children are

in extreme poverty, beween 14 and 18 percent of the children in urban municipal and central government schools are extremely poor (table 3.3.4).

Table 3.3.4 Prevalence of Poverty in Local and Central Government Schools by Rural/Urban

Type of School	Rural		Urban	
	Poor (%)	Extremely Poor (%)	Poor (%)	Extremely Poor (%)
Government	87.8%	58.9%	46.1%	15.6%
Municipal	79.9%	54.7%	45.3%	13.5%
RDC	85.9%	57.8%	52.0%	18.0%

Source: 2001. Poor children are from households whose per-capita consumption expenditures are lower than the upper poverty line (the TPL). Extremely poor children are from households below the lower line (the FPL).

Central government and RDC primary schools enroll large proportions of children from the poorest households. However, these proportions fall significantly at secondary school level for municipal and RDC schools (the prevalence of the poorest children falls). The fall in the proportion of children from the poorest households at secondary school indicates that a significant proportion of rural poor children drop out of school at the primary level; central government schools in rural areas appear to do a better job in retaining poor and extremely poor students. In urban areas, fewer children from the poorest households participate in central government and municipal secondary schools (table 3.3.13).

Table 3.3.13Prevalence of Poverty in Local and Central Government Primary and Secondary Schools by Rural/Urban

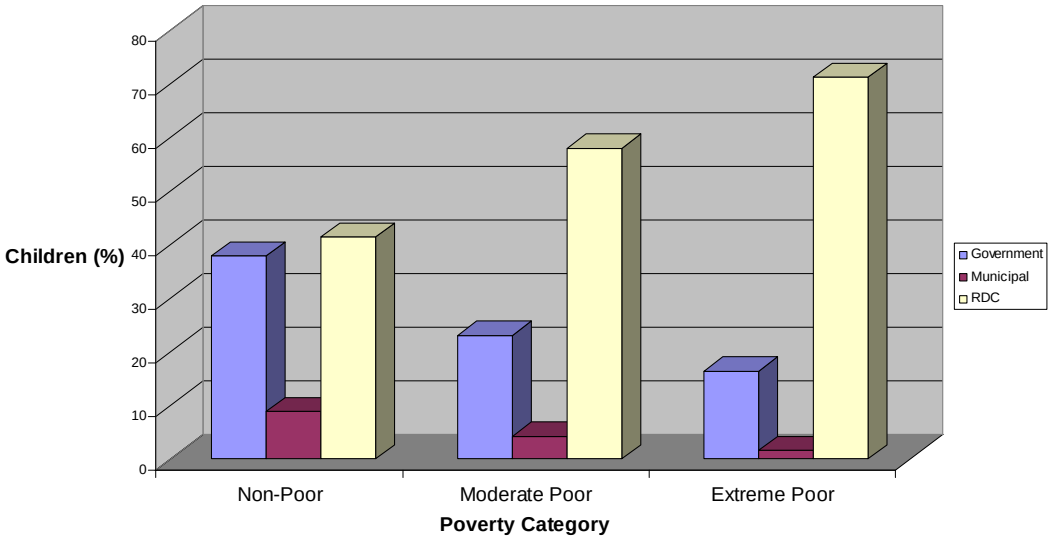
Type of School		Rural		Urban	
		Poor (%)	Extremely Poor (%)	Poor (%)	Extremely Poor (%)
Primary	**Central Govt**	87.8%	60.5%	48.8%	17.1%
	Municipal	80.4%	54.0%	46.3%	12.9%
	RDC	86.9%	58.8%	52.1%	20.3%
Secondary	**Central Govt**	87.8%	55.0%	42.8%	13.2%
	Municipal	63.8%	36.2%	42.7%	16.9%
	RDC	81.2%	50.4%	49.7%	12.4%

Source: ICES 2001. Poor children are from households whose per-capita consumption expenditures are lower than the upper poverty line (the TPL). Extremely poor children are from households below the lower line (the FPL).

Participation in central government primary and secondary schools declines with poverty, whilst participation in schools administered by rural district councils

increases sharply. Primary school enrolments in municipal schools also decline as the poverty status of the household worsens and these schools cater to small proportions of children from all poverty groups. In secondary schools, the proportion of children going to central government schools also declines as poverty status worsens, and RDC enrolment also increases. (figures 3.3.12 and 3.3.13). These trends are due to two main factors.

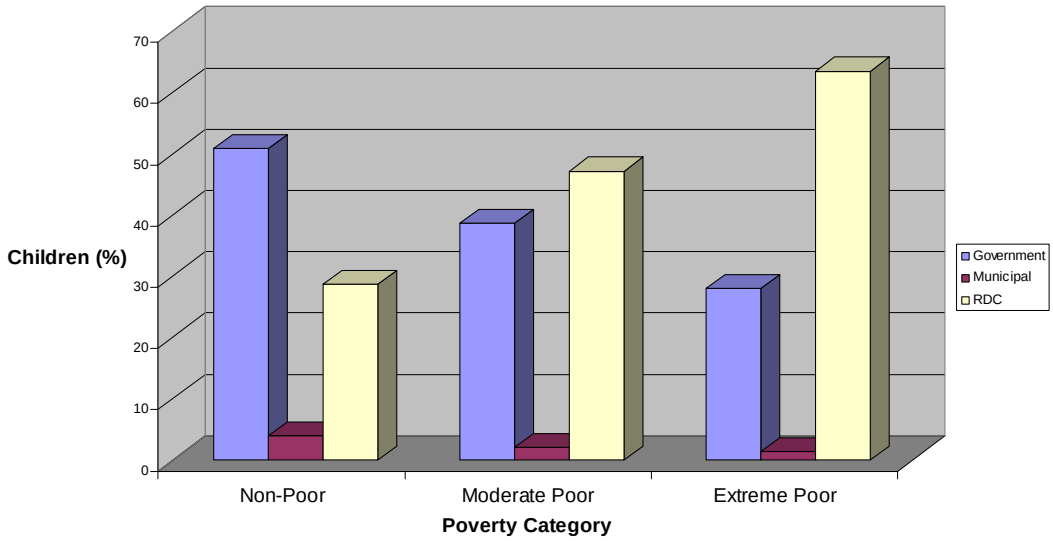
Figure 3.3.12 Proportions of Children in Enrolled in Local and Central Government Primary Schools vs Poverty Group



Source: ICES 2001. Moderate poor are children from households whose per capita consumption is lower than the upper poverty line but above the food poverty line. Extreme poor are from households below the food poverty line

Firstly, almost all central government schools are in urban areas where there are more non-poor than poor households. Currently, there are very few municipal secondary schools, hence central government dominates in the provision of secondary education. As highlighted in the previous section, the non poor have superior secondary school entrance, gross and net enrolment rates. Secondly, the large poor population in rural areas tends to enroll in rural district council (RDC) schools that are relatively affordable. They cannot afford to send their children to boarding schools because of cost.

Figure 3.3.13 Proportions of Children Enrolled in Government Secondary Schools by Poverty Group



Source: ICES 2001. Moderate poor are children from households whose per capita consumption is lower than the upper poverty line but above the food poverty line. Extreme poor are from households below the food poverty line.

Employer schools

Employers in large scale commercial farming areas and mining towns generally provide education facilities for children of their employees. Since settlements in these two areas are normally located far away from other settlements, children (regardless of household poverty status) do not have much choice besides enrolling at their local school. Hence, each of these employer-provided schools enrolls only about two percent of children across all poverty categories.

Private Schools

Unlike mining and large scale commercial farm schools that cater to small proportions of children from all the poverty groups due to location and limited choice for households, both primary and secondary mission/church and other private schools enroll small proportions of the school going population because they are expensive by Zimbabwean standards.[16] However, these schools appear to be doing a relatively

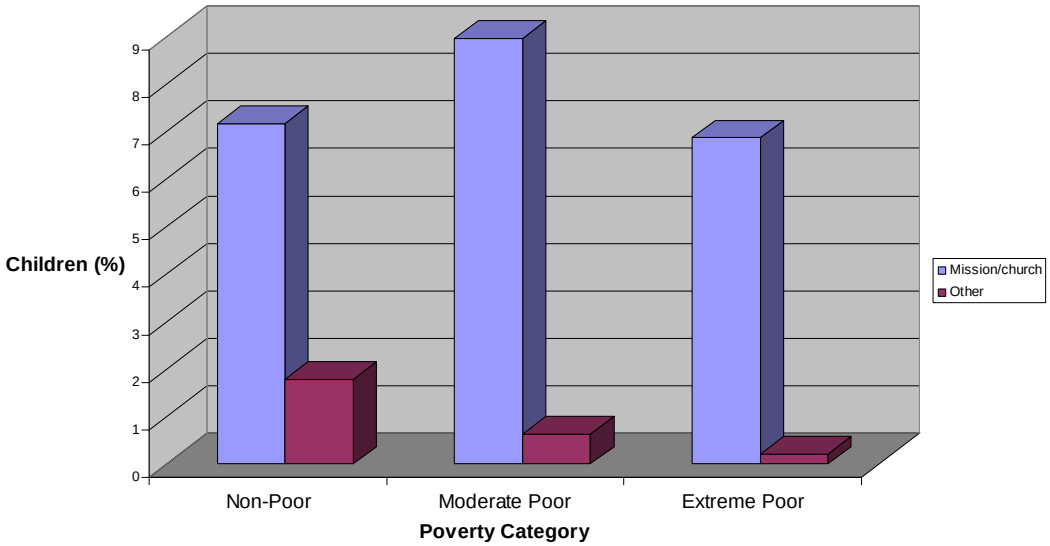
[16] Enrolments by these two categories of schools are higher than shown in this Report because children in boarding schools were not captured by the ICES as they were not part of the household. Almost all mission schools and a large proportion of the high-fee private schools are boarding schools. Those

good job at mitigating these cost constraints, as relatively equal proportions of children in each poverty group are enrolled in mission and church schools (Figure 3.3.14). Enrolments of non-poor children in mission/church primary and secondary schools are similar, and participation of the non poor in private secondary schools relatively high (figure 3.3.15).

Box 8: Private Schools

Zimbabwe has a well-established system of mission schools run by churches and other private schools run by boards of trustees/governors. In 1996 there were 387 mission schools and 304 private schools (MoE and UNICEF (1997)).[17] Among the private schools, a considerable proportion are high-fee schools that only attract children from non-poor households who can either pay the fees from their own earnings, or get school fee assistance from their employers as a fringe benefit.

Figure 3.3.14 Proportion of Children Enrolled in Mission/Church and Other Primary Schools by Poverty Group



Source: ICES 2001. Moderate poor are children from households whose per capita consumption is lower than the upper poverty line but above the food poverty line. Extreme poor are from households below the food poverty line.

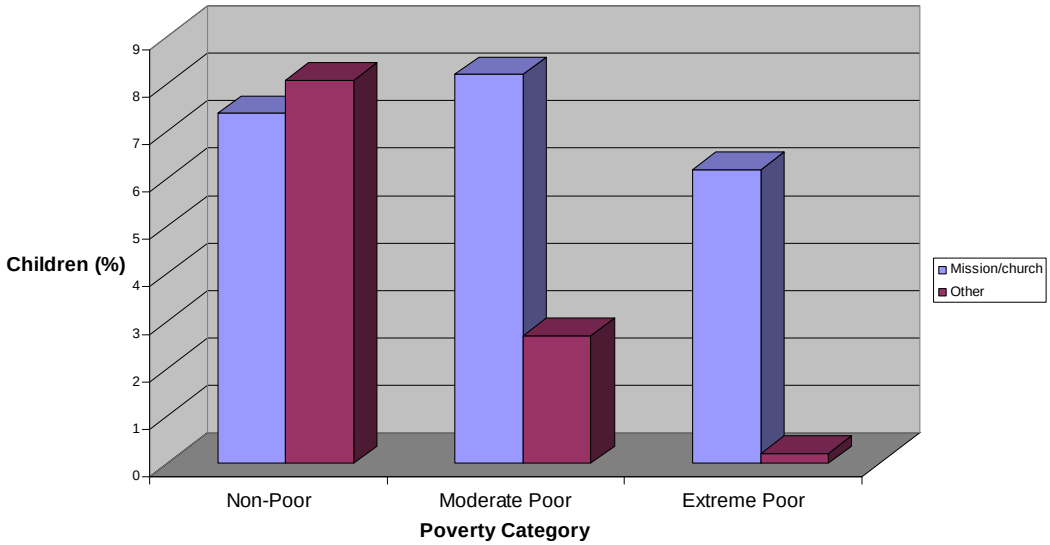
Implications on Educational Policy

captured as attending these schools were mostly probably enrolled as day scholars in these schools, or, they were on vacation from school during the time of the survey.

[17] This figure excludes 297 primary and secondary schools in large scale commercial farms and mining towns that were also privately owned or run by boards of trustees/governors.

An extra dollar ploughed into the development of RDC schools will benefit children and people from the poorest households. Municipalities should also give particular attention to the construction of more primary and secondary schools, as their share in the whole sector is still very small.

Figure 3.3.15 Proportion of Children Enrolled in Mission/Church and Other *Secondary Schools by Poverty Group*



Source: ICES 2001. Moderate poor are children from households whose per capita consumption is lower than the upper poverty line but above the food poverty line. Extreme poor are from households below the food poverty line.

Poverty declines as educational attainment increases, hence average returns to education are high. Government should, therefore invest in education for poverty reduction purposes, particularly in rural areas where there are low enrolment rates and poverty is most prevalent. Most of the households in the rural areas are poor and are likely to participate less in education due to cost and time constraints. Returns to education in rural areas are low and this is likely to be a disincentive for rural communities to invest in the education of their children. Central Government thus has a role in supporting rural education; society as a whole will benefit because social returns will exceed rural returns (because of migration).

Government should also reconsider its policy of paying salaries for teachers in private schools, especially in urban areas. Since more children from elite households are enrolled in these schools, the salary payments amount to an indirect subsidy to the

rich. These resources could be directed towards the development of education infrastructure in rural areas.

Government has done a lot in reducing urban poverty by investing in the children of urban households. It could now be time to direct resources to rural educational development. Government should consider investing in improvement and rehabilitation of educational infrastructure in rural areas.

Whilst Government has achieved significant progress in formulating policies directed at improving access to education, a lot still has to be done in terms of policy implementation. Incentives need to be designed to discourage parents from keeping their children out of school. Effective policing mechanisms should be put in place to ensure that children are not sent away from school for finance-related reasons, and that parents do not unnecessarily keep their children out of school.

4 Summary and conclusions

Wide spread poverty and severe inequality are some of the major challenges that Zimbabwe faces. To address these two challenges there is need for both the government and the private sector to come up with complementary broad-based macro economic policies to ensure a sustained growth and put measures to make sure that the economic growth benefits the poor.

Poverty is more prevalent, deeper and more severe in the rural areas of Zimbabwe. Some of the factors that contribute to rural poverty are limited employment opportunities, unreliability of communal agriculture, population pressure on communal and resettlements lands, inflexible institutions for land allocation and low levels of education. The 1995/6 drought and floods in 1999/2000 contributed to the high incidence of poverty in this period. These led to increased transitory poverty in rural and resettlement areas. There are strong poverty reducing returns to economics growth in these areas. In these rural and resettlement areas, there is great need to diversify the economy, improve the productivity of traditional agriculture and support development of the educational infrastructure. Inflexible rules for the allocation and transfer of land have contributed to the high numbers of people (and dependants) per unit of land among the poor. More flexibility should be a target for policy. The government should also invest more in the soil research and study so that productivity per unit of land is improved across the board.

It should be recognised that the solutions to rural poverty should not be confined to rural areas alone; creation of employment in urban areas can also help by relieving population pressure and providing resources for supporting the rural community. There are close linkages between rural and urban areas, and slow growth in urban employment negatively affects the flow of remittances to rural areas. Rural households, especially female headed ones, tend to be highly dependent on these remittance flows.

The driest areas of the country tend to be the poorest, and drought seems to have worsened the poverty significantly in these areas. The poorest households especially those in Matabeleland North and South tend to be those with limited assets, almost complete reliance on agriculture as a source of livelihood and income, and low levels of education.

The poor tend to have larger family sizes than the non poor. These large households also tend to have more children and elderly dependents. In turn these characteristics tend to perpetuate poverty overtime leading to a vicious cycle of intergenerational misery. Children from such households are less likely to attend school and more likely to drop out of school earlier. The children also face problems of access to secondary education and participation due to the limited number of schools and limited means by the households. Some illnesses go untreated, not only due to distances to health services but also because the costs of treatment exceed the family's means.

Although urban poverty is less severe than in the rural areas, it is a problem. The poor urban households tend to depend more on irregular or informal income sources and the formal sector has not created the growth in employment required to absorb the large number of personnel entering the job market. Slow employment creation in urban areas reduces remittances to rural areas and contributes to rural poverty. These sources usual do not provide benefits such as medical aid or retirement. The households of the poor in urban areas just like in the rural areas are larger than the households of the non poor, and this indicates a perpetuation of poverty through the generations. Children in the poor urban households are similarly less likely to attend school and more likely to drop out.

The sector wise profile of poverty illuminates several areas that deserve attention by policy makers.

Agriculture

Poverty is deeper and more severe among households that depend on agriculture, particularly in the rural and resettlements areas. The poor in the resettlements own more assets than the poor in the rural areas indicating that there is a potential for poverty reduction through productivity improvement in theses areas. A broad- based economic growth, through more favourable producer prices; productive-enhancing innovations etc will reduce poverty significantly. Large family sizes in rural and resettlement areas are closely associated with poverty. Land policy should there fore allow flexibility in household land holding sizes. Access to land per person is a strong determinant of poverty in agricultural areas.

Most food subsidies do not flow to the poorest rural communities but are more beneficial to the poor urban households where severity and depth of poverty is less pronounced. The vast majority of the poor agricultural households produce much of

the food that they consume (particularly maize). This means that they purchase far less maize than the urban households and benefit less from the subsidies.

Government support for agriculture should be reoriented towards core agricultural services with greater focus on technological and service needs of the poor. The poor need low cost technology that improve the productivity of their land holdings, reduce uncertainties caused by frequent droughts, floods and are appropriate, the given the resources and knowledge base. These dynamics need to be factored into decisions on funding of agricultural research. Techniques for better water management and increased access to water for agricultural production should also be given high priority.

Health

There appears to be mistargeting of public expenditure on health which is meant for the poor. The policy of exemption on fees for primary health care in rural areas has benefited the poor and the non poor equally. Most rural poor people who do not seek medical care are constrained by the high cost of such services and by the distances to the service facilities. Mobile clinics are one alternative that can be explored. In urban areas, the main constrain to treatment of illness faced by the poor appears to be high costs. This indicates that there is a need for health care benefits (such as those paid by SDF) to be expanded to cover the urban poor. Public health centres are used more frequently by the urban poor, though a significant percentage also opts for the private health centres.

Urban sanitation and water supplies appear to be almost universally available even to the poor, but in the rural areas there is a great need for improvement of both of these facilities. For example sanitation facilities do not exist in most of the homes of the rural poor and a high percentage of the rural poor rely on unsafe water supplies.

Education

Zimbabwe's achievements in education are impressive and these achievements create conditions favourable for long term economic growth. However education spending should also benefit from improved targeting. Poor children in both rural and urban areas are less likely to attend school and more likely to drop out than the other children. These patterns are pronounced in for secondary education, where payoffs to education are higher.

Access to secondary education remains limited to many Zimbabweans, but the poor suffer from lowest enrolment rates. Whilst the country has made large investment in secondary schools infrastructure and teacher training, the majority of the children in need of secondary education do not benefit from this investment especially the poor. This implies that the limited access is cost related among other underlying factors that need further investigation. A programme to expand access to secondary education should therefore be considered. In rural areas access to education is poorer than in urban areas, and some of the implicit subsidies in education system flow disproportionately to the urban areas. Although rural primary schools are exempted from tuition fees children are constrained by other factors, as they tend to enroll late and drop out early.

Economic returns to education are lower in rural areas than in urban areas. The poorest household may aware of these limited returns and that tend to invest less in the education of their children. Government might have to increase its investment in education in rural areas so as to increase participation by the rural poor. Alternative programmes to generate employment opportunities in rural areas will increase rural returns to education and provide incentives for educational investments by the rural poor.

5. APPENDICES

Annex A

The ICES and Welfare Measurement

The 2001 ICES is the major source of data for the poverty profile. There was need to ensure that the use of data in the best possible manner to create measures that have a close correspondence to the concept of welfare and poverty.

The basic guiding principle for use of the data was to create "good" measures of the concepts of interest. For the purpose of this analysis, these variables are taken to be household income and household consumption expenditures[18]. No single measure can fully capture the multidimensional aspects of welfare or poverty. However, it can be argued that since consumption expenditures or income reflect a person's command over goods and services on which much welfare does depend, they represent more comprehensive indicators of welfare than other measures. Information is also needed on household composition to ensure consistency. Many of the other variables in the ICES (such as employment, schooling, health) also affect well being and may not be adequately reflected in consumption expenditures. Consumption of public goods and many benefits that do not flow through markets can be difficult to measure and value. They are also not included in the measure of consumption used in this study.

It is important that the measure (consumption or income) corresponds closely to the concept in question. Both of these are "flow" concepts, whereas wealth is a "stock" concept. Therefore, there is need to measure the flow of goods, money, etc. that are either consumed, or accrued as income. It is also important to avoid double counting. Double counting occurs when goods are purchased and then used to produce something else that is either consumed or used to create income.

Income is a net concept; it should be computed as the difference between revenues (actual and imputed) earned by the household and costs (such as the purchase of inputs). Expenditures on inputs into, for example, farm production are an obvious area where double counting needs to be avoided, as these expenditures do not fit into the concept of consumption. Purchases of flour used to produce bread are counted in the own-consumption portion of the questionnaire and should not be included in the final expenditure measure.

Standard economic concepts should be used to help define each "variable." The notion of a household balance sheet can help sort things out. In such a balance sheet, household "expenditures" on consumption should equal household income plus the net change in asset position including savings. Everything entering the consumption portion of the balance should have a corresponding entry on the income or asset side.

Household Income/Consumption Balance

[18] Consumption expenditure is used in this study because a large part of welfare ultimately depends on the consumption of goods and services. Typically, expenditure surveys measure purchases of goods and expenditures are used as a proxy for consumption. The comprehensive nature of the ICES allow us to construct a measure of household consumption that includes consumption of home-produced goods, consumption from durable assets, implied consumption from owner-occupied housing, etc.

The basic balance equation for household income, asset values and consumption is

$$C_i \equiv Y_i - A_i,$$

where C_i represents consumption (in dollars) by the i^{th} household (the identity could also use at subscript for time), Y_i is the income and A_i is the asset position of the i^{th} household. This identity must hold for every household for every period of time.

Aggregate Income Balance:
Nationally, the following must hold,

$$\sum Y_i \equiv Y,$$

where Y is national income. That is, we should recognize that our individual measures of household income need to be consistent when aggregated. Similarly, consumption should sum to national consumption.
Aggregate Consumption Balance:
In the aggregate, consumption must also balance,

$$\sum C_i \equiv C,$$

where C is national consumption. These identities provide information about how different items should be treated:

1) **Savings.** Savings can be thought of as the residual on household consumption, a part of the asset balance in the preceding discussion. They represent income not spent on direct consumption, but on consumption deferred into the future. In a balance sheet approach, savings and dissavings represent changes in the net wealth (A_i) of the household. This asset position creates the link between household income and consumption. Current savings are not, therefore, consumption expenditures, and sales of assets (except capital gains) should not be treated as income.
2) **Imputed expenditures and imputed income**. Imputations are required in a number of cases. Consumption of own-produced goods counts both as income and as expenditure. This consumption is valued by the household in the ICES, i.e. there is a corresponding "imputed" income accrued from this consumption. Purchase and consumption of durable goods need to be handled in a similar fashion. An expenditure on a durable item represents a transfer to the household "asset account." It should be treated exactly as savings. Only that portion of the asset that is "consumed" in the period in question is counted as consumption. Thus, the purchase price should be amortized over the life of the good in question. How does such consumption of durable goods enter the income side of the balance sheet? Note that the income used to purchase the asset was earned at some prior time. This income was disposed of by spending it on the asset (a transfer to the asset account). "Consumption" occurs over the life of the asset; this initially earned income is gradually disposed of.
3) **Assets** whose values are not diminished by use. Some assets are not "consumed" by their continued use. Housing is the principal example; the value of housing does not fall by continued occupation. In such cases, consumption does not lessen the value of the asset, and an imputed income must be used to balance the sheet. Also, imputed values (or implicit rental values) goes into C_i if the housing is owned.
4) **Remittances.** The balance sheet should not only balance at the household level, but also in the aggregate. How do remittances enter on the income side of the equation and on the consumption side? Remittances sent out of the house should count against net income (even though it might seem strange, these are part of the "cost" of earning an income);

remittances received from others add to income. Such a treatment ensures balance at the national level. Remittances out of a house are not expenditures (nor consumption). Since income must equal expenditures, remittances are income that never happened.

During the processing of the consumption variable, the above conventions were adhered to. The resulting variable (household consumption in a given month) was expressed on a household per-capita basis in order to conduct the analyses.

Annex B

ICES Data Processing

The 2001 ICES data needed extensive processing to create the measure of household consumption expenditures. Household consumption expenditures form the core welfare indicator for ranking households in this report. Normal cleaning of the data was required. The raw data were generally quite clean, but some outliers were identified by examining the univariate distributions of variables. Obvious expenditure outliers for all goods were investigated carefully, and, in fewer than 20 cases, were replaced by overall mean expenditures.

The decision to use consumption rather than expenditure made it necessary to smooth some expenditures (on durables and schooling) and to impute in some cases (durables, schooling, and housing). These smoothing and imputation procedures are described below. The expenditure recall period for the ICES was generally the past month, except for durables, which are recalled for the past 12 months. This recall period causes problems in the recording of lumpy expenditures, particularly schooling and some durables.

Food Items

Minimal cleaning was required for food expenditures. The ICES has detailed information on expenditures (market, own consumption, gifts, transfers, and payments in kind) for some 250 items. Although market purchases were recorded for all food items, own consumption, gifts, transfers, and payments in kind were recorded for only broad groups of food items (such as Bread and Cereals). This reporting makes it impossible to measure total consumption of each item, especially when own-consumption constitutes a large share of consumption of the item in question.

Table B.1 Mean Shares in Total Food Expenditure of Own-consumption, Gifts, transfers, and Payments in Kind, by Broad Food Group

	Share of Total Expenditure on Each Broad Group from Own Consumption		
Broad Food Group	**All Zimbabwe**	**Rural**	**Urban**
Breads and Cereal	22.52	35.01	2.71
Meats	26.22	41.92	2.97
Fish	18.34	22.68	4.47
Fruits	37.75	62.43	1.63
Vegetables	6.8	10.24	1.32
Dairy	52.89	69.29	13.24
Fats and Oils	63	77.35	12.99
Nuts	85.67	89.01	31.67
Tubers	53.36	72.95	6.96

Source: ICES 2001.

Since own consumption of bread and cereals constitutes about 23 percent of household consumption of bread and cereals, and since it is impossible to identify how much of that is devoted to maize, it is impossible to estimate the exact

consumption of maize[19].The inability to disaggregate non-market consumption of particular food items had a particular impact on the estimation of the food poverty line. The adopted methodology (see annex D) required an estimate of the total quantity of each major food consumed. The ICES 2001 expenditures were divided by product prices to compute a quantity of each good. In the case of non-market consumption, the problem is to identify the correct prices. Simple indices were used to create a composite price of these non-market items (see annex D).

Nonfood Items

Housing

Rents were imputed for owner-occupied housing. The imputations made by the ICES enumerators (see item 315 in the 2001 ICES questionnaire) did not add explanatory power to the imputation equation, and were not used (see Annex C for a description of how the value of housing consumption was imputed for owner-occupied housing).

Mortgage payments were also available from the ICES (item 578). These payments were used only in cases where the household reported living in a rented dwelling and the reported mortgage payment was different from the reported rent. In such cases, it was assumed that the mortgage payment was for a dwelling different from the one occupied by the household in question. Then the mortgage payment was added to rental expenditures. In all other cases, mortgage payments were not included, as the imputed price of owner-occupied housing was assumed to capture the consumption benefits from housing ownership.

Schooling

Expenditures on schooling had to be treated in a manner that was consistent with the study's use of consumption as the means of ranking household welfare. Households that had children in school either had expenditures (and an implied equivalent value of consumption of school services), or they received free schooling which also represents a consumption of school services. Two problems had to be addressed when creating the variable for household consumption of school services: the lumpiness of expenditures on school fees, and valuing the consumption associated with free schooling.

Information on schooling is found in two places in the ICES. Schooling status of household members was collected in the section on household demographics. Questions were asked about the highest grade completed, current attendance, and type of school for current attendance for all members of the household. As boarders who live away from the home are not considered as household residents, there is no information on them. Expenditures on school-related items were recorded for the month during which the household was interviewed.

Expenditures on schooling, including school fees, levies, and other fees, tend to be lumpy, as they are usually incurred only once per term. For this reason, expenditures on schools were imputed for a large number of households who reported having children in schools, but who reported none of these expenditures. A simple regression analysis was run for those households that were interviewed during months when they would normally be expected to pay fees. Two separate regressions were run: one explaining the school fees paid and one explaining payments of levies and building fees. The regressions used only those observations from households that were interviewed during the first two months of each term.

[19] It is not known if this own consumption is of maize, millet, sorghum, or other member of the bread and cereal group.

Table B.2 Variables Used in School Fees Regression, and Regression Results

Variable Name	*Description*	**Parameter Estimate (standard errors)**	
		School Fees Equation	**School Levies Equation**
Intercept		246.87 (36.07)	37.28 (8.33)
Term 2	Dummy variable=1 for households interviewed in term 2	-1 (69.38)	-4.52 (5.54)
Term 3	Dummy variable=1 for households interviewed in term 3	-446.51 (74.98)	-4.00 (6.07)
Kidsgsp	Number of children attending government primary school	-93.63 (31.37)	3.19 (2.51)
Kidsgss	No. children attending government secondary school	345.47 (60.77)	8.91 (4.85)
Kidsmcp	No. children attending municipal or council primary school	-22.5 (56.36)	8.36 (4.50)
Kidsmcs	No. children attending municipal or council secondary school	970.85 (133.5)	26.98 (10.66)
Kidscsp	No. children attending mission or private primary school	99.91 (33.17)	3.19 (2.65)
Kidscss	No. children attending mission or private secondary school	-285.00 (78.59)	6.02 (6.28)
Manicaland	=1 for residence in Manicaland, 0 otherwise	-475.55 (122.31)	-38.80 (9.77)
Mash. Central	=1 for residence in Mashonaland Central, 0 otherwise	-421.05 (145.19)	-30.78 (11.59)
Mash. East	=1 for residence in Mashonaland East, 0 otherwise	-553.68 (140.12)	-8.45 (11.19)
Mash. West	=1 for residence in Mashonaland West, otherwise	-563.17 (131.78)	-37.77 (10.52)
Matabel. North	=1 for residence in Matabeleland North, 0 otherwise	-581.05 (154.79)	-32.80 (12.36)
Matabel. South	=1 for residence in Matabeleland South, 0 otherwise	-553.41 (156.45)	-25.72 (12.49)
Midlands	=1 for residence in Midlands, 0 otherwise	-530.65 (127.27)	-24.57 (10.16)
Masvingo	=1 for residence in Masvingo, 0 otherwise	-513.40 (138.53)	-34.94 (11.06)
Rural	=1 for residence in rural areas, 0 otherwise	-87.14 (41.35)	-5.16 (11.37)
Number of Obs		1349	831
Adj R^2		.076	.076

Source: regression results using ICES 2001data.

Fees and levies were regressed on a number of variables including number of children in schools of different types, the term in question, urban/rural status, and dummy variables representing province of residence (table B.2).

Regression results are all consistent with expectations. Households interviewed during the start of term 3 spent less on fees than households interviewed during the first and second term

(the first term is the omitted category). The largest share of fees and levies is usually collected during the first term; and some schools collect levies only during the first term.

Fees and levies for secondary school students are higher than for primary students, while mission and private fees are higher than any other type of school. These results are also consistent with expectations. In terms of location, school fees and levies in Harare and Bulawayo (the deleted categories)[20] are higher than in any other province in the country. Fees in Mashonaland East and Mashonaland West are the lowest in the country, while levies in Matabeleland North are the lowest.

The results from this regression were used to impute school fees and expenditures for those households who reported paying no fees, and for those households interviewed during months other than the first two months of each term. It was assumed that the imputed fee and levy represented a term payment, and the imputations were divided by three (the number of months in each term). For households in these other months, the information on the number of children in each school category, province, term of interview, and place of residence was combined with the regression results to produce an "imputed" expenditure on schooling.

For households with children in school that were interviewed during the first two months of the term, reported expenditures on school fees and levies were used. However, if the household reported not paying any school fees or levies and reported having children in school, fees and levies were imputed.

Durable goods

Since the study uses the concept of household *consumption,* rather than *expenditures,* to rank household welfare, care needed to be taken in separating flows of consumption benefits from purchase and ownership of durable goods. Two procedures were employed to measure the flow of consumption benefits from the purchase and ownership of durable assets.

Expenditures on durables tend to be very lumpy. To be consistent with the study's use of consumption, it was necessary to spread the value of expenditures on durables over the estimated lifetime of the good in question. Welfare-relevant benefits from such purchases are far below the purchase price, depending on the estimated life of the asset. The monthly consumption benefit equals the expenditure in the past year on each asset (as reported in the 2001 ICES), divided by the total expected life of the asset in months. The estimated lives of durable assets that were used in the study are presented in table B.3. Purchases of 12 durables are recorded in the 2001 ICES (see table B.3); their purchase values were divided by the average monthly life to reach a monthly equivalent expenditure value.

Since ICES records ownership of key assets (see table B.3), it allows an imputation of the benefit flows accruing to the household from such ownership. If the household reports owning the asset, the monthly equivalent benefit from such ownership was computed as the average purchase price divided by the asset's monthly life.

Table B.3. Durable Asset Lives and Estimated Purchase Prices

	Ownership		**Values of Assets[a]**

[20] The regression contains a number of dummy variables (provinces). If all these dummies were included in the regression, there would be a perfect linear dependency between the dummy variables and the intercept term. To run the regression, one or more of the provincial dummy variables is deleted, and the coefficients on the other provincial variables are interpreted with respect to the deleted province.

Asset	Recorded in ICES[b]	Estimated Life (years)[c]	Number of Observations[d]	Mean Expenditure on Asset (Z$)[e]
Automobile	yes	10	58	28948
Refrigerator	yes	10	196	6560
Stove	yes	10	361	1282
Heater	yes	5	313	40
Television	yes	10	376	1963
VCR	yes	3	47	4596
Radio	yes	5	873	725
Bicycle	yes	5	114	790
Furniture	no	10		
Jewelry	no	10	891	70
Other electronic goods	no	5	205	624
Other appliances	no	7	544	473

[a]From ICES
[b]If ownership was recorded, then benefit flow from ownership is imputed, if ownership of item is not recorded, then flow of benefits from a recorded purchase are spread over the life of the asset.
[c]Based on judgment of team
[d]Number of households recording purchase in past 12 months
[e]Used as the purchase price for imputations for consumption flows from ownership of automobiles, refrigerators, stoves, heaters, televisions, VCRs, radios, and bicycles.

Average purchase prices were taken from the information from the ICES on household expenditures. Eight such imputations were possible from the information from the ICES (see table B.3).

This means of imputing benefits from ownership introduces error in that there is no information from the ICES on the quality of the durable nor on its age. It is assumed that durables are all of a uniform quality and that no movement in relative prices of durables occurs over the life of the asset.

Because purchase and ownership benefits are measured, the interest payments on consumer loans (items 583-592 in the ICES 2001) are not included when computing consumption. Their inclusion would represent double counting.

Non-durable goods

Expenditures on non-durable items such as clothing, household furnishings, etc. were recorded for the month of the interview and were included directly. No imputations were necessary and only minimal cleaning was required.

An obvious problem is associated with this treatment of non-durables such as clothing as a current expenditure (rather than amortising the expenditure over the life time of the good in question). These expenditures can be as lumpy as expenditures on durables, and the flow of consumption benefits from ownership of these items is not included in the measure of welfare. This problem could not be avoided, as there is no information on ownership of these items from the ICES. Instead of spreading purchase values over the expected lives of some of these semi-durable assets, reported monthly expenditures were used to capture the consumption benefits from such purchases.

In the case of certain expenditures on repairs (e.g., for automobiles), it could be argued that the expenditures are required to maintain the flow of consumption from the durable. We

instead assume that repair expenditures are required to maintain the consumption flow and therefore are not amortized over the life of the asset.

Total Consumption

Total consumption was computed as the sum of the monthly consumption of food, non-durable and durable goods, housing, and schooling. All expenditure categories that are present in the ICES were included in this computation. For example, expenditures on transportation, fuel, etc. were all included. To ensure that comparisons are made in terms of real consumption, nominal consumption values were divided by the CSO's consumer price index. This index varies by month and by province, but not by rural and urban residence. Since there is a spatial and temporal source of price variability, the reference had to include a location at a specific time; Harare in July 2001 was used as the base, and each region/ temporal CPI was normalised using the July 2001 Harare CPI.

Annex C

Housing & Rental Values

Overview

Different means of imputing values of owner-occupied housing were attempted and compared. These imputations are described in this annex. It was found that:

1) There exists selectivity bias; that is, factors that determine the value of housing determine the value of housing in a different way depending on whether the housing is rented or owner-occupied.
2) ICES enumerator imputations of the values of owner-occupied housing were significantly different from predicted rents based only on those houses/apartments that were actually rented.
3) Use of ICES enumerator imputations does not lead to improvements in ability to predict rental values.

As a consequence of these findings, the enumerator imputations were not used; a single hedonic regression that expressed the value of rented housing as a function of that housing's characteristics was used to value owner-occupied housing. This regression was corrected for selectivity bias, but observations on enumerator-imputed values were not included.

Background

The ICES is unusual among similar surveys in developing countries in that it collected information on housing, including housing characteristics and rental expenditures. For owner-occupied housing, there are two sources of information on its value: regular mortgage payments and imputations conducted by enumerators who were asked to estimate the market value of the monthly rent for the housing. There were too few observations on actual mortgage payments for the variable to be useful for the purposes of the analysis.

Table C.1 Actual and Imputed Expenditures on Housing, by Place of Residence

Variable	**All Zimbabwe**		**Rural**		**Urban**	
	N	**Mean (Z$)**	**N**	**Mean(Z$)**	**N**	**Mean (Z$)**
Housing Rental						
Furnished	338	264.2	39	143.7	299	221.3
Unfurnished	5115	149.3	340	196.5	4775	135.4
Imputed	8305	177.5	6876	103.2	1429	643.9
Owner's Fees	548	160.2	6	1100.4	542	149.9
Mortgage Payments	355	360.4	16	340.0	339	361.0

Source: 2001 ICES.

The mean imputed (by ICES enumerators) housing rental values are higher than actual rental values (table C.1). This difference is difficult to interpret because the enumerator imputations are for owner-occupied housing and the actual rentals only exist for rented housing. Urban imputations are more than 6 times those of rural areas, while unfurnished rentals (actual) are higher in rural areas than in urban areas. In rural areas, mean imputed housing rental values are about the rental values of housing that is actually rented.

Since the study uses the concept of consumption to rank household welfare, it is necessary to include actual rental expenditures (for households that occupy rental housing), the imputed value of owner-occupied housing, and the imputed value of tied housing when that housing is provided by the employer. These values had to be included in the measure of total consumption expenditures of the household.

Two important issues had to be addressed to determine which housing value to include in the measure of consumption expenditures:

1) How much faith to place in the enumerators' imputations; and,
2) How to impute rental expenditures for the remaining households (i.e. for all households that do not report a rental payment in the case that the enumerators' imputations are totally discounted, or for those households without either a reported or imputed rent).

The procedures used to answer these questions were as follows. First, the plausibility of the different estimates was checked by examining the distribution of the variables. An outlier check revealed no obviously incorrect values. Imputed rent ranged in value from Z$ 0.50 to Z$12 000, while furnished and unfurnished rents had maxima of Z$8 000 and Z$45 000. The latter value appears high, but an examination of the individual data record confirmed its plausibility.

Second, a hedonic regression equation was run using the following model:

$$\ln(\text{rent}) = f(X,Z,X*I,Z*I), \qquad \text{(C.1)}$$

where X is a vector of variables representing housing characteristics, Z is a vector of location-specific dummy variables, I is a dummy variable (=1 if the rental amount was imputed for the household in question, and =0 otherwise), X*I and Z*I are interactions between the independent variables and the imputation dummy variable, and ln(rent) is the natural log of imputed and actual rents. The interaction terms in this regression allow a test of whether the imputation procedure generates significantly different estimates of rental value than the market.

If the imputations generate significantly different estimates, the question that dad to be answered is: Do we gain information by including imputations in the regression? That is, are the predicted rental values obtained by including the observations that were imputed better than those obtained by not including these values?

Sample Selection Bias

Prior to estimation of equation C.1, it was necessary to determine if sample selection bias was present. When rents are observed for a fraction of the entire sample, the distribution of the values of observed rents is truncated at zero. This truncation can lead to a non-zero correlation between the explanatory variables (X, Z, etc.) and the error term in an OLS regression using C.1. Non-zero correlation leads to sample selection bias which means that use of predicted rents from equation C.1 to estimate rents for owner-occupied housing would be invalid. Essentially, sample selection bias results when the regime determining rents for owner-occupied housing is different from the regime for market rents. Rental housing is in some way different from owner-occupied housing.

To test for sample selection bias, a two-stage technique was employed. In the first stage, a probit equation was run, estimating the probability of rental (a zero-one dummy variable) as a function of explanatory variables. The probit estimation gives the inverse Mill's ratio:

$\lambda_j = \phi(f_k)/\Phi(f_k)$, (C.2)

Where $\Phi(.)$ is the cumulative distribution function and $\phi(.)$ is the probability density function of the standard normal distribution. f_k is the predicted probability from probit estimation. In the second stage of the regression, the inverse Mill's ratio was entered as a RHS regressor in an OLS regression of log rents on the exogenous variables (see Maddala, 1983, Chapter 8 for more information). The inverse Mill's ratio "corrects" the equation for the selection bias.

The probit equation should include some exogenous variables that affect only the probability that housing is rented, but not the rental value. These "instruments" are required to "identify" the inverse Mills ratio. It was assumed that the location of the household, whether in communal areas, large-scale commercial farming areas, small scale commercial farming areas, and resettlement areas, affects the probability of rental. Once these houses are rented, the characteristics of the housing, and not its land-use area location, are assumed to determine the value of the house.

Table C.2 Probit Results

Variable	Parameter Estimate (p-values in parentheses)
intercept	-0.411 (0.0002)
careas	1.647 (0.0001)
lscf	1.588 (0.0001)
sscf	1.542 (0.0001)
rareas	1.562 (0.0001)
dwellt	1.731 (0.0001)
dwellm	1.155 (0.0001)
dwelld	0.068 (0.5223)
dwellth	-0.192 (0.1045)
Bulawayo	-0.161 (0.0001)
Manicaland	-0.258 (0.0001)
Mashonaland Central	0.476 (0.0001)
Mashonaland East	-0.047 (0.4868)
Mashonaland West	-0.172 (0.0009)
Matabeleland North	-0.716 (0.0001)
Matabeleland South	-0.811 (0.0001)
Midlands	-0.134 (0.0120)
Masvingo	-0.159 (0.0107)
N	17555
-2 log likelihood	-5590.39

Source: 2001/1996 ICES regression results

Thus, CAREAS, LSCF, SSCF, and RAREAS are dummy variables representing location in communal, large scale commercial farming, small scale commercial farming, and resettlement areas, respectively (see table C.2). The DWELLT,M,D, and TH variables, defined below, are dummy variables representing the household type, and regional dummy variables.

Variables included in regression model

Variables from various sections of the ICES were used in the hedonic property value equations. These included characteristics of the housing and location variables.

Housing characteristics (X):

DURACC: Access to durables (stoves, refrigerators, electric heaters, and washing machines) =1 if household has access to any, =0 otherwise.
POOL: =1 if house has swimming pool (household reported expenses on pool chemicals or pool maintenance), =0 otherwise.
GARDEN: =1 if house has garden (purchased gardening inputs), =0 otherwise.
DWELLT: =1 if traditional dwelling type, =0 otherwise.
DWELLM : =1 if mixed dwelling type, =0 otherwise.
DWELLD: =1 if detached or semi-detached dwelling type

DWELLTH: =1 if townhouse.
ELEC: =1 if house has electricity, =0 otherwise.
FOODEN: =1 if household cooks using gas or electricity, =0 otherwise.
WATER1: =1 if house has piped water inside the house, =0 otherwise.
WATER2: =1 if house has piped water outside the house or a communal tap, =0 otherwise.
WATER3: =1 if house has borehole water =0 otherwise.
TOILET1: =1 if house has a flush toilet, =0 otherwise.
TOILET2: =1 if house has a Blair toilet or a pit toilet, =0 otherwise.
FURNISH: =1 if rental is furnished, =0 otherwise.
LOAN: =1 if owned housing is mortgaged, =0 otherwise.
INSURE: =1 if housing is insured, =0 otherwise.
MORTEXP: A continuous variable representing monthly mortgage payment.
OWNERFEE: A continuous variable representing payment in last month of owner's fees.

The variables POOL, GARDEN, ELEC, FOODEN, FURNISH, LOAN, INSURE, MORTEXP, and OWNERFEE are all expected to have positive impacts on the rental value. They all are consistent with higher quality housing. The three variables representing dwelling type are interpreted with respect to the missing housing category (Other – see question 36 on p.7 of the ICES questionnaire). It is expected that all signs will be positive, with DWELLTH and DWELLD having the largest magnitude, since these housing categories are associated with properties that are more expensive.

Likewise, the three water variables should be interpreted with respect to the deleted category (unprotected wells, river/stream, other). The signs of the coefficients should all be positive with WATER1 having the largest magnitude. TOILET1 and TOILET2 are compared to the deleted category (none, other), and their signs should be positive, since the presence of either type of toilet would be expected to increase the house's value. DURACC should have a negative sign as it is most likely to be consistent with group or shared housing and indicates that the household does not own, but only has access to the durable goods in question.

Location variables (Z):

Two classes of location-specific variables (Z) were used in the housing value regression:

RURAL: =1 if household is in rural area, =0 otherwise.

The other class was a provincial level dummy showing province of resident. The deleted class is Harare, and all the signs are expected to be negative as Harare has the most expensive properties of all provinces. RURAL's coefficient is also expected to have a negative sign.

Table C.3 Summary Statistics for Variables in Regression Model

Variable	**N**	**Mean**	**Standard Deviation**
DURACC	17081	0.23	1.614
POOL	17451	.000	0.190
INSURE	17451	.008	1.002
GARDEN	17451	.003	0.677
LOAN	17451	.017	1.521
DWELLT	22224	0.24	0.428
DWELLM	22224	.025	0.431
DWELLD	22224	.037	0.482
DWELLTH	22224	0.03	0.176
ELEC	17555	.314	5.322
FOODEN	22224	0.25	0.436
WATER1	22224	0.10	0.304
WATER2	22224	0.32	0.468
WATER3	22224	0.32	0.465
TOILET1	22224	0.32	0.466
TOILET2	22224	0.33	0.471
FURNISH	22224	0.01	0.095
RURAL	17555	.633	5.528
MORTEXP	355	360.43	6160.93
OWNERFEE	548	160.17	4290.57

Source: ICES 2001

Table C.4 Results of Housing Value Regression, with Imputed Values[a]

Dependent variable: ln(rent)	**Parameter Estimate (t-statistics)**	
Variable	*Parameters*	**Parameters Interacted With I**
INTERCEPT	5.71 (12.23)	
DURACC	-.221 (-3.60)	0.024 (0.17)
POOL	3.704 (4.28)	-2.468 (-2.00)
INSURE	0.349 (3.49)	-0.084 (-0.54)
GARDEN	-0.105 (-0.48)	0.529 (1.89)
LOAN	-0.494 (-5.03)	0.527 (4.26)
DWELLT	0.450 (1.96)	0.302 (0.79)

DWELLM	-0.575 (-3.14)	1.774 (4.99)
DWELLD	-0.029 (-0.29)	1.476 (3.52)
DWELLTH	0.218 (1.98)	0.691 (1.49)
ELEC	0.295 (7.06)	0.137 (1.59)
FOODEN	0.154 (4.40)	0.214 (2.61)
WATER1	0.860 (5.54)	-0.452 (-2.64)
WATER2	0.530 (3.53)	-0.656 (-4.12)
WATER3	0.494 (3.15)	-0.459 (-2.90)
TOILET1	0.193 (1.59)	0.185 (1.13)
TOILET2	0.208 (1.69)	0.071 (0.57)
FURNISH	-0.035 (-0.65)	0.408 (1.38)
BULAWAYO	-0.128 (-2.56)	0.343 (4.32)
MANICALAND	-0.411 (-5.77)	0.036 (0.34)
MASHONALAND CENTRAL	-0.616 (-6.00)	0.848 (6.47)
MASHONALAND EAST	-0.326 (-4.79)	0.304 (2.98)
MASHONALAND WEST	-0.550 (-9.89)	0.646 (6.73)
MATABELELAND NORTH	-1.081 (-10.08)	0.702 (5.39)
MATABELELAND SOUTH	-0.852 (-7.20)	0.437 (3.18)
MIDLANDS	-0.627 (-11.50)	0.608 (6.43)
MASVINGO	-0.948 (-14.48)	0.756 (7.47)
RURAL	-1.077 (-5.11)	-0.204 (-0.94)
MORTEXP	0.000 (3.14)	0.000 (0.93)
OWNERFEE	0.004 (4.67)	-0.004 (-4.03)
λ	-3.205 (-4.19)	-0.773 (-1.03)
R^2		.434
N		12974

[a] The full model regression contains all the exogenous variables interacted with the dummy variable representing whether the rental value was imputed or not.

Full Model Results[21]

The full model includes the inverse Mill's ratio and interactions between the explanatory variable and I. I is the dummy variable representing whether or not the rental value was imputed. Thus, the full model represents a regression of C.1, and all value observations (whether actual or imputed) were used. The full model results are shown in table C.4.

The correction for selectivity bias is necessary as the coefficient attached to λ is significant in the full model (table C.4). In addition, the results show that the regimes determining the housing value differ depending on whether the rents are actual or imputed. A Chow test was conducted to determine whether the interaction variables were jointly significant. The null hypothesis that the interaction terms could be deleted from the regression was rejected (p=0.0004). This finding means that there will be significant differences in rental imputations in cases where the imputed rents are used in the estimation.

[21] All regressions were examined for violations of statistical assumptions. The main means of examination are residual plots and plots of squared residuals.

The critical issue is not, however, whether the regression regimes are different, but whether or not including the information from the imputed rents helps in better prediction of actual rents. In fact, we have no objective information about the quality of the imputations.

To examine whether information is added when including imputed observations, two steps were taken. First, a second, or restricted model was run. This model is identical to the full model with the exception that it excludes the I*Z and I*X interaction variables. It also includes only those observations with actual rental values. The imputations were not included in this second regression[22]. The results of this regression are presented as model 1 in table C.5.

The regression results for model 1 in table C.5 are consistent with expectations. Variables associated with higher quality housing (WATER1, POOL, etc.) all had a positive impact on rental values. Rental units in urban areas are, all else equal, higher priced than in rural areas. Bulawayo is the province with the most expensive housing, all else held equal (Harare is deleted and thus represents the comparison province), and Matabeleland North is least expensive.

An example of differences between the two models is found in the coefficient on the variable POOL. The housing market places a higher value on the presence of a swimming pool than do the ICES enumerators (the coefficient from model 2 is larger than that for model 1). The ICES enumerators also tend to undervalue the presence of piped water within the housing unit. Other differences exist (see table C.5).

To examine the predictive power of models 1 and 2, the coefficients from each of these regressions were used to create a predicted housing value. Predictions were only made for observations with actual rental values (thus, no predictions were made for housing for which the ICES enumerators made an imputation). These predicted values were compared to actual housing values, and an R^2 measure was computed.

It was found that the imputations did not add any explanatory powers to the regression. In fact, the coefficients that were estimated while including the imputations (model 2 parameters in table C.5) led to significantly worse predicted rents than those estimated using only actual rents. The errors in prediction for the model that was estimated using all (actual and imputed) observations are shown in figure C.1. Comparing this figure with the errors obtained using the regression coefficients when only actual rental observations are included (figure C.2) shows that the latter regression is a better predictor of actual rents.

Table C.5 Results of Housing Value Regression

Dependent variable: ln(rent)	**Parameter Estimate (t-statistics)**	
Variable	*Model 1*	**Model 2**
INTERCEPT	6.138(8.54)	6.568(26.28)
DURACC	-0.231(-3.41)	-0.352(-5.98)
POOL	3.635(3.68)	2.788(4.17)
INSURE	0.291(2.85)	0.345(4.20)
GARDEN	-0.054 (-0.23)	0.256(1.72)
LOAN	0.153(2.06)	0.310(4.94)
DWELLT	0.377(1.30)	-0.285(-2.32)

[22] The variables MORTEXP and OWNERFEE were also not included, as these were obviously not appropriate in a regression explaining *rental* housing values.

DWELLM	-0.630(-2.54)	0.102(0.84)
DWELLD	0.000(0.00)	-0.025(-0.23)
DWELLTH	0.203(1.63)	0.610(0.55)
ELEC	0.289(6.15)	0.355(9.06)
FOODEN	0.176(4.52)	0.250(7.36)
WATER1	0.904(5.15)	0.348(5.90)
WATER2	0.541(3.17)	-.115(-2.12)
WATER3	0.532(3.00)	0.051(2.04)
TOILET1	0.165(1.19)	0.121(1.95)
TOILET2	0.169(1.18)	0.234(9.35)
FURNISH	-0.69(-1.14)	-0.295(-5.22)
BULAWAYO	0.271(4.72)	0.272(7.10)
MANICALAND	-0.420(-4.76)	-0.770(-17.55)
MASHONALAND CENTRAL	-0.748(-5.38)	-0.326(-7.05)
MASHONALAND EAST	-0.339(-4.36)	-0.424(-9.71)
MASHONALAND WEST	-0.615(-9.08)	-0.490(-11.49)
MATABELELAND NORTH	-1.065(-7.19)	-1.031(-20.58)
MATABELELAND SOUTH	-0.861(-5.25)	-0.983(-19.55)
MIDLANDS	-0.658(-10.15)	-0.586(-14.09)
MASVINGO	-1.005(-13.02)	-0.757(-17.22)
RURAL	-1.230(-4.04)	-0.725(-6.98)
λ	-3.877(-3.44)	-3.407(-9.44)
$\mathbf{R^2}$	.320	.326
N	5225	12974

Notes: Model 1 parameters were estimated using only those observations with actual rents.
Model 2 parameters were estimated using observations on actual and imputed rents.
A third regression was run, using the imputed and actual observations and the same set of right-hand side variables as in the second regression (results shown as model 2 in table C.5). Both model 1 and model 2 coefficients can be used to predict housing values for owner-occupied and tied housing. As can be seen, the coefficients from the two models are similar in sign, magnitude and significance. Differences do exist.

Conclusively, the process of imputing housing values (for owner-occupied housing) leads to predictions (of actual rental values) that are no better than those obtained using market data alone. The value of housing consumption for owner-occupied housing in the body of the report uses the imputations from model 1.

Figure C.1: Actual Minus Predicted Rents, Prediction using Model Estimated including Enumerator Imputations.

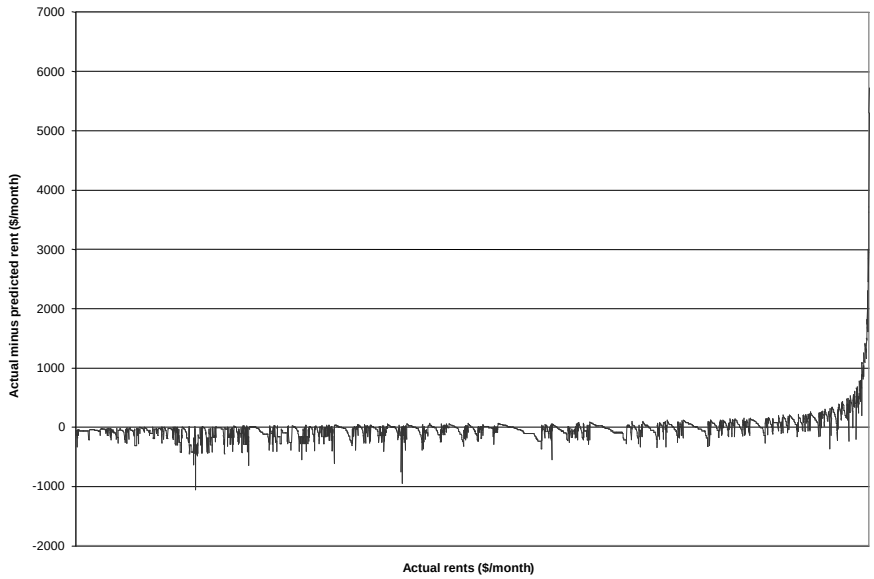
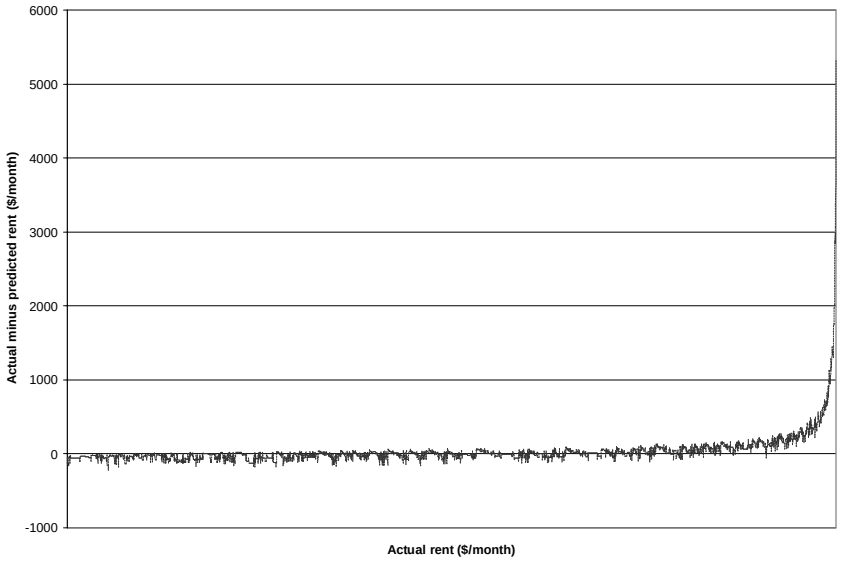


Figure C.2. Actual Minus Predicted Rents, Prediction using Model Estimated without including Enumerator Imputations.



Annex D

The Poverty Datum Line for Zimbabwe

Background

A number of studies have been conducted related to poverty and its determinants in Zimbabwe. These include Cubitt and Riddell, Cubitt, Jackson and Collier, Ministry of Public Service, Labour and Social Welfare, among others. These studies address many of the issues surrounding the level and composition of a poverty datum line (PDL). They note that as the PDL is the primary building block of subsequent analyses, determining the line is a critical first step in any analysis of poverty.

Different methods can be employed to determine the PDL, including the "food energy" method, the "least-cost diet" method, and the "cost of basic needs" method. The cost of basic needs method was adopted in this study because it is consistent with prior practices in Zimbabwe, and is preferred on conceptual grounds because it leads to consistent comparisons among sub groups (for a discussion of consistency and the desirable properties of PDLs, see CSO, 1998; or Ravallion, 1998). All the studies mentioned above used some variation of the cost of basic needs method. Despite their use of a common methodology for developing a PDL, these studies did not use a similar minimum needs basket of items.

The cost of basic needs method consists of identifying a "minimum needs basket" of food items and other consumption goods, and then valuing (using market prices) that basket. The resulting value represents the cost or minimum expenditure required to attain a minimum level of well being (or what Ravallion, 1998, calls "the cost of the poverty level of utility"). As the value of the minimum needs basket will vary depending on the composition of the basket (and, of course, prices), it is important that the basket be consistent with expenditure patterns of the poor.

Methodology

The poverty datum lines employed in this study use a "representative basket" of food items that are consistent with expenditure patterns in Zimbabwe, provide reasonable dietary diversity, and provide a minimum amount of food energy needs. This basket was valued using market prices for the 10 provinces of Zimbabwe[23]; the resulting value (or cost of consumption of the minimum food needs) represents the "food poverty line" (FPL). It is assumed that an individual whose total consumption expenditures do not exceed the FPL is very poor. A second poverty line that accounts also for non-food basic needs was created; this line is denoted the "total poverty line" (TPL). The TPL was derived by computing the non-food consumption expenditures of households whose food expenditures just equal FPL. This amount was added to the FPL. If an individual does not consume more than this TPL, he or she is deemed poor.

There are two options for the "representative basket" of food items: (i) use a single basket for the entire country, or, (ii) use a basket that varies according to location. An example of the second option is the PASS study (MPSLSW) which used different minimum food baskets for urban and rural households. The choice to use single or multiple baskets, and the composition of the baskets is not one that should be made cavalierly. There is substantial evidence that findings relative to where poverty is more severe can depend on the choice (see, for example, Ravallion and Sen).

If a single national basket is used, poverty among certain groups may be understated when their consumption is compared to the cost of each poverty line. The reason for this is that as prices change, consumers substitute away from consumption of relatively more expensive goods and replace them with less expensive sources of nutrients. For example, prices of some commodities such as sugar and cooking oil might be higher in rural areas than they are in urban areas. Rural consumers will substitute less expensive goods for these higher-priced goods. If a constant food basket is used, and prices of the goods in the basket in rural areas are all higher than in urban areas, the poverty line, computed using a single food basket, in rural areas will be higher than it should be. Rural consumers will be able to achieve the same level of welfare, at lower cost to them, by making substitutions. The resulting poverty line will tend to overstate rural poverty relative to urban poverty[24].

The above argument implies that different "baskets" should be used depending on the location, especially if relative prices vary "significantly" across locations. However, a problem emerges with the use of different baskets, because different baskets of goods can imply different levels of welfare. To make poverty comparisons, the analyst must try to insure that individuals (or households) whose expenditures or income are exactly equal to the poverty line have equal levels of well being, regardless of where they live. When "minimum needs" baskets contain different quantities or different items in different areas, it is difficult to insure this equality. Thus, the validity of the poverty comparisons may be compromised by the use of different consumption baskets to construct the poverty line.

[23] Official CSO prices were used. These are collected on a monthly basis in major markets throughout Zimbabwe. As they are regularly updated and form the "Official Price Series" of the Government of Zimbabwe, they are the most appropriate prices to use in this analysis.

[24] The example here is hypothetical, and the real direction of the bias depends on a number of things, including the magnitude of price differences, the source and composition of the minimum needs basket, and the propensity of low-income consumers to make substitutions. The direction of the bias (that is, whether poverty is over- or under-stated in a given area due to the use of a single food basket) is an empirical question.

The CSO is, as a matter of policy, adopting a single minimum needs food basket. There are several reasons for this including the fact that CSO uses single national weights for its CPI. It is desirable to have a consistent methodology for the CPI and the PDLs. In addition, there are substantial difficulties associated with ensuring that welfare levels are similar if different baskets are used. For the purpose of validating inferences, rural and urban minimum needs baskets were identified and the results of the two profiles were compared.

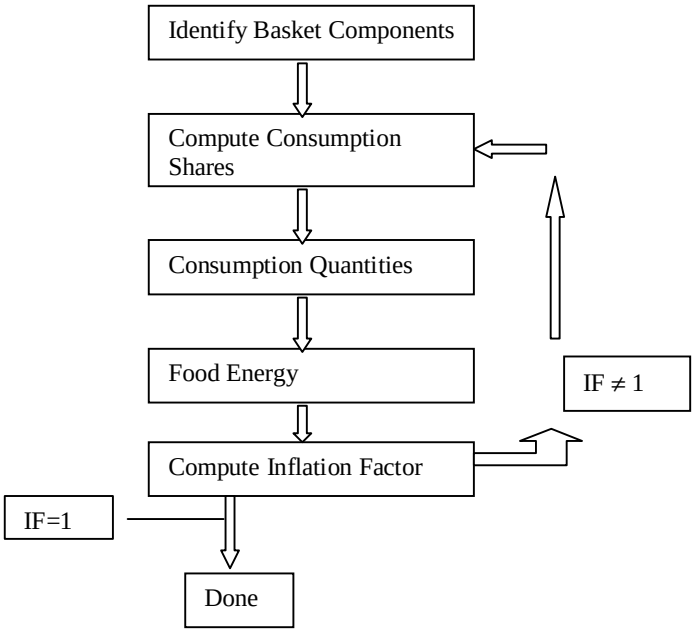
The Minimum Needs Food Basket

The minimum needs food basket was identified by examining expenditure patterns from the 2001 ICES[25] and comparing those patterns to baskets used in other studies. An overview of the procedure used to identify components of the food basket and the quantities of each component is shown in figure D.1.

Identifying basket components

The analysis began by analysing consumption patterns of Zimbabweans. Mean food budget shares[26] were examined for households whose consumption fell below the 40th percentile of total per capita consumption. Food items were identified that constituted at least 1 percent of total food consumption for such households for each province and by rural and urban location. Any item whose mean food share exceeded 1 percent in any province was included in the minimum needs basket. Eighteen expenditure items were identified as being significant components of food expenditure. These commodities and their shares of total food expenditures are shown in table D.1. They formed the "minimum needs" basket of food.

Figure D.1. Process for Determining PDL Quantities



[25] The terms "consumption" and "expenditure" are used interchangeably here. The ICES contains information on market expenditures and non-market values such as own-produced items consumed by the household.

[26] That is, the share of expenditure or consumption of each food in total household food expenditure. These mean shares were computed only for those households below the 40th percentile of the national consumption distribution.

Determining quantities of each component

Once the elements of the minimum needs food basket were identified, there was need to determine the quantity of each element, so that the total basket could be priced. In this step, the average shares of each of these minimum needs elements in the total value of the minimum food needs basket were computed[27]. These shares were only computed for households below the 40th percentile of the national consumption distribution[28]. These shares were multiplied by the value of expenditure at the 40th percentile, and divided by CSO prices, to yield the implied quantity of each good consumed.

Quantities were then converted to their energy equivalent (see section below on how food energy content was computed). The energy content of the food basket (E_B)[29] was compared to the 2100 calorie per person per day FAO minimum dietary needs (E_{MIN}). An inflation factor (E_B/E_{MIN}) was computed and the total expenditure at the 40th percentile was multiplied by this inflation factor (to increase or decrease, proportionally, the quantities of all the items in the basket). This process yields a new consumption cutoff.

Table D.1 Food Commodities Included in the Minimum Needs Basket, and Their Shares Of Total Food Consumption Expenditures[a].

Commodity	Share in total food consumption
Maize (including own-produced)	.216
Bread	.094
Rice	.012
Flour	.018
Beef (including own-produced)	.130
Poultry	.024
Fish	.043
Milk&eggs (including own-produced)	.061
Fats&oils	.066
Rape	.021
Cabbage	.007[b]
Tomatoes	.016
Own-produced vegetables	.093
Groundnuts	.013
Potatoes&tubers	.017
Sugar	.062

[27] The total consumption expenditure by each household on the elements of the minimum needs basket was divided into the value of consumption of each item. This formed a series of expenditures on each item as a share of total expenditures on the food basket.

[28] The choice of this decile as a starting point was arbitrary. The resulting food basket does not depend on this choice.

[29] $E_B = \sum_{i=1}^{n} s_i * x_{40} / p_i * e_i = q_i * e_i$, where i indexes the n (18) items in the minimum needs basket, s_i is the minimum needs expenditure share, x_{40} represents the value of total consumption expenditure at the 40th percentile, p_i is the price of the ith good, and e_i is the energy content of the ith good.

Pulses	.008[b]
Salt & Confections	.016
Total (value food basket divided by total food consumption)	.920

Source: 2001 ICES.
[a] Shares are presented for households below the 40th percentile of total per capita consumption.
[b] Although the mean share is less than 1 %, the share exceeds 1% in at least one province.

Average minimum needs shares were then computed for households whose total consumption fell below the new consumption cutoff. The quantities were recomputed and priced, and the process was repeated until the inflation factor stabilized at 1. This iterative process insures that the budget shares used are consistent with the expenditure patterns of households below the poverty line.

In order to compute rural and urban poverty lines (for the purpose of examining the robustness of the findings of the profile to the use of a single national minimum needs basket), the process was repeated. Budget shares, quantities, and final expenditures were computed for urban and rural areas, separately. The process yielded two minimum needs baskets, one for urban and one for rural areas, while ensuring that the expenditure patterns were consistent with such patterns in rural and urban Zimbabwe.

Computing Food Energy Content

The energy content of the minimum needs basket had to be estimated in order to derive the inflation factor and ensure that the quantities of food in the basket provided adequate dietary energy. To do so, values of expenditure on the food items were divided by the food prices (see above) to yield quantities. After this, the quantities had to be converted to their energy equivalent. To operationalise this approach, the problem of how the 2001 ICES handled own consumption of food items needed to be addressed. Also, assumptions about the energy content of the food items were made.

Table D.2 Assumed Composition of Own-Produced Consumption, by Broad Group

Own-Produced Broad Commodity Group	Assumed Composition
Bread and Cereals	Maize (100%)
Meat	Beef (70%), poultry (30%)
Dairy	Milk (80%), eggs (20%)
Vegetables	Cabbage(33%), rape(33%), tomatoes (34%)

Note: these assumed compositions were based on rough expenditure patterns for market purchases of the items.

To minimize the needs for prices of commodities, the components of the composite commodities were kept to a small number. In the bread and cereals group, maize was the only component, because own consumption of the other major cereals (bread, flour, rice) is unlikely to occur.

Own consumption

Own consumption accounts for a large share of reported expenditures on the following food groups: bread and cereals, meats, dairy products, and vegetables. Since the ICES contains no information on the specific commodities composing these own consumption expenditures,

assumptions needed to be made about their composition in order to compute prices (which are quantity-weighted averages) and energy contents of these commodities[30]. Assumptions about the composition of the own-consumption composite goods were made based on expenditure patterns, on the availability of CSO prices, and common sense. For example, the own-consumption of the bread and cereal group did not include bread (very little own-consumption of bread occurs) or sorghum/millet (CSO does not collect prices of these commodities). The assumed composition of the own-consumption bundle for each of these groups is shown in table D.2.

Energy content

The primary source of information on energy content of food items was the paper authored by Chitsiku. In cases where food items were aggregated into a compound commodity, raw expenditure shares were used to weight the calorie contents of the different components. All energy values were adjusted for energy losses during cooking.

Table D.3 Assumed Energy Content of Food items in the Minimum Needs Basket

Commodity	**Units**	**Kcal/ unit**	*Note*
Maize	100 g	310	Straight run mealie-meal, adjusted (*.89) for energy loss during cooking
Rice	100 g	311	Raw rice, adjusted (*.89) for energy loss during cooking
Flour	100 g	291	Adjusted (*.89) for energy loss during cooking
White bread	Standard Loaf	2100	70 kcal/25 g., 750 g. per loaf
Beef	100 g	251	Stewed beef
Poultry	100 g	216	Roasted chicken
Own-produced meat	100 g	240	Beef (70%), chicken (30%)
Fish	100 g	299	Dried fish
Milk	1 cup (244 g)	150	Fresh whole milk
Own-produced dairy	100 g	151	Milk(80%), eggs (20%)
Oil/fats	100 g	895	Vegetable oil
Cabbage	100 g	20	Boiled
Rape	100 g	36	Adjusted (*.76) for nutrient loss during cooking
Tomato	100 g	16	Adjusted (*.76) for nutrient loss during cooking
Own-produced vegetables	100 g	24	Cabbage (33%), rape (33%), tomato (34%)
Tubers	100 g	78	Compound commodity (.75 boiled potato and .25 boiled sweet potato)
White sugar	100 g	375	
Dried Vegetables	100 g	330	Dried haricot beans

Source: Chitsiku

[30] The ICES addresses own consumption by asking the household the value of own-produced food items consumed in the previous month (see CSO 2001a and CSO 2001b). However, these values were aggregated during completion of the questionnaire into broad food groups. For example, while the ICES contains information on market expenditures on maize, bread, millet, etc., it only contains information on own-consumption of the broad cereal group. Payments in kind, gifts, and transfers are also aggregated in a similar fashion.

When a food basket providing 2 100 calories per day was reached, it was priced for each province and month using local prices. This process yielded region- and month-specific food poverty datum lines.

Non-food expenditures

Because it is difficult to measure quantities, qualities, and prices of non-food goods necessary for a minimum level of well-being, the analysis turned again to revealed behaviour of households near the FPL. Ravallion (1998) shows that on a conceptual basis, the total consumption poverty line cannot exceed the total consumption of those whose actual food spending achieves basic food needs. Thus, we measure the total consumption for households whose food expenditures exactly equal the FPL. This amount of expenditures is the TPL.

To implement this procedure, non-parametric methods are used to measure the total consumption expenditures of those households just spending enough on food to meet the FPL consumption level. The mean total consumption of households whose food expenditures fall between .99 and 1.01 of the FPL was computed. Then mean expenditures for the intervals .98-1.02, .97-1.03 up to .90-1.10 were computed. The mean of these consumption expenditures provides a non-parametric estimate of the mean consumption (food plus non-food). These shares are computed by rural/urban residence and by province.

Because prices vary monthly and by province, the FPL is different for every month and every province. The TPL is different for every month, every province, and by rural/residence.

Results

The iterative procedure outlined above was used to compute a minimum needs basket for all Zimbabwe (table D.4). The minimum needs basket is close in quantities to the basket used in the PASS study (MPSLSW), and closely matches the consumption patterns of Zimbabweans (see Mutungadura and Keogh for an overview of different food baskets used in studies in Zimbabwe). Differences from the PASS[31] basket occur because the CSO modified its questionnaire between the conduct of the 2001 and 2001 ICES, and expenditure patterns of the poor have changed over time.

The quantities consumed in this minimum needs basket are multiplied by the market price in each of the 10 provincial markets to yield a food poverty line for each province. This poverty line varies by market and by month as the prices of the goods in the minimum needs basket change.

[31] The PASS study used a minimum needs basket derived using the 2001 ICES.

Table D.4 Minimum Needs Food Basket for All Zimbabwe

Commodity	Share of minimum needs food basket	Quantity (kg/annum/person)
Maize (including own-produced)	.28	134.7
Bread	.06	18.3
Rice	.01	0.7
Flour	.02	3.6
Beef	.12	11.1
Poultry	.02	2.4
Fish	.05	3.5
Milk&eggs (including own-produced)	.05	15.5
Fats&oils	.06	5.7
Rape	.03	13.1
Cabbage	.01	5.3
Tomatoes	.01	3.1
Own-consumed vegetables	.18	66.7
Groundnuts	.02	8.4
Potatoes&tubers	.02	6.6
Sugar	.08	13.3
Pulses	.01	10.5
Salt	.01	2.9

Source: ICES 2001

Table D.5 Mean TPLs by Place of Residence

	Rural	Urban
Province	Mean TPL	Mean TPL
Manicaland	211.55	235.04
Mashonaland Central	265.07	278.49
Mashonaland East	249.97	283.95
Mashonaland West	234.60	248.90
Matabeleland North	213.10	233.89
Matabeleland South	221.97	225.57
Midlands	215.40	235.95
Masvingo	230.65	260.59
Bulawayo	-.-	312.85
Harare	-.-	289.53

Notes: Variation in TPL is caused by spatial and seasonal variations in prices and by variations in the food shares by place of residence (rural/urban) and province. TPL is measured in Z$ per person per month.

Food shares and non-food needs

A second poverty line (the total consumption poverty line) is derived by obtaining, from the ICES, the average non-food consumption expenditures for households whose food consumption is equal to the FPL. The mean FPL by province and place of residence are shown in table D.5.

Comparison with PASS Results

The ICES results cannot be exactly compared with PASS because different measures of welfare[32], different survey techniques, and different PDLs were used in the two studies. The PASS was conducted using a one-off survey, where the main measure of well-being was income. PASS was also conducted only in November 2001, while the ICES spanned the year from July 2001- June 1996. However, it is possible to isolate the effects of different welfare measures and the errors associated with their measurement from the effect of different PDLs. To do so, the PASS poverty lines were used to compute the prevalence of poverty using the ICES data. The PASS PDLs were adjusted (using the monthly and province-specific CPI) for the month of survey of the ICES. The results, for urban and rural areas are shown in table D.6.

Prevalences of poverty measured using the ICES and the PASS PDLs are much lower than the same prevalences measured using the PASS income measure. This result provides evidence that PASS systematically underestimated consumption (using the income proxy), and systematically overestimated poverty. Reasons for this overestimation may have to do with the timing of the survey (November may be a particularly bad month) or the proxy and how it was measured, or both.

Table D.5 Measured Prevalence of Poverty, Two Surveys, Using PASS PDLs.

	PASS-Measured Prevalence of		ICES-Measured Prevalence of	
Residence	**Poverty**	**Severe Poverty**	**Poverty**	**Severe Poverty**
Rural	75	60	62	36
Urban	39	21	28	10
All Zimbabwe	61	45	50	26

[32] PASS used income per person while this study used consumption expenditures per capita.

Annex E

Miscellaneous Tables

Table E.1.2 Main Activity for People reported to be Working, by Urban/Rural

	Place of Residency		
Percent Workers Reporting Main Activity as	**Rural**	**Urban**	**All Zimbabwe**
Permanent paid employee	12.78	59.77	23.56
Casual/temporary employee	7.51	16.48	9.57
Employer	0.06	0.45	0.15
Communal/resettlement own-account worker	52.20	0.014	40.25
Other own-account worker	2.36	22.07	6.88
Unpaid family worker	25.09	1.08	19.59
Total	**100%**	**100%**	**100%**

Source: 2001 ICES. Workers are only those who currently report being employed.
For example, the main activity of a student is student and he or she would not be included among these numbers.

Table E.1.2 Mean Holding Size (in hectares) in Communal and Resettlement Areas, by Province

Province	Communal Areas	Resettlement Areas
Manicaland	2.13	3.26
Mashonaland Central	2.09	3.89
Mashonaland East	1.51	1.75
Mashonaland West	2.52	3.89
Matabeleland North	2.68	-
Matabeleland South	1.52	3.94
Midlands	2.62	4.51
Masvingo	1.97	5.06

Source: 2001 ICES

Table E.2.1 Shares of Consumption Expenditures by Decile

Decile	Share of Total Expenditure Per Capita	Mean Real Expenditure Per Capita
1	.00849	38.29
2	.01448	58.07
3	.02047	74.86
4	.02664	93.06
5	.03476	113.47
6	.04529	138.11
7	.06175	173.79
8	.09112	226.50
9	.15180	321.48
10	.54520	882.95

Source: 2001 ICES. Harare in July 2001 is the base period.

Table E.2.2 Prevalence of Poor and Severely Poor People and Distribution of Poor People by Rural/Urban

Residence	Prevalence of Poverty	Prevalence of Severe Poverty	Percent Poor People	Percent Very Poor People
Rural	82.4	52.4	82.93	90.05
Urban	42.2	14.4	17.07	9.95
All Zimbabwe	70.9	41.5	100	100

Source2001ICES. Poor denotes residents of households whose consumption expenditures do not meet the upper poverty line (the TPL); very poor people reside in households with consumption expenditures below the lower poverty line (the FPL).

Table E.2.3 Prevalence of Poor and Severely Poor People and Distribution of Poor People By Province

	Prevalence (%) of		Poverty Indices	
Province	Poor People	Very Poor People	Poverty Depth Index	Poverty Severity Index
Manicaland	82.9	56.7	45.9	29.5
Mashonaland Central	73.0	32.8	30.8	16.1
Mashonaland East	76.1	47.6	38.7	23.3
Mashonaland West	74.1	38.6	34.2	19.4
Matabeleland North	84.4	61.4	49.7	34.0
Matabeleland South	77.8	49.8	40.7	25.0
Midlands	69.3	39.1	34.0	20.2
Masvingo	82.2	52.4	43.7	27.5
Bulawayo	44.7	16.4	16.7	8.2
Harare	36.5	11.4	13.0	6.3

Source: 2001 ICES. The poverty gap and the severity indices are the Foster, Greer and Thorbecke $\alpha=1$ and $\alpha=2$ measures, respectively (see Ravallion, 1992 for details). These indices ***are calculated using the upper poverty line.***

Table E.2.4 Distribution of Poor People by Province

Province	Percent Poor People	Percent Very Poor People
Manicaland	23.21	27.11
Mashonaland Central	8.92	6.84

Mashonaland East	10.11	10.79
Mashonaland West	10.90	9.68
Matabeleland North	6.66	8.28
Matabeleland South	6.28	6.86
Midlands	12.23	11.78
Masvingo	12.28	13.39
Bulawayo	2.92	1.83
Harare	6.49	3.45
Total	100	100

Source: 2001ICES. *Poor* denotes residents of households whose consumption expenditures do not meet the upper poverty line (the TPL); *very poor* reside in households with consumption expenditures below the lower poverty line (the FPL).

Table E.2.5 Household Poverty Indices by Sector of Employment of the Household Head

Type of Employment	Prevalence (%) of		Poverty Indices	
	Poor	Very Poor	Poverty Depth Index	Poverty Severity Index
Own-account resettlement farmer	43.6	8.8	17.4	8.8
Own-account other	82.6	26.3	42.8	26.3
Government	51.2	11.2	21.0	11.2
Parastatal	19.5	2.9	6.3	29.1
Private Sector				
Formal Sector	51.4	12.0	22.0	12.0
Informal Sector	58.3	11.6	22.9	11.6

Source: 2001 ICES. Government workers include Central and Local government workers; parastatal includes cooperative employees; formal sector includes registered establishments; informal sector includes unregistered establishments.

Table E.2.6 Prevalence of Household Poverty by Tenure Status

	Rural	Urban	All Zimbabwe
Owner/purchaser	81.4	35.5	72.4
Tenant or Lodger	42.2	35.0	35.4
Tied Accomodation	47.1	24.3	42.3
Other	56.5	33.3	41.3

Source: 2001ICES. Poor people reside in households whose per capita consumption expenditures are below the upper poverty line (the TPL).

Table E.3.1 Prevalence of Poor and Severely Poor People and Distribution of Poor People by Province, Rural Areas

Province	Percent Poor People	Percent Very Poor People
Manicaland	25.18	28.06
Mashonaland Central	10.34	7.43
Mashonaland East	11.69	11.66
Mashonaland West	10.95	9.64
Matabeleland North	7.25	8.96
Matabeleland South	7.34	7.57

Midlands	12.98	12.18
Masvingo	14.26	14.54
Total	100%	100%

Source: 2001ICES. Poor people reside in households whose per capita consumption expenditures are below the upper poverty line (the TPL). Very poor have consumption expenditures below the lower line (the FPL).

Table E.3.2 Poverty Indices for People in Rural Areas by Province

Province	Prevalence of Poverty	Prevalence of Extreme Poverty	Poverty Gap Index	Poverty Severity Index
Manicaland	87.8	62.1	50.0	32.7
Mashonaland Central	75.8	64.6	32.3	17.0
Mashonaland East	77.2	49.0	39.7	24.0
Mashonaland West	80.2	44.9	38.5	22.2
Matabeleland North	91.8	72.2	56.9	39.8
Matabeleland South	83.0	54.4	44.1	27.2
Midlands	78.1	46.6	39.9	24.1
Masvingo	84.4	54.7	45.3	28.7

Source: 2001ICES. The poverty gap and the severity indices are the Foster, Greer and Thorbecke α=1 and α=2 measures, respectively (see Ravallion, 1992 for details). These indices are calculated using the upper poverty line.

Table E.3.3 Indices of Poverty Among People by Rural Land Use Areas

Land Use Area	Prevalence (%) of		Poverty Indices	
	Poverty	Extreme Poverty	Poverty Gap Index	Poverty Severity Index
Communal Areas	84.0	55.3	45.3	28.6
Small Scale Commercial Farms	74.1	46.1	38.2	23.6
Large Scale Commercial Farms	71.8	32.4	30.8	16.6
Resettlement Areas	90.3	62.9	50.2	31.2

Source: 2001ICES. The poverty gap and the severity indices are the Foster, Greer and Thorbecke α=1 and α=2 measures, respectively (see Ravallion, 1992 for details). These indices are calculated using the upper poverty line.

Table E.3.4 Prevalence of Poverty and Extreme Household Poverty by Natural Region and Land Use (prevalence of extreme poverty in parentheses)

Land Use	Natural Region				
	I	**II**	**III**	**IV**	**V**
Communal Areas	91.5 (73.5)	79.8 (52.2)	82.0 (49.2)	84.8 (55.9)	88.5 (61.1)
Small-scale Commercial Farms	91.6 (81.2)	54.6 (19.2)	N/A*	81.4 (53.8)	N/A*
Large-scale Commercial Farms	58.4 (17.5)	73.5 (32.5)	74.8 (42.4)	45.3 (21.3)	67.6 (41.0)
Resettlement Areas	N/A*	87.9 (54.2)	91.3 (64.1)	90.2 (66.7)	88.9 (67.1)

Source: 2001ICES. Poor are households whose per capita consumption expenditures are below the upper poverty line (the TPL). Very poor have consumption expenditures below the lower line (the FPL).

* The respective land uses were not in the ICES sample for these natural regions.

Table E.3.5 Percentage of Males and Females Reporting an Illness, by Poverty Status

Poverty Status	Sex	
	Male	Female
Non Poor	15.89	15.99
Poor	12.8	12.8
Poorest	9.91	11.95

Source: 2001ICES. Cells are the percentage of people reporting being ill in the past 30 days.

Table E.3.6 Prevalence of Poverty Among People by Sex and Education of the Household Head, Rural and Urban Areas

Education of Household Head	Rural		Urban	
	Poor	Very Poor	Poor	Very Poor
All Households				
None	90.1	66.4	70.1	29.8
Primary School	86.2	56.2	54.1	21.5
Secondary School	74.2	41.0	40.1	11.6
Post-secondary School	50.2	20.5	33.7	9.0
Male-headed				
None	91.2	67.0	75.7	32.57
Primary School	86.5	56.4	52.4	19.1
Secondary School	74.6	41.3	40.5	12.1
Post-secondary School	46.4	17.6	31.9	8.0
Female-headed				
None	89.1	65.8	63.9	26.7
Primary School	85.7	55.7	57.8	26.9
Secondary School	73.2	40.3	38.5	9.4
Post-secondary School	20.3	36.2	10.1	1.8

Source: 2001ICES. Poor people reside in households whose per capita consumption expenditures are below the upper poverty line (the TPL). Very poor have consumption expenditures below the lower line (the FPL).

Table E.3.7 Poverty Indices for Households by Sex and Education of the Household Head

Education of Household Head	Prevalence (%) of		Poverty Indices	
	Poor	Very Poor	Poverty Depth Index	Poverty Severity Index
Male-headed				
None	81.7	51.6	43.5	27.5
Primary School	70.5	39.3	34.2	20.1
Secondary School	49.3	20.2	19.6	10.4
Post-secondary School	17.2	3.3	5.0	2.0
Female-headed				
None	80.3	52.8	43.1	27.1
Primary School	73.3	42.4	35.9	21.3
Secondary School	51.3	23.3	21.7	11.9
Post-secondary School	12.6	2.2	4.0	2.0

Source: 2001ICES. The poverty gap and the severity indices are the Foster, Greer and

Thorbecke α=1 and α=2 measures, respectively (see Ravallion, 1992 for details). These indices ***are calculated using the upper poverty line.***

Table E.3.8 Prevalence of Household Poverty by Sex and Education of the Household Head, Rural and Urban Areas

Education of Household Head	Rural		Urban	
	Poor	Very Poor	Poor	Very Poor
Male-headed				
None	82.8	54.2	64.4	22.6
Primary School	78.4	46.2	52.0	13.7
Secondary School	64.1	32.2	37.7	8.0
Post-secondary School	36.8	12.3	15.8	2.8
Female-headed				
None	81.8	55.0	54.8	22.6
Primary School	79.4	47.9	44.3	18.2
Secondary School	63.4	32.06	29.1	7.0
Post-secondary School	14.4	2.5	6.0	1.1

Source: 2001ICES. Poor households have per capita consumption expenditures are below the upper poverty line (the TPL). Very poor have consumption expenditures below the lower line (the FPL).

Table E.3.9 Poverty Indices Computed for People by Education of the Household Head

Education of Household Head	Poor	Very Poor	Poverty Depth Index	Poverty Severity Index
None	90.7	67.5	57.1	37.1
Primary School	82.9	53.9	51.8	31.7
Secondary School	60.3	27.3	42.0	22.4
Post-secondary School	24.6	5.2	29.4	12.4

Source: 2001 ICES. The poverty gap and the severity indices are the Foster, Greer and Thorbecke α=1 and α=2 measures, respectively (see Ravallion, 1992 for details). These indices ***are calculated using the upper poverty line***.

Table E.F.1 Access to Sanitation and Electricity by Poverty on Large Scale Commercial Farms

% With Access to	Type of LSCF							
	Type I		Type II		Type III		Type IV	
	Non-poor	Poor	Non-poor	Poor	Non-poor	Poor	Non-poor	Poor

Safe Water	98.3	94.2	96.5	95.1	98.0	91.2	96.3	93.6
Toilet (Flush or Blair)	76.9	56.5	62.3	51.0	91.3	52.4	74.0	51.9
Electricity	24.0	5.8	9.9	5.6	71.5	17.4	23.4	7.5
Cook with Electricity	15.7	1.8	2.7	0.1	60.3	6.2	10.2	1.6

Source: 2001ICES. Poverty refers to the prevalence of households or people in households whose consumption expenditures per capita are below the upper poverty line (the TPL). Type I households have three or fewer members and are headed by someone who has at least some secondary education; type II are small in size, but headed by someone with only primary education; type III are large in size, with a well-educated head; while type IV are large in size and headed by someone with primary or less education.

Table E.F.2 Distribution of Large Scale Commercial Farms by Household Headship

Headship	**Type of Large Scale Commercial Farm**				
	Type I	**Type II**	**Type III**	**Type IV**	**All LSCFS**
Male	76.5	54.7	77.6	67.4	68.7
Female Defacto	11.5	15.0	13.8	10.6	12.0
Female Dejure	12.1	30.3	8.7	21.9	19.4

Source: 2001ICES. Type I households have three or fewer members and are headed by someone who has at least some secondary education; type II are small in size, but headed by someone with only primary education; type III are large in size, with a well-educated head; while type IV are large in size and headed by someone with primary or less education.

Annex F

Poverty on Large Scale Commercial Farms

Several researchers note that commercial farms need to be analysed separately from other rural land use areas. Because they are characterised by diverse populations as they include households headed by farm owners and managers and by farm labourers, commercial farms need to be examined closely (World Bank 1996 summarises some of the arguments). Indeed, above it was found that the prevalence of poverty and extreme poverty is relatively low on commercial farms when compared to other rural areas. It was also noted, however, that the FGT poverty depth and severity indices indicated problems of inequality among residents of LCSFs. Unfortunately, the ICES cannot be used to distinguish directly between owners/managers and labourers[33], but further analysis shows major differences based on household structure and the education of the household head.

Returns to education on commercial farms are more consistent with returns in urban areas than they are with other rural areas. There is a sharp break in poverty status for households on LSCFs that are headed by someone with at least some secondary education. The prevalence of household poverty falls from nearly 60 percent to below 40 percent if the head of a household on a commercial farm has some secondary education as opposed to some primary education. The prevalence of extreme poverty drops by about ½ for households whose head has some secondary education. About 26 percent of households on commercial farms have a head with at least some secondary education. Households headed by someone with post-secondary education are very unlikely to be poor, although these households represent only about 0.3 percent of the commercial farm population.

Table F.1 Poverty and Education of the Household Head, Large Scale Commercial Farms

Head's Education	Percent of Total Population	Prevalence of Poverty	Prevalence of Extreme Poverty
None	11.6	93.1	58.5
Primary	56.8	79.2	51.8
Secondary	28.4	63.1	31.9
Post Secondary	3.2	8.0	9.1
Total	100		

Source: 2001ICES. Prevalence of poverty refers to households with per-capita expenditures below the upper poverty line (the TPL). Extreme poverty is below the lower poverty line (the FPL).

Table F.2 Prevalence of Household Poverty on LSCFs by Household Size

Household Size	Prevalence (%) of

[33] The ICES, when it asks about the main activity of the household head, can distinguish between workers and employers. Unfortunately, the percentage of households on commercial farms that are headed by someone whose main activity is employer is only .3. Managers and normal workers cannot be separated because both would classify themselves as salaried employees.

	Poverty	Extreme Poverty
1	30.1	0.0
2-3	14.0	2.6
4-5	48.4	18.6
6-7	69.0	50.7
8+	79.0	59.9

Source: 2001ICES. Prevalence of poverty refers to households with per-capita expenditures below the upper poverty line (the TPL). Extreme poverty is below the lower poverty line (the FPL).

Household structure also has a large effect on household well being on commercial farms (Table F.2). As noted in chapter 2, commercial farms are characterised by having a large percentage of single-person households; here we see that household structure is closely associated with poverty. Single family households are characterised by much lower poverty and severe poverty than other households. Only 13.2 percent of single-person households on LSCFs are deemed poor (2.5 percent are very poor), compared to 56 (26.8) percent overall. There is also a discrete break between well being of households with three or fewer members and those with more than three members. Using both criteria—household size and head's education—the sample can be divided into 4 classes of farms: type I has fewer than three members and is headed by someone with secondary or higher education; type II has 3 or fewer members, but is headed by someone with primary or less education; type III has more than 3 members and is headed by someone with secondary or more education; while type IV is a large household headed by someone with primary or less education.

Table F.3 Percent Distribution of LSCF Households by Head's Education and Household Size.

	Head's Education				
Household Size	**None**	**Primary**	**Secondary**	**Post-secondary**	**Total**
1	19.0	29.4	47.9	3.7	100
2-3	6.3	46.1	44.2	3.0	100
4-5	11.9	47.1	36.0	5.0	100
6-7	15.4	64.9	17.3	2.4	100
8+	11.6	75.4	11.4	1.7	100

Source: 2001 ICES.

Analysis of Poverty by Household Type on Large Scale Commercial Farms

There is a clear and strong relationship between type of household and poverty. Type I and Type II households, which tend to be smaller in size, have prevalence of poverty and extreme poverty that is far below the prevalence in households of the other 2 types. Thirty-three percent of LSCF households are Type IV (that is they are large in size and are headed by someone of only minimal education) and the poverty prevalence in these households is over 90 percent. Type III households (large in size, but headed by someone with at least some secondary education) have a lower prevalence of poverty and extreme poverty, but the depth and severity indices for these households are also quite high (Table F.4).

Table F.4 Household Poverty by Type of Household, Large Scale Commercial Farms

Household Type	% Total LSCF Households	Prevalence (%) of			
		Poverty	Extreme Poverty	Poverty Depth	Poverty Severity
Type I	13.3	44.8	8.6	17.4	8.6
Type II	14.3	59.6	10.7	22.5	10.7
Type III	18.3	66.7	18.4	32.1	18.4
Type IV	54.1	87.3	29.8	48.1	29.8
Total	**100%**				

Source: 2001ICES. Type I households have three or fewer members and are headed by someone who has at least some secondary education; type II are small in size, but headed by someone with only primary education; type III are large in size, with a well-educated head; while type IV are large in size and headed by someone with primary or less education. Poverty refers to the prevalence of households or people in households whose consumption expenditures per capita are below the upper poverty line (the TPL). Extreme poverty represents a shortfall below the lower poverty line (FPL). The poverty gap and the severity indices are the Foster, Greer and Thorbecke α=1 and α=2 measures, respectively (see Ravallion, 1992 for details). These indices are computed using the upper poverty line.

Table F.5 Access to Sanitation and Electricity on Large Scale Commercial Farms

Percent Households with Access to	Type of Large Scale Commercial Farm				
	Type I	Type II	Type III	Type IV	All LSCFS
Safe Water	90.6	83.4	89.6	78.1	95.3
Toilet (Flush or Blair)	71.1	67.0	70.3	62.8	59.7
Electricity	54.6	35.1	39.0	18.5	12.6
Cook with Electricity	51.3	33.2	34.8	12.1	5.6

Source: 2001ICES. Type I households have three or fewer members and are headed by someone who has at least some secondary education; type II are small in size, but headed by someone with only primary education; type III are large in size, with a well-educated head; while type IV are large in size and headed by someone with primary or less education.

Access to sanitation and energy sources varies significantly depending on the "type" of household living on the LSCF (Table F.5). Type I households are more likely to have access to safe water supplies and much more likely to have the use of a good waste disposal system than are other types of households. Access to electricity and use of electricity for cooking varies in a different fashion on LSCFs. The households that have more members (the type III and type IV households) are more likely to have access to electricity than the smaller households, holding head's education constant. Thus, the type III households (large size, head with secondary education) are more likely to have electricity than a type I household (35 percent vs. 19 percent). Poor households within each type are much less likely to have access to good water, sanitation, and electricity than are non-poor households (Annex E, table E.5.2). Thus, although the households types are closely associated with poverty, the poor, holding type of household constant, are much worse off than the non-poor.

The large majority of LSCF households are headed by males, while over 11 percent are headed by females. The largest fraction of type II households (small in size, poorly educated head) are female-headed (almost 15 percent of type II households are female-headed) (Annex E, table E.5.3). Female-headed households are more likely to be poor, extremely poor, and have higher depth and severity indices than male-headed households on LSCFs, but, from the results once again, there is some heterogeneity among female-headed households (Table F.6).

De jure female-headed households have the highest prevalence of poverty of all households on LSCFs. These households represent about 9 percent of all LSCF households and are clearly worse-off than other LSCF households.

Table F.6 Household Poverty by Sex of Household Head, Large Scale Commercial Farms

Household Head	**Prevalence (%) of**			
	Poverty	**Extreme Poverty**	**Poverty Depth**	**Poverty Severity**
Male	74.0	22.3	37.5	22.3
Female	73.9	21.7	37.3	21.7
De Facto	75.2	23.0	38.9	23.0
De Jure	73.1	21.0	36.2	21.0

Source: 2001ICES. Poverty refers to the prevalence of households or people in households whose consumption expenditures per capita are below the upper poverty line (the TPL). Extreme poverty represents a shortfall below the lower poverty line (FPL). The poverty gap and the severity indices are the Foster, Greer and Thorbecke $\alpha=1$ and $\alpha=2$ measures, respectively (see Ravallion, 1992 for details). These indices are computed using the upper poverty line.

School Enrolments on Large Scale Commercial Farms

The analysis above showed a strong relationship between the education of the head of the household and poverty status on LSCFs. Better-educated heads of households have families that are much less likely to be poor and extremely poor on all LSCFs. Several sources (notably World Bank,) note that educational opportunities are limited for children living on LSCFs. The subsequent sections of the report will analyse enrolments and educational outcomes in more detail, but it is instructive to examine school enrolment rates for children on LSCFs. This information shows how poverty among workers on these farms continues from generation to generation.

Enrolment rates on LSCFs are much lower than they are for the country as a whole, and even for other rural areas of Zimbabwe. The extremely low rates of enrolment in secondary schools are particularly troubling since, as was demonstrated above; secondary education helps lower the likelihood that a family is poor. Some may argue that many of the children of secondary school age (official secondary school ages are 13-17 years in Zimbabwe) are actually old enough to be working, and thus may be misclassified as students. In fact, the mean age of children of secondary school age on these farms is 14.8 years, indicating either a large portion of under-aged workers or a distressingly low rate of school participation.

Table F.7 School Enrolment Rates on Large Scale Commercial Farms

Enrolment Rate	**Type of Large Scale Commercial Farm**			
	Type I	**Type II**	**Type III**	**Type IV**
Gross Total	73.7	63.6	81.4	69.4
Net Total	62.8	58.8	78.0	66.9
Gross Primary	115.9	117.5	107.2	99.7
Net Primary	92.3	77.0	82.5	72.9
Gross Secondary	21.0	10.9	16.0	10.9
Net Secondary	0.3	8.5	13.4	7.9

Type I households have three or fewer members and are headed by someone who has at least some secondary education; type II are small in size but headed by someone with only primary education; type III are large in size with a well-educated head; while type IV are large in size and headed by someone with primary or less education.

Summary

Households that reside on large scale commercial farms are a diverse group. Although there is, on average, less poverty among these households than among other rural households, there are wide variations in conditions on these farms. There are dramatic differences in the poverty indices depending on the number of members in the LSCF households and on the education of the household head. These characteristics (household size and head's education) helped distinguish between the different households.

It was found that conditions are much worse for type IV households than for others as they were less likely to avail of good water, good sanitation, and electricity than the other household types. Female-headed households are worse off than male-headed households on commercial farms.

6

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