ZAMBIA

2010 CENSUS OF POPULATION AND HOUSING

MUCHINGA PROVINCE ANALYTICAL REPORT

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Foreword

The 2010 Census of Population and Housing was conducted between 16th October and 15th November 2010. Complete enumeration in all parts of the country was achieved by 30th November 2010. The 2010 Census of Population and Housing marked the fifth national population census that Zambia has successfully conducted since independence in 1964. Previous censuses were conducted in 1969, 1980, 1990 and 2000.

This report presents analytical results of the population in Muchinga Province based on data from the 2010 Population and Housing Census. The report presents detailed analysis of issues of Population Size, Growth and Distribution; Education and Economic characteristics, Disability and Coverage and Content errors.

I would like to thank all our cooperating partners that supported the 2010 Census of Population and Housing. Special gratitude goes to the United Nations Population Fund (UNFPA), the United Kingdom AID (UKAID-formerly DFID), the United States Agency for International Development (USAID) and the African Development Bank (AfDB) for their material, financial and technical support to the Government of the Republic of Zambia (GRZ) and the Central Statistical Office (CSO) during this mammoth national exercise.

I also extend my sincere gratitude to the people of Muchinga Province and all the residents of Muchinga Province for the support and cooperation during the census. I hope the information contained in this report will be effectively used by all to plan and deliver development to the people of Muchinga Province.

Alexander B. Chikwanda, MP
Minister of Finance and National Planning

March, 2014

Acknowledgements

Chapter 1:
Provincial Profile; Muchinga Province

Muchinga province, Zambia

Nakonde

Isoka

Mafinga

Chinsali

Chama

Mpika

Legend

District boundaries

N
E
W
S
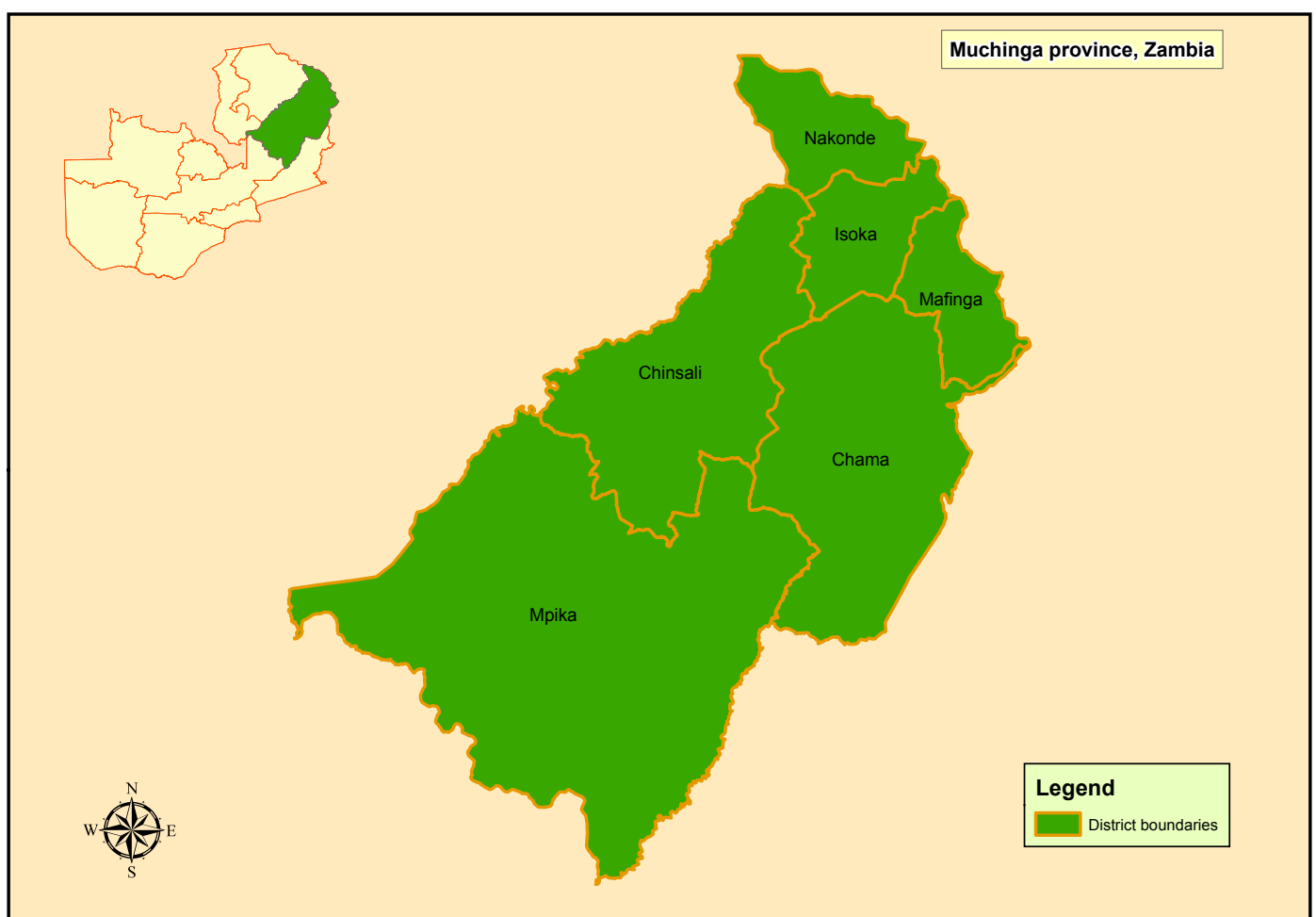
Chapter 1
Profile: Muchinga Province

1.0 Introduction

Muchinga Province covers an area of 87,806 square kilometers, which is about 11.7 percent of the total area of Zambia. The province is sparsely populated with a population density of 8.1 persons per square kilometer.

1.1 Administration

Muchinga Province was created in October 2011 from districts that were part of Northern Province (Chinsali, Isoka, Mpika and Nakonde) and Eastern Province (Chama). The new district of Mafinga which forms the sixth district of the province was created by turning Isoka East Constituency into a district. Muchinga Province has 10 constituencies and 96 wards. The provincial administration offices are situated in Chinsali District.

1.2 Natural Resources

Muchinga Province has both natural and plantation forests. The province is in the high rainfall zone, with average annual rainfall of above 1200 mm. The province has moderate temperatures ranging between 15°C and 35°C. Its soils are considered not to be very fertile due to leaching caused by heavy rains. This leads to acute shortage of potassium and phosphates. There are natural landmarks such as the Muchinga escarpment which is the second largest escarpment in Zambia. The province also has the Lwitikila waterfalls and the North and South Luangwa national parks which are rich in wildlife. Tourist attractions such as the Nachikufu curves are situated in Mpika District.

1.3 Languages

English is the official language of communication and instruction in Zambia. The main local languages of communication in Muchinga Province are Bemba, Mambwe, Namwanga, Senga and Tumbuka. However, there are a number of other local languages spoken in other parts of the country that are spoken across the province.

1.4 Religion

Zambia was officially declared a Christian nation according to the 1996 constitution while upholding the right of every person to enjoy that persons freedom of conscience or religion.

1.5 Health

Health plays a critical role in the development of the country and no meaningful development can be attained without a sound health policy. Since 1991 the health sector has been making strides to improve the health delivery system in the country. Some of these efforts include a move from a strongly centralised health system in which the central structures provided support and national guidance to the peripheral structures to a more decentralized system.

Table 1.1 shows the number of health facilities in Muchinga Province by facility type, ownership and district. The province has a total of 99 health facilities. The health system comprises of one Specialised Hospital, four District Hospitals, four Urban Health Centres, 69 Rural Health Centres and 21 Health Posts (The List of Health Facilities in Zambia, 2012).

Table 1.1: Number of Health Facilities by Facility Type, Ownership and District, Muchinga Province 2010							
Type of Facility	Total	District					
		Chama	Chinsali	Isoka	Mafinga	Mpika	Nakonde
Level 3 Hospital	0	0	0	0	0	0	0
Level 2 Hospital	1	0	0	0	0	1	0
Level 1 Hospital	4	1	1	1	0	1	0
Urban Health Centres (UHCs)	4	0	1	0	0	3	0
Rural Health Centres (RHCs)	69	20	14	4	4	19	8
Health Posts (HPs)	21	2	2	5	5	5	2
Total	99	23	18	10	9	29	10
Ownership							
GRZ health facilities	89	23	14	10	9	23	10
Mission health facilities	7	0	3	0	0	4	0
Private health facilities	3	0	1	0	0	2	0
Total	**99**	**23**	**18**	**10**	**9**	**29**	**10**
Source: Ministry of Health, 2010							

1.6 Economy

The main activity of the people in the region was farming. The province is increasing and diversifying agricultural production and productivity in order to raise the share of its contribution to GDP and reduce dependency on copper mining. Crop farming is the primary agricultural activity. Major crops grown include; cassava, maize, groundnuts, sweet potatoes, millet, mixed beans and tobacco. The province is a traditional livestock area and has a number of poultry, beef, and pork and dairy farmers at smallholder level. Fish farming is also practiced on a small scale in the province with development programmes focused on conservation and research in order to improve yields, marketing and distribution (Zambia Review, 2011).

Muchinga Province has the busiest boarder in the country situated in Nakonde District. Mpika District has the headquarters for Tanzania Zambia Railway Authority which links the country to the North.

Muchinga Province is one of the major suppliers of hardwood and softwood. The hardwood is used in building and construction, bee keeping, collection of forest products, and traditional medicines and herbs. Bee keeping is popular in Mpika District. Softwood is used in construction, mining and furniture making. Plantations are found in Mpika and Mporokoso districts. The province has well established forestry related activities such as saw milling, paper, pulp and furniture industries with the saw milling being

the most developed industry. Non-wood forest products provide income for rural communities as well as for self-consumption. However, deforestation and forest degradation, soil erosion and fertility loss; and loss of biological diversity are ever present challenges (Zambia Review, 2011).

1.7 Education

Education is a powerful tool for economic development of an individual and nation. The Sixth National Development Plan (SNDP) identifies education, training, science and technology as prime movers of Zambia's development.

Zambia has a three-tier education system consisting of seven-year primary education, followed by five-year secondary education and post secondary schooling. Government has in the past decade embarked on a number of initiatives to ensure universal access to education. The number of basic schools offering grades 1 to 9 in Muchinga Province has increased. An increase was also recorded in the number of high schools (Grade 10-12) which was attributed to the construction of new high schools in the province. With such measures in place, Muchinga Province has recorded improvements in the education sector contributing to high enrolment levels of both girls and boys at primary, basic and high school levels (Ministry of Education, Educational Statistical Bulletin, 2010).

The continuous teacher recruitment programme introduced by the government resulted in additional teachers being recruited in 2010 leading to an improvement in the Pupil-Teacher Ratio at all levels of basic education in the province (Ministry of Education, Educational Statistical Bulletin, 2010).

Higher learning institutions in the Muchinga Province offering Technical Education, Vocational and Entrepreneurship, Tertiary Education also recorded an increase in their enrolment rates in 2010 (Ministry of Education, 2010).

1.8 Gender Issues

Gender issues are concerned with promoting equality between sexes and improvement in the status of both women and men in society. It is well understood that social and economic development can only be attained when there is equal participation of both men and women in the development process.

Zambia's vision on gender as stated in the "Vision 2030" is to achieve gender equity and equality in the social-economic development process by 2030. In this regard, the government has put in place a Gender policy which ensures the advancement of gender mainstreaming policies and legislation.

1.9 Census of Population and Housing Undertaking

The 2010 Census is the fifth National Census of Population and Housing conducted in Zambia since independence in 1964. The country has so far conducted censuses in 1969, 1980, 1990 and 2000.

The 2010 Census of Population and Housing was carried out from 16th October to 15th November, 2010. The field staff included school leavers who worked as Census Enumerators and Census Supervisors who were mostly teachers and other civil servants. Civil Servants from various government departments and ministries worked as Master Trainers, Assistant Master Trainers and Provincial Census Officers.

1.9.1 The Main Objectives of the Census of Population and Housing

The main objectives of the 2010 Census of Population and Housing included:

- *To provide accurate and reliable information on the size, composition and distribution of the population of Zambia at the time of the census;*

- *To provide information on the demographic and socio-economic characteristics of the population of Zambia at the lowest administrative level – the Constituency and Ward;*

- *To provide indicators for measuring progress towards national and international development goals in a timely and user friendly manner;*

- *To provide information on the number and characteristics of households engaged in agriculture and other economic activities;*

- *To provide an accurate sampling frame and sample weights for future inter-censal household and population based surveys;*

- *To provide information identifying the number of eligible voters for the 2011 General Elections.*

- *To provide a census that meets national and international standards and allows for comparability with other censuses;*

- *To provide information on the housing characteristics of the population.*

1.9.2 Methodologies Applied in the 2010 Census of Population and Housing

Prior to the 2010 Census undertaking, a comprehensive mapping exercise was conducted. The mapping strategy for 2010 census was Geographical Information System (GIS) driven and involved the use of the Global Positioning System (GPS) and Satellite imagery. The GPS was used to map rural areas while the urban areas were mapped using high resolution satellite imagery.

The 2010 Census used a single questionnaire to capture individual, household and housing characteristics from the population, whereas the 2000 Census used two different questionnaires, Form A (Household and Housing Characteristics) and Form B (Individual Characteristics) to collect information from the population.

During data capturing, the 2010 Census used Optical Mark Reading (OMR) and Intelligent Character Recognition (ICR) technology, whereas the 2000 Census used the OMR technology only.

The 2010 Census included the following questions which were not in the 2000 census:

- *Deaths of Household Members during the 12 months period prior to the census enumeration, as well as cause of death for all reported deaths.*
- *Maternal deaths to women aged 12-49 years during the reference period (12 months prior to the Census).*

- *Albinism.*

- *Orphanhood and Fosterhood*

The 2010 Census used school leavers that had completed their Secondary School Education within 2 to 5 years prior to the Census as Enumerators while the 2000 Census used Grade Eleven School Pupils.

1.9.3 Presentation of Results
The analysis in this report is based on the geography that existed at the time of the census in 2010.

CHAPTER 2
POPULATION SIZE, GROWTH AND DISTRIBUTION

2.0 Chapter Summary

Muchinga Province's population in 2010 was 711,657. This was an increase from 566,266 in 2000. The population grew at an average annual rate of 2.3 percent per annum during the 2000-2010 inter-censal period.

In 2010, 83.0 percent of the population were residing in rural areas while 17.0 percent were residing in urban areas.

Mpika District had the largest population at 203,379 while Mafinga District had the smallest population at 65,969.

The province is sparsely populated with a population density of 8.1 persons per square kilometre. Nakonde Disrict was the most densely populated with a density of 25.9 persons per square kilometre while Mafinga District was the least densely populated district with a density of 5.0 persons per square kilometre.

Chapter 2
Population Size, Growth and Distribution

2.1 Introduction
This chapter presents an analysis of the population size, growth and distribution of the 2010 Census for Muchinga Province.

2.2 Concepts and definitions
Concepts and definitions used in this chapter are as follows:

De Facto Population
This refers to household members and visitors who spent the census night at a household. This, however, excludes:

a) *Foreign diplomatic personnel accredited to Zambia*
b) *Zambian nationals accredited to foreign embassies and their family members who live with them abroad, and*
c) *Zambian migrant workers and students in foreign countries who were not in the country at the time of the census.*

De jure Population
This refers to usual household members present and usual household members temporarily absent at the time of the census. In a de jure Census, institutional populations in places such as hospitals or health centres, prisons and academic institutions like universities, colleges and boarding schools are counted as members of their usual household. Figure 2.1 presents a diagrammatic picture of the de facto and de jure populations.

De Jure and De Facto Populations
The de jure count is considered the true or resident population of a country. It is used for the age-sex distribution and is also used as a denominator in the calculation of vital indicators for sectors such as education, for example, deriving Gross and Net enrolment rates.

However, the de jure population is not used in the analysis of data on various social, economic and health characteristics as some variables would be missing for individuals who were absent from the household at the time of the census.

Figure 2.1: Diagrammatic Presentation of the De facto and the De jure Populations
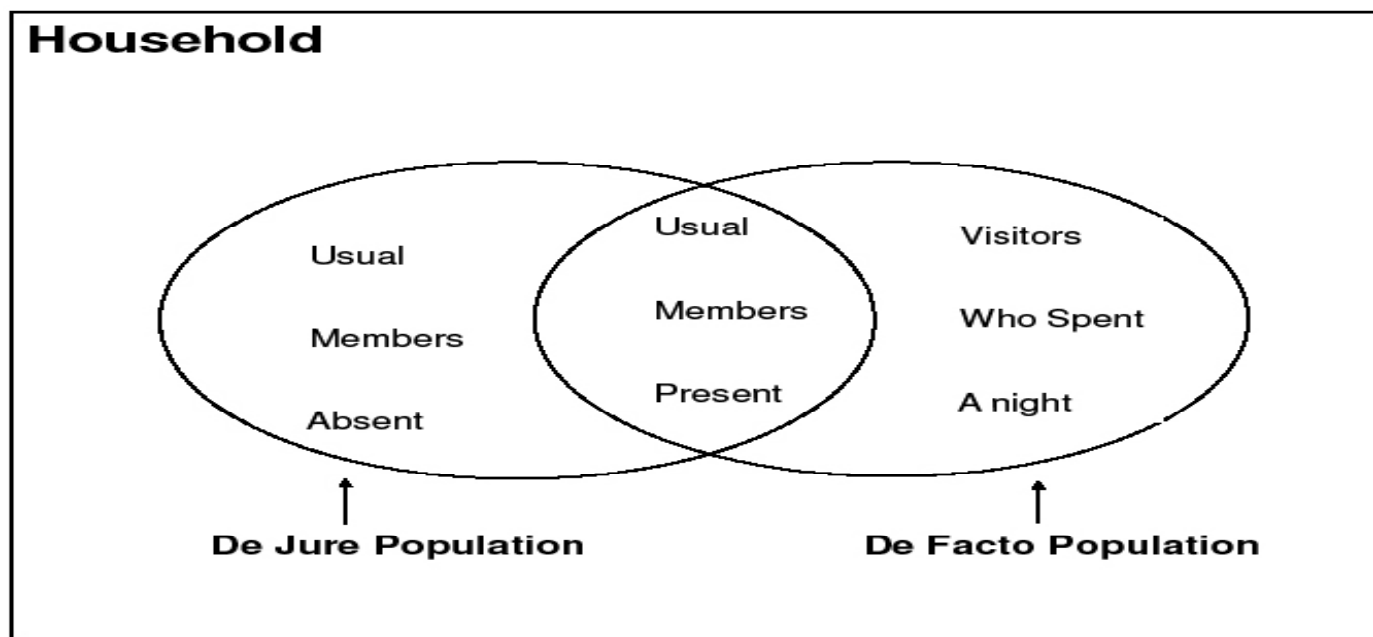
Population Growth Rate
This refers to the change in the size of the population as a proportion of the total population of an area. Estimated on a yearly basis, it gives the average annual growth rate for each year of the inter-censal period.

2.3 Population Size
This is the absolute number of people that was enumerated at the time of the census. Table 2.1 shows the percent change in the de jure population for Muchinga Province in 2000 and 2010. The population in Muchinga Province increased from 566,266 in 2000 to 711,657 in 2010. This represented a percentage increase of 25.7 percent from 2000 to 2010.

Table 2.1 De Jure Population Percent Change, Muchinga Province 2000 and 2010			
Rural/Urban	**2000-2010 Percent Change**		
	2000	**2010**	**Percent Change**
Total	566,266	711,657	25.7
Rural	568,266	590,575	3.9
Urban	61,889	121,082	95.6
Sources: 2000 and 2010 Censuses of Population and Housing			

The population in rural areas increased from 568,266 in 2000 to 590,575 in 2010 while the urban population increased from 61,889 in 2000 to 121,082 in 2010. This represented an increase of 3.9 percent in rural areas and 95.6 percent in urban areas.

Table 2.2 shows the percent distribution of the population by sex and rural/urban for Muchinga Province in 2010. Of the total population in 2010, there were 349,872 males and 361,785 females. Males constituted 49.2 percent and females constituted 50.8 percent.

Table 2.2: Total Population (De jure) and Percent Distribution by Sex and Rural/Urban, Muchinga Province, 2010						
Rural/Urban	**Total Population**		**Male Population**		**Female Population**	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Total	711,657	100.0	349,872	49.2	361,785	50.8
Rural	590,575	100	290,490	49.2	300,085	50.8
Urban	121,082	100	59,382	49.0	61,700	51.0
Source: 2010 Census of Population and Housing.						

Table 2.3 shows the distribution of the population by sex, district and rural/urban. Mpika District had the largest population at 203,379 followed by Chinsali District at 146,518. Mafinga District had the smallest population at 65,969.

Table 2.3: Total Population (De Jure) by Sex, Rural/Urban and District, Muchinga Province 2010									
Rural/Urban and District	**Total**			**Rural**			**Urban**		
	Total	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**
Muchinga Province	**711,657**	**349,872**	**361,785**	**590,575**	**290,490**	**300,085**	**121,082**	**59,382**	**61,700**
Chama	103,894	50,856	53,038	96,865	47,302	49,563	7,029	3,554	3,475
Chinsali	146,518	72,526	73,992	131,320	65,180	66,140	15,198	7,346	7,852
Isoka	72,189	35,314	36,875	54,894	26,920	27,974	17,295	8,394	8,901
Mafinga	65,969	32,035	33,934	65,969	32,035	33,934	-	-	-
Mpika	203,379	100,267	103,112	163,655	80,853	82,802	39,724	19,414	20,310
Nakonde	119,708	58,874	60,834	77,872	38,200	39,672	41,836	20,674	21,162
Source: 2010 Census of Population and Housing.									

The most urbanised district was Nakonde, followed by Mpika District with a population of 41,836 and 39,724, respectively. The least urbanised was Chama District with a population 7,029. Mpika District had the largest rural population at 163,655 while Isoka District had the smallest at 54,894.

Table 2.4 shows population distribution by districts and sex. In 2000 and 2010, Mpika District had the largest population at 146,196 and 203,379, respectively.

Table 2.4: Population (De Jure) by Sex and District, Muchinga Province 2000 and 2010						
District	**2000**			**2010**		
	Total	**Male**	**Female**	**Total**	**Male**	**Female**
Muchinga Province	**566,266**	**282,121**	**284,145**	**711,657**	**349,872**	**361,785**
Chama	74,890	37025	37865	103,894	50,856	53,038
Chinsali	128,646	64,362	64,284	146,518	72,526	73,992
Isoka	99,319	49,428	49,891	72,189	35,314	36,875
Mafinga	42,080	20846	21234	65,969	32,035	33,934
Mpika	146,196	73,151	73,045	203,379	100,267	103,112
Nakonde	75,135	37,309	37,826	119,708	58,874	60,834
Source: 2000 and 2010 Censuses of Population and Housing.						

In 2010, the population in all the districts recorded an increase from the population in 2000 except for Isoka District which reduced from 99,319 in 2000 to 72,189 in 2010. The decrease was due to creating Mafinga District from Isoka District.

2.4 Population Growth

The population of Muchinga Province grew at a rate of 2.3 percent per annum during the 2000-2010 period. The urban population grew at a rate of 6.9 percent per annum between 2000 and 2010. The rural population grew at a rate of 1.6 percent during the 2000-2010 inter-censal period.

Table 2.5 shows the average annual rate of population growth for Muchinga Province by district.

Table 2.5: Population Size and Average Annual Population Growth Rate by Rural/Urban and District, Muchinga Province 2000-2010

Rural/Urban and District	Population Size 2000	Population Size 2010.	Annual Growth Rate
Muchinga Province	**566,266**	**711,657**	**2.3**
Rural	504377	590,575	1.6
Urban	61889	121,082	6.9
District			
Chama	74,890	103,894	3.3
Chinsali	128,646	146,518	1.3
Isoka	99,319	72,189	-3.1
Mafinga	42080	65,969	4.6
Mpika	146,196	203,379	3.4
Nakonde	75,135	119,708	4.8

Source: 2000 and 2010 Censuses of Population and Housing

Mafinga District had the fastest growing population with an average annual population growth rate of 4.6 percent per annum while Chinsali District had the lowest average annual growth rate at 1.3 percent during the 2000-2010 inter-censal period.

Figure 2.2: Percent Distribution of Population by Rural/Urban, Muchinga Province 2000 and 2010
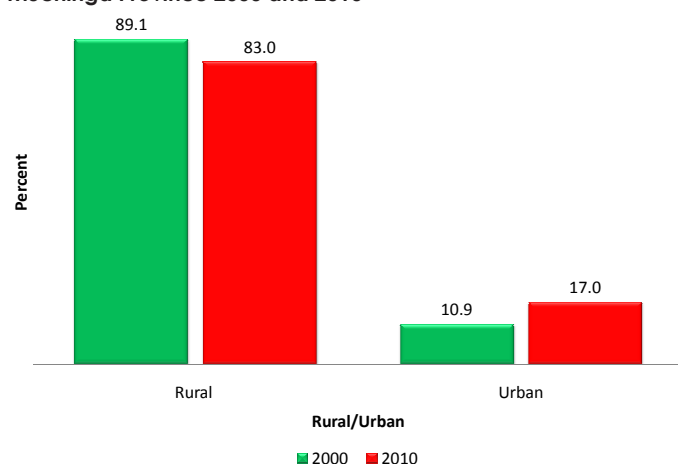
Source:2000 and 2010 Censuses of population and Housing

2.5 Population Distribution

The population of Muchinga Province has remained largely rural. Figure 2.2 shows the percent distribution of the population by rural/urban in 2010.

The population in rural areas reduced from 89.1 percent in 2000 to 83.0 percent in 2010. The proportion of the urban population increased from 10.9 percent in 2000 to 17.0 percent in 2010.

Table 2.6 shows the percentage distribution of population by rural/urban and district from 2000 to 2010. In 2010, urban areas had a positive contribution towards the provincial population at 6.1 percent. Nakonde District had the highest contribution towards the provincial population at 2.5 percent. Chinsali and Isoka Districts recorded negative percentage points of -3.9 and -8.8 percent, respectively.

Table 2.6: Population Distribution (De Jure) by Rural/Urban and District, Muchinga Province 2000 and 2010.

Rural/Urban and district	2000		2010		Percentage Change
	Population	Percent	Population	Percent	2000-2010
Muchinga Province	**566,266**	**100**	**711,657**	**100**	**N/A**
Rural	504377	89.1	590,575	83.0	-6.1
Urban	61889	10.9	121,082	17.0	6.1
District					
Chama	74,890	14.4	103,894	14.6	0.2
Chinsali	128,646	24.5	146,518	20.6	-3.9
Isoka	99,319	18.9	72,189	10.1	-8.8
Mafinga	42080	8.0	65,969	9.3	1.3
Mpika	146,196	27.9	203,379	28.6	0.7
Nakonde	75,135	14.3	119,708	16.8	2.5

Source:2000 and 2010 Censuses of population and Housing

Figure 2.3: Percentage Distribution of the Population by District, Muchinga Province 2010.
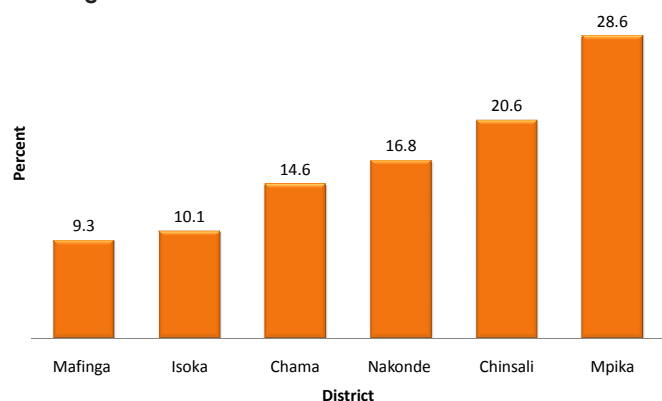
Source: 2010 Census of population and Housing.

Figure 2.3 shows the percent distribution of the population by district to total province population. Mpika District had the largest percentage of the population at 28.6 percent while Mafinga District recorded the least population at 9.3 percent.

2.6 Population Density

Population density is defined as the total number of persons per square kilometer. Table 2.7 shows the area of Muchinga Province and population density by district from 2000 to 2010. The population density for Muchinga province increased from 6.4 persons per square kilometer in 2000 to 8.1 persons per square kilometer in 2010.

Table 2.7: Population Density (De jure) by District, Muchinga Province 2000 and 2010

Rural/urban/District	Area (Sq.Km)	Population	Population Density (Population per Sq. Km)	
			2000	2010
Muchinga Province	**87,806**	**711,657**	**6.4**	**8.1**
Chama	17,630	103,894	3.9	5.9
Chinsali	15,395	146,518	5.4	9.5
Isoka	5,091	72,189	10.8	14.2
Mafinga	4,134	65,969	10.2	16.0
Mpika	40,935	203,379	2.8	5.0
Nakonde	4,621	119,708	16.3	25.9

Source: 2000 and 2010 Censuses of Population and Housing.

Nakonde District had the highest population density at 25.9 persons per square kilometer. The least densely populated district was Mpika District with a population density of 5.0 persons per square kilometer.

CHAPTER 3
POPULATION COMPOSITION AND DEMOGRAPHIC CHARACTERISTICS

3.0 Summary

Muchinga Province had a young population with 48.6 percent of persons aged below 15 years. The median age was 15.5 years. The median age was higher in urban areas at 17.2 years compared to 15.2 years in rural areas.

The Overall Dependency Ratio was recorded at 106.9 persons per 100 persons aged between 15 and 64 years. Child and Aged dependency ratios were 100.6 and 6.3, respectively.

The overall sex ratio was 96.7 males per 100 females, while the sex ratio at birth was 101.6 males per 100 females.

Chapter 3
Population Composition And Demographic Characteristics

3.1 Population Composition

Information on the age and sex structure is essential in the analysis of demographic processes such as fertility, mortality and migration. The analysis in this chapter focuses on the age and sex composition of the population.

3.2 Age and Sex Composition

The 2010 Census collected information on sex and age in completed years at the time of enumeration. Figure 3.1 shows the percentage distribution by sex for the province in 2010. The distribution shows higher percentages of population in the younger ages. The percentage decreases with increase in age.

Figure 3.1: Percent Age Distribution by Sex, Muchinga Province 2010
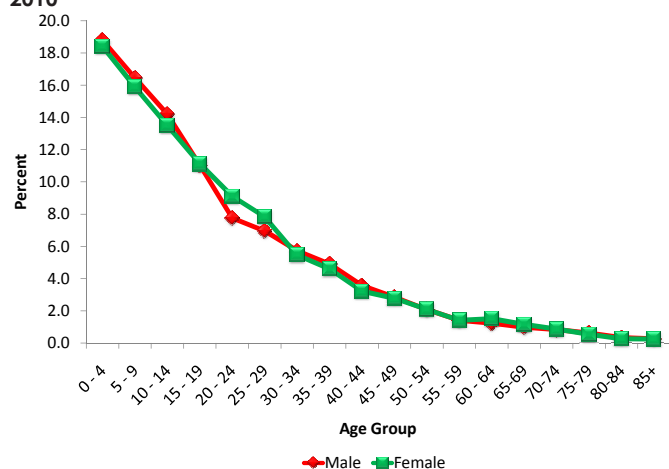
Source: 2010 Census of Population and Housing

A comparison between the sexes shows minimal differences in the percent age distribution with an exception of the population aged 20-29 years. The age group 20-29 years had fewer males than females.

Figure 3.2 presents the age distribution by rural/urban. The figure shows a higher percent of the population aged 0-9 years in rural areas. However, the proportion of the population aged 15-39 years in urban areas was higher than that of rural areas.

Figure 3.2: Percent Age Distribution by Rural/Urban, Muchinga Province, 2010
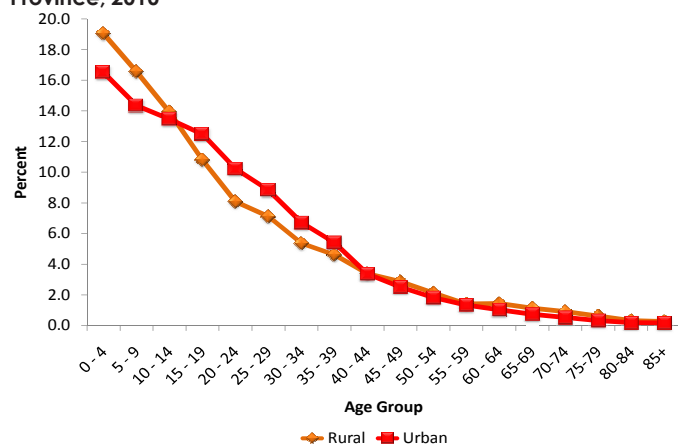
Source: 2010 Census of Population and Housing

Figure 3.2.1: Population Age and Sex Structure, Muchinga Province 2010
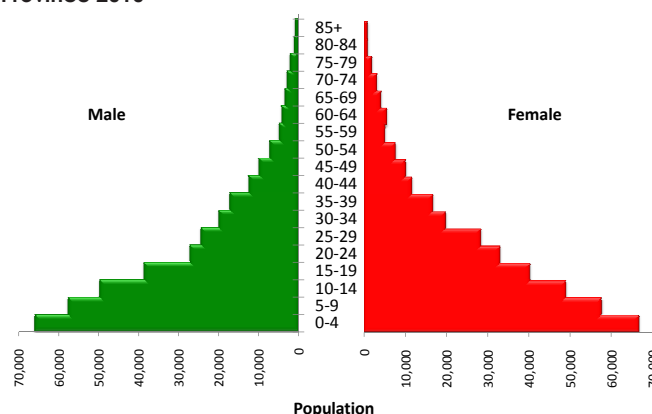
Source: 2010 Census of Population and Housing

For the purpose of policy interventions, proportions of some selected age groups have been presented. Selected age groups include adolescents aged 10-19 years; young people aged 10-24 years; children aged below 15 years; children aged below 18 years; persons in middle and later adolescence stages aged 15-19 years; youths aged 15-24 years; persons in the reproductive age group aged 15-49 years; youths aged 15-35 years; persons in the labour force aged 15-64 years and the elderly aged 60 years and older and 65 years and older.

Figure 3.3 shows the population proportions by selected age groups. The population aged below 18 years had the highest percent at 55.4. The elderly population aged 65 years and older had the lowest percent at 3.0. The population aged 15-24 and 15-35 had proportions of 19.5 and 33.9 percent, respectively.

Figure 3.3: Population Proportions by Selected Age Groups, Muchinga Province 2010
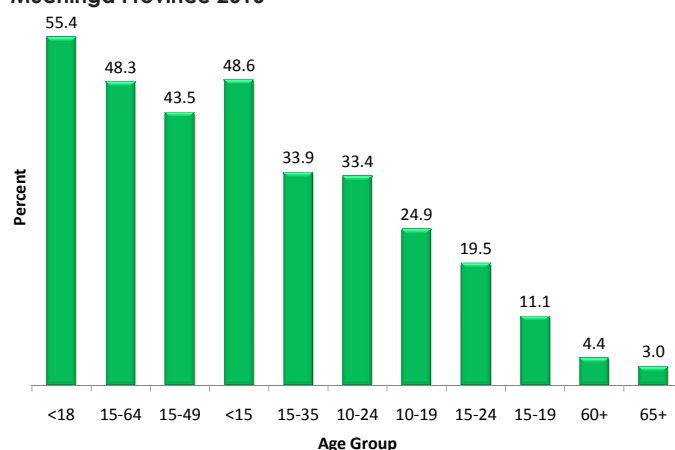
Source: 2010 Census of Population and Housing

Figure 3.4 shows the percent distribution of children aged below 15 years and the elderly (65 years and older) by District. Chama District had the highest percent of children below 15 years at 50.8 percent while Isoka District had the lowest at 46.9 percent.

Figure 3.4: Percentage Distribution of Population Aged below 15 years and the Population 65 Years and Older by District, Muchinga Province 2010

Source: 2010 Census of Population and Housing

Figure 3.6: Median Age by Sex and Rural/Urban, Muchinga Province 2010
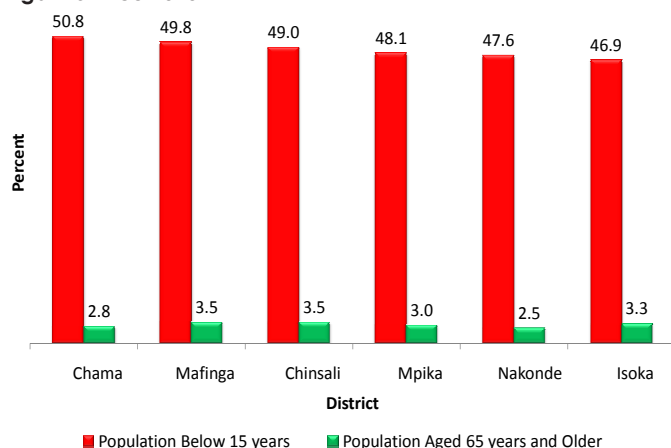
Source: 2010 Census of Population and Housing

3.3 Median Age

Median age is the age that divides the population into two numerically equal groups i.e. half the population are younger than that age while half are older. A median age that is lower than 20 years shows a young population; between 20 and 30 years indicates an intermediate population that is either becoming younger or ageing; while a population with a median age above 30 years is an old population.

Figure 3.5 shows the median age by rural/urban. The median age for Muchinga Province was 15.5 years. The median age was higher in urban areas (17.2 years) than rural areas (15.2 years).

Figure 3.5: Median Age by Rural/Urban, Muchinga Province 2010

Source: 2010 Census of Population and Housing

Figure 3.6 shows the median age by sex and rural/urban. The median age was 15.2 years and 15.9 years for males and females, respectively. The median age for females was higher than males in both rural and urban areas.

Figure 3.7 shows the median age by district. Isoka District had the highest median age at 16.2 years while Chama District had the lowest at 14.7 years.

Figure 3.7: Median Age by District, Muchinga Province 2010
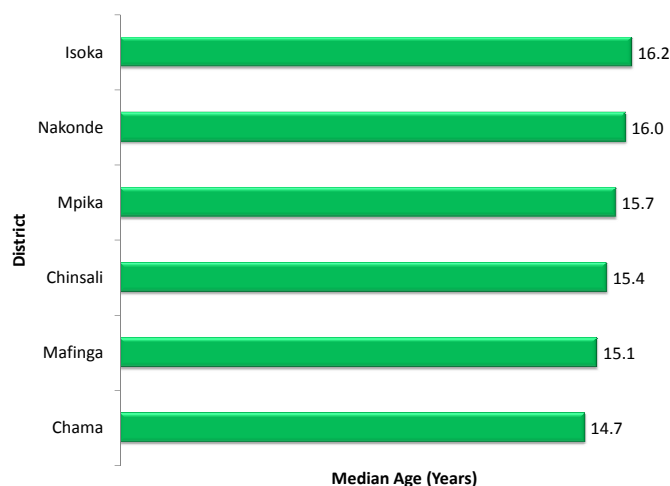
Source: 2010 Census of Population and Housing

3.4 Age Dependency Ratios

Age Dependency Ratio is the ratio of population aged 0-14 years and persons aged 65 years and older per 100 persons in the working age group of 15-64 years. It shows the burden of dependency on the productive population.

The following age dependency ratios have been calculated in this section:

a) *Child Dependency Ratio: The number of children aged below 15 years per 100 persons aged between 15 and 64 years.*

b) *Aged Dependency Ratio: The number of persons aged 65 years and older per 100 persons aged between 15 and 64 years*

c) *Overall Dependency Ratio: The number of children below 15 years and elderly persons aged 65 years and older per 100 persons aged between 15 and 64 years.*

Table 3.1 shows Age Dependency Ratio. The Overall Dependency Ratio was 106.9 per 100 persons aged 15-64 years; while the Child and Aged Dependency Ratios stood at 100.6 and 6.3 persons for every 100 persons aged 15-64 years, respectively.

Table 3.1: Age Dependency Ratio, Muchinga Province 2010		
Province	**Age Dependency Ratios**	**2010**
Muchinga Province	Overall Dependency Ratio	106.9
	Child Dependency Ratio	100.6
	Aged Dependency Ratio	6.3
Source: 2010 Census of Population and Housing		

Table 3.2 shows the Overall, Child and Aged Dependency Ratios by District. Chama District had the highest Overall Age Dependency Ratio at 115.2 per 100 persons aged 15-64 while Isoka District had the lowest at 100.7 persons per 100 persons aged 15-64 years.

Table 3.2: Overall, Child and Aged Dependency Ratios by District, Muchinga Province 2010			
District	**Age Dependency Ratios**		
	Overall	**Child**	**Aged**
Chama	115.2	109.3	6.0
Chinsali	110.3	103.0	7.3
Isoka	100.7	94.1	6.5
Mafinga	114.1	106.7	7.4
Mpika	104.2	98.1	6.1
Nakonde	100.8	95.7	5.1
Source: 2010 Census of Population and Housing			

3.5 Sex Composition

This section analyses the composition of males and females in the population using sex ratio. Sex ratio is the number of males per 100 females. This type of sex ratio is also called the masculinity ratio. A value above 100 indicates excess of males over females.

Another indicator analysed is sex ratio at birth, which is the ratio of males per 100 females at birth. The percent deficit males has been used to show the percent at which males are fewer than females. It's the difference between the male and female population divided by the total population expressed as a percentage. A negative value shows a deficit of males while a positive value shows an excess of males.

3.5.1 Sex Ratio and Percent Deficit of Males

Table 3.3 shows sex ratio and percent deficit of males by district and rural/urban. Muchinga Province had fewer males per 100 females, with a sex ratio of 96.7. This indicates that a deficit of males amounts to 1.7 percent of the total population.

Chinsali District had the highest sex ratio at 98.0 males per 100 females, a 1.0 percent deficit of males. Mafinga District had the lowest sex ratio at 94.4 males per 100 females, translating into a 2.9 percent deficit of males.

Table 3.3: Sex Ratio and Percent Deficit of Males by Rural/Urban and District, Muchinga Province, 2010		
Rural/Urban and District	**Sex Ratio**	**Percent Male Deficit**
Muchinga Province	**96.7**	**-1.7**
Rural	96.8	-1.6
Urban	96.2	-1.9
District		
Chama	95.9	-2.1
Chinsali	98.0	-1.0
Isoka	95.8	-2.2
Mafinga	94.4	-2.9
Mpika	97.2	-1.4
Nakonde	96.8	-1.6
Source: 2010 Census of Population and Housing		

3.5.2 Sex Ratio at Birth

The births in the last twelve (12) months were used as a proxy for the calculation of the sex ratio at birth. Figure 3.8 shows the sex ratios by district and rural/urban. The sex ratio at birth in Muchinga Province was 101.6 males per 100 females. In rural and urban areas, the sex ratio at birth was 100.8 and 105.7 males per 100 females, respectively.

Figure 3.8: Sex Ratio at Birth by Rural/urban and District, Muchinga Province 2010
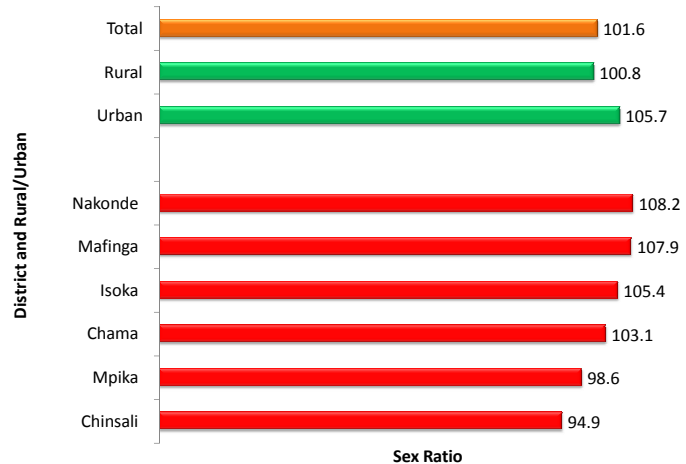
Source: 2010 Census of Population and Housing

Nakonde District had the highest sex ratio at birth of 108.2 males per 100 females while Chinsali District had the lowest sex ratio at birth of 101.6 males per 100 females.

CHAPTER 4
SOCIAL CHARACTERISTICS

4.0 Chapter Summary

In 2010, Muchinga Province recorded 341,987 persons aged 15 years and older. Of these 60.8 percent were married. Rural areas had a higher percentage of the population aged 15 years and older that were married (62.6 percent) compared to urban areas (52.7 percent).

The median age at first marriage was 20.1 years. The median age at first marriage was lower in rural areas (20.0 years) than urban areas at 20.7 years. Males had a higher median age at first marriage than females at 23.2 years and 18.3 years, respectively.

In 2010, Muchinga Province had 138,738 households. There were more households in rural than urban areas at 114,762 and 24,021, respectively. The average household size was 5.1 persons. Male headed households had a larger average household size at 5.4 than female headed households with 4.1 persons. Protestants and Catholics constituted 77.2 and 19.1 percent, respectively. Muslims and other religious affiliations made up 3.0 percent of the provincial population.

Of the population aged below 18 years, 79.7 percent did not have birth certificates. For the population aged 16 years and older, 82.8 percent had Green National Registration Cards.

Chapter 4
Social Characteristics

4.1 Marital Status

Marital status is the categorization of the population in relation to whether an individual has never been married; is married, cohabiting, separated, divorced or widowed. Marital status was analysed for the population aged 15 years and older. In 2010 the population 15 years and older in Muchinga Province was 341,987. Of these 161,138 were males and 180,849 were females

Figure 4.1 shows the percentage distribution of the population aged 15 years and older in Muchinga Province by marital status. The figure shows that 60.8 percent of the population aged 15 years and older were married and 26.8 percent were never married. The widowed and divorced accounted for 5.5 percent and 1.8 percent, respectively.

Figure 4.1: Percentage Distribution of the Population (15 Years and Older) by Marital Status, Muchinga Province 2010
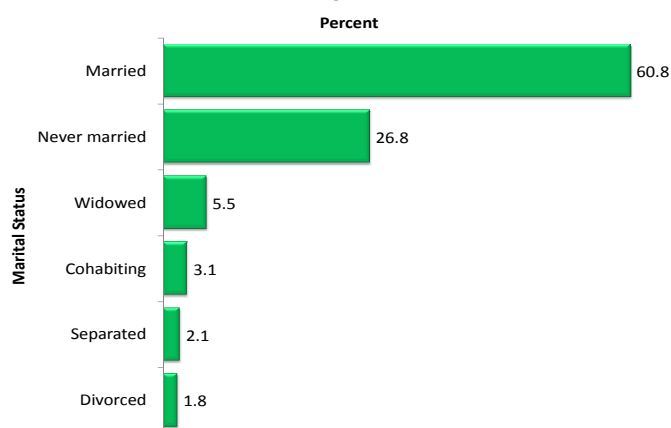
Source: 2010 Census of Population and Housing

Figure 4.2 shows the percent distribution of the population aged 15 years and older by marital status and rural/urban. The percentage of the married was higher in rural areas (62.6 percent) than urban areas (52.7 percent). Of the population aged 15 years and older that had never married, urban areas had a higher percentage (34.1 percent) than rural areas (25.1 percent).

Figure 4.2: Percentage Distribution of the Population (15 Years and Older) by Marital Status and Rural/Urban, Muchinga Province 2010
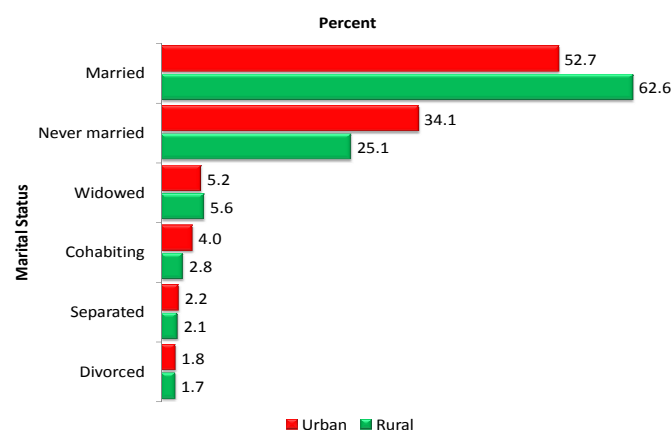
Source: 2010 Census of Population and Housing

Figure 4.3 shows the percentage distribution of the population aged 15 years and older by marital status and sex. More males had never been married (34.6 percent) than females (19.8 percent). There were more females who were widowed than males at 9.5 and 1.1 percent, respectively.

Figure 4.3: Percentage Distribution of the Population (15 Years and Older) by Marital Status and Sex, Muchinga Province 2010
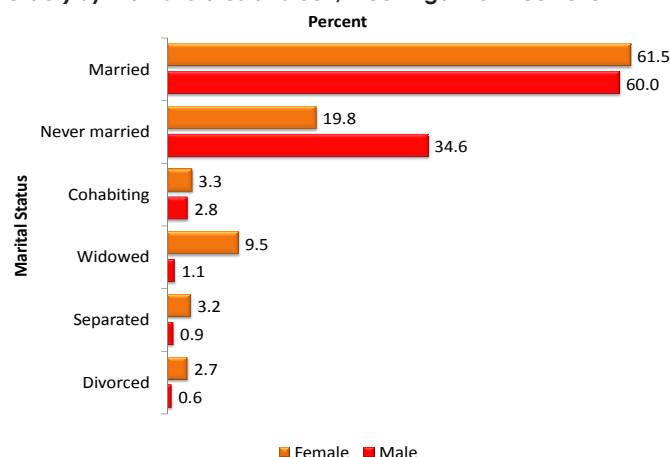
Source: 2010 Census of Population and Housing

4.2 Median Age at First Marriage

Median age at first marriage divides the married population into two parts, showing that 50 percent got married before the median age and 50 percent married after reaching the median age.

Figure 4.4 shows the median age at first marriage by sex, district and rural/urban. Of the population aged 15 years and older, the median age at first marriage was 20.1 years. The median age at first marriage was 20.0 years in rural areas and 20.7 years in urban areas. The median age for males was 25.2 years while that of females was 18.3 years.

Figure 4.4: Median Age at First Marriage by sex, Rural/Urban and District, Muchinga Province 2010
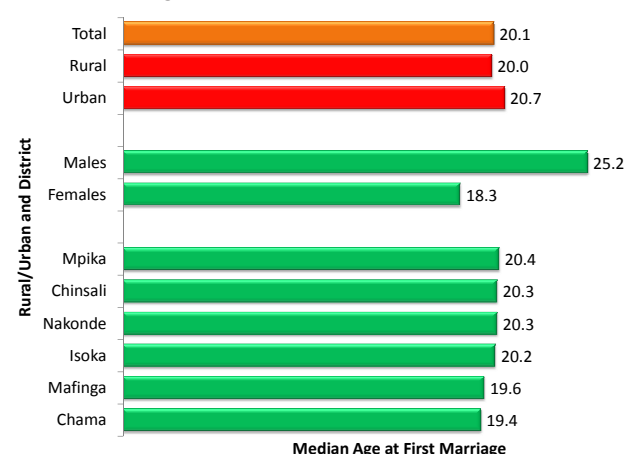
Source: 2010 Census of Population and Housing

Chinsali District had the highest median age at first marriage at 20.4 years while Chama District had the lowest at 19.4 years.

4.3 Household Composition

Household composition is the description of the household according to some aspect of its members such as age, sex, relationship to head and size. It is determined by some people living together and their relationships to one another.

A Household: refers to a group of people who normally live and eat together. These may or may not be related by blood, marriage or adoption, but make common provision for food or other essentials for living and they have only one person whom they all regard as head of household. A household can also have one member.

A Household head: is a person all members of the household regard as the head. He or she makes day to day decisions governing the running of the household. In cases of one member households, the member is taken as the household head.

A Usual household member: is a person who has been living in the household for at least 6 (six) months or has joined the household and intends to live with the household for six months or longer.

4.3.1 Household and Household Headship

In 2010, there were 138,738 household heads in Muchinga Province. Household heads made up 19.5 percent of the population in Muchinga Province. There were more households in the rural than urban areas at 114,762 and 24,021 respectively.

Figure 4.5 shows the distribution of household heads by age. The population aged 25-29 years had the highest percentage of household heads at 15.4 percent followed by the age group 30-34 at 14.9 percent. Households headed by persons aged below 20 years made up 1.1 percent of the total number of household heads in the province.

Figure 4.5: Percentage Distribution of Households Heads (12 Years and Older) by Age Group, Muchinga Province 2010
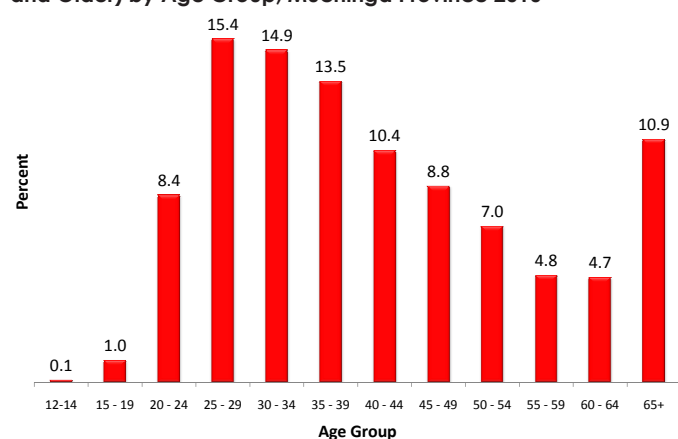
Source: 2010 Census of Population and Housing

Figure 4.6 shows the percentage distribution of household heads by sex and rural/urban. Male household heads constituted 78.4 percent of the total household heads while female household heads constituted 21.6 percent. There were more male household heads than female household heads in both rural and urban areas.

Figure 4.6: Percentage Distribution of Household Heads (12 Years and Older) by Sex and Rural/Urban, Munchinga Province 2010
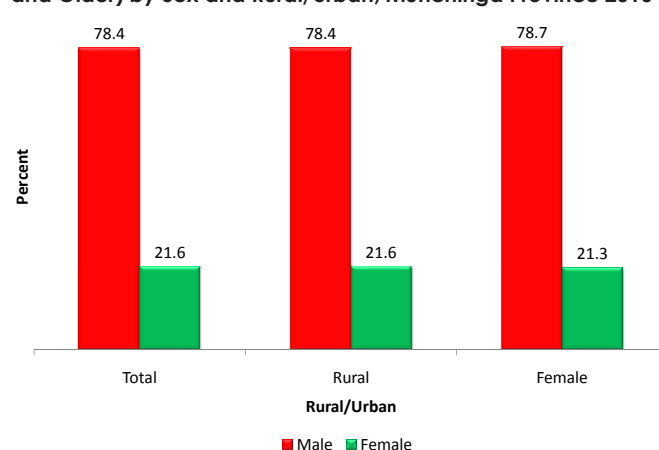
Source: 2010 Census of Population and Housing

4.3.2 Household Size

Figure 4.7 shows the average household size by district and rural/urban. In 2010, the average household size in Muchinga Province was 5.1 persons. Rural areas had a higher average household size (5.1 persons) than urban area (5.0 persons). The average household size was highest in Chama Districts at 5.3 persons and lowest in Nakonde District at 5.0 persons.

Figure 4.7: Average Household Size by Rural/Urban and District, Muchinga Province 2010.

Source: 2010 Census of Population and Housing

Figure 4.8 shows the average household size by sex of household head, district and rural/urban. Male headed households had a higher average household size than female headed households at 5.4 and 4.1 persons, respectively.

Figure 4.8: Average Household Size by Sex of the Household Head, Rural/Urban and District, Muchinga Province 2010

Source: 2010 Census of Population and Housing

4.3.3 Relationship to Head

Figure 4.9 shows the percentage distribution of population by relationship to the household head. In 2010, 65.9 percent of the persons in the household were biological children of the household heads while 18.4 percent were spouses.

Figure 4.9 Percentage Distribution of the Population by Relationship to Household Head, Muchinga Province 2010.
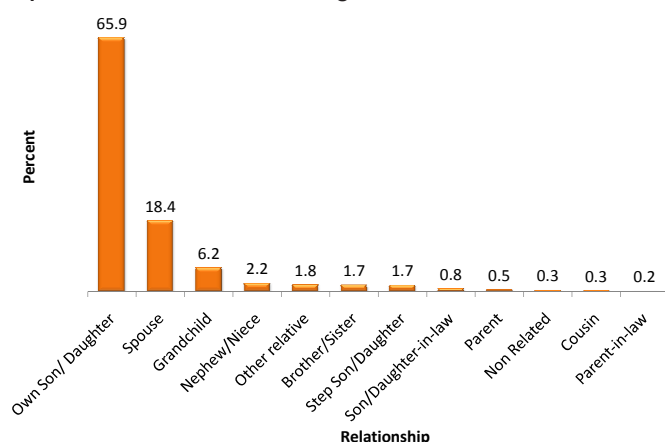
Source: 2010 Census of Population and Housing.

4.4 Religion

Figure 4.10 shows the percentage distribution of the population by religious affiliation. Protestants accounted for 77.2 percent of the population in Muchinga Province while 19.1 percent were Catholics.

Figure 4.10 Percentage Distribution of the Population by Religious Affiliation, Muchinga Province 2010
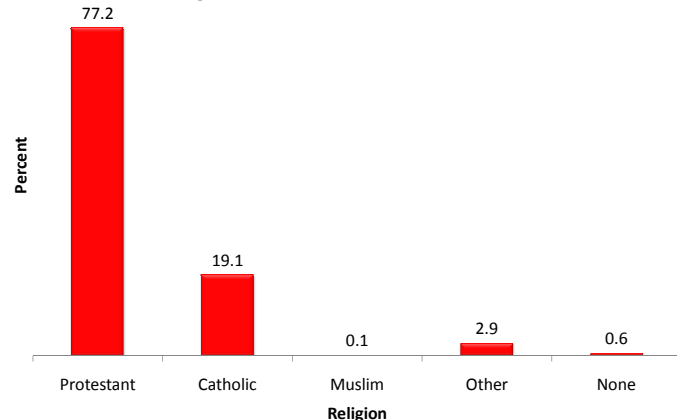
Source: 2010 Census of Population and Households

4.5 Birth Certificates

Figure 4.11 shows the percentage distribution of persons aged below 18 years with or without birth certificates. Of the population aged below 18 years in Muchinga Province, 79.7 percent did not have birth certificates. The proportion of those with birth certificates was highest in urban areas at 30.2 percent.

Figure 4.11 Percentage Distribution of Persons Aged Below 18 Years With or Without Birth Certificates by Rural/Urban, Muchinga Province 2010
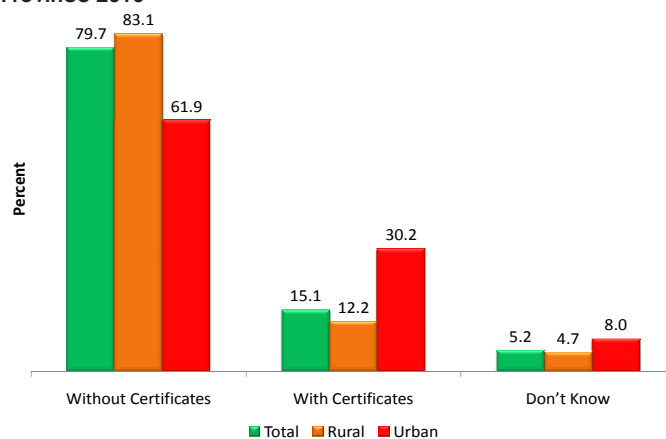
Source: 2010 Census of Population and Housing

Figure 4.12 shows the percentage distribution of persons aged below 18 years without Birth certificates by district. Chama District had the highest proportion of persons without birth certificates at 94.7 percent while Nakonde District had the lowest at 60.4 percent.

Figure 4.12: Percentage Distribution of Persons Aged Below 18 Years Without Birth Certificates by District, Muchinga Province 2010
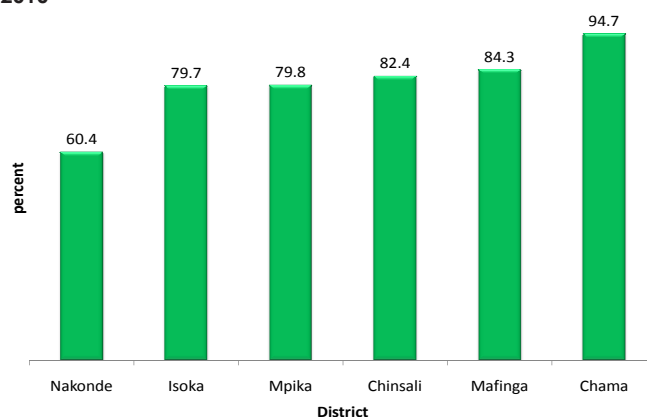
Source: 2010 Census of Population and Housing

4.6 Holders of Green National Registration Cards

In Zambia, the age at which one is required to obtain a Green National Registration Card (NRC) is 16 years. Figure 4.13 shows the percent distribution of the population aged 16 years and older with green National Registration Cards by sex, district and rural/urban. In 2010, 324,048 citizens in Muchinga Province were aged 16 years and older. Of these, 82.8 percent had NRCs.

Figure 4.13 Percentage Distribution of Population (16 Years and Older) with Green National Registration Cards by Sex, District and Rural/Urban, Muchinga Province 2010
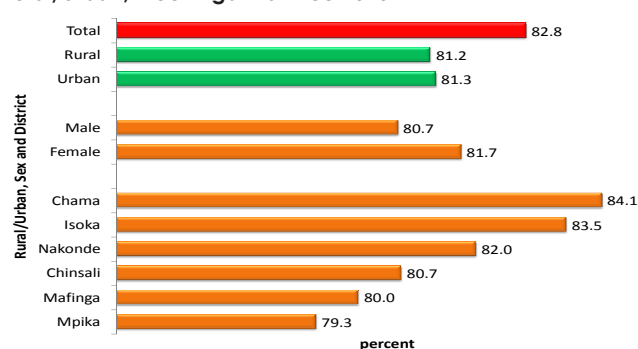
Source: 2010 Census of Population and Housing

Urban areas had a higher proportion of Green National Registration Card holders than rural areas at 81.3 and 81.2 percent, respectively. The proportion of females with Green National Registration Card (81.7 percent) was higher than males (80.7 percent). The district with the highest proportion of persons with green NRCs was Chama District at 84.1 percent while Mpika District had the lowest at 79.3 percent.

4.7 The Voting Population

The 2010 Census collected information on the number of registered voters at the time of the Census. This included people who were registered during the previous registration exercise as well as those registered during the 2010 registration exercise.

There were 296,682 eligible voters (18 years and older) of which 189,189 (63.8 percent) were registered voters. Table 4.1 shows the percentage distribution of eligible voters (persons aged 18 years and older) and registered voters by sex and rural/urban. The registered voters in rural and urban areas were 83.3 and 16.7 percent, respectively. Of the registered voters, males constituted 48.1 percent while females constituted 51.9 percent.

Table 4.1: Percentage Distribution of Eligible Voters (18 Years and Older) and Registered Voters by Sex and Rural/Urban, Muchinga Province 2010.

Sex and Rural/Urban	Eligible Voters(18 years and older)	Registered voter
Total	296,682	189,189
Rural	81.6	83.3
Urban	18.4	16.7
Sex		
Male	46.7	48.1
Female	53.3	51.9
Source: 2010 Census of Population and Housing		

Figure 4.14 shows the percentage distribution of registered voters among eligible voters by district. The proportion of registered voters was highest in Mafinga District at 72.9 percent and lowest in Mpika District at 58.8 percent.

Figure 4.14: Percentage Distribution of Eligible Voters (Aged 18 Years and Older) and Registered Voters by District, Muchinga Province 2010
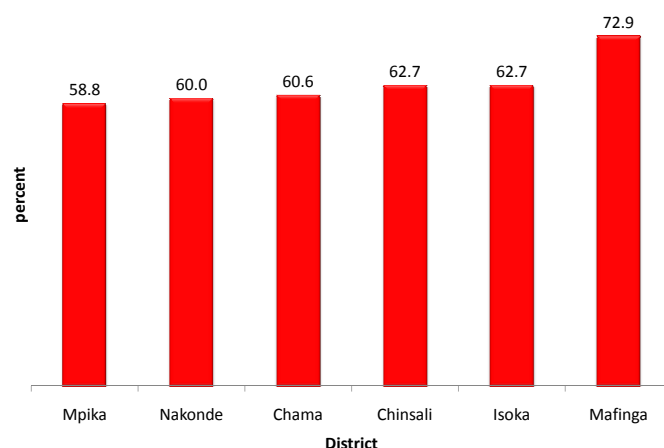
Source: 2010 Census of Population and Housing

CHAPTER 5
EDUCATION CHARACTERISTICS

5.0 Summary

The literacy rate for Muchinga Province was 63.5 percent. Literacy rates for rural and urban areas were 60.3 and 78.9 percent, respectively. Males had a higher literacy rate (68.3 percent) than females (59.1 percent).

Of the population aged 5 years and older, 32.8 percent were currently attending school. The net primary and secondary school attendance rates were 69.8 and 36.7 percent, respectively. The net primary school attendance rate was 68.7 percent in rural areas and 75.7 percent in urban areas. The net secondary school attendance rate was 31.7 percent in rural areas and 58.1 percent in urban areas.

The Gender Parity Index was 0.89. Rural and urban Gender Parity Index were 0.87 and 0.96, respectively. Of the population aged 25 years and older, 63.0 percent had completed primary school, 29.7 percent had completed secondary school and 6.8 percent had completed tertiary education.

Of the population aged 25 years and older that ever attended school, 63.0 percent completed primary school, 29.7 percent completed secondary school and 6.8 percent completed tertiary education.

In rural areas, the completion rate was 69.5 percent for primary, 25.4 percent for secondary and 4.6 percent for tertiary education. In urban areas, the highest completion rate was for secondary at 46.2 percent followed by primary at 38.2 percent. Urban areas recorded the highest completion rate for tertiary education at 15.3 percent.

More females (73.7 percent) had completed primary education than males (53.5 percent). At secondary and tertiary levels, males had higher completion rates of 36.8 and 9.4 percent, respectively. Females had completion rates of 21.6 percent for secondary and 3.9 percent for tertiary.

Chapter 5
Education Characteristics

5.1: Introduction
Education is a basic human right and is of central importance to the economic and social development of a nation. There are various benefits of education such as promoting economic growth, national productivity, innovations and social cohesion.

The current Education Policy supports free primary education for all. This is in line with the second Millennium Development Goal which is to 'achieve universal primary education, that is to ensure by 2015 children everywhere, boys and girls alike, will be able to complete a full course of primary schooling' (UN, 2000). The population censuses in general provide a good basis for monitoring the participation of the population in an education system. The 2010 Census captured the education characteristics of the population such as literacy, school attendance, educational attainment, professional or vocational education attainment and fields of study.

5.2: Concepts and Definitions
School Attendance
This is defined as attendance at any accredited educational institution or programme, public or private, for organized learning at any level of education.

Gross School Attendance Rate
Gross school attendance rate is defined as the ratio of the population aged five years and older attending a specified education level to the applicable official school-age population. In some instances where there is extensive under-age and over-age enrolment, the ratio can be over 100 percent. This indicator is mainly used to measure the absorption capacity of an education system at any designated level.

Net School Attendance
The net school attendance rate measures the percentage of the school-age population that is attending a designated level of education. This indicator is much more refined than the gross attendance rate and is widely used in education planning. The gross and net attendance rate are used to determine the extent of under and over age school attendance in an education system.

Educational Attainment
This is the highest level of formal education that an individual has completed regardless of duration in school. It is the highest grade completed within the most advanced level attended in the educational system of the country where the education was received.

Literacy
Literacy refers to the ability to both read and write in any language. Members of the population who are able to read and write are literate, while those who cannot read and write in any language are considered illiterate.

Gender Parity Index
The Gender Parity Index (GPI) is the number of female students enrolled in primary, secondary and tertiary education to the number of male students in each level. A GPI of less than 1 indicates that there are fewer females than males in the formal education system to the appropriate school-age population. A gender parity index of more than 1 means that there are more females than males attending school. A score of 1 reflects equal enrolment rates for males and females.

5.3. Literacy
Figure 5.1 shows literacy rates of person aged 5 years and older by sex and rural/urban. The percentage of persons aged 5 years and older that were literate was 63.5 percent. The literacy rate for males was higher (68.3 percent) than that of females (59.1 percent). The literacy rate in urban areas was higher than in rural areas at 78.9 and 60.3 percent, respectively.

Figure 5.1: Literacy Rate for Population Aged 5 years and Older by Sex and Rural/Urban, Muchinga Province, 2010
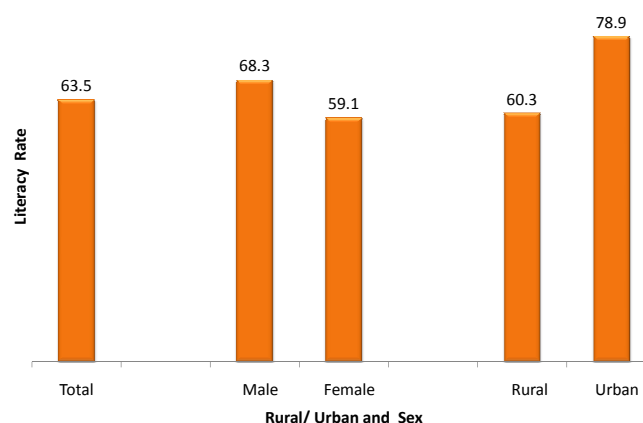
Source: 2010 Census of Population and Housing

Figure 5.2 shows literacy rate of the population aged 5 years and older by district. Chinsali District had the highest literacy rate at 66.0 percent followed by Nakonde District at 65.9 percent. Chama District had the lowest literacy rate at 55.2 percent.

Figure 5.2: Literacy Rate of the Population Aged 5 Years and Older by District, Muchinga Province 2010

Source: 2010 Census of Population and Housing

5.3.1: Literacy Rates for the Youth population (15 –24 years)

Youth literacy is one of the indicators used to assess the achievement of universal primary education. Figure 5.3 shows literacy rates for the population aged 15 to 24 years by sex and rural/urban. Youth literacy was 84.9 percent in 2010. The male and female youth literacy rates were 89.9 and 80.6 percent, respectively. Urban areas recorded higher literacy rates (94.6 percent) than rural areas (82.5 percent).

Figure 5.3: Literacy Rate of the Youth Population (15-24 years) by Sex and Rural/Urban, Muchinga Province 2010
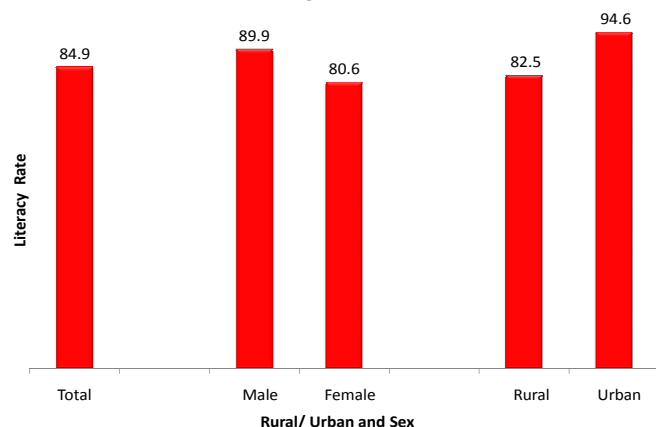
Source: 2010 Census of Population and Housing

Figure 5.4 shows literacy rates for the youth population aged 15 to 24 years by district. Mafinga District had the highest youth literacy rate at 87.8 percent while Chama District had the lowest at 77.0 percent.

Figure 5.4: Literacy Rate of the Youth Population (15-24 years) by District, Muchinga Province 2010
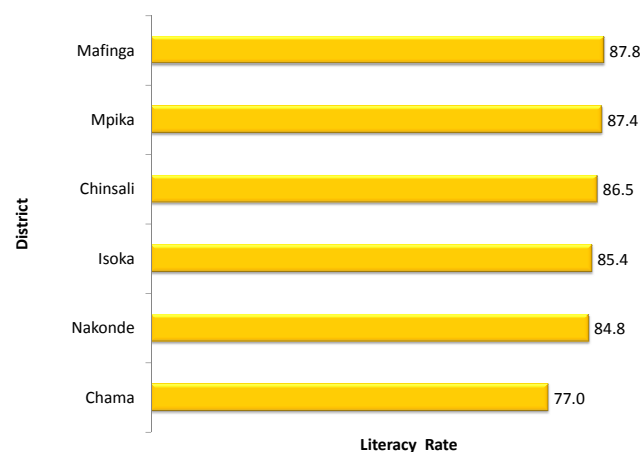
Source: 2010 Census of Population and Housing

5.3.2: Literacy Rate for the Adult Population (15 years and older)

Figure 5.5 shows literacy rates for the adult population aged 15 years and older by sex and rural/urban. The adult literacy rate was 78.3 percent in 2010. The adult literacy rate for urban areas was higher (91.4 percent) than that of rural areas (75.3 percent). Males recorded a higher adult literacy rate at 87.0 percent than females at 70.5 percent.

Figure 5.5: Literacy Rate for the Adult Population (15 years and older) by Sex and Rural/Urban, Muchinga Province 2010
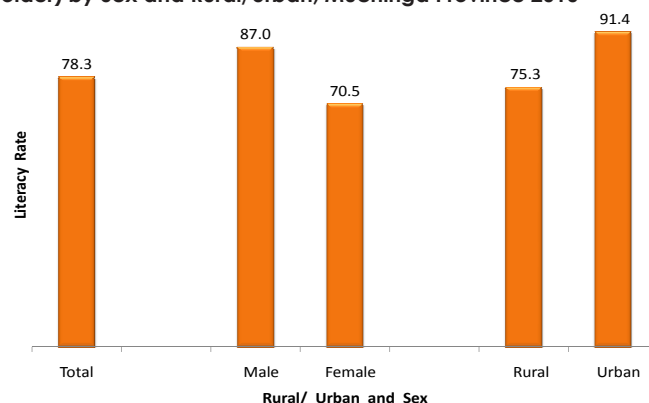
Source: 2010 Census of Population and Housing

Figure 5.6 shows the literacy rate for the adult population (15 years and older) by district. Chinsali District had the highest adult literacy rate at 83.4 percent followed by Nakonde District at 80.1 percent. Chama District had the lowest adult literacy rate at 68.7 percent.

Figure 5.6: Literacy Rate for Adult Population (15 years and older) by District, Muchinga Province 2010
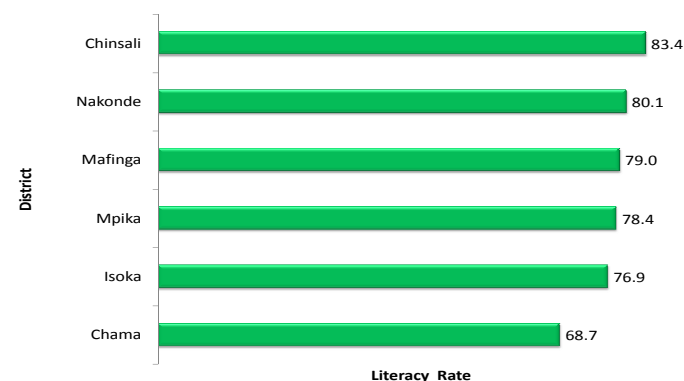
Source: 2010 Census of Population and Housing

5.4: School Attendance

The primary school official entry age in Zambia is seven years. Grades 1 to 7 correspond to pupils aged 7 to 13 years while 8 to 9 correspond to pupils aged 14 to 15 years. Grades 10 to 12 correspond to pupils aged 16 to 18 years. The population aged 18 years and older are expected to be in higher institutions of learning.

Figure 5.7 shows the percent of the population aged 5 years and older that were currently attending school by sex and rural/urban. In 2010, 32.8 percent of the population aged 5 years and older was currently attending school.

Figure 5.7: Percentage of Population Aged 5 Years and Older Currently Attending School, by Sex and Rural/Urban, Muchinga Province 2010

Source: 2010 Census of Population and Housing

In rural and urban areas the percentage of the population aged 5 years and older that was currently attending school was 31.8 and 37.1 percent, respectively. The percentage of males currently attending school was higher (35.9 percent) than the females (29.8 percent).

Figure 5.8 shows the percentage of the population aged 5 years and older currently attending school by 5 year age groups. The age group 10-14 years had the highest proportion currently attending school at 82.1 percent followed by the age group 15-19 years at 60.9 percent. The age group 45 years and older had the lowest percentage currently attending school at 1.6 percent.

Figure 5.8: Percentage Distribution of the Population Currently Attending School by 5 year Age Group, Muchinga Province, 2010
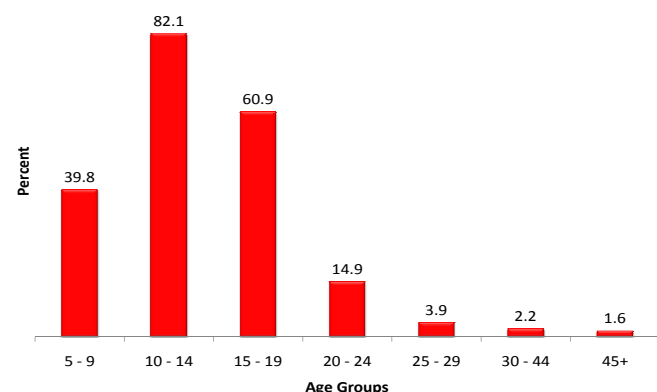
Source: 2010 Census of Population and Housing

Figure 5.9 shows the percent distribution of the population (aged 5 years and older) currently attending school by age group and rural/urban. Across all age groups, the population currently attending school was higher in urban areas than rural areas. The age group 10-14 years had the highest proportion of the population currently attending school in both rural and urban areas at 80.7 and 88.9 percent, respectively.

Figure 5.9: Percentage Distribution of the Population Currently Attending School by Age Group and Rural/Urban, Muchinga Province 2010
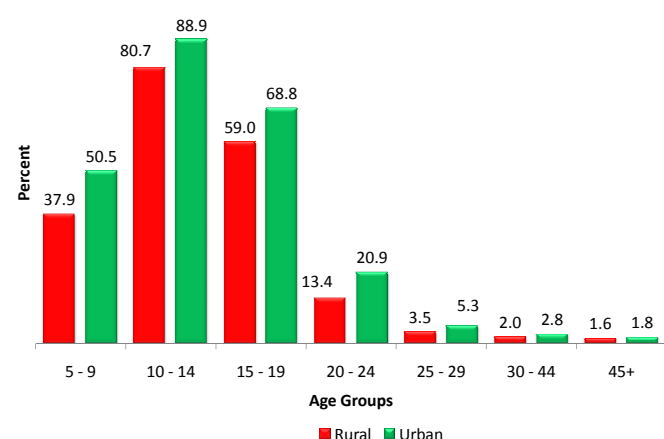
Source: 2010 Census of Population and Housing

Figure 5.10 shows the percent distribution of the population currently attending school by sex and age group. There were more females (40.8 percent) currently attending school than males (38.9 percent) in the age group 5–9 years.

Figure 5.10: Percentage Distribution of the Population Currently Attending School by Sex and Age, Muchinga Province 2010
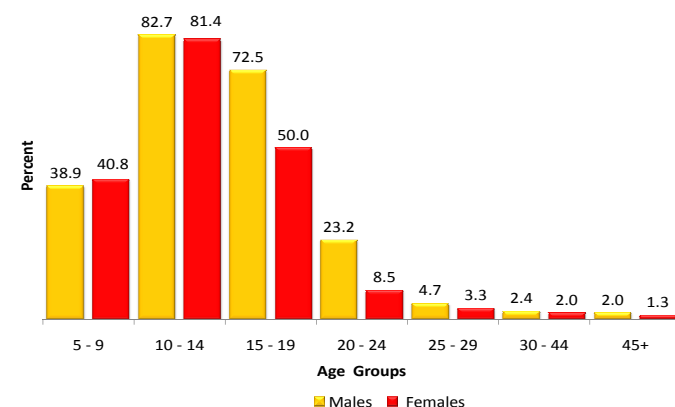
Source: 2010 Census of Population and Housing

Figure 5.11 shows the percentage of the population aged 5 years and older that was currently attending school by district. Mafinga District had the highest proportion of the population that was currently attending school at 35.5 percent while Chama District had the lowest at 30.0 percent.

Figure 5.11: Percentage of Population aged 5 years and older Currently Attending School by District, Muchinga Province 2010
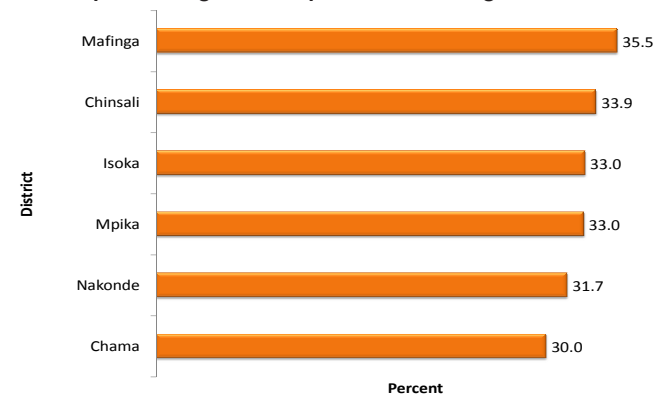
Source: 2010 Census of Population and Housing

5.5 Primary School Attendance

Figure 5.12 shows the percentage of the population aged 7 to 13 years that was currently attending primary school by sex and rural/urban. In 2010, primary school attendance rate was 71.8 percent. In rural areas, 70.1 percent of the population aged 7- 13 years was currently attending primary school while 81.0 percent of the population aged 7-13 years was currently attending primary school in urban areas. Primary school attendance rate for both males and females was 71.8 percent.

Figure 5.12: Percentage of the Population aged 7 to 13 years Currently Attending Primary School by Sex and Rural/Urban, Muchinga Province 2010
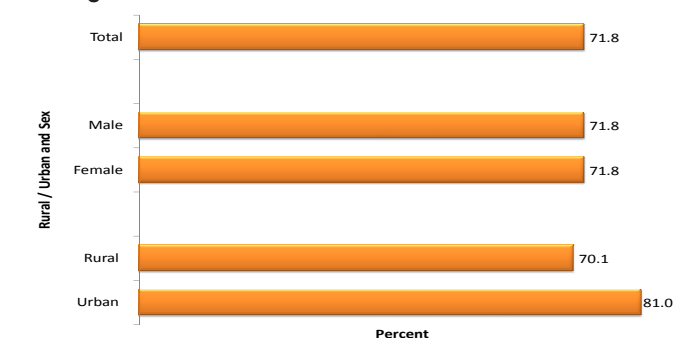
Source: 2010 Census of Population and Housing

Current primary school attendance rates by district are shown in Figure 5.13. Mafinga District had the highest proportion of the population currently attending school (77.6 percent) while Chama district had the lowest (65.8 percent).

Figure 5.13: Percentage of the Population Aged 7 to 13 Years Currently Attending Primary School by District, Muchinga Province 2010
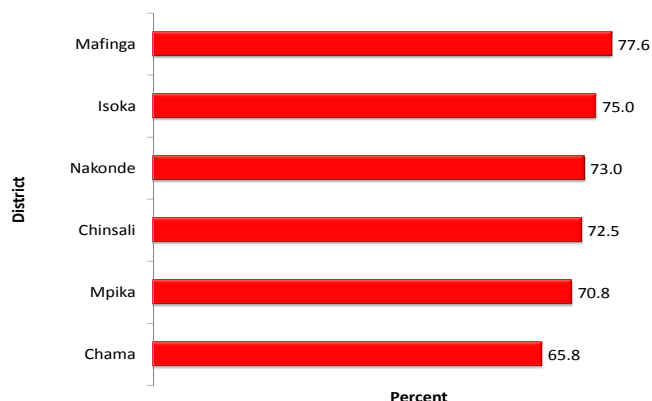
Source: 2010 Census of Population and Housing

5.5.1 Gross Primary School Attendance Rate

Figure 5.14 shows gross primary school attendance rate by sex and rural/urban. In 2010, the gross primary school attendance rate was 94.6 percent. The gross primary school attendance rate was higher in urban areas (95.9 percent) than rural areas (94.4 percent). Males had higher gross primary school attendance rate than females at 96.7 and 92.5 percent, respectively.

Figure 5.14: Gross Primary School Attendance Rate by Sex and Rural/Urban, Muchinga Province 2010

Source: 2010 Census of Population and Housing

Figure 5.15 shows the gross primary school attendance rates by district. Mafinga District had the highest gross primary school attendance rate at 107.5 percent followed by Isoka District at 99.4 percent. Chama District had the lowest gross primary school attendance rate at 85.1 percent.

Figure 5.15: Gross Primary School Attendance Rate by District, Muchinga Province 2010
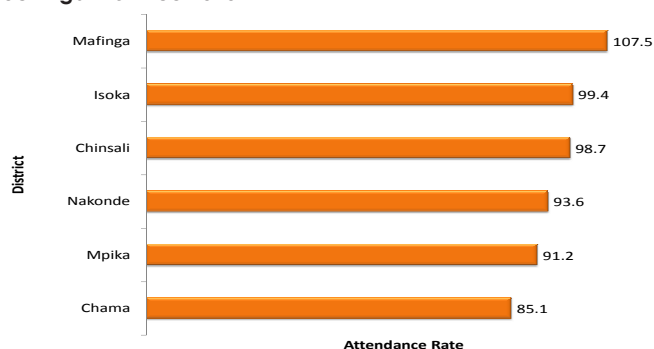
Source: 2010 Census of Population and Housing

5.5.2 Net Primary School Attendance Rate

Net primary school attendance rate shows the percentage of the primary school age population (7 to 13 years) currently attending primary grades (Grades 1 to 7). Figure 5.16 shows net primary school attendance rate by sex and rural/urban. In 2010, the net primary school attendance rate was 69.8 percent. The net primary school attendance rate means that the percentage of eligible primary school age children not in school was at 30.2 percent in 2010.

In rural areas, the net primary school attendance rate was 68.7 percent while in urban areas the net primary school attendance rate was 75.7 percent. The net primary school attendance rate for both males and females was 69.8 percent.

Figure 5.16: Net Primary School Attendance Rate by Sex and Rural/Urban, Muchinga Province 2010
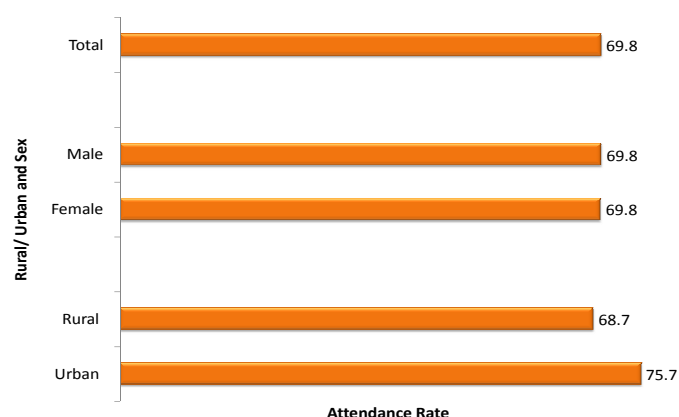
Source: 2010 Census of Population and Housing

Figure 5.17 shows the net primary school attendance rate by district. Mafinga District had the highest net primary school attendance rate at 76.4 percent while Chama District had the lowest at 64.4 percent.

Figure 5.17: Net Primary School Attendance Rate by District, Muchinga Province 2010
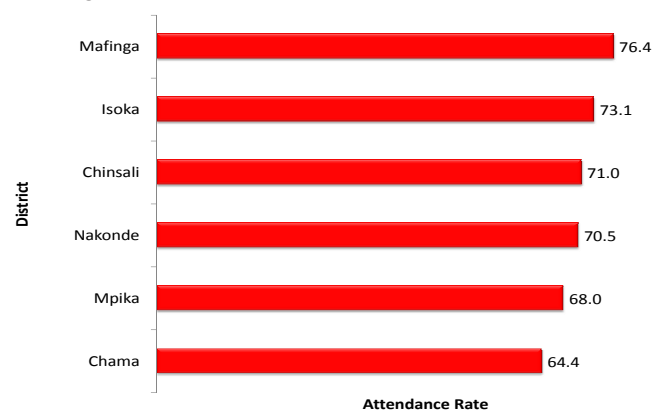
Source: 2010 Census of Population and Housing

5.6 Gross Secondary School Attendance

In Zambia, the official secondary school age ranges from 14-18 years. Figure 5.18 shows gross secondary school attendance rate by sex and rural/urban. The gross secondary school attendance rate for the population aged 14-18 years was 56.2 percent. Urban areas had a higher gross secondary school attendance rate (88.8 percent) than rural areas (48.8 percent). Male and female gross secondary school attendance rates were 65.8 and 46.9 percent, respectively.

Figure 5.18: Gross Secondary School Attendance Rate by Sex and Rural/Urban, Muchinga Province 2010
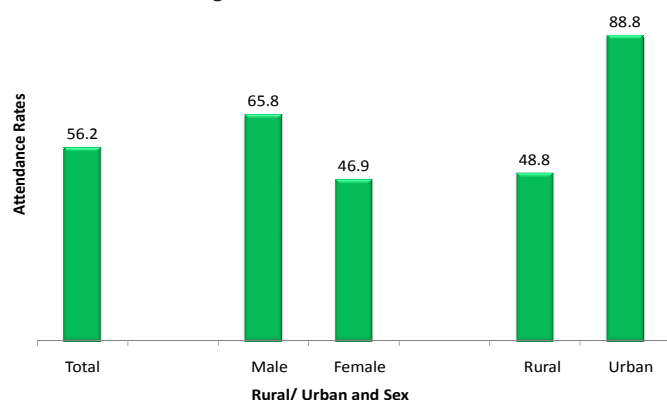
Source: 2010 Census of Population and Housing

Figure 5.19 shows gross secondary school attendance rate by district. Mpika District had the highest gross secondary school attendance rate at 63.5 percent while Mafinga District had the lowest at 46.9 percent.

Figure 5.19: Gross Secondary School Attendance Rate by District, Muchinga Province 2010
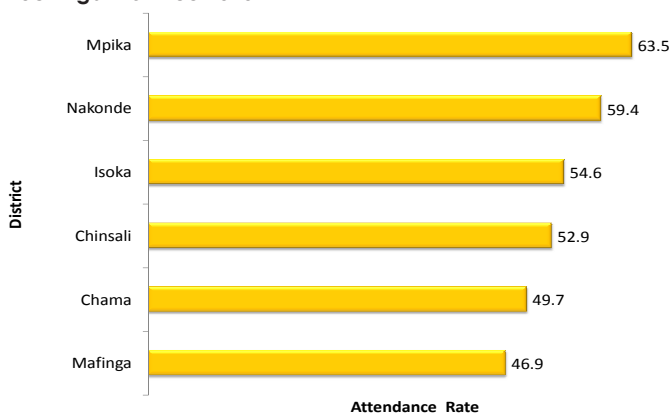
Source: 2010 Census of Population and Housing

5.6.1 Net Secondary School Attendance Rate

Net secondary school attendance rate show the percentage of the secondary school age population (14-18 years) currently attending secondary grades 8 to 12. Figure 5.20 shows net secondary attendance rate by sex and rural/urban. In 2010, the net secondary school attendance rate was 36.7 percent. The net secondary school attendance for rural and urban areas was 31.7 and 58.1 percent, respectively. The net secondary school attendance rate for males (40.4 percent) was higher than that of females (33.0 percent).

Figure 5.20: Net Secondary School Attendance Rate by Sex and Rural/Urban, Muchinga Province 2010
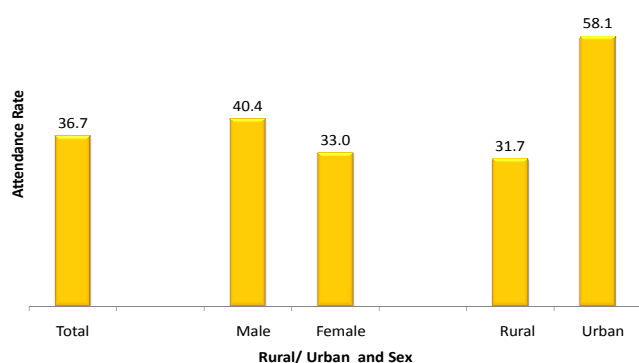
Source: 2010 Census of Population and Housing

Figure 5.21 shows the net secondary school attendance rates by district. Mpika District had the highest secondary school attendance rate at 41.1 percent while Mafinga District had the lowest at 30.6 percent.

Figure 5.21: Net Secondary School Attendance Rate by District, Muchinga Province 2010
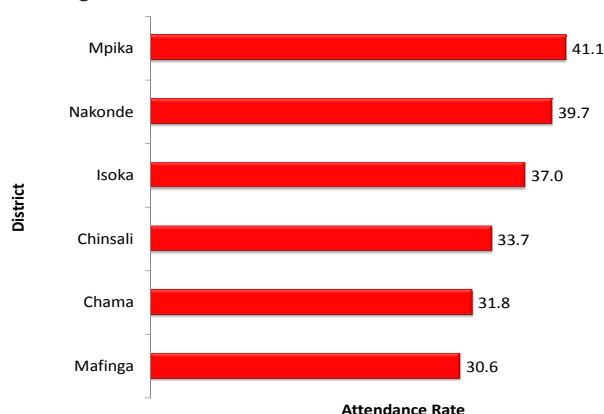
Source: 2010 Census of Population and Housing

5.7 Gender Parity Index

Gender parity index shows the disparities in education and helps in addressing unequal access to education among females in developing countries. Figure 5.22 shows gender parity index by district and rural/urban. The gender parity index for those currently attending school was 0.89, implying that there were less females than males currently attending school.

Figure 5.22: Gender Parity Index by District and Rural/Urban, Muchinga Province 2010
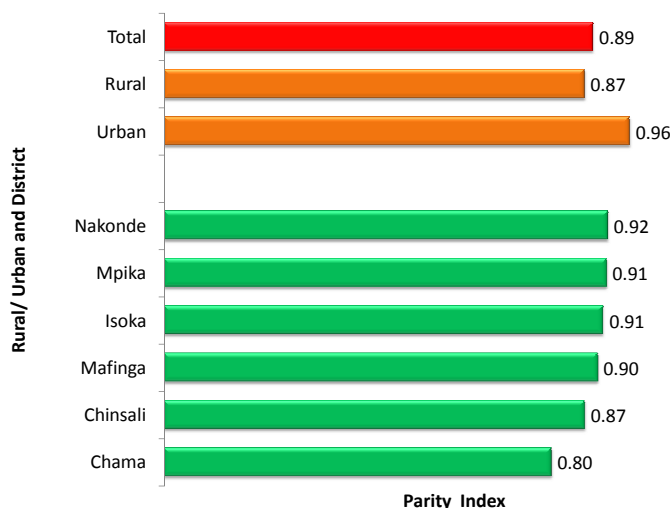
Source: 2010 Census of Population and Housing

The GPI for rural areas was 0.87 while that of urban areas was 0.96. Nakonde District had the highest GPI of 0.92 while Chama District had the lowest at 0.80.

Figure 5.23 shows gender parity index for the population currently attending primary school by district and rural/urban. The Gender Parity Index for those currently attending primary school was 0.95. The GPI for rural areas was 0.94 while that of urban areas was 1.04. Nakonde and Mpika districts had the highest GPI of 0.97 each while Chama District had the lowest at 0.92.

Figure 5.23: Gender Parity Index for Population Currently Attending Primary School by District and Rural/Urban, Muchinga Province 2010
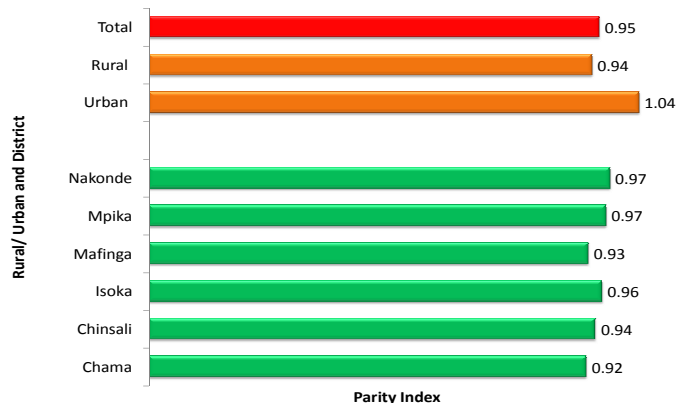
Source: 2010 Census of Population and Housing

Figure 5.24 shows the Gender Parity Index for the population currently attending secondary school by rural/urban and district. The GPI for those currently attending secondary school was 0.73. In rural areas, the GPI was 0.67 while in urban areas the GPI was 0.87. Mpika District had the highest GPI at 0.81 while Chama District had the lowest at 0.49.

Figure 5.24: Gender Parity Index for the Population Currently Attending Secondary School by Rural/Urban and District, Muchinga Province 2010
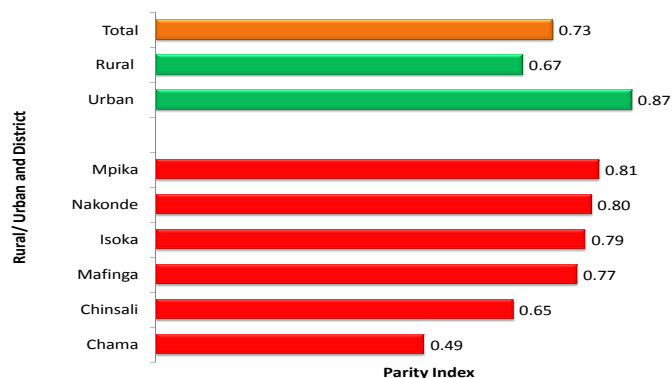
Source: 2010 Census of Population and Housing

5.8 Highest Education Level Completed

Educational attainment is the highest level of education completed in the country where the education was received (United Nations, 1998). The United Nations recommends that educational attainment be included among the basic areas of census inquiry and that data on the subject be collected for all persons 5 years of age and older.

Indicators on highest education qualification level completed and highest professional/vocational qualification in this analysis uses the population aged 25 years and older. Note that the population under 25 years of age may still be attending school and that the measures for these persons would tend to understate their eventual educational attainment to some degree (Siegel and Swanson, 2004).

Figure 5.25 shows the percent distribution of the population (25 years and older) that ever attended school by highest education level completed and rural/urban. In 2010, 63.0 percent had completed primary level and 29.7 percent had completed secondary education. Tertiary education was completed by 6.8 percent of the population aged 25 years and older that had ever attended school.

Figure 5.25: Percentage Distribution of Population (25 Years and Older) that Ever Attended School by Highest Level of Education Completed and Rural/Urban, Muchinga Province 2010
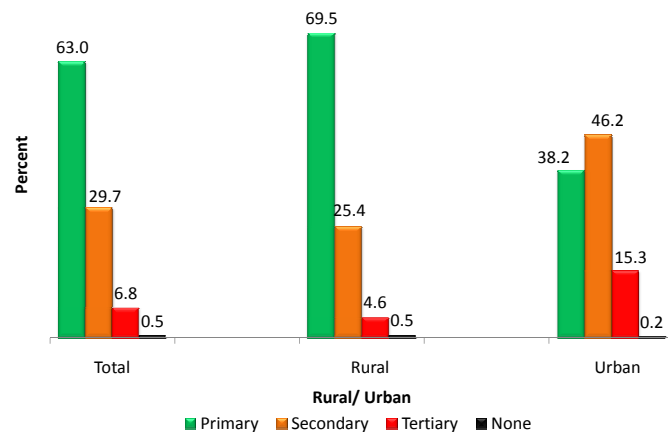
Source: 2010 Census of Population and Housing

In rural areas, 69.5 percent had primary as the highest level of education completed while 25.4 percent had completed secondary education. Secondary education was the highest level of education completed in urban areas at 46.2 percent followed by primary education at 38.2 percent. The percentage of the population that had completed tertiary education in urban areas was 15.3 percent.

Figure 5.26 shows the percent distribution of the population (25 years and older) that ever attended school by highest education level completed and sex. There were more females than males who had primary education as the highest level completed at 73.7 and 53.5 percent, respectively. The percentage of males who had secondary and tertiary education as their highest level of education completed was higher than that of females.

Figure 5.26: Percentage Distribution of Population (25 Years and Older) that Ever Attended School by Highest Level of Education Completed and Sex, Muchinga Province 2010
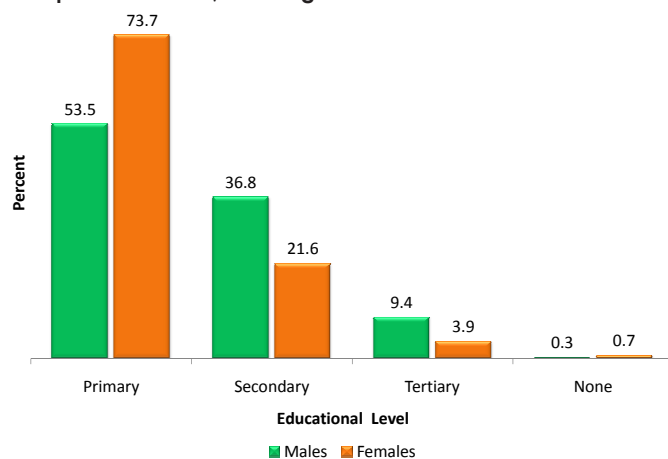
Source: 2010 Census of Population and Housing

Figure 5.27 shows the percent distribution of the population (25 years and older) that ever attended school by highest education level completed and district. Mpika District had the highest percentage of the population with tertiary as their highest level of education completed at 9.2 percent. Mafinga District had the lowest completion of tertiary education at 2.9 percent.

Figure 5.27: Percentage Distribution of Population (25 Years and Older) that Ever Attended School by Highest Level of Education Completed and District, Muchinga Province, 2010.
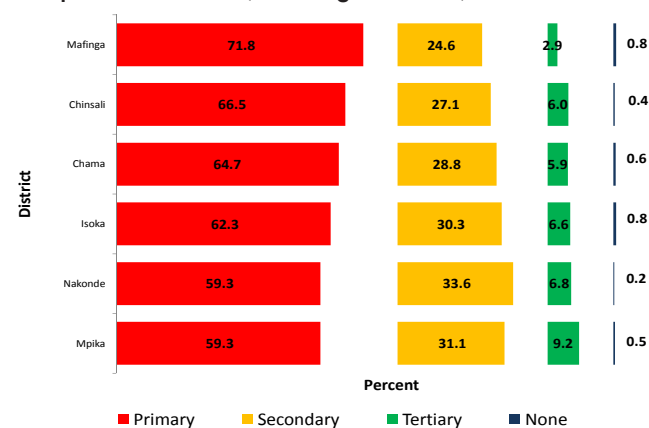
Source: 2010 Census of Population and Housing

5.9 Highest Profession/Vocational Qualification Completed

Figure 5.28 shows the percent distribution of the population (25 years and older) by highest profession/vocational qualification completed. Certificate holders constituted 3.8 percent followed by diploma holders at 1.3 percent. Less than one percent (0.0) of the population 25 years and older had doctorate degrees (PhD).

Figure 5.28: Percent Distribution of population (25 Years and Older) by Highest Profession/Vocational Qualification Completed, Muchinga Province, 2010
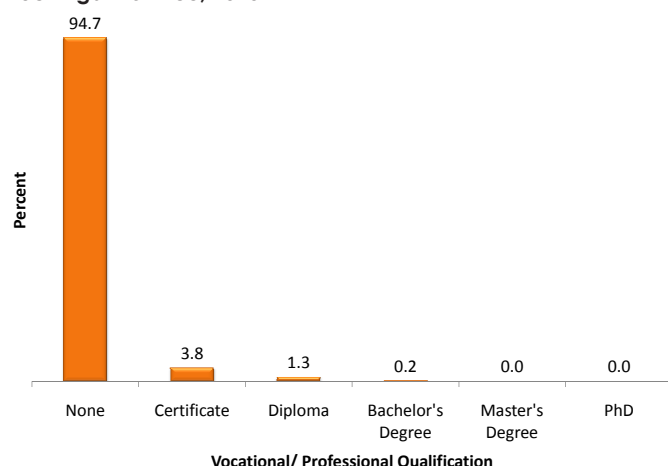
Source: 2010 Census of Population and Housing

Figure 5.29 shows the percent distribution of population 25 years and older by highest profession/vocational qualification completed and sex. In all professional and vocational qualification categories, males had higher percentages than females except for those that had no professional/vocational qualification. The highest percentage difference was recorded in the Certificate category where males accounted for 5.8 percent compared to 2.0 percent for females.

Figure 5.29: Percentage Distribution of Population (25 Years and Older) by Highest Profession/Vocational Qualification Completed and Sex, Muchinga Province, 2010
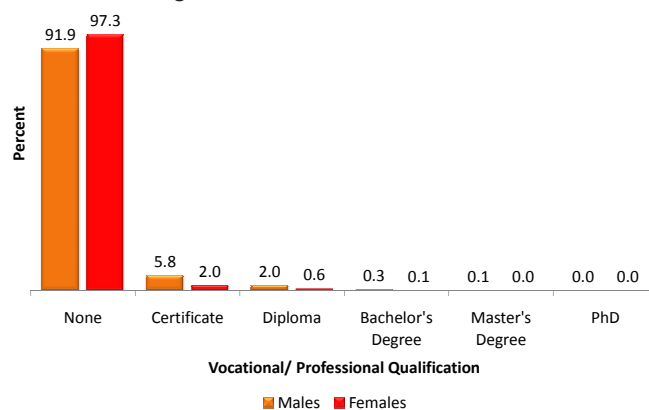
Source: 2010 Census of Population and Housing

5.10 Field of Study

Table 5.1 shows the percent distribution of the population 25 years and older by field of study and sex. Teacher training was reported by 2.0 percent of the total population. This was followed by nursing at 0.4 percent. Other notable fields of study included accountancy, business administration, agriculture, and mechanical engineering at 0.2 percent each.

Table 5.1: Percentage Distribution of Population (25 years and older) by Field of Study and Sex, Muchinga Province 2010				
Field of Study	Population	Percent of Total	Percent Males	Percent Females
Total	213,412		47.5	52.5
Natural science (e.g. biological science programme chemistry programme geological programme etc).	82	0.0	84.1	15.9
Civil engineering	96	0.0	100.0	0.0
Electrical and electronics engineering	263	0.1	95.4	4.6
Mechanical engineering	390	0.2	96.9	3.1
Chemical engineering	17	0.0	100.0	0.0
Mining engineering	94	0.0	97.9	2.1
Industrial engineering	27	0.0	85.2	14.8
Metallurgical engineering	15	0.0	93.3	6.7
Architectural and town planning engineering	39	0.0	84.6	15.4
Other engineering	93	0.0	95.7	4.3
Medicine and surgery	68	0.0	94.1	5.9
Pharmacy	89	0.0	67.4	32.6
Dentistry	43	0.0	86.0	14.0
Nursing	872	0.4	63.8	36.2
Medical technology	110	0.1	90.0	10.0
X-Ray technology	5	0.0	20.0	80.0
Veterinary	47	0.0	93.6	6.4
Statistics	6	0.0	83.3	16.7
Mathematics	46	0.0	91.3	8.7
Computer science/Economics	133	0.1	57.1	42.9
Accountancy	411	0.2	78.1	21.9
Teacher training	4,296	2.0	63.2	36.8
Law and jurisprudence (includes magistrates and judges)	227	0.1	88.1	11.9
Journalism	24	0.0	62.5	37.5
Fine arts	32	0.0	75.0	25.0
Physical education	17	0.0	64.7	35.3
Library science	22	0.0	68.2	31.8
Social welfare	146	0.1	60.3	39.7
Criminology	152	0.1	84.9	15.1
Business administration and related programmes	373	0.2	75.6	24.4
Secretarial training	191	0.1	16.2	83.8
shorthand typing	55	0.0	34.5	65.5
Clerical Typing	38	0.0	52.6	47.4
Operating of office machines	32	0.0	81.3	18.8
Service trade (e.g. cooking tourist trade etc.)	121	0.1	50.4	49.6
Radio and television broadcasting	10	0.0	90.0	10.0
Fire protection and fire fighting	32	0.0	71.9	28.1
Agriculture forestry and fishery	502	0.2	82.7	17.3
Food and drinks processing trades programmes	36	0.0	58.3	41.7
Wood working	318	0.1	96.9	3.1
Textile trades	87	0.0	37.9	62.1
Leather trades	6	0.0	66.7	33.3
Other programmes	1,923	0.9	86.0	14.0
None	201,826	94.6	46.0	54.0

Source: 2010 Census of Population and Housing

CHAPTER 6
ECONOMIC CHARACTERISTICS

6.0 Chapter Summary

The population aged 12 years and older was 394,054 in Muchinga Province in 2010. Out of these, 81.7 percent were in rural areas while 18.3 percent were in urban areas. Males comprised 47.6 percent of total population aged 12 years while females comprised 52.4 percent.

Of the population aged 12 years and older, 243,787 were in the labour force, out of which 85.9 percent were in rural areas and 14.1 percent were in urban areas.

The unemployment rate was 6.4 percent of the total labour force. Urban unemployment rate was 15.6 percent while rural unemployment rate was 4.9 percent. The unemployment rate among the male population was 7.7 percent compared to 5.0 percent among the female population.

The youth unemployment rate was 7.7 percent, of which urban youth unemployment rate was higher (19.7 percent) than the rural unemployment rate (5.6 percent). The unemployment rate for male youths was higher (9.4 percent) than that of female youths (6.0 percent).

Of the employed population, the highest proportion was in self employed (47.6 percent) and the lowest were employers (0.3 percent)

Chapter 6
Economic Characteristics

6.1 Introduction

Individuals engage in economic activities in order to attain and sustain a certain acceptable level of consumption of goods and services. Engagement in these activities not only ensures a person's livelihood but also equips an individual with the means of acquiring and sustaining the basic needs of life such as food, clothing and shelter. In a developing country like Zambia, it becomes imperative to constantly measure and monitor changes in the levels of economic activities because fluctuations in labour force participation rates, employment levels and economic dependency levels have an impact on poverty.

6.2 Concepts and Definitions

Concepts and definitions used in this chapter are as follows:

Labourforce Participation Rate: This is ratio of the economically active population to the working age population expressed as a percent.

Unemployment rate: This is the proportion of the labourforce who have no jobs, are available for work and are seeking work in a given reference period in the total labourforce expressed as a percent.

Youth Unemployment Rate: This was defined as a proportion of the labourforce aged 15-35 years who had no jobs, were available

for work and were seeking work in a given reference period in the total youthful labour force expressed as a percent.

In the 2010 Census, data pertaining to economic characteristics of the population 12 years and older was collected and analyzed. The main topics covered are:

i) Labour force participation
ii) Economic dependency
iii) Employment and unemployment
iv) Employment status
v) Occupation
vi) Industry

6.3 Working Age Population

The working-age population was defined as all persons 12 years and older. This is the population from which measurement of the economic characteristics of the population is based.

Figure 6.1 shows the various components of the population 12 years and older. It shows the composition of the economically active and economically inactive population, including their sub components.

Figure 6.1: Organogram for the structure of Population aged 12 years and above
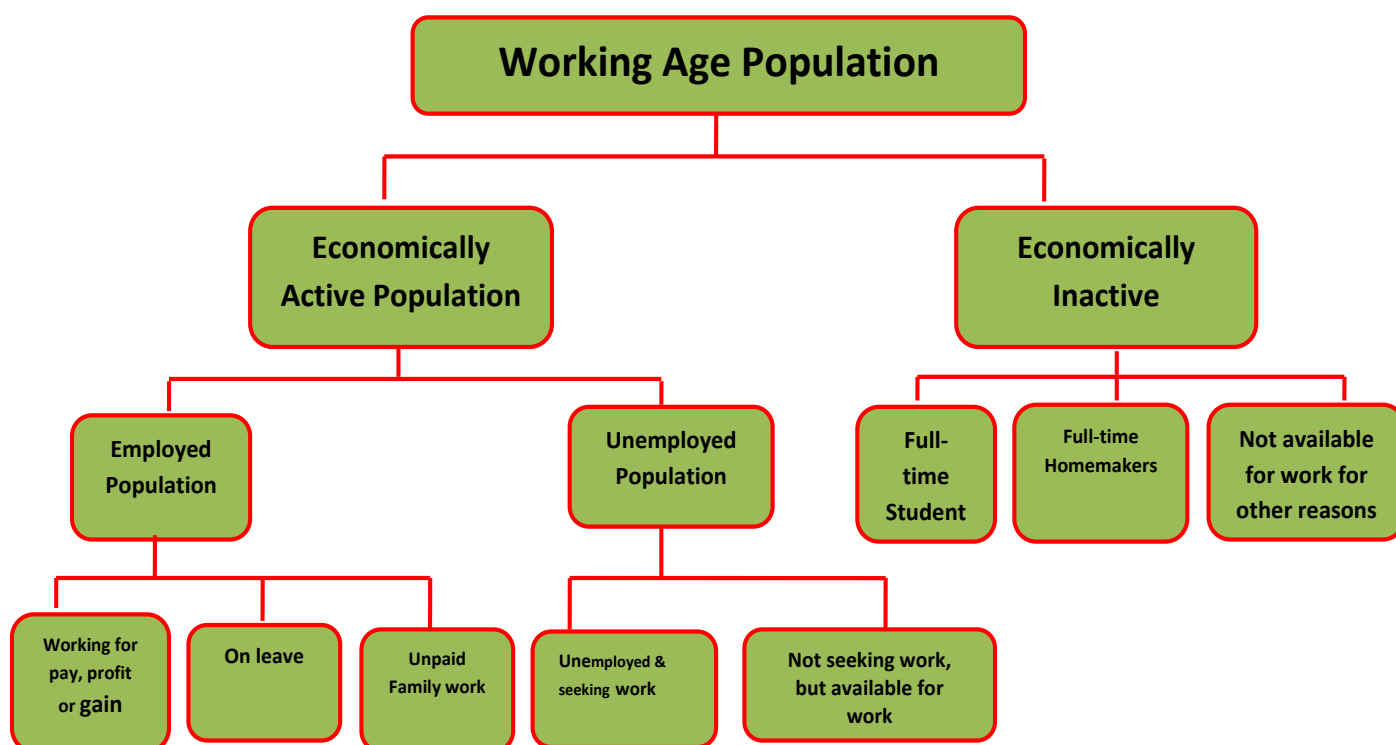
The question asked in the 2010 Census to determine the economic activity status was 'What did (NAME) do in the last 7 days and last 12 months?'The reference period for the response categories was the last 7 days (Current activity status) and last 12 months (Usual activity status).

6.3.1 Population 12 years and older
In 2010, the population aged 12 years and older represented 59.6 percent of the total population of Muchinga province. The population 12 years and older (Working age population) was reported at 394,054 in Muchinga province.

6.4 Economic Activity Status
The population 12 years and older is subdivided into two broad economic activity status categories, namely economically active and the economically inactive. The economic activity status thus refers to whether a person aged 12 years and older is in the labour force or outside the labour force.

6.4.1 Economically Active
The economically active population (labour force) comprises persons who during the 7-days prior to the census night were either employed (i.e. employers, employees and unpaid family workers) or unemployed (i.e. without work but actively looking for work and those willing to work).

The analysis for the economic activity status is based on the current (in the 7 days prior to the census night) economic activity of the population. In 2010, the population of the labour force was 243,787 persons in Muchinga Province. Of these, 127,461 were male and 116,326 were female.

6.4.2 Economically Inactive
The economically inactive population comprises people who, during the reference period, were outside the labour force. These included fulltime students, fulltime homemakers (i.e. fulltime housewives) and those not available for work for other reasons such as, not able to work due to sickness, old age, beggar's among other.

Figure 6.2 shows the percent share of the population 12 years and older by economic activity status. Of the population 12 years and older, 61.9 percent were economically active while 38.1 percent were economically inactive.

Figure 6.2: Percentage Distribution of Population (12 Years And Older) by Economic Activity Status, Muchinga Province 2010
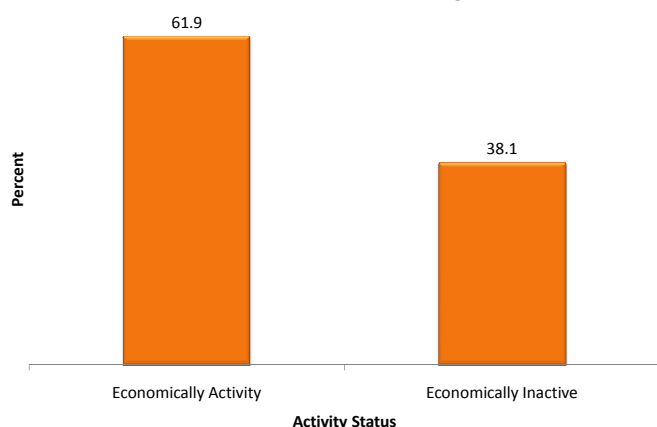
Source:2010 Census of Population and Housing

6.5 Labour Force Participation Rate
The labour force participation rate shows how much of the population is economically active. Figure 6.3 shows the participation rate for the population 12 years and older by sex and rural/urban. In 2010, the labour force participation rate (Activity status rate) was 61.9 percent in Muchinga Province. In the male population, the participation rate was 67.9 percent compared to 56.3 percent in the female population.

Rural/urban analysis shows that labour force participation rate was higher in rural areas (65.1 percent) compared to that recorded in urban areas (47.6 percent). In addition, labour force participation rates for males were higher than those of females in both rural and urban areas.

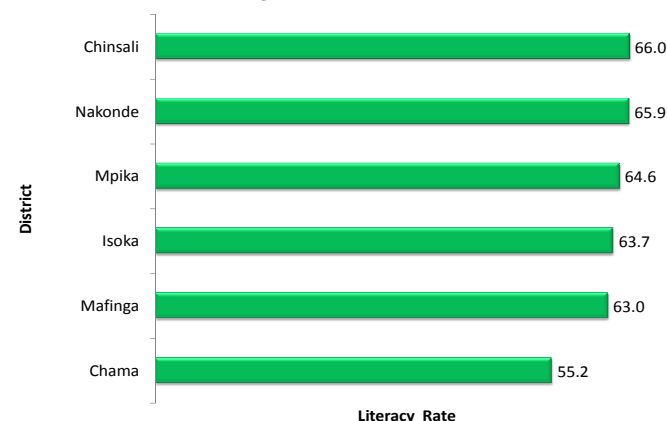**Figure 6.3: Labour Force Participation Rate for the Population (12 Years and Older) by Sex and Rural/ Urban, Muchinga Province, 2010**
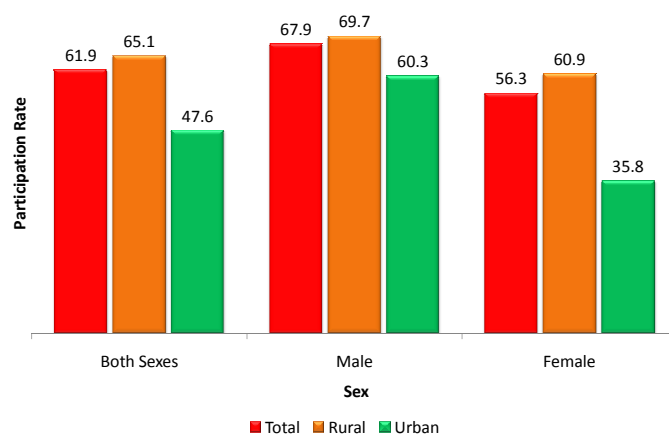
Source:2010 Census of Population and Housing

Figure 6.4 shows the labour force participation rate for the population 12 years and older by age and sex. Labour force participation among males was higher than that of females in all age groups except for the age groups 12-14 and 15-19 years.

Figure 6.4: Labour Force Participation Rate for the Population (12 Years and Older) by Age Group and Sex, Muchinga Province 2010
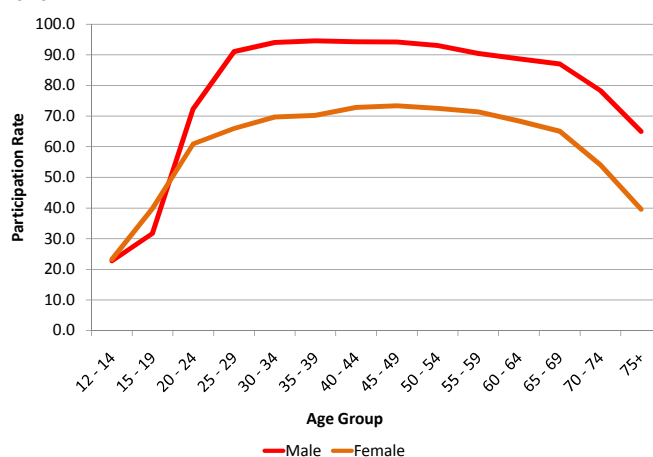
Source:2010 Census of Population and Housing

The participation rate for both sexes increased with progression in age. However, labour force participation rate declined in older ages, 50 years and older.

Figure 6.5 shows the labour force participation rate for the population 12 years and older by district. Chama district had the highest labour force participation rate (69.9 percent) while Nakonde district had the lowest (54.9 percent).

Figure 6.5: Labour Force Participation Rate for the Population 12 years and older by District, Muchinga Province 2010
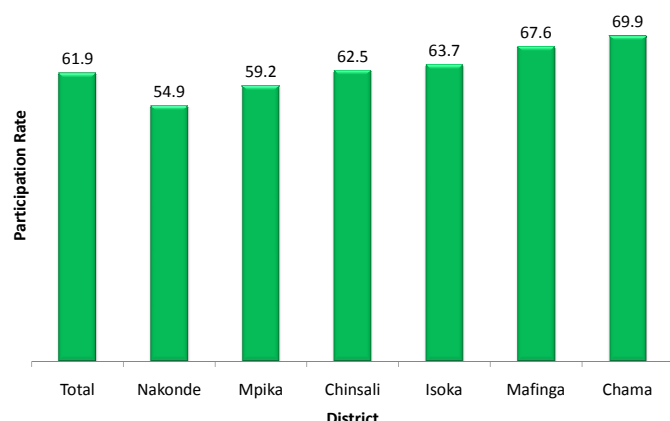
Source:2010 Census of Population and Housing

6.6 Employed Population
Employment in Zambia is measured as a percent of the labour force. In the 2010 Census, it made up those who reported to be working or on leave during the reference period (seven days prior to the census night). Out of 243,787persons in the labour force, 228,202 persons were employed, representing 93.6 percent of the labour force.Out of the employed population, 51.6 percent were male and 48.4 percent were female

Figure 6.6 shows the percentage distribution of employed population by sex and rural/urban. The results show that there were more employed persons in rural areas (87.3 percent) than in urban areas (12.7 percent). In rural areas, female employment accounted for 89.7 percent while male employment was at 85.1 percent. As for the urban areas, there was higher male employment (14.9 percent) than the female employment (10.3 percent).

Figure 6.6: Percentage Distribution of Employed Population (12 Years and Older) by Sex and Rural/Urban, Muchinga Province 2010.
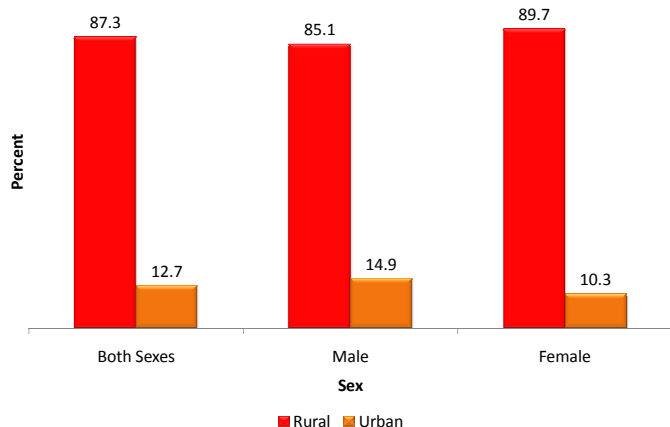
Source: 2010 Census of Population and Housing

6.7 Unemployment
The unemployed population consists of all persons 12 years and older who were actively seeking work or were available for work during the period, seven days prior to the census night. Unemployment is a state of total lack of work for those persons within the employable age available for work but without work, looking for work but did not do anything i.e. zero hours of work in the 7 days prior to the census night.

Figure 6.7 shows the unemployment rates of Muchinga Province for the population 12 years and older by district.Of the 243,787 persons in the labour force 15,585 (6.4 percent) were unemployed. Nakonde district had the highest unemployment rate at 9.6 percent while Mafinga district had the lowest unemployment rate at 2.8 percent.

Figure 6.7: Unemployment Rate for the Population 12 Years and Older by District, Muchinga Province 2010
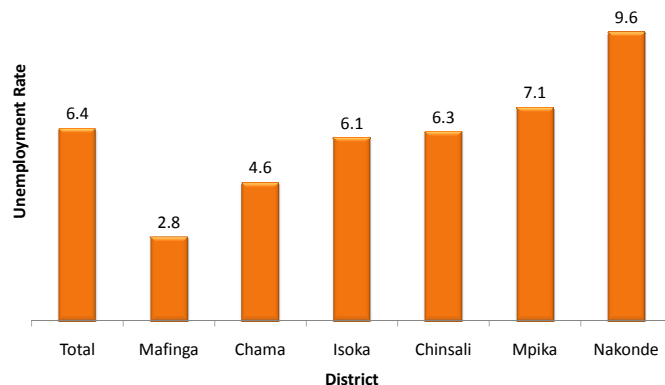
Source:2010 Census of Population and Housing

Figure 6.8 shows the unemployment rate of the population (12 years and older) by age group. Unemployment rate was highest in the age group 15-19 years at 9.8 percent followed by the age group 20-24 years at 9.6 percent. The lowest unemployment rate was 3.2 percent in the age group 70-74 years and older.

Figure 6.8: Unemployment Rate of Population (12 Years and Older) by Age Group, Muchinga Province 2010
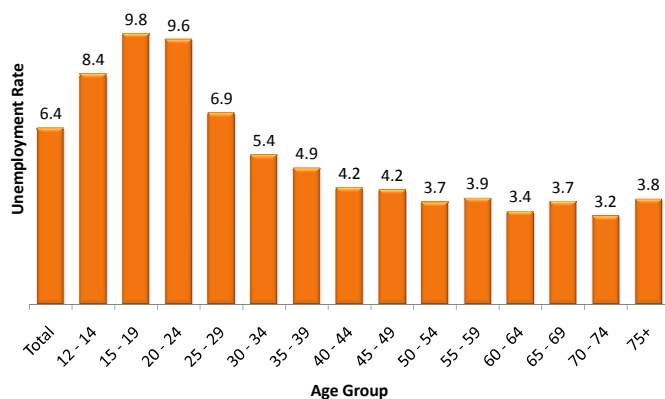
Source:2010 Census of Population and Housing

Figure 6.9 shows the unemployment rate of population (12 years and older) by sex and rural/urban. Unemployment rate was 7.7 percent for males and 5.0 percent for females. Unemployment was higher in urban areas than in rural areas. In rural areas, males recorded a higher unemployment rate (6.0 percent) than females (3.7 percent). Similarly, males recorded a higher unemployment rate (16.1 percent) than females (14.8 percent) in urban areas.

Figure 6.9: Unemployment rate of Population (12 Years and Older) by Age, Sex and Rural/Urban, Muchinga Province 2010
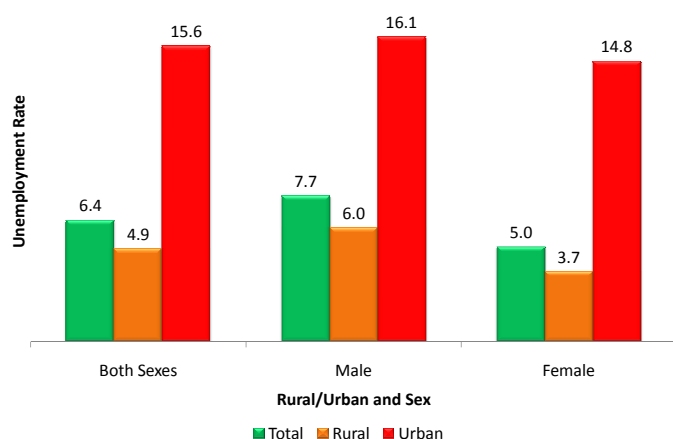
Source:2010 Census of Population and Housing

6.7.1 Youth Unemployment

The national youth policy defines a youth as any person aged 15 to 35 years. In this chapter, this age group has been used to analyse youth unemployment. The youth population in the labour force was 139,305 representing 57.1 percent of the total labour force. Of these, 50.8 percent were male while 49.2 percent were female. In terms of rural-urban residence, 84.9 percent were in rural areas and 15.1 percent in urban areas.

The youth unemployment rate by age group is shown in Figure 6.10. Out of the 139,305 youths in the labour force, 7.7 percent were unemployed. The highest youth unemployment rate was in the age group 15-19 years at 9.8 percent while the lowest rate was for youth population in the age group 30-35 years at 5.3 percent.

Figure 6.10: Youth Unemployment Rate by Age Group, Muchinga Province 2010
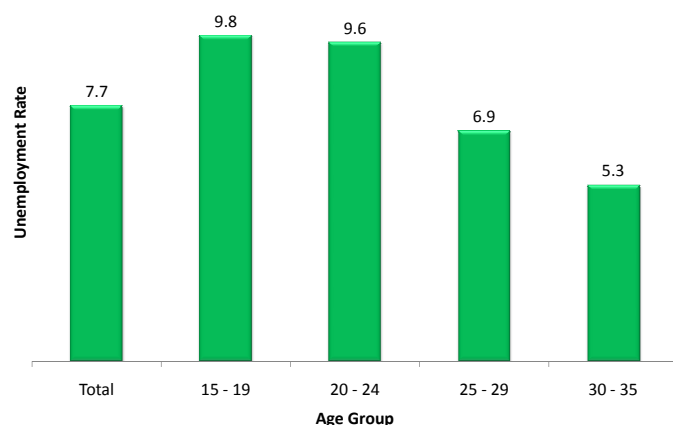
Source:2010 Census of Population and Housing

Figure 6.11 shows the youth unemployment rate by age group and sex. Overall, unemployment rates for male youths were higher in all age groups. The total youth unemployment rate among males was 9.4 percent and 6.0 percent among females. The age group with the highest disparity between males and females was 20-24 years with 12.4 percent for males and 7.0 percent for females.

Figure 6.11: Youth Unemployment Rate by Age Group and Sex, Muchinga Province 2010
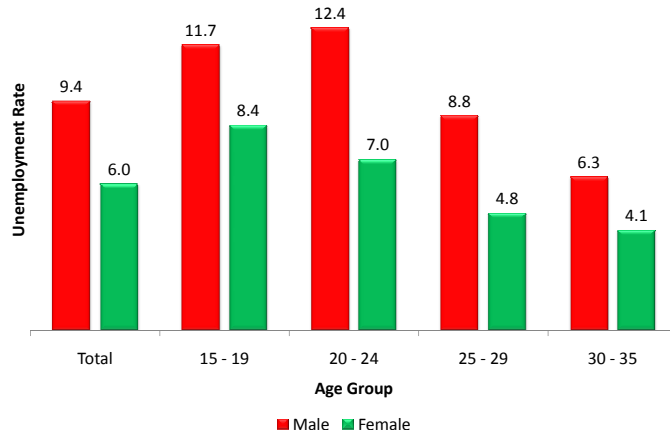
Source:2010 Census of Population and Housing

Figure 6.12 shows the youth unemployment rate by rural/urban and district. The unemployment rate was higher in urban areas (19.7 percent) than in rural areas (5.6 percent). Nakonde district reported the highest youth unemployment rate of 11.8 percent and Mafinga recorded the lowest rate of 3.3 percent.

Figure 6.12: Youth Unemployment Rate by Rural/Urban and District, Muchinga Province 2010
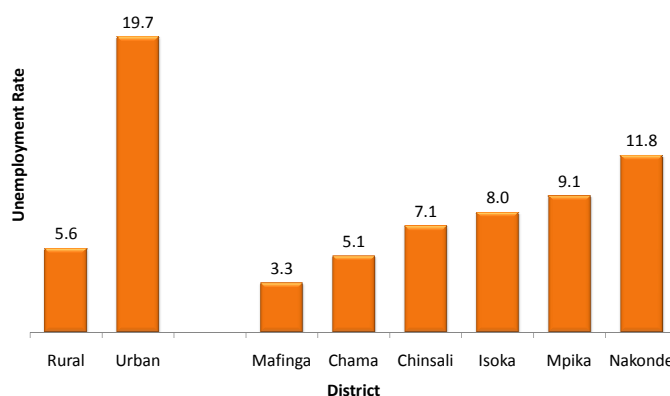
Source:2010 Census of Population and Housing

6.8 Economically Inactive Population

The economically inactive population refers to persons who reported to be either full-time homemakers (i.e full-time housewives), full-time students or not available for work for other reasons (e.g. beggars, too sick to work and so on).

Figure 6.13 shows the percentage distribution of the economically inactive population by reason of inactivity. The highest proportion for the economically inactive population for both males and females were full time students at 75.2 and 42.4 percent, respectively.

Figure 6.13: Percent Distribution of the Economically Inactive Population by Reason of Inactivity, Muchinga Province 2010
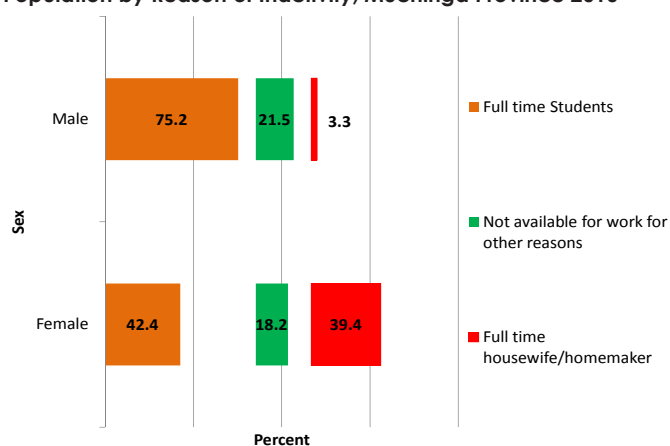
Source:2010 Census of Population and Housing

Economic Dependency Ratios

Economic dependency measures the extent to which the economically inactive population is dependent on the economically active population. It is the ratio of the economically inactive persons to a 100 economically active persons.

Figure 6.14 shows the dependency ratio by sex and rural/urban. The economic dependency ratio for Muchinga Province was reported at 62 in 2010. This means that, there were 62 economically inactive people for every 100 economically active people. The economic dependency ratio was higher among the females (77) than the males (47). The dependency ratio was higher in urban at 110 than in rural areas at 54.

Figure 6.14 Dependency Ratio by Sex and Rural/Urban, Muchinga Province 2010.
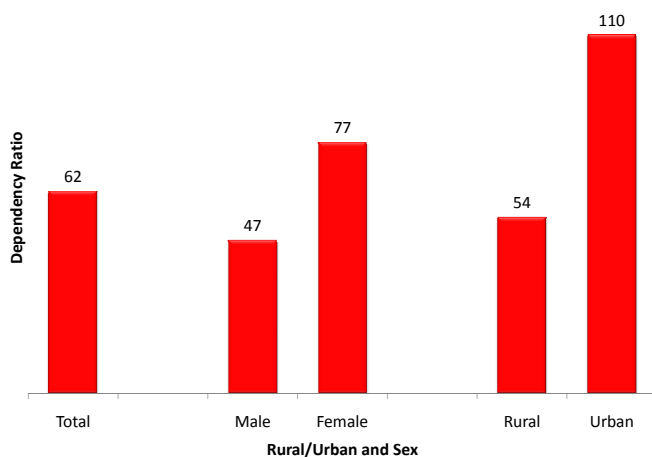
Source: 2010 Census of Population and Housing

6.10 Employment Status, Occupation and Industrial Classification

The employment status, occupational and industrial structure of a country's workforce reflects the level of its economic development and the efficiency with which it uses and allocates its resources. The analysis that follows is based on the usually working population, (i.e. those that were working in the 12 months prior to the census night) as this reflects the characteristics of the population for a longer period.

6.10.1 Employment Status

Employment status refers to whether a person is an employer, employee, self-employed or an unpaid family worker. An employer is a person who operates his or her own economic enterprise or engages independently in a profession or trade, and hires one or more employees. An employee is a person who works for a public or private employer and receives remuneration in wages, salaries, commissions, tips, piece rates, or pay in kind. A self-employed worker is a person who operates his or her own economic enterprise or engages independently in a profession or trade, and hires no employees. An unpaid family worker is a person who works without pay in an economic enterprise operated by a related family member of the same household (including peasant farmers).

Figure 6.15 shows the percentage distribution of usually working population 12 years and older by employment status. The results show that the majority of the usually working population was self-employed at 47.6 percent, followed by unpaid family workers at 45.7 percent. The lowest proportion was for employers with 0.3 percent.

Figure 6.15: Percentage Distribution of Usually Working Population (12 Years and Older) by Employment Status, Muchinga Province 2010
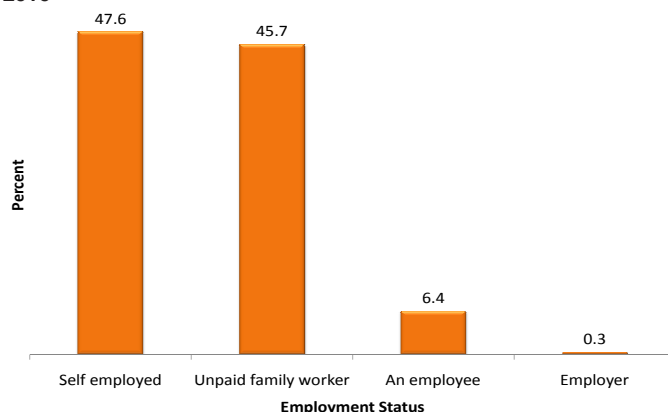
Source: 2010 Census of Population and Housing

The distribution of the usually working population by employment status and sex is shown in Figure 6.16. The figure shows that 59.8 percent of the females were unpaid family workers followed by self employed at 36.8 percent. For males, 58.4 percent were self employed followed by unpaid family workers at 31.6 percent.

Figure 6.16: Percentage Distribution of Usually Working Population (12 Years and Older) by Employment Status and Sex, Muchinga Province 2010
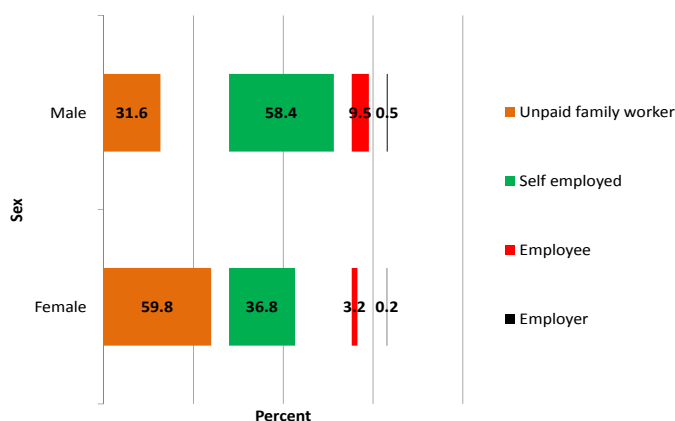
Source: 2010 Census of Population and Housing

6.10.2 Working Population by Occupation

Occupation is defined as the actual work or task that a person does in his/her main job at his/her place of work whether in paid employment, unpaid family work or self-employment.

Figure 6.17 shows the percentage distribution of the usually working population (12 years and older) by occupation. The main occupation among the usually working population was the skilled agricultural, forestry and fishing at 76.1 percent, followed by the elementary occupations at 7.7 percent. Managers accounted for 0.3 percent of the total working age population.

Figure 6.17: Percentage Distribution of Usually Working Population (12 Years and Older) by Occupation, Muchinga Province 2010
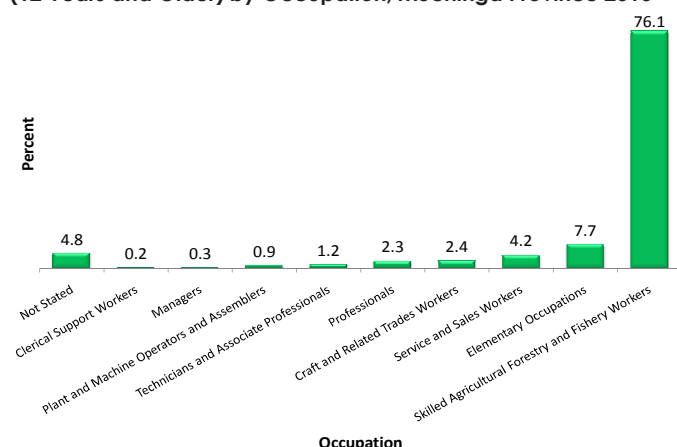
Source: 2010 Census of Population and Housing

Figure 6.18 shows the percentage distribution of the usually working population (12 years and older) by occupation and sex. The largest percent share of the working population for both male and female was skilled agriculture, forestry and fishing at 72.3 and 79.9 percent, respectively.

Figure 6.18: Percentage Distribution of Usually Working Population (12 Years and Older) by Occupation and Sex, Muchinga Province 2010
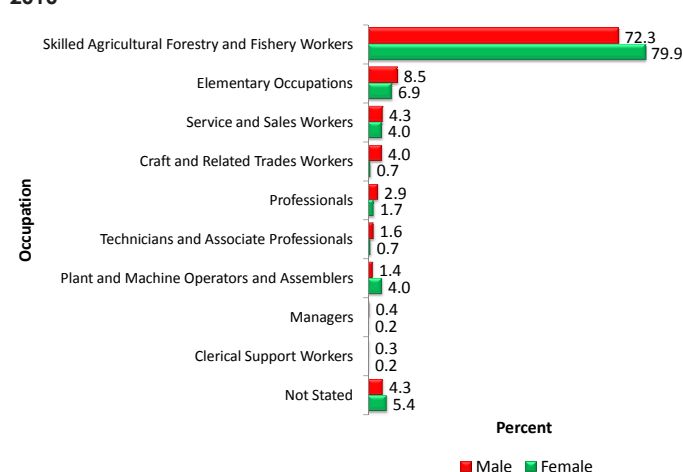
Source: 2010 Census of Population and Housing

Figures 6.19 and 6.20 show the percentage distribution of the usually working population (12 years and older) by occupation for rural and urban areas, respectively. The largest percent share of the usually working population in rural areas was in the skilled agriculture, forestry and fishing occupation (82.3 percent), followed by elementary occupations (7.6 percent).

Figure 6.19: Percentage Distribution of Usually Working Population (12 Years and Older) by Occupation, Rural Muchinga Province 2010
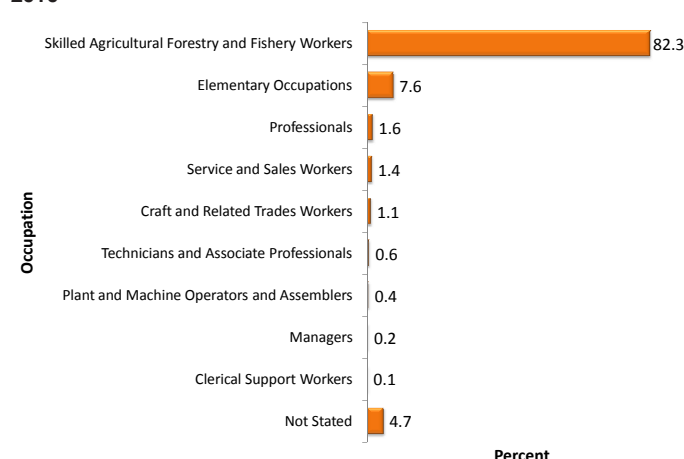
Source: 2010 Census of Population and Housing

In urban areas the largest percent share of the usually working population was in skilled agriculture forestry and fishery workers (32.2 percent), followed by the services and sales occupation (23.8 percent). The lowest percentage in urban areas was for managers at 0.8 percent.

Figure 6.20: Percentage Distribution of Usually Working Population (12 Years and Older) by Occupation, Urban Muchinga Province 2010
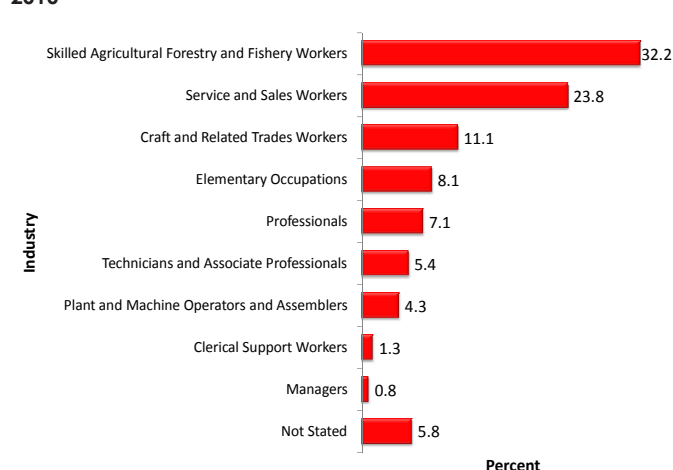
Source: 2010 Census of Population and Housing

6.10.3 Working Population by Industry

Industry is defined as the type of activity carried out by an enterprise where a person works. Industry categorisation used the International Standard Industrial Classification of All Economic Activity Revision IV (ISIC Rev. 4).

The percentage distribution of the usually working population by industry is shown in Figure 6.21. The agriculture industry accounted for 82.9 percent of the usually working population. Other industries with a fair share of the usually working population were community, social and personal services; and wholesale and retail trade at 3.9 and 3.6 percent, respectively.

Figure 6.21: Percentage Distribution of Usually Working Population (12 Years and Older) by Industry, Muchinga Province 2010

Industry	Percent
Agriculture Hunting Forestry and Fishing	82.9
Community Social and Personal Services	3.9
Wholesale & Retail Trade Restaurants and Hotel	3.6
Construction and Allied Repairs	1.2
Manufacturing	1.2
Transport and Storage	0.9
Accomodation and food services activities	0.4
Information and Communication	0.3
Mining and Quarrying	0.1
Finance and Insurance	0.1
Water Supply	0.0
Electricity Gas Steam and Air conditioning supply	0.0
Real Estate Activies	0.0
Not Stated	5.3

Source: 2010 Census of Population and Housing

Figures 6.22 and 6.23 show the percentage distribution of the usually working population (12 years and older) by industry in rural and urban areas, respectively. The agriculture industry accounted for 89.8 percent of the usually working population in rural areas. Community, social and personal services; wholesale and retail trade; manufacturing; and Construction collectively accounted for 4.3 percent.

Figure 6.22: Percentage Distribution of Usually Working Population (12 Years and Older) by Industry, Rural Muchinga Province, 2010

Industry	Percent
Agriculture Hunting Forestry and Fishing	89.8
Community Social and Personal Services	2.0
Wholesale & Retail Trade Restaurants and Hotel	1.1
Construction and Allied Repairs	0.6
Manufacturing	0.6
Information and Communication	0.2
Transport and Storage	0.2
Mining and Quarrying	0.1
Accomodation and food services activities	0.1
Water Supply	0.0
Finance and Insurance	0.0
Electricity Gas Steam and Air conditioning supply	0.0
Real Estate Activies	0.0
Not Stated	5.1

Source: 2010 Census of Population and Housing

In urban areas, the agriculture industry accounted for 34.4 percent of the usually working population followed by Wholesale and retail trade industry (21.2 percent); Community social and personal services (16.7 percent) and Transport and Storage (6.3 percent).

Figure 6.23: Percentage Distribution of Usually Working Population (12 Years and Older) by Industry, Urban Muchinga 2010

Industry	Percent
Agriculture Hunting Forestry and Fishing	34.4
Wholesale & Retail Trade Restaurants and Hotel	21.2
Community Social and Personal Services	16.7
Transport and Storage	6.3
Construction and Allied Repairs	5.4
Manufacturing	5.3
Accomodation and food services activities	2.4
Finance and Insurance	0.5
Information and Communication	0.4
Electricity Gas Steam and Air conditioning supply	0.2
Water Supply	0.2
Mining and Quarrying	0.2
Real Estate Activies	0.1
Not Stated	6.6

Source: 2010 Census of Population and Housing

CHAPTER 7:
FERTILITY CHARACTERISTICS

7.0 Summary

The Total Fertility Rate (TFR) for Muchinga Province was 7.0. The TFR in rural areas was 7.4 and 5.4 in urban areas. Chama District recorded the highest TFR at 7.7 and Nakonde District had the lowest at 6.2.

The Crude Birth Rate (CBR) in 2010 was 40 live births per 1000 population. Rural areas had a higher CBR than urban areas at 40 and 35 live births per 1000 population, respectively.

In 2010, the Child woman ratio (CWR) for Muchinga Province was 854 children (0-4 years) per 1000 women. The CWR for rural areas was 897 compared with 675 in urban areas.

The General Fertility Rate was 176 live births per 1000 women in the reproductive age group (15-49 years). Rural areas had a GFR of 184 and urban areas had GFR of 140.

The completed family size was 6.5 children. The completed family size for rural and urban areas was 6.6 and 6.1, respectively.

The Gross Reproduction Rate (GRR) was 2.8. The GRR for rural and urban areas were 2.9 and 2.1 respectively. Thus, the replacement level of mothers is higher in rural than the urban areas.

The Net Reproduction Rate (NRR) was 2.1. The NRR for rural and urban areas were 2.2 and 1.6 respectively.

The mean age at child bearing was 29.4 years.

Chapter 7
Fertility Characteristics

7.1 Introduction

Fertility remains one of the most important aspects of census undertaking. The census provides a unique opportunity to collect reliable data on migration and fertility, which is very hard to do in a survey. It provides information to help understand and appreciate past, current and future trends of the population size, composition and growth. Fertility data leads planners, government, non-governmental organizations, among others, to evidence based socio-economic planning, monitoring and evaluation for various current and future aspects of population development. There were two fertility questions in the 2010 Census of Population and Housing. Interviewers asked all females 12 years and older if they ever had a live birth broken down by whether these children were still living or not. The second question asked females, 12 to 49 years old if they had any live births in the 12 months preceding the Census, broken down by whether these children were still alive or not.

7.2. Concepts and Definitions

The following concepts have been used in the analysis of fertility in this chapter.

Age Specific Fertility Rates (ASFR): Is the annual number of births to women in a particular age group per 1000 women in that age group.

Child Woman Ratio (CWR): The ratio of all children aged 0-4 years to women aged 15-49 years in the population.

Completed Family Size (Mean Parity): is the number of children ever born to women who have completed their reproduction i.e. those aged 50 years and older.

Crude Birth Rate (CBR): Is the annual number of live births per thousand population present at mid-year.

Fertility: refers to the occurrence of live births among women in a population.

General Fertility Rate (GFR): The number of live births occurring in a year per thousand women of childbearing age.

Gross Reproduction Rate (GRR): Refers to the average number of female births that a woman would give birth to by the time she reached the end of her reproduction if she experienced age specific fertility rates prevailing in that year.

Mean Age at Child Bearing (MACB): Is the mean age of mothers at the birth of their children if women were subject throughout their lives to the age-specific fertility rates observed in a given year. It is computed as the sum of age-specific fertility rates weighted by the midpoint of each group.

Mean Parity: Refers to the completed family size (CFS)

Net Reproduction Rate (NRR): refers to the average number of female births born to women aged 15-49 years that would

survive to the end of their reproductive period after experiencing the prevailing fertility and mortality levels.

Total Fertility Rate (TFR): Is the average number of live births a woman would have by age 50 if she were subject, throughout her life, to the age specific fertility rates observed in a given year. The calculation assumes there is no mortality and is expressed as number of children per woman.

7.3 Data Availability and Limitations

Fertility measurement in most developing countries, Zambia inclusive, is still a significant challenge. This is so because direct methods of measuring fertility, such as the vital registration system, are still underdeveloped. As a result, the 2010 Census applied indirect estimation methods to measure fertility. The 2010 Census followed international standards in asking questions on children ever born and births occurring in the 12 months prior to Census Night. The question on 'children ever born' provides a total record of women's child bearing experience from the beginning of their reproductive period to the current age (Manual X 1983 pp 31). The average number of children ever born, obtained by dividing the number of reported children by the number of women is a measure of the fertility experience of a cohort of women (Ibid 1983 pp33). The question on Children Ever Born (CEB) provides estimates for lifetime fertility and completed mean parity or family size.

Data from the question on 'births occurring 12 months prior to the census' was used to estimate Age Specific Fertility Rate (ASFRs), Total Fertility Rate (TFR), Gross Reproduction Rate (GRRs) and Net Reproduction Rate (NRRs) for national, provincial and district levels.

Omission of children by women responding to the census question on children ever born and births in the last twelve months may introduce errors in the estimation of fertility, especially those that died or are living elsewhere. In view of this weakness, the 2010 Census broke down this question to include other questions such as 'how many children are living with you?', 'how many are living elsewhere?' and 'how many are dead?' This form of investigation has the advantage of providing more accurate data for making appropriate estimates (Ibid 1983 pp27).

7.4 Evaluation and Justification for Adjustments

The 2010 Census data on fertility was evaluated for completeness of reporting of children ever born and births in the last 12 months using the Coale-Demeny and Brass Empirical formula technique. Using data for CEB, the Brass empirical formula yielded this result: $(P2)(P4/P3)4 = (1.342) (3.859/2.623)4 = 7.897$. Observed average parity for women 45-49 years for the 2010 Census was 6.018. Comparing the Brass empirical formula result with observed parity for women 45-49 years, it is clear that there was under reporting of children. This therefore called for the adjustment of reported fertility in order to come up with adjusted Age Specific Fertility Rates (ASFRs) and Total Fertility Rates (TFRs).

The 2010 Census therefore applied the P/F Ratio Technique, which uses children ever born data to adjust fertility data for underreporting in number of births that occurred in the last 12 months prior to the census (Arriaga et al 2005). The P/F Ratio Technique is based on cumulating fertility (represented by letter 'F') up to ages 20, 25, …50 (49) which are later adjusted and compared with CEB, represented by letter 'P'. The general assumption of this technique is that the number of children ever born is more accurately reported than births in the last year. In the same way, the P/F Ratio Technique also assumes that the completeness of data is the same for all age groups of women; that the reporting of the average number of children ever born per woman is complete at least up to ages 30 or 35 years; that there is no age misreporting of women of childbearing age; and that the pattern and level of fertility have not changed in the 10-15 years prior to the census (Coale and Trussel, 1974).

7.5 Fertility Indicators

7.5.1 Adjusted Age Specific Fertility Rates

Figure 7.1 shows the Adjusted Age Specific Fertility Rate. The age group with the highest ASFR in 2010 was 25-29 years. This was followed by the age group 20-24 years.

Figure 7.1: Adjusted Age Specific Fertility Rate by Age Group, Muchinga Province 2010
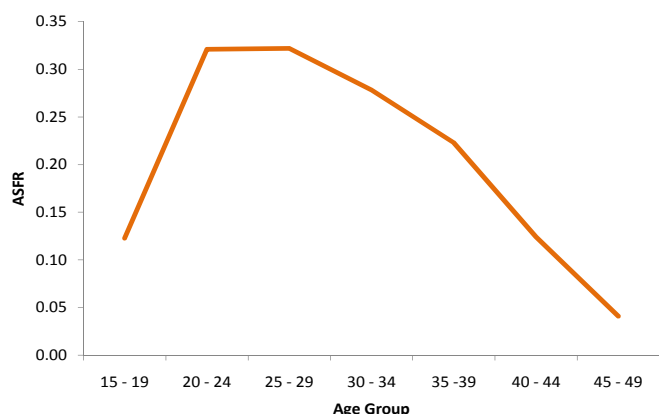
Source: 2010 Census of Population and Housing

Figure 7.2 shows the Adjusted Age Specific Fertility Rate by rural/urban. Results show that child bearing starts early in rural areas compared to urban areas. The peak for child bearing in rural areas was in the 20-24 age group, while in urban areas the ASFR peak was in the age group 25 – 29 years.

Figure 7.2: Adjusted Age Specific Fertility Rates by Age Group and Rural/Urban, Muchinga Province 2010
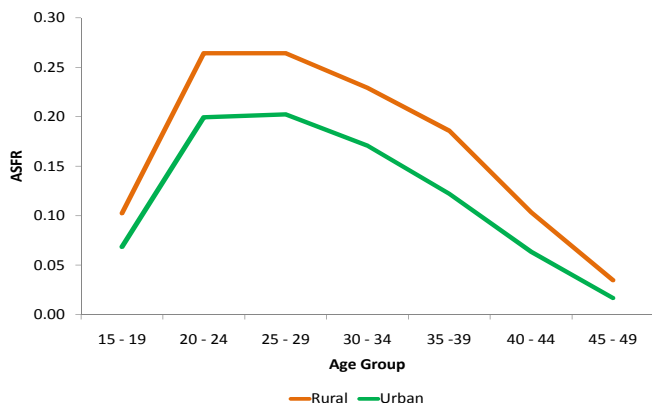
Source: 2010 Census of Population and Housing

7.5.2 Total Fertility Rate

Figure 7.3 shows the Total Fertility Rate (TFR) by rural/urban. In 2010 the TFR for Muchinga Province was 7.0. Rural areas had a higher TFR than urban areas at 7.4 and 5.4, respectively.

Figure 7.3: Total Fertility Rate by Rural/Urban, Muchinga Province, 2010
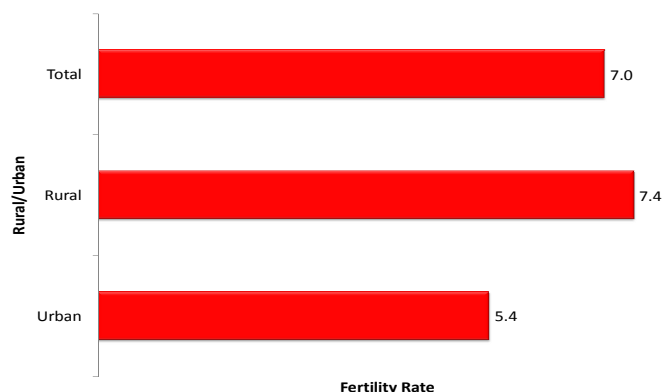
Source: 2010 Census of Population and Housing

7.5.2.1 Total Fertility Rate by District

Figure 7.4 shows total fertility rate by district. Chama District had the highest TFR at 7.7 while Nakonde District had the lowest TFR at 6.2.

Figure 7.4: Total Fertility Rates by District Muchinga Province,2010
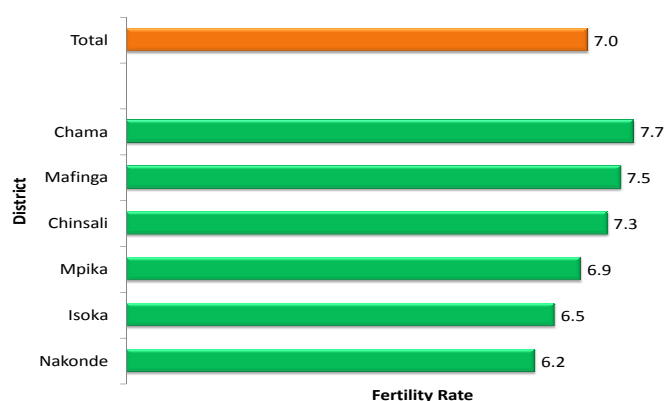
Source: 2010 Census of Population and Housing

7.5.3 Mean Age at Child Bearing (MACB)

Figure 7.5 shows the Mean Age at Child Bearing (MACB) by rural/urban. In 2010, the MACB for Muchinga Province was 29.4 years. The MACB for rural and urban areas was 29.5 and 29.0 years, respectively.

Figure 7.5 Mean Age at Child Bearing by Rural/Urban, Muchinga Province 2010
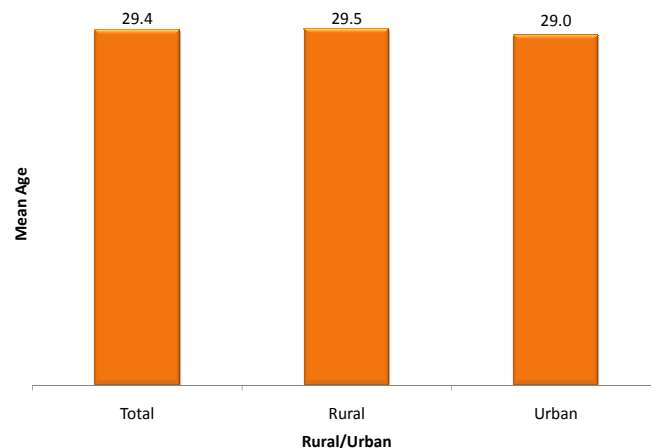
Source: 2010 Census of Population and Housing

7.5.4 Gross Reproduction Rate (GRR)

Figure 7.6 shows the Gross Reproduction Rate by rural/urban. The GRR for Muchinga Province was 2.8. The GRR was higher in rural areas at 2.9 compared to 2.1 in urban areas.

Figure 7.6: Gross Reproduction Rate by Rural/Urban Muchinga Province,2010
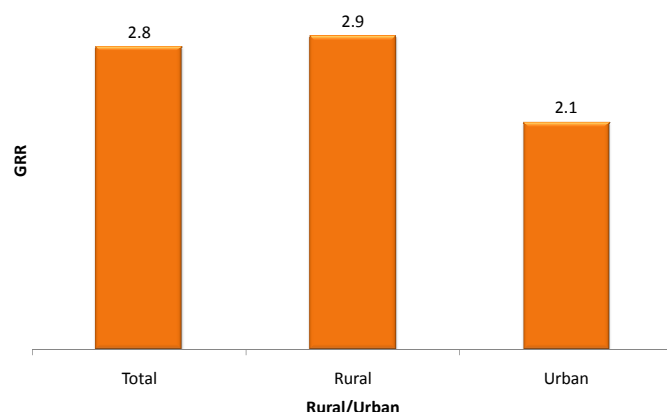
Source: 2010 Census of Population and Housing

7.5.5 Net Reproduction Rate (NRR)

Figure 7.7 shows the Net Reproduction Rate by rural/urban. The NRR for Muchinga Province in 2010 was 2.1. The NRR was higher in rural than urban areas at 2.2 and 1.6, respectively.

Figure 7.7: Net Reproduction Rate by Rural/Urban, Muchinga Province 2010
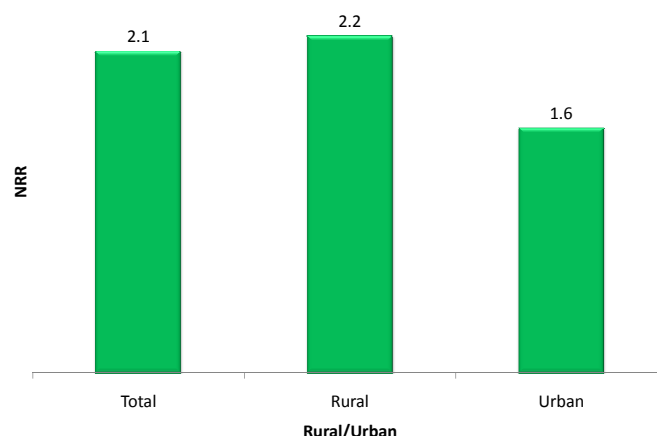
Source: 2010 Census of Population and Housing

7.5.6 Other Fertility Indicators

Several other indices of fertility can also be measured from data on births and population. These include the Crude Birth Rate (CBR), Child-Woman Ratio (CWR), Completed Family Size (CFS) and the General Fertility Rate (GFR).

Table 7.1 shows a summary of fertility indicators by rural/urban and district. In 2010, the CBR was 40 births per 1000 mid-year population, while the CWR was 854 per 1000 women. Other indicators such as the GFR and CFS were at 176 and 6.5, respectively.

Table 7.1: Fertility Indicators By Rural/Urban and District, Muchinga Province 2010

Rural/Urban and District	Total Fertility Rate (TFR)	Completed Family Size (CFS)	Crude Birth Rate (CBR)	Child Woman Ratio (CWR)	General Fertility Rate (GFR)	Gross Reproduction Rate (GRR)	Net Reproduction Rate (NRR)
Total	**7.0**	**6.5**	**40**	**854**	**176**	**2.8**	**2.1**
Rural	7.4	6.6	40	897	184	2.9	2.2
Urban	5.4	6.1	35	675	140	2.1	1.6
Districts							
Chama	7.7	6.7	43	920	196	3.0	2.2
Chinsali	7.3	6.8	41	878	187	3.1	2.4
Isoka	6.5	6.6	36	796	156	2.4	1.9
Mafinga	7.5	6.8	40	878	180	2.8	2.1
Mpika	6.9	6.4	38	834	168	2.7	1.9
Nakonde	6.2	6.2	39	828	170	2.5	1.9

Source: 2010 Census of Population and Housing

7.6 Fertility Differentials and Selected Background Characteristics of Women Aged 15-49 years

This section presents results on the fertility levels by various background characteristics of women. These characteristics include religious affiliation, education level and economic activity status.

7.6.1: Total Fertility Rate by District and Religious Affiliation of Women Aged 15–49 Years

Table 7.2 shows fertility levels by religious affiliation of women. Total Fertility Rate was highest among women who were Muslim at 9.4 followed by women with no religious affiliation at 7.3. Catholic women had the least total fertility rate at 6.8.

Table 7.2: Total Fertility Rates by Religious Affiliation of Women Aged 15-49 years and District, Muchinga Province 2010

District	All Women	Religious Affiliation of Women (15-49 years)					
		Catholics	Protestants	Muslims	Hindus	Other	None
Tota	**7.0**	**6.8**	**7.1**	**9.4**	**-**	**6.7**	**7.3**
Chama	7.7	7.8	7.7	-	-	8.5	7.2
Chinsali	7.3	6.7	7.6	2.0	-	5.0	6.9
Isoka	6.5	5.3	6.5	-	-	6.7	7.8
Mafinga	7.5	4.8	7.6	-	-	7.3	4.7
Mpika	6.9	6.9	6.9	3.6	-	6.5	9.9
Nakonde	6.2	5.5	6.3	-	-	6.1	4.0

Source: 2010 Census of Population and Housing

7.6.2 Total Fertility Rate by District and Education attainment of Women Aged 15–49 years

Table 7.3 shows the total fertility rate for women by education attainment and district. Total fertility rate was higher among women with primary education at 7.8 percent followed by women with no education at 7.2 percent. Women with tertiary education had the lowest total fertility rate at 2.9.

District	All women	Education Level Attainment (15-49 years)			
		No education	Primary	Secondary	Tertiary
Total	**7.0**	**7.2**	**7.8**	**5.2**	**2.9**
Chama	7.7	7.7	8.3	5.7	6.5
Chinsali	7.3	7.1	8.2	5.3	1.9
Isoka	6.5	6.7	7.1	4.9	2.4
Mafinga	7.5	7.3	7.9	6.1	3.6
Mpika	6.9	7.3	7.6	5.3	3.2
Nakonde	6.2	6.4	7.1	4.8	3.3

Table 7.3: Total Fertility Rate by Education Attainment of Women Aged 15-49 years and District, Muchinga Province 2010

Source: 2010 Census of Population and Housing

7.6.3 Total Fertility Rate by Employment Status of Women 15–49 Years

Figure 7.8 shows the total fertility rate by employment status of women aged 15-49 years and district. The total fertility rate was higher among the unemployed women aged 15-49 years (7.2) compared to that of the employed women aged 15-49 years (6.7). A similar pattern was observed across all districts.

Figure 7.8: Total Fertility Rates by Employment Status of Women 15-49 Years and District Muchinga Province, 2010
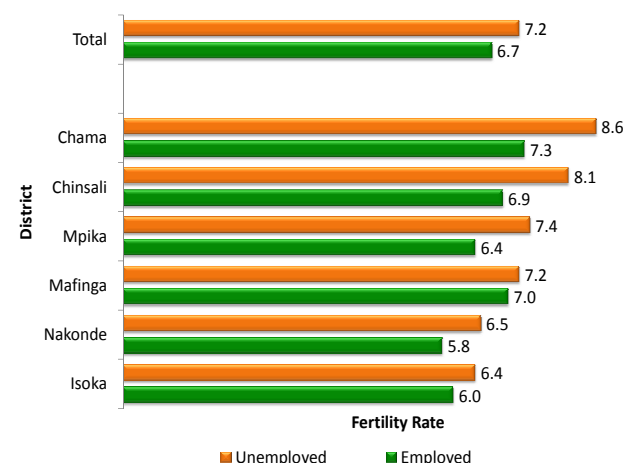
Source: 2010 Census of Population and Housing

CHAPTER 8
CHILDHOOD MORTALITY CHARACTERISTICS

8.0 Summary

The infant mortality rate (IMR) was 83.9 deaths per 1,000 live births in 2010.

In 2010, the child mortality rate (CMR) was 65.9 deaths per 1000 live births.

The under-5 mortality rate (U5MR) was 149.7 deaths per 1000 live births in 2010.

Chapter 8
Childhood Mortality

8.1 Introduction

Child mortality is a key indicator not only of child health and nutrition but also of the implementation of child survival interventions and, more broadly, of social and economic development (UNICEF, 2011). Reducing the current levels of child mortality is one of eight millennium development goals (MDG4). Though it is a global goal, it is also a national goal set in Zambia's national health strategic plans over time. In the past decade, the government through the Ministry of Health (MOH) has scaled up child health interventions such as the child health week programme aimed at expanding access to immunization and other child health interventions like vitamin A supplementation to the hard to reach children in communities.

Among the majors causes of child mortality are infectious diseases like pneumonia, diarrhea, malaria and measles. These diseases are common and affect most children in some provinces of Zambia. HIV/AIDS and its related complications, coupled with high levels of malnutrition also contribute to the high disease burden among children under the age of five in some provinces of Zambia.

8.2 Concepts and definitions

The following concepts and definitions have been used in this analysis:

Mortality: Refers to the occurrence of deaths in a population.

Age Specific Death Rate (ASDR): Refers to mortality rates from deaths occurring to a specified population age group or sex per 1,000 population in that age group or sex during a given time period.

Infant Mortality Rate (IMR) Is usually denoted by the life table notation (1q0) and refers to the number of infant (children below the age of one) deaths per 1,000 live births occurring during a specified reference period, in this case taken to be one year prior to the census.

Child Mortality Rate (CMR): Usually denoted by the life table notation (4q1) refers to the number of child (children aged between exact age one and four) deaths per 1,000 live births occurring during a specified reference period, in this case taken to be one year prior to the census.

Under-five mortality rate (UMR): Usually denoted by the life table notation (5q0) refers to the number of deaths among children aged below the age of five years per 1,000 live births occurring during a specified reference period, in this case taken to be one year prior to the census. UMR therefore, constitutes both the infant and child mortality.

8.3 Collection of Childhood Mortality data in the 2010 Census Information collected in population and housing censuses on the total number of children ever born and children surviving are used in the estimation of childhood mortality (UN, 1983).

Two questions are usually included in a census on children ever born (CEB) and births in the last 12 months prior to the census. This information is also used in the estimation of fertility.

All women aged 12 years and older in all households were asked whether they had a live birth, including those who died after birth. Follow up questions were asked to find out how many of the children born alive were living in the household by sex, how many were living elsewhere by sex and how many were dead. This information was also collected from all women aged 12-49 years for the 12 months period prior to the census.

8.4 Childhood Mortality data evaluation and estimation procedure

It is well known that the proportions of children ever born who have died are indicators of child mortality and can yeild robust estimates of childhood mortality (UN, 1983). However, it is equally well known that children ever born data sometimes suffers from under reporting of dead children, especially those that die early in infancy. Infants that die within 24 hours after birth are sometimes classified not as deaths but as "stillbirths" (Shryock, 1980).

8.4.1 Crude Death Rate

Child mortality data collected using the question on household deaths in the last twelve months was evaluated using demographic methods. Crude mortality rates were computed using observed unadjusted data. Evaluation was made of the observed crude measures. The observed crude death rate for the population aged 0-4 years are shown in Figures 8.1 and 8.2 and Table 8.1.

Figure 8.1 shows that childhood mortality was higher among infants at 89.2 deaths per 1000 population aged less than one year. The observed CDR declined with increase in age, reaching 7.8 deaths per 1000 population at age four.

Figure 8.1: Observed Crude Death Rate per 1000 Population aged 0-4 by Single Age, Muchinga Province 2010
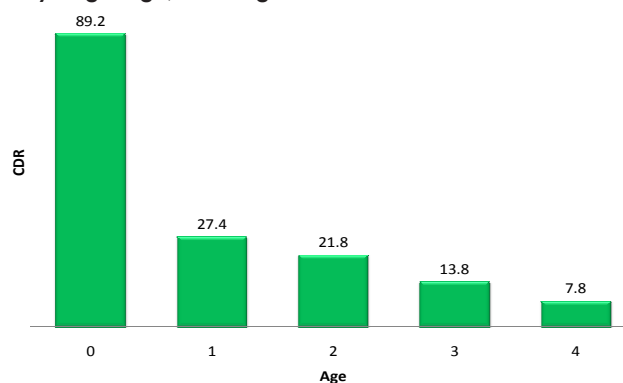
Source: 2010 Census of Population and Housing

Figure 8.2 shows observed crude death rate by rural/urban. The observed crude death rate was higher in rural areas at 33.2 deaths per 1,000 population aged 0-4 years compared to 24.7 deaths per 1,000 population in urban areas.

Figure 8.2: Observed Crude Death Rate per 1000 Population Aged 0-4 Years by Rural/Urban, Muchinga Province 2010
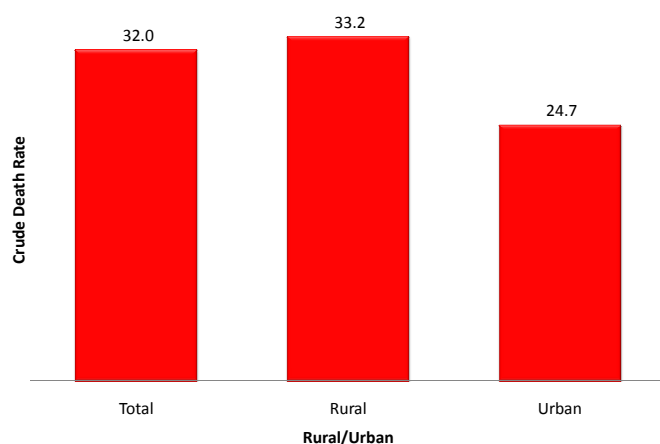
Source: 2010 Census of Population and Housing

Table 8.1 shows crude death rate by rural/urban, sex and single age for the population aged 0-4 years. The analysis of the crude death rate presented in Table 8.1 provides proxy indications of the expected levels of infant, child and under five mortality rates. The information in the table shows an infant mortality rate of 89, a child mortality rate of 71 and an under five mortality rate of 160.

The table further shows the infant mortality rate of 93 for rural areas and 69 for urban areas. Child mortality rate for rural areas was 74 and 56 for urban areas while under five mortality rate was 167 for rural areas and 125 for urban areas.

Table 8.1: Observed Crude Death Rates (CDR) by Sex and Single Age for Population Aged 0-4 Years and Rural/Urban, Muchinga Province 2010

Age	Muchinga Province			Rural			Urban		
	Both Sexes	Males	Females	Both Sexes	Males	Females	Both Sexes	Males	Females
0	0.089	0.099	0.079	0.093	0.103	0.083	0.069	0.078	0.059
1	0.027	0.028	0.027	0.028	0.028	0.028	0.026	0.028	0.025
2	0.022	0.026	0.018	0.023	0.027	0.019	0.015	0.021	0.009
3	0.014	0.015	0.013	0.015	0.016	0.014	0.009	0.011	0.008
4	0.008	0.009	0.006	0.008	0.009	0.007	0.006	0.009	0.003
Source: 2010 Census of Population and Housing									

Direct estimation procedures were used to generate child hood mortality indicators. These indicators were extracted from the empirical life tables generated using information on household deaths in the period 12 months prior to the census. The US Census Bureau spreadsheet LTPOPDTH was used to generate the life tables.

8.5 Infant Mortality Rate

Table 8.2 shows infant mortality rate (IMR) by sex and rural/urban for Muchinga Province for the period 12 months prior to the census. In 2010, the IMR was 83.9 deaths per 1000 live births. In rural areas, the IMR was 87.1 deaths per 1000 live births and 65.4 deaths per 1000 live births in urban areas. Estimated IMR was higher for male children than female children in both urban and rural areas.

Table 8.2: Infant Mortality Rate (IMR) by Sex and Rural/Urban, Muchinga Province 2010

Rural/Urban	Both Sexes	Males	Females
Muchinga Province	83.9	92.9	75.1
Rural	87.1	96.1	78.2
Urban	65.4	74.3	56.4
Source: 2010 Census of Population and Housing			

Infant mortality rate (IMR) by district is presented in Figure 8.3. Chama District had the highest Infant mortality rate at 102.5 infant deaths per 1000 live births while the lowest was Chinsali District at 60.0 infant deaths per 1,000 live births.

Figure 8.3: Infant Mortality Rate (IMR) by District, Muchinga Province 2010
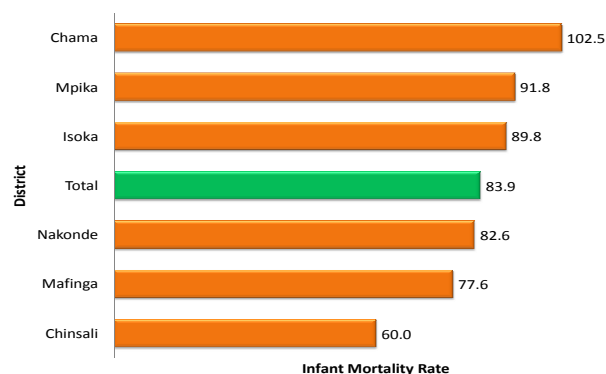
Source: 2010 Census of Population and Housing

8.6 Child Mortality Rate

Table 8.3 shows the Child Mortality Rate (CMR) by sex and rural/ urban in 2010. The CMR for Muchinga Province was 65.9 deaths per 1,000 live births. In rural areas, the CMR was 68.0 deaths per 1,000 live births and 53.8 deaths per 1000 live births in urban areas. The CMR was higher for male than female children in both rural and urban areas.

Table 8.3: Child Mortality Rate by Sex and Rural/Urban, Muchinga Province 2010

Rural/Urban	Both Sexes	Males	Females
Muchinga Province	65.9	72.1	59.6
Rural	68.0	73.5	62.6
Urban	53.8	64.4	43.1
Source: 2010 Census of Population and Housing			

Figure 8.4 shows the child mortality rate (CMR) by district. Chama District had the highest child mortality rate at 89.3 deaths per 1000 live births while Nakonde District had the lowest child mortality rate at 48.3 deaths per 1000 live births.

Figure 8.5 shows under five mortality rate by district. Under five mortality rate was lowest in Chinsali District at 113.8 deaths per 1,000 live births while Chama District had the highest at 191.8 deaths per 1,000 live births.

Figure 8.4: Child Mortality Rate (CMR) by District, Muchinga Province 2010

Source: 2010 Census of Population and Housing

Figure 8.5: Under Five Mortality Rate (U5MR) by District, Muchinga Province 2010
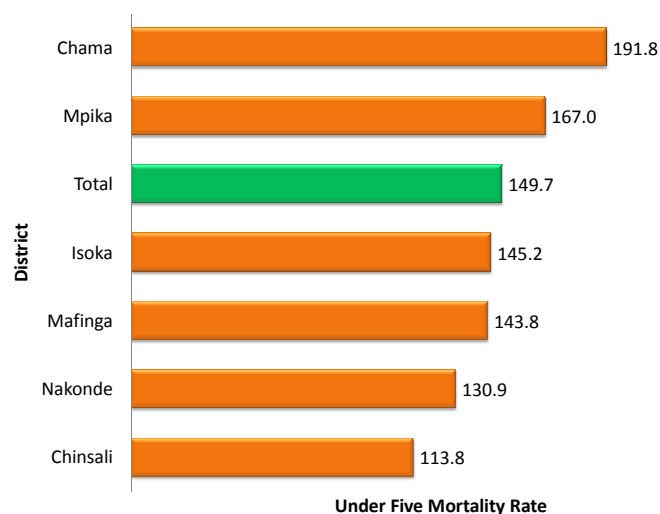
Source: 2010 Census of Population and Housing

8.7 Under-Five Mortality Rate (U5MR)

Table 8.4 shows Under-Five Mortality Rate (U5MR) by sex and rural/urban. The U5MR was 149.7 deaths per 1,000 live births. The U5MR in rural areas was 124.9 deaths per 1,000 live births and 119.2 deaths per 1,000 live births in urban areas. As observed in infant and child mortality, under-five mortality rate was higher for male than female children in both rural and urban areas.

Table 8.4: Under-Five Mortality Rate (U5MR) by Sex and Rural/ Urban, Muchinga Province 2010			
Rural/Urban	**Both Sexes**	**Males**	**Females**
Muchinga Province	149.7	165.1	134.7
Rural	124.9	169.7	140.7
Urban	119.2	138.7	99.5
Source: 2010 Census of Population and Housing			

CHAPTER 9
GENERAL AND MATERNAL MORTALITY CHARACTERISTICS

9.0 Summary

The Crude Death Rate (CDR) in 2010 was 12.4 deaths per 1,000 population. The CDR for males was 14.0 deaths per 1,000 population and 10.8 deaths per 1,000 population for females. Rural areas had a higher CDR at 12.4 deaths compared to 12.2 deaths per 1,000 population for urban areas.

The highest percentage of reported adult deaths was in the age group 25-29 years for females and 30-34 years for males. For ages below 34 years, the percentages of the reported adult deaths were higher among females than males.

The life expectancy at birth was 53.0 years, 53.8 years in rural areas and 49.9 years in urban areas. Females had a higher life expectancy at birth of 56.3 years compared to 49.7 years for males.

The most common cause of death was sickness/disease accounting for 69.4 percent of all reported causes.

Chapter 9
General and Maternal Mortality Characteristics

9.1 Introduction

Mortality data are useful in assessing the performance of national health programs, including interventions aimed at disease control and prevention. Mortality statistics provide a foundation on which health policy is formulated.

Mortality measure, though a challenge in the absence of complete vital registration is still critical to national planning. Census and surveys still form a major source of mortality information for Zambia. However, the costs and periodicity of censuses and surveys affect the timeliness and accuracy.

A national population census provides a unique opportunity to collect mortality data for district and sub-district level estimates. This is the core advantage of collecting mortality data in a census over other sources. The district level estimates of mortality form critical input into population projections and components of district planning.

9.2 Concepts and definitions

The following concepts and definitions have been used in analyzing General Mortality in this chapter;

Death (Mortality): The complete disappearance of any signs of life at any time after a live birth has occurred.

Crude Death Rate (CDR): The ratio of the number of deaths occurring in a year to the mid-year population expressed per 1,000 population.

Age Specific Death Rates (ASDR): Mortality rates from deaths occurring to a specified population age group or sex per 1,000 population in that age group or sex during a given time period

Life Expectancy at Birth (e0): Average number of years expected to be lived by a birth cohort, based on prevailing age specific mortality rates

9.3 Collection of Mortality Data in the 2010 Census

Information on children ever born, children surviving and children dead and direct questions on deaths in the 12 months prior to the census were asked to all households in the census. All households in the census were asked whether there was any member who had died since October 2009, the sex of the deceased, age and the cause of death.

9.4 General Mortality

9.4.1 Crude Death Rate (CDR)

Crude Death Rate (CDR) gives a general indication of the levels of mortality in a population. Crude death rate is calculated for 12 month periods such as calendar years or fiscal years so as to eliminate the effect of seasonal or monthly variations on the comparability of the rates (Shryock et al., 1980).

Figure 9.1 shows the observed crude death rate (CDR) for Muchinga Province by sex and rural/urban. The Crude Death Rate was 12.4 deaths per 1,000 population. The CDR for males

was 14.0 deaths per 1,000 population and 10.8 deaths per 1,000 population for females. Overall, males had higher mortality than females in both rural and urban areas. Rural areas had a higher CDR at 12.4 deaths compared to 12.2 deaths per 1,000 population for urban areas.

Figure 9.1: Observed Crude Death Rate (CDR) per 1,000 Population by Sex and Rural/Urban, Muchinga Province 2010
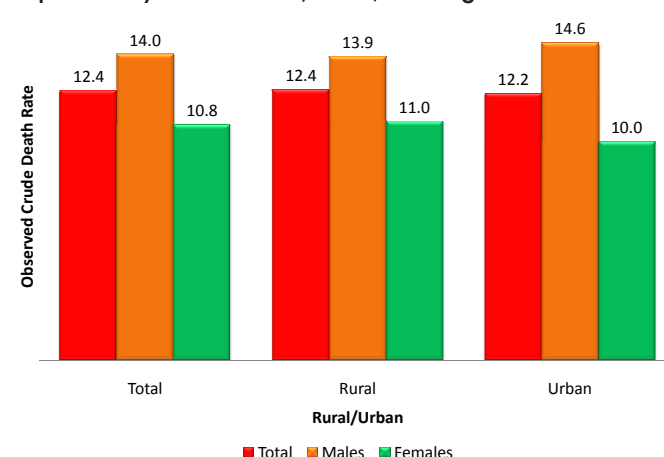
Source: 2010 Census of Population and Housing

Figure 9.2 shows the crude death rate by district. Mpika District had the highest CDR at 14.2 deaths per 1,000 population while and Chinsali District had the lowest CDR at 10.3 deaths per 1,000 population.

Figure 9.2: Crude Death Rate (CDR) by District, Muchinga Province 2010
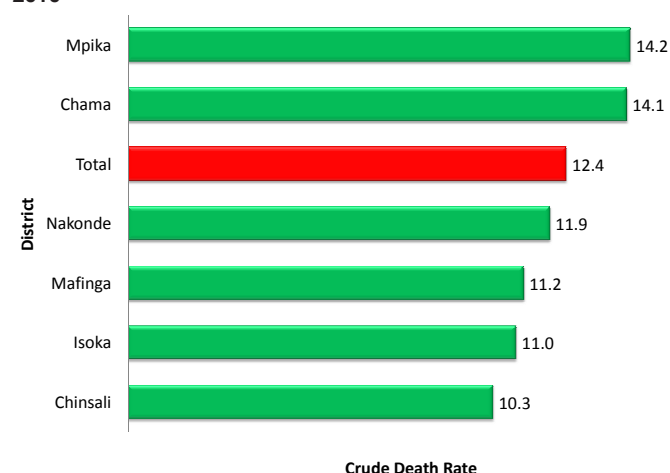
Source: 2010 Census of Population and Housing

Table 9.1 shows the observed crude death rate by sex and district. The CDR was highest in Chama District for males at 16.1 deaths per 1,000 population while the highest CDR for females was recorded in Mpika District at 12.8 deaths per 1,000 population. The lowest CDR was recorded in Chinsali District at 11.9 deaths per 1,000 population for males and 8.7 deaths per 1,000 population for females.

Table 9.1: Observed Crude Death Rate by Sex and District, Muchinga Province 2010

District	Male	Female
Chama	16.1	12.2
Chinsali	11.9	8.7
Isoka	13.0	9.0
Mafinga	12.3	10.1
Mpika	15.7	12.8
Nakonde	13.7	10.2

Source: 2010 Census of Population and Housing

9.4.2 Age-Sex Specific Death Rate

Age and sex form two important demographic variables in the analysis and understanding of mortality levels and patterns. Certain diseases or mortality risks tend to be age or sex selective. Age-sex specific death rate refers to mortality rate from deaths occurring to a specified population age group or sex per 1,000 population in that age group or sex during a given time period.

Figure 9.3 shows the observed Age-Sex Specific Death Rates for Muchinga Province in 2010. The figure shows a u-shaped characteristic with high mortality at the very young and oldest ages. The high death rate in the age groups less than 1 and 1 to 4 years explains the high child mortality in Muchinga Province. Further, the figure shows increasing mortality in both males and females after age 15 years, levelling off in the mid-thirties for both males and females.

Figure 9.3: Observed Age-Sex Specific Death Rate by Age Group and Sex, Muchinga Province 2010
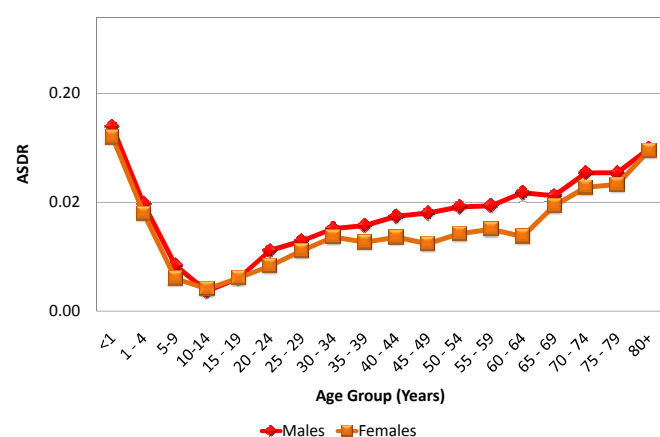
Source: 2010 Census of Population and Housing

Muchinga Province follows the typical u-shaped age specific death rates pattern, starting off high in early childhood, declining to the lowest at the age group 10-14 years and increasing with age. There is a "bump" set off by rising mortality after age 15. The figure also shows higher mortality among males than females, especially in early childhood and after age 30.

Figures 9.4 and 9.5 show Age-Sex Specific Death Rate for rural and urban areas, respectively. In both cases, the mortality pattern is characterized by high mortality in young ages that decline with increasing age until the age of 15 years. After age 15, mortality steadily increases before levelling off in the thirties for females and in the late forties for males and then it increases with age.

Generally, in both rural and urban areas, mortality was higher among males than females, especially over the age of 30 years.

Figure 9.4: Observed Age-Sex Specific Death Rate by Age Group and Sex, Muchinga Province Rural 2010
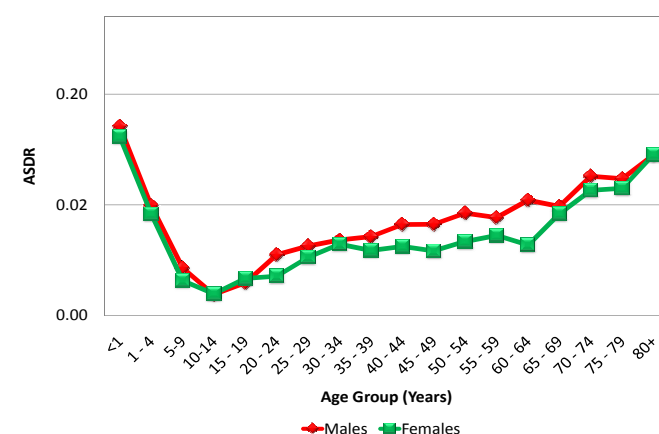
Source: 2010 Census of Population and Housing

Figure 9.5: Observed Age-Sex Specific Death Rate by Age Group and Sex, Muchinga Province Urban, 2010
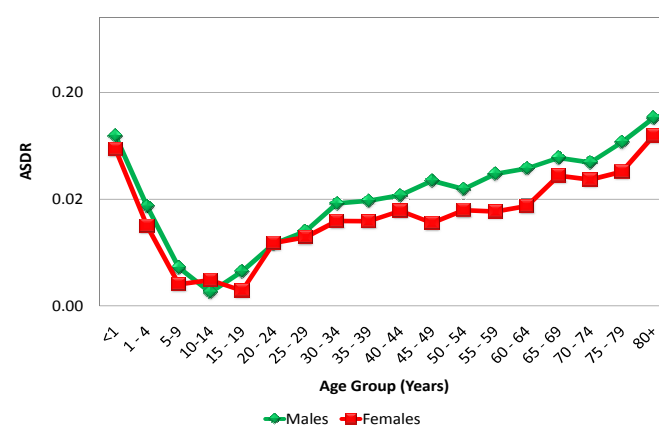
Source: 2010 Census of Population and Housing

Figure 9.6 shows Observed Age-Specific Death Rate by rural/urban for Muchinga Province. The figure shows that after the age of 24, mortality is higher in urban than in rural areas.

Figure 9.6: Observed Age Specific Death Rate by Age Group and Rural/Urban, Muchinga Province 2010
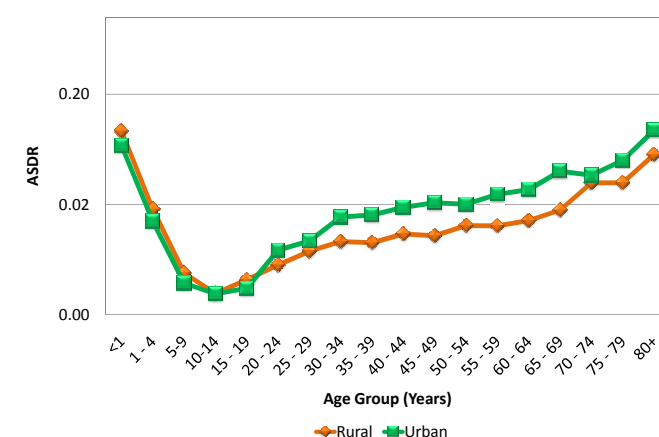
Source: 2010 Census of Population and Housing

In all societies, mortality levels are influenced more by the age structure. However, some causes of death tend to be sex selective. Therefore, mortality tends to vary by age and sex.

Figure 9.7 shows the percentage of reported adult deaths by age group and sex for Muchinga Province. The highest percentage of reported adult deaths was in the age groups 25-29 years for

females and 30-34 years for males. The percentage of reported adult deaths was higher for females than males in the age group 15-34 years, while the percentage of reported adult deaths was higher for males than females among those aged 35 years and older.

Figure 9.7: Percentage Reported Adult Deaths by Age Group and Sex, Muchinga Province, 2010
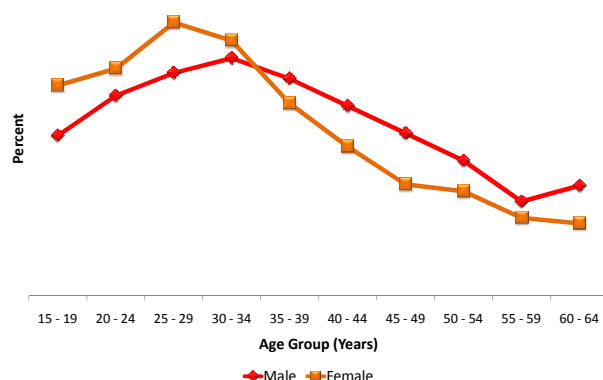
Source: 2010 Census of Population and Housing

9.5 Life Expectancy

Life expectancy refers to the average numbers of years expected to be lived from a particular age of reference e.g. from age 0 (life expectancy at birth), age 5, age 15, age 45 or age 65. It is computed using prevailing age specific mortality rates and implied life table probabilities. Hence, Life expectancy is a useful summary measure because it takes into account the mortality situation at each age yet expresses the result in a single figure (US Census Bureau, 1994).

The most commonly used measure of life expectancy is the life expectancy at birth (e0), which refers to the average number of years expected to be lived by a birth cohort, based on prevailing age specific mortality rates.

Unadjusted household deaths data were used to generate abridged life tables for Eastern Province by sex and rural/urban. The 2000 life expectancy estimates were indirectly estimated based on the North Model, while the 2010 estimates are based on empirical data on household deaths collected during the 2010 Census. The US Bureau spreadsheet LTPOPDTH was used to generate life tables from which the estimates of life expectancy at birth had been extracted.

Table 9.2 shows life expectancy at birth by sex and rural/urban for Muchinga Province in 2010. Life expectancy at birth was 53.0 years. The life expectancy at birth for rural areas was higher (53.8 years) than in urban areas (49.9 years). A possible explanation lies in the high adult mortality in urban areas than in rural areas as explained earlier with the Age-Sex Specific Death Rate. In both rural and urban areas, females had higher life expectancy at birth than males.

Table 9.2: Life Expectancy at Birth by Sex and Rural/Urban, Muchinga Province 2010

Rural/Urban	Both Sexes	Males	Females
Muchinga Province	53.0	49.7	56.3
Rural	53.8	51.9	57.7
Urban	49.9	47.6	55.7
Source: 2010 Census of Population and Housing			

For each district, life expectancy at birth was generated from abridged life tables based on reported household deaths 12 months prior to the census. Figure 9.8 shows life expectancy at birth by district. Chinsali District had the highest life expectancy at birth of 57.5 years and Mpika District had the lowest life expectancy at birth of 50.9 years.

Figure 9.8: Life Expectancy at Birth by District, Muchinga Province 2010
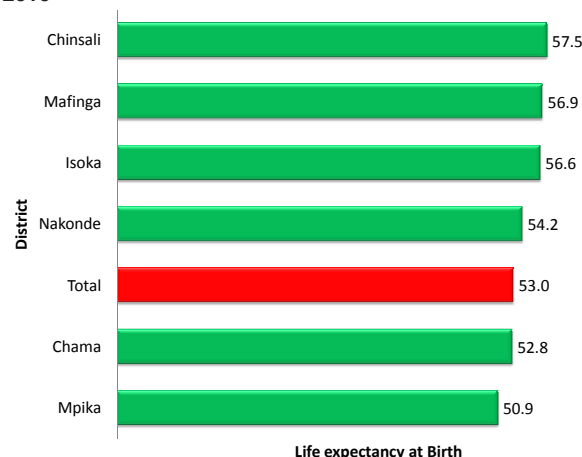
Source: 2010 Census of Population and Housing

Figure 9.9 shows life table function nqx (probability of dying between exact n and n+x. This is presented by age and sex due to the variability of mortality by age and sex.

Figure 9.9: Life Table Probability of Dying (nqx) by Age and Sex, Muchinga Province 2010
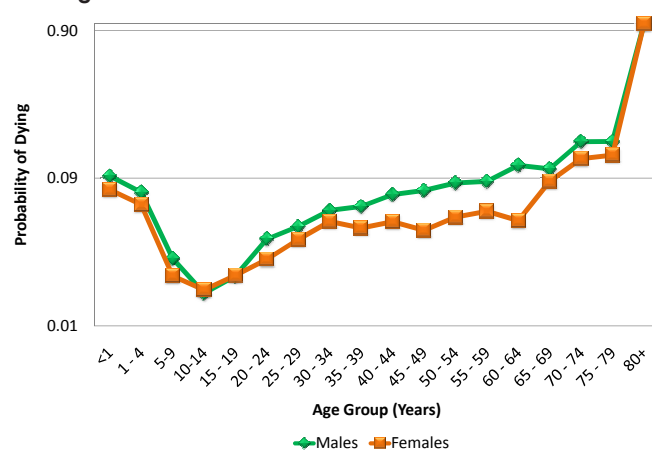
Source: 2010 Census of Population and Housing

The probability of dying is higher for males than females almost in all ages except age group 10 to 14 years. At age 10, there were improved survival prospects for both sexes. As mortality increases beyond age 20, the gap in the probability of dying between males and females increases and is even wider between the ages of 45 and 60. This contributes to the lower life expectancy among males than females.

9.6 Cause of Death

Information on the cause of death is important in focusing interventions to prevent and reduce mortality. For all deaths reported during the 2010 Census, cause of death information was collected. However, the broad categories were pre-specified due to limited space on the questionnaire.

Figure 9.10 shows the percentage distribution of reported cause of death for deceased household members as reported by households. The major cause of mortality was illness/disease accounting for 69.4 percent of all reported household deaths. Accidents were cited as a cause of death for 3.5 percent of deaths reported, while other causes were cited in 14.0 percent of reported deaths. Spouse violence, suicide and injury accounted for less than one percent each.

Figure 9.10: Percentage Distribution of Reported Cause of Death for Deceased Household Members that Died 12 months Prior to the Census, Muchinga Province 2010
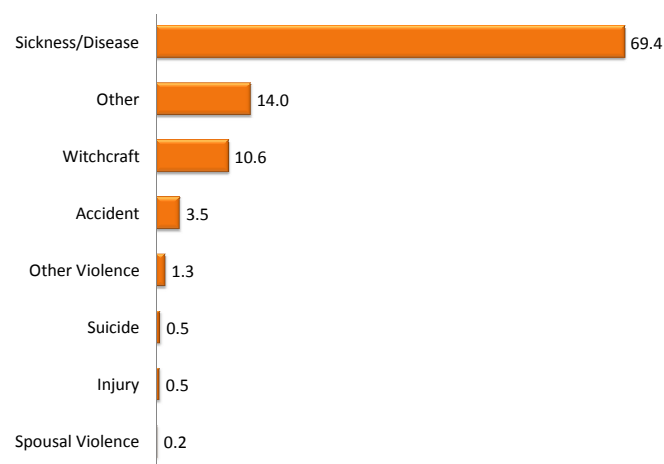
Source: 2010 Census of Population and Housing

Some causes of death are selective due to selective nature of exposure to risk. Hence it is important to look at cause of death by sex so as to assess any variation in cause of death by sex. Figure 9.11 shows information on cause of death by sex of deceased persons reported in the census.

Sickness/disease was the major cause of mortality among males and females in Muchinga Province at 67.7 and 71.5 percent, respectively. The percentage of deaths attributed to the rest of the causes of death was higher for males than females, with the exception of spousal violence.

Figure 9.11: Percentage Distribution Reported Cause of Death for Deceased Household Members that Died 12 Months Prior to the Census by Sex of Deceased, Muchinga Province 2010
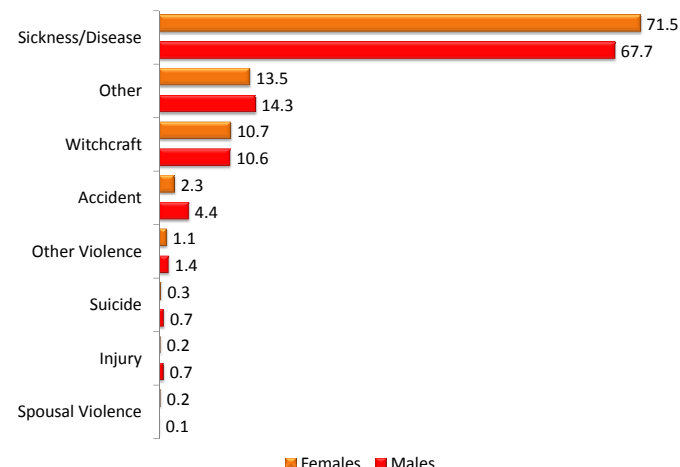
Source: 2010 Census of Population and Housing

Figure 9.12 shows the percentage of reported adult deaths due to illness/disease by age and sex of the deceased person. The percentage of reported female deaths due to illness/disease was higher than that of males for the age groups 15-34 years. The percentage of males dying from illness/disease was higher than females for ages over 35 years.

Figure 9.12: Percentage Distribution of Reported Adult Deaths Due to Sickness/Disease by Age and Sex of Deceased Person, Muchinga Province 2010
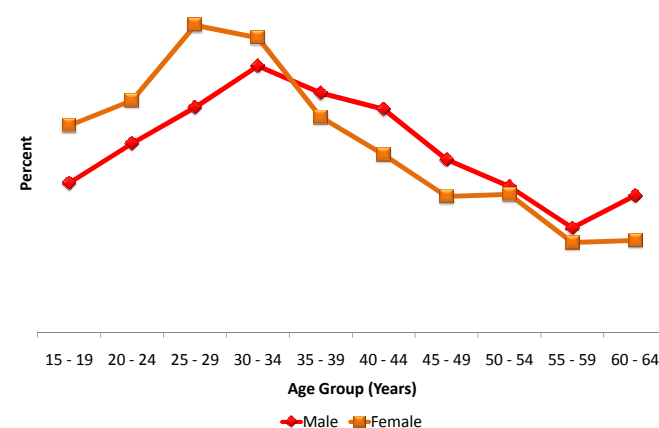
Source: 2010 Census of Population and Housing

CHAPTER 10
LANGUAGE AND ETHNICITY

10.0 Summary

Bemba was was spoken by a higher proportion of the population in Muchinga Province at 46.9 percent.

Bemba was the most language spoken in Chinsali (95.4 percent) and Mpika (74.7 percent) districts. Namwanga was widely spoken in Isoka and Nakonde districts at 63.3 and 76.5 percent, respectively. In Chama District, Senga was the most spoken language at 84.6 percent of the population. Tumbuka was widely spoken in Mafinga District at 72.6 percent.

Bemba was the largest ethnic group with 37.2 percent of the population in Muchinga Province.

Chapter 10
Language and Ethnicity

10.1 Introduction

The Zambian society is endowed with many languages; there are officially 73 ethnic groups, from which, seven language clusters have been identified. There are seven languages or language clusters that are used in Zambia besides English for official purposes such as broadcasting (both on radio and television), literacy campaigns and the official dissemination of information. These are (in alphabetical order), Bemba, Kaonde, Lozi, Lunda, Luvale, Nyanja and Tonga.

This chapter presents data on predominant language of communication and ethnicity. Predominant language of communication looks at the language use. Therefore the number of language users does not necessarily reflect the number of people that belong to an ethnic grouping.

The data is presented by sex, rural/urban and province and by census year. Some tables show the data by broad language/ethnic groups and others by single language/ethnic groups. Broad language/ethnic groups are formed using different criteria:

i) By combining most spoken languages in a geographical location such as North-Western language groups

ii) By combining languages which are mutually intelligible. For example, Mambwe, Lungu, Namwanga, Wina and Tambo form one language group called the Mambwe language group because they are mutually intelligible languages.

iii) By combining languages which are trans-tribe such as Nyanja

To collect ethnicity data, Zambians were asked to indicate their ethnic group. Zambians of different origin and Non-Zambians were asked to indicate a major racial group they belonged to (such as African, Asian, European or American).

It is important to note that during data collection, children under the age of three years whose speech was still developing and persons with speech impairment did not report any language of communication. Therefore, the total population reported to have been speaking a predominant language is less than the defacto population. The analysis on ethnicity included all persons in the defacto population.

10.2 Concepts and Definitions

Ethnicity
This is the tribal group that one identifies himself/herself with. Ethnic group is a self-perceived conception of social group membership.

Widely Used Language of communication
This is the language which is mostly spoken by an individual during their day to day communication, at work, with neighbours or in market places. This is simply the language currently spoken or most often spoken by the individual in his/her present home.

10.3 Widely Used language of communication

Table 10.1 shows the 12 most spoken languages in Muchinga Province by rural/urban. The widely used language of communication in Muchinga Province was Bemba at 46.9 percent followed by Namwanga at 20.7 percent. In rural and urban areas, Bemba was the widely spoken language of communication by 42.4 and 68.2 percent, respectively.

Table 10.1: Percentage Distribution of the Population by Widely Spoken Language of Communication and Rural/urban, Muchinga Province 2010			
Widely Spoken Language of Communication	**Total**	**Rural**	**Urban**
Bemba	46.9	42.4	68.2
Lala	0.4	0.5	0.0
Bisa	6.4	7.8	0.2
Tonga	0.1	0.0	0.2
Nyanja	0.3	0.2	1.2
Tumbuka	8.2	9.6	1.3
Senga	12.4	14.1	4.6
Mambwe	0.5	0.3	1.2
Namwanga	20.7	20.5	21.7
Wina	0.6	0.7	0.0
Tambo	0.6	0.8	0.1
English	0.1	0.0	0.3
Other Languages	2.8	3.1	1.0
Total Percent	**100.0**	**100.0**	**100.0**
Total; Population	**593,539**	**490,305**	**103,234**
Source: 2010 Census of Population and Housing			
Note: Languages that had less than 0.1 percent of the total population in the province were lumped in the "Other Languages" category. "Not applicable", "Not stated" and "Major Racial Group" categories were excluded from the analysis of predominant language of communication.			

10.3.1: Language Groups

In this analysis, seven language groups had been identified according to the criteria described in 10.1. These are (in alphabetical order) Barotse, Bemba, Mambwe, North Western, Nyanja, Tonga and Tumbuka. Table 10.2 shows the percent distribution of language groups by rural/urban. Languages in the Bemba group were spoken by 53.8 percent of the population. Of the rural and urban population, 50.7 and 68.5 percent spoke a language from the Bemba group, respectively.

Table 10.2: Percentage Distribution of the Population by Major Language Group and Rural/Urban, Muchinga Province 2010			
Language Group	Total	Rural	Urban
Bemba	53.8	50.7	68.5
Tonga	0.1	0.1	0.3
North Western	0.0	0.0	0.1
Barotse	0.0	0.0	0.2
Mambwe	22.5	22.4	23.0
Nyanja	0.5	0.3	1.6
Tumbuka	20.6	23.7	5.9
English	0.1	0.0	0.3
Others	2.4	2.9	0.2
Total Percent	100	100	100
Total Population	593,539	490,305	103,234
Source: 2010 Census of Population and Housing			

10.3.2: Widely Used Language of Communication by Sex

Table 10.3 shows the percentage distribution widely used language of communication by sex and rural/urban. The table shows that Bemba was the most widely used language of communication for both males and females at 47.2 and 46.6 percent, respectively. A similar pattern was observed in both rural and urban areas where most males and females reported Bemba as their widely used language of communication.

Table 10.3: Percentage Distribution of Widely Used Language of Communication by Sex, Rural/Urban, Muchinga Province 2010									
Widely Spoken Language of Communication	Total			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Bemba	46.9	47.2	46.6	42.4	42.8	42.0	68.2	68.0	68.4
Lala	0.4	0.4	0.4	0.5	0.4	0.5	0.0	0.0	0.0
Bisa	6.4	6.3	6.5	7.8	7.6	7.9	0.2	0.2	0.1
Tonga	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.2
Nyanja	0.3	0.4	0.3	0.2	0.2	0.1	1.2	1.3	1.2
Tumbuka	8.2	8.1	8.3	9.6	9.5	9.7	1.3	1.3	1.3
Senga	12.4	12.2	12.6	14.1	13.8	14.3	4.6	4.7	4.5
Mambwe	0.5	0.5	0.5	0.3	0.3	0.3	1.2	1.2	1.2
Namwanga	20.7	20.8	20.6	20.5	20.7	20.4	21.7	21.6	21.7
Wina	0.6	0.6	0.6	0.7	0.7	0.7	0.0	0.0	0.0
Tambo	0.6	0.6	0.7	0.8	0.8	0.8	0.1	0.0	0.1
English	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.4	0.3
Other Languages	2.8	2.7	2.8	3.1	3.1	3.2	1.0	1.1	0.9
Total Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Population	593,539	287,218	306,321	490,305	237,308	252,997	103,234	49,910	53,324
Source: 2010 Census of Population and Housing									

10.3.3 Widely Used Language of Communication by District

Table 10.4 shows the percentage distribution of widely used language of communication by district. Bemba was widely used in Chinsali (95.4 percent) and Mpika districts (74.7 percent). Namwanga was widely spoken in Isoka and Nakonde Districts at 63.3 and 76.5 percent, respectively. Senga was widely used in Chama District at 84.6 percent while Tumbuka was widely used in Mafinga District at 72.6 percent.

Table 10.4: Percentage Distribution of Widely Used Language of Communication by District, Muchinga Province 2010							
Widely Used Language of Communication	Total	Chama	Chinsali	Isoka	Mafinga	Mpika	Nakonde
Bemba	46.9	4.0	95.4	19.2	2.0	74.7	19.1
Lala	0.4	0.0	0.0	0.0	0.1	1.3	0.0
Bisa	6.4	0.0	0.0	0.0	0.0	22.6	0.0
Tonga	0.1	0.0	0.0	0.0	0.0	0.1	0.1
Nyanja	0.3	0.9	0.1	0.2	0.2	0.3	0.6
Tumbuka	8.2	9.3	0.1	1.2	72.6	0.1	0.5
Senga	12.4	84.6	0.0	0.1	0.2	0.0	0.0
Mambwe	0.5	0.0	0.0	0.2	0.1	0.1	2.4
Namwanga	20.7	0.6	4.2	63.3	1.5	0.3	76.5
Wina	0.6	0.0	0.0	5.8	0.1	0.0	0.0
Tambo	0.6	0.0	0.0	6.4	0.1	0.0	0.0
English	0.1	0.0	0.0	0.1	0.0	0.1	0.1
Other Languages	2.8	0.6	0.2	3.5	23.2	0.4	0.6
Total Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Population	593,539	86,899	122,321	58,940	53,544	169,033	102,802
Source: 2010 Census of Population and Housing							

10.4 Ethnicity

This section shows ethnic groups that had a population of at least 0.1 percent of the total population in Muchinga Province as captured in 2010. The rest of the ethnic groups are lumped under the "other" category.

10.4.1. Ethnicity by Rural/Urban

Table 10.5 shows the percentage distribution of the population by ethnic group and rural/urban. The Bemba ethnic group had the largest percentage of the provincial population at 37.2 percent followed by the Namwanga ethnic group at 23.3 percent. In rural and urban areas, the largest percentage of the population was Bemba at 36.7 and 39.4 percent, respectively.

Table 10.5: Percentage Distribution of the Population by Ethnicity and Rural/Urban, Muchinga Province 2010			
Ethnicity	Total	Rural	Urban
Bemba	37.2	36.7	39.4
Lunda Luapula	0.1	0.0	0.2
Lala	0.8	0.8	0.8
Bisa	8.1	9.2	2.3
Ushi	0.2	0.1	0.4
Lamba	0.1	0.1	0.4
Tonga	0.5	0.3	1.4
Lenje	0.1	0.1	0.3
Luvale	0.1	0.0	0.2
Lunda N/Western	0.1	0.0	0.2
Kaonde	0.1	0.1	0.3
Lozi	0.3	0.1	1.0
Chewa	0.4	0.2	1.0
Nsenga	0.3	0.2	0.8
Ngoni	0.5	0.3	1.3
Nyanja	0.1	0.1	0.3
Tumbuka	9.4	10.1	5.8
Senga	11.3	12.8	4.0
Yombe	0.1	0.0	0.2
Lungu	0.1	0.1	0.4
Mambwe	2.3	1.7	5.5
Namwanga	23.3	21.9	30.3
Wina	0.2	0.2	0.1
Tambo	0.5	0.6	0.3
English	0.0	0.0	0.0
Ethnicity Not Stated	0.8	0.8	0.4
Major racial groups	0.3	0.2	0.9
Other Ethnic Groups	2.9	3.1	1.8
Total Percent	100.0	100.0	100.0
Total Population	677,507	562,025	115,482
Source: 2010 Census of Population and Housing			

10.4.2. Ethnicity by Rural/Urban and Sex

Ethnicity was also analysed by sex and rural/urban as shown in Table 10.6. The Bemba ethnic group had the largest population of males and females at 37.1 and 37.2 percent, respectively. The table shows that there were no major differences by sex in the proportion of the population for all ethnic groups in both rural and urban areas.

Table 10.6: Percentage Distribution of the Population by Ethnicity, Sex and Rural/Urban, Muchinga Province 2010									
Ethnicity	Muchinga Province			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Bemba	37.2	37.1	37.2	36.7	36.8	36.6	39.4	38.7	40.1
Lunda Luapula	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.2
Lala	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.8
Bisa	8.1	7.9	8.2	9.2	9.1	9.4	2.3	2.3	2.3
Ushi	0.2	0.2	0.1	0.1	0.1	0.1	0.4	0.4	0.4
Lamba	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.4	0.3
Tonga	0.5	0.5	0.5	0.3	0.3	0.3	1.4	1.5	1.3
Lenje	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3
Luvale	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.2
Lunda N/Western	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.2
Kaonde	0.1	0.1	0.1	0.1	0.0	0.1	0.3	0.4	0.3
Lozi	0.3	0.3	0.3	0.1	0.2	0.1	1.0	1.1	1.0
Chewa	0.4	0.4	0.4	0.2	0.3	0.2	1.0	1.1	1.0
Nsenga	0.3	0.3	0.3	0.2	0.2	0.2	0.8	0.8	0.8
Ngoni	0.5	0.5	0.5	0.3	0.3	0.3	1.3	1.4	1.3
Nyanja	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.3	0.3
Tumbuka	9.4	9.4	9.4	10.1	10.1	10.2	5.8	5.9	5.7
Senga	11.3	11.2	11.4	12.8	12.7	13.0	4.0	4.0	4.0
Yombe	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.2
Lungu	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.4	0.4
Mambwe	2.3	2.4	2.2	1.7	1.7	1.6	5.5	5.6	5.3
Namwanga	23.3	23.4	23.3	21.9	22.0	21.8	30.3	30.2	30.3
Wina	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0
Tambo	0.5	0.5	0.5	0.6	0.6	0.6	0.3	0.3	0.3
English	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ethnicity Not Stated	0.8	0.8	0.7	0.8	0.8	0.8	0.4	0.4	0.4
Major racial groups	0.3	0.3	0.3	0.2	0.2	0.2	0.9	0.9	0.9
Other Ethnic Groups	2.9	2.9	2.8	3.1	3.1	3.1	1.8	1.9	1.8
Total Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Population	677,507	328,980	348,527	562,025	272,884	289,141	115,482	56,096	59,386
Source: 2010 Census of Population and Housing									

CHAPTER 11
DISABILITY

11.0 Summary

The proportion of the population with disabilities in Muchinga Province was 2.2 percent. The proportion in rural areas was higher than urban areas at 2.4 and 1.5 percent, respectively. Mpika District had the highest proportion of the population with disabilities at 2.4 percent while Nakonde District had the lowest with 1.9 percent.

The median age for the population with disability was 37.1 years. Physical disability was the most common type of disability at 30.3 percent. The major cause of disability was disease at 33.4 percent.

The literacy rate for the population with disabilities in Muchinga Province was 56.3 percent. Chinsali District had the highest proportion of the population with disabilities who were literate at 62.1 percent. Chama District had the lowest proportion of the population with disabilities who were literate at 49.5 percent.

The proportion of the population with disability that had never attended school was 36.4 percent. The highest level of education attained by the majority of the population with disabilities, whether male or female was primary education at 63.6 and 82.7 percent, respectively.

The proportion of the population with disabilities who were employed was 95.1 percent. Most of the population with disabilities had agricultural related occupations at 93.4 percent.

Chapter 11
Disability

11.1 Introduction
Disability is an experience with different parts and aspects. The concept of disability has been evolving. There has been a shift in the perception of disability from an individual and medical condition to a social perspective. The International Classification of Functioning, Disability and Health (ICF) classify disability in three areas that are inter-related:

• *Impairments: problems in body function or changes in body structure such as blindness;*

• *Activity limitations: difficulties in doing certain activities such as walking or eating;*

• *Participation limitations: societal restrictions with regards, involvement in any area of life such as being discriminated against in employment or transportation.*

Disability refers to problems faced in any or all three areas of functioning (WHO, 2011).

Zambia has been collecting data on the prevalence of disability through censuses and surveys. This information was collected in all of its five censuses (1969, 1980, 1990, 2000 and 2010). The set of impairments on which data is collected through censuses in Zambia has been increasing, from four to twelve disability categories between 1969 and 2010, as shown in the Table 11.1.

Table 11.1: Disability Categories used in Censuses, Zambia 1969-2010				
1969	**1980**	**1990**	**2000**	**2010**
1. Blind	1. Blind	1. Blind	1. Blind	1. Blind
2. Deaf and/or mute	2. Deaf and/or mute	2. Deaf-Dumb	2. Partially sighted	2. Partially sighted
3. Loss of limb	3. Crippled, or loss of limb	3. Crippled	3. Deaf/Dumb	3. Deaf and Dumb
4. Sick	4. Mentally Retarded	4. Mentally Retarded	4. Hard of Hearing	4. Deaf
	5. Sick	5. Multiple Disabilities	5. Mentally ill	5. Hard of Hearing
	6. Combination of two or more categories		6. Ex- Mental	6. Dumb
			7. Mentally Retarded	7. Mentally ill
			8. Physically Handicapped	8. Intellectual
				9. Speech impairment
				10. Physically disabled
				11. Mentally Retarded
				12. Other
Source: 1969, 1980, 1990, 2000 and 2010 Censuses of Population and Housing				

The widening of responses on impairments overtime was meant to capture more people living with disabilities and hence improve the measurement of disability. However, this has made comparability between censuses difficult as some categories have not only changed but also increased.

11.2 Concepts and Definitions
Disability, in the 2010 Census, was defined as a limitation in the kind or amount of activities that an individual can do because of the on-going difficulties due to a long term physical condition, mental condition or health problem. Short term disabilities due to temporary conditions such as broken legs and illness were excluded.

The following concepts and definitions have been used to analyse data on disability.

11.2.1 Type of Disability:
Blind: Complete loss of sight in both eyes.

Partially Sighted: Loss of one eye or poor sight but does not mean complete blindness.

Deaf and Dumb: Complete loss of sense of hearing and speech. The lack or loss of the ability to hear and speak.

Deaf: Complete loss of sense of hearing. The lack or loss of the ability to hear.

Hard of Hearing: Partial loss of sense of hearing but not complete loss of sense of hearing e.g. the person who uses hearing aids.

Dumb: Complete lack of ability to speak.

Mental Illness: A condition of mental illness with a substantial, adverse and long-term effect on one's ability to carry out normal day-to-day activities.

Intellectual: Intellectual disability is a disability characterized by significant limitations both in intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills. This disability originates before the age of 18.

Speech Impairment: This is a condition for people who fail to produce meaningful sound words.

Physically Disabled: Any person with a physical abnormality relating to the loss of bodily limbs or any deformity in the bodily stature. e.g. the epileptics and leper.

Mentally Retarded: Any individual that is either very slow to learn or has deficiency of mental intellect (slow in grasping things, difficulties in remembering things, very slow at responding).

Other: Any other disability not mentioned above.

11.3 Causes of Disability

The following responses to causes of disability were used in the questionnaire.

- *Congenital/Prenatal - these are disabilities which one is born with.*
- *Disease/Illness e.g. polio, leprosy, cataract.*
- *Injury/Accidents e.g. road accidents, injuries from accidental falls, fire etc.*
- *Spousal Violence – e.g. husband/wife battering.*
- *Other Violence– e.g. violence perpetrated by any other person such as boyfriend or girlfriend.*
- *Unknown –where the respondent did not know the cause of the disability.*
- *Other, e.g., unsuccessful medical operation, wrongful application of traditional and conventional medicine.*

11.4 Limitations of Disability Data

The method used in the collection of disability data determines the comprehensiveness and quality of the data. Countries using censuses to capture disability data report low prevalence of disability rates than those using surveys. This is so because a census is a huge data collection undertaking covering entire populations after long intervals and as such can only include few questions on disability. Specialised surveys can provide extensive information about disability because not only do they provide information on problems in body function and structure but also cover information on origins and impact of the impairments on functioning, service accessibility and unmet needs of the disabled (Altman BM and Barnartt SN, 2006).

The 2010 census did not include detailed questions on disability to be able to bring out the variations in the intensity of the disabilities. In addition, this data did not include the population living with disabilities in institutions.

11.5 General Characteristics

This section discusses the distribution and age structure of the population with disabilities. Types and causes of disability are also discussed in this section.

11.5.1 Distribution of the Disabled and Non–Disabled Population

Figure 11.1 shows the percent distribution of the population by disability status. The percentage of the population living with disabilities was 2.2 percent out of which 2.1 percent had one disability while 0.1percent had more than one disability.

Figure 11.1: Percentage Distribution of the Population by Disabled and Non-Disabled, Muchinga Province 2010
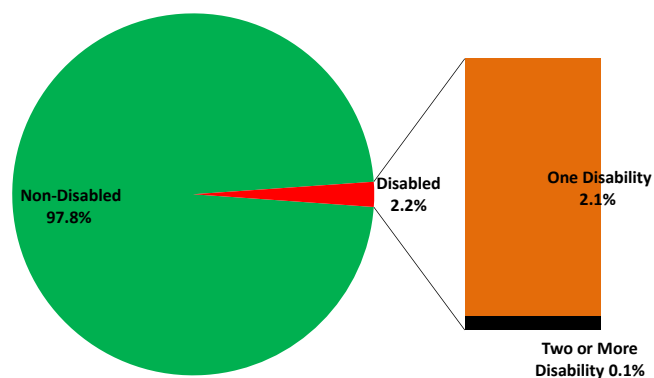
Source: 2010 Census of Population and Housing

11.5.2 Distribution of the Disabled

Figure 11.2 shows the percentage distribution of persons with disabilities by rural/urban and district. The percentage of the population living with disabilities was 2.2 percent. Rural areas had more persons living with disabilities than urban areas at 2.4 and 1.5 percent, respectively.

Figure 11.2: Percentage Distribution of the Population with Disability by Rural/Urban and District, Muchinga Province 2010
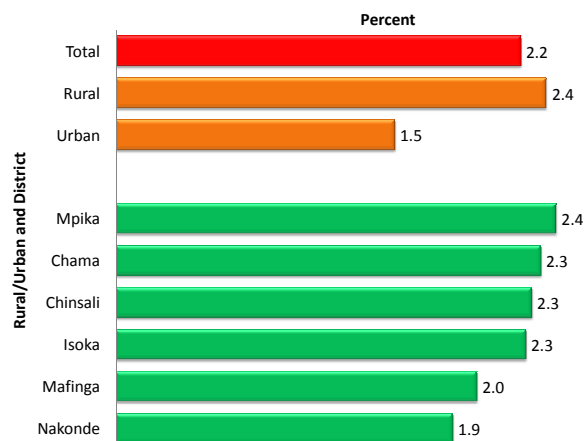
Source: 2010 Census of Population and Housing

Mpika District had the highest percentage (2.4 percent) of persons with disabilities while Nakonde District had the lowest (1.9 percent).

11.5.3 Disability by Sex

Figure 11.3 shows the percentage distribution of persons living with disabilities by sex and district. There were more males than females who were disabled at 2.4 and 2.1 percent, respectively. Chama and Mpika districts had the highest percentage of males who were disabled at 2.6 percent each. Mpika District had the highest percentage of disabled females at 2.3 percent. Nakonde District had the lowest percentage of persons living with disabilities at 1.9 and 1.8 percent for males and females, respectively.

Figure 11.3: Percentage Distribution of the Population with Disability by Sex and District, Muchinga Province 2010
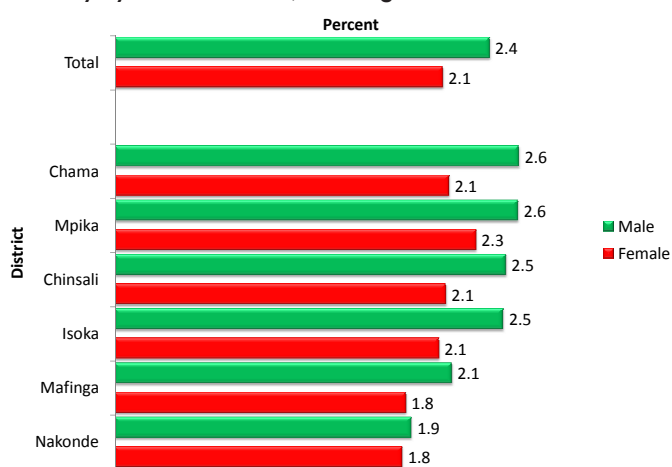
Source: 2010 Census of Population and Housing

11.5.4 Disability by Age

Figure 11.4 shows the percentage of the population with disabilities by age. The figure shows that disability increases with age, with the highest percentage being in the age group 95 years and older at 21.3 percent. The age group with the lowest percentage was 0-4 years at 0.7 percent.

Figure 11.4: Percentage Distribution of Persons with Disabilities by Age, Muchinga Province 2010
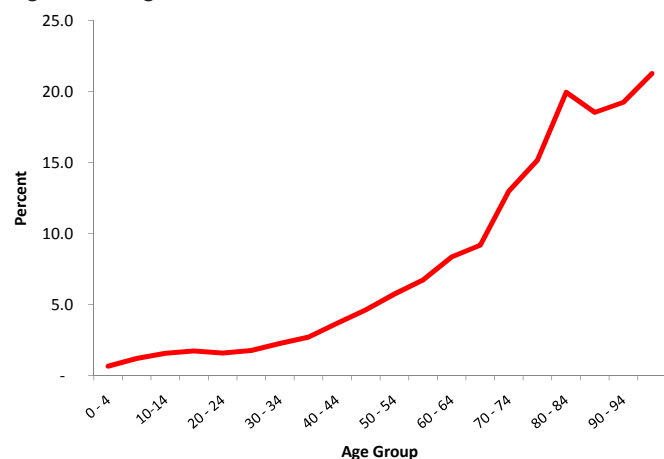
Source: 2010 Census of Population and Housing

Figure 11.5 shows the median age for the disabled and non-disabled population in Muchinga Province. The median age for the population with disabilities was 37.1 years while the non-disabled population had a median age of 15.8 years.

Figure 11.5: Median Age of the Disabled and Non-Disabled Population by Sex, Muchinga Province 2010
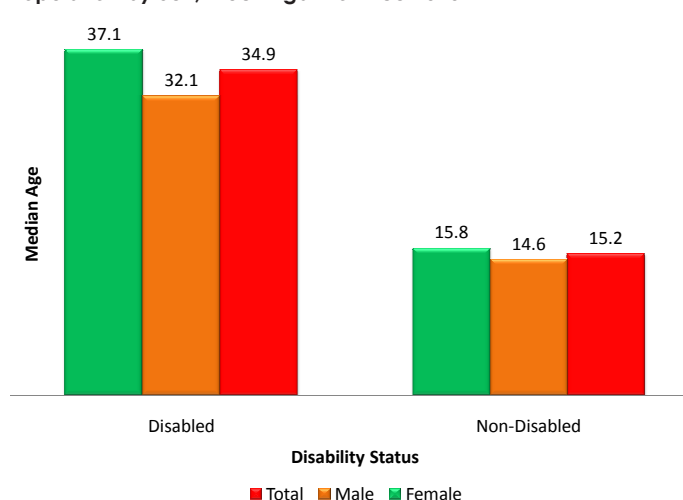
Source: 2010 Census of Population and Housing

11.5.5 Disability by Household Headship

Figure 11.6 shows the percentage distribution of the population with disabilities who were household heads by sex and rural/urban. Females with disabilities made up 6.2 percent of the total population of female household heads higher than that of the male household heads at 3.5 percent. The percentage distribution of household heads with disabilities was higher for females in both rural and urban areas at 6.6 and 4.2 percent, respectively. Male household heads with disabilities were 3.8 percent in rural areas and 2.0 percent in urban areas.

Figure 11.6: Percentage Distribution of Household Heads with Disabilities, by Sex and Rural/Urban, Muchinga Province 2010
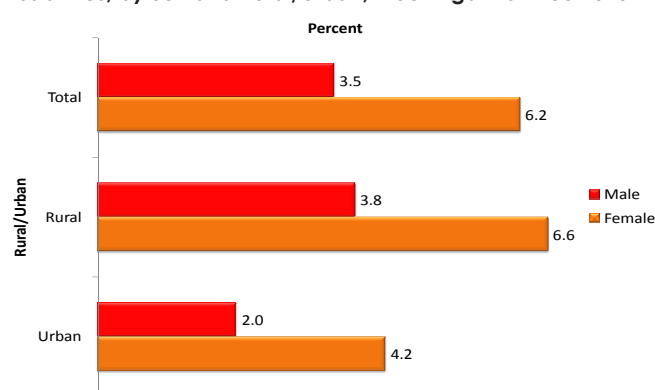
Source: 2010 Census of Population and Housing

Figure 11.7 shows the percentage distribution of the population with disabilities who were household heads by district. The percentage of household heads with disabilities was higher in Mpika District at 4.6 percent and lowest in Nakonde District at 3.2 percent.

Figure 11.7: Percentage Distribution of Household Heads with Disabilities, by District, Muchinga Province 2010.
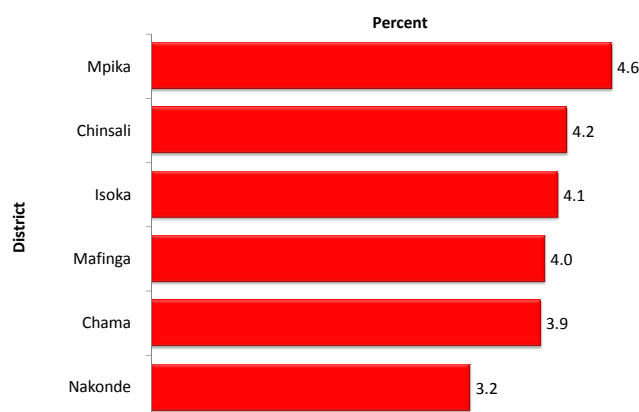
Source: 2010 Census of Population and Housing

11.5.6 Type of Disability

Figure 11.8 shows the percentage distribution of persons with disabilities by type of disability. Physical disability was the most prevalent type of disability (30.3 percent) followed by partially sighted at 24.9 percent. The least common type of disability was intellectual at 1.1 percent.

Figure 11.8: Percentage of Persons with Disabilities by Type of Disability, Muchinga Province 2010
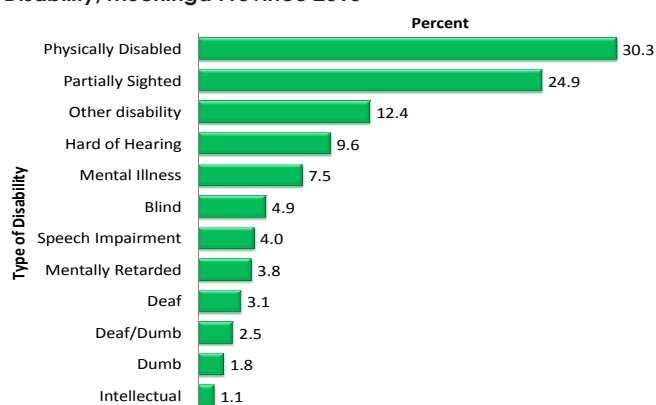
Source: 2010 Census of Population and Housing

11.5.7 Cause of Disability

This section discusses the most common causes of disability. However, the data did not allow for exploring the association between causes and specific types of disability. The various causes of disability were categorized as congenital, disease, injury, spousal violence, other and unknown. Respondents were asked to state if they had more than one cause of disability.

Figure 11.9 shows the percent distribution of the population by cause of disability. The figure shows that 33.4 percent of persons with disabilities reported disease as the cause of disability. This was followed by congenital at 13.0 percent. The least common cause of disability was spousal violence at 0.8 percent.

Figure 11.9: Percentage Distribution of Persons with Disabilities by Cause of Disability, Muchinga Province 2010
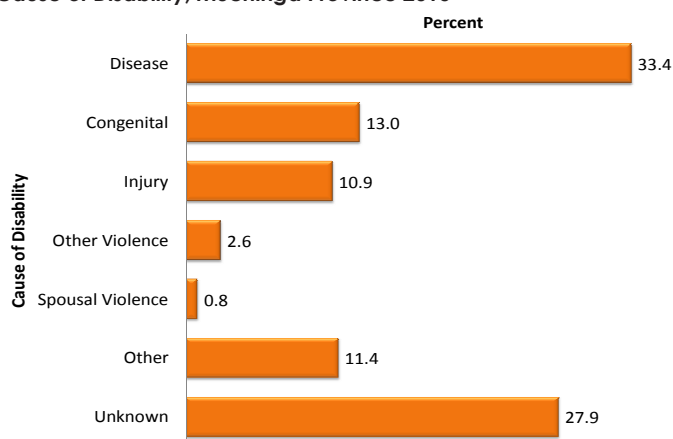
Source: 2010 Census of Population and Housing

11.6 Characteristics of the Population with Disability

This section presents the characteristics of the population with disabilities using education, economic activity and marital status indicators.

11.6.1 Literacy Levels among the Disabled and Non-Disabled

Figure 11.10 shows the percentage distribution of literate population aged 5 years and older by disability status and rural/urban. Literacy among persons with disabilities was 56.3 percent compared to 63.6 percent for persons without disabilities. The literacy levels for persons with disabilities were higher in urban areas at 68.0 percent compared to 54.8 percent in rural areas.

Figure 11.10: Percentage Distribution of Literate Population (5 Years and Older) by Disability Status and Rural/Urban, Muchinga Province 2010
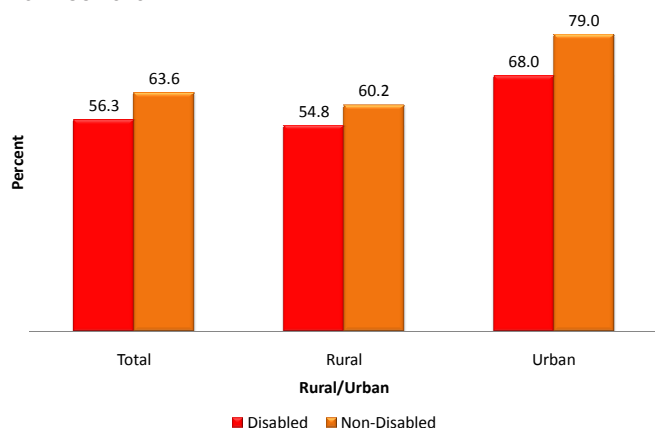
Source: 2010 Census of Population and Housing

Figure 11.11 shows the percentage distribution of literate population with disabilities aged 5 years and older by district. Chinsali District had the highest proportion of the literate population with disabilities at 62.1 percent while Chama District had the least proportion at 49.5 percent.

Figure 11.11: Percentage Distribution of the Population (5 years and older) with Disabilities who were Literate by District, Muchinga Province 2010
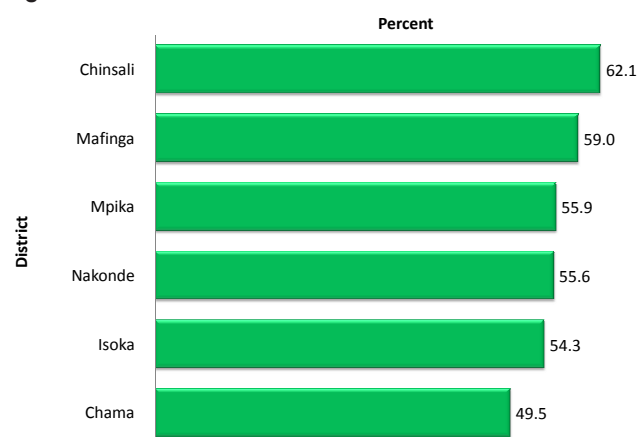
Source: 2010 Census of Population and Housing

11.6.2 School Attendance

The percentage distribution of population aged 5 years and older by disability status, school attendance and rural/urban is shown in Figure 11.12. The figure shows that there was a higher percentage of persons with disabilities who had never attended school at 36.4 percent compared to 22.8 percent for persons without disability. For the population currently attending school, the percentage of the disabled was lower than that of the non-disabled at 15.3 and 32.4 percent, respectively.

In rural areas, the proportion of persons with disabilities who were no longer attending school was 47.4 percent and the non-disabled was 43.2 percent. In urban areas, the disabled no longer attending school was 55.5 percent and the non disabled persons was 52.0 percent. Similarly, there were more persons with disability who had never attended school than the non-disabled in both rural and urban areas.

Figure 11.12: Percentage Distribution of Disabled and Non-Disabled Populations (5 years and Older) by School Attendance and Rural/Urban, Muchinga Province 2010
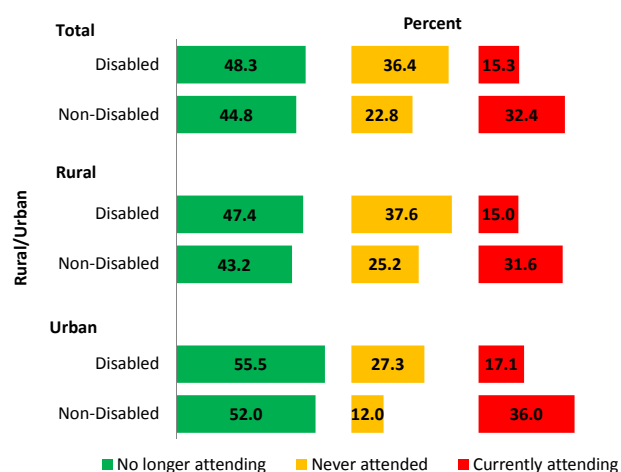
Source: 2010 Census of Population and Housing

11.6.3 Education Level among the Disabled

Figure 11.13 shows the percentage distribution of persons with disabilities, 25 years and older, by highest level of education completed and sex. In Muchinga Province, 71.3 percent of the population with disabilities had attained primary education and 7.2 percent had attained tertiary education. A higher percentage of males had completed tertiary education at 9.9 percent compared to 3.2 percent for females.

Figure 11.13: Percentage Distribution of Persons with Disabilities (25 years and older) by Highest Level of Education Completed and Sex, Muchinga Province 2010
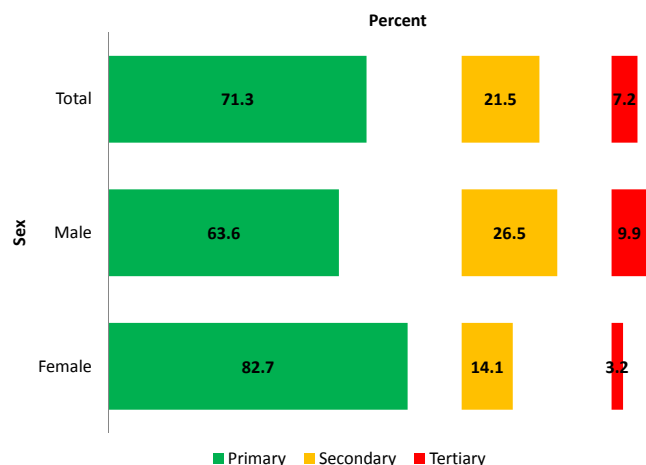
Source: 2010 Census of Population and Housing

11.7 Economic Activity

Persons living with disabilities are disadvantaged with regards engagement in economic activities. Literature suggests that, in developed as well as developing countries, persons living with disabilities face much lower employment rates and higher unemployment rates than persons without disabilities (WHO, 2011).

Figure 11.14 shows the percentage distribution of employed persons aged 12 years and older by disability status and rural/urban. The figure shows that 95.1 percent of persons with disabilities were employed compared to 93.6 percent of persons without disabilities. The percentages of the disabled who were employed were higher than the percentages for the non-disabled in both rural and urban areas.

Figure 11.14: Percentage Distribution of the Disabled Population (12 years and older) who were Employed, Muchinga Province 2010
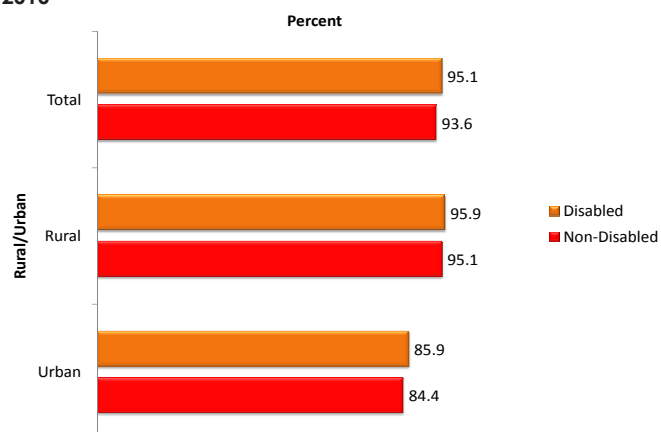
Source: 2010 Census of Population and Housing

11.7.1 Employment Status

Figure 11.15 shows employment status of persons with disabilities by rural/urban. Self-employed was the most common employment status at 72.9 percent while the least were employers with 0.4 percent.

Figure 11.15: Percentage Distribution of Persons with Disabilities (12 Years and Older) by Employment Status and Rural/Urban, Muchinga Province 2010
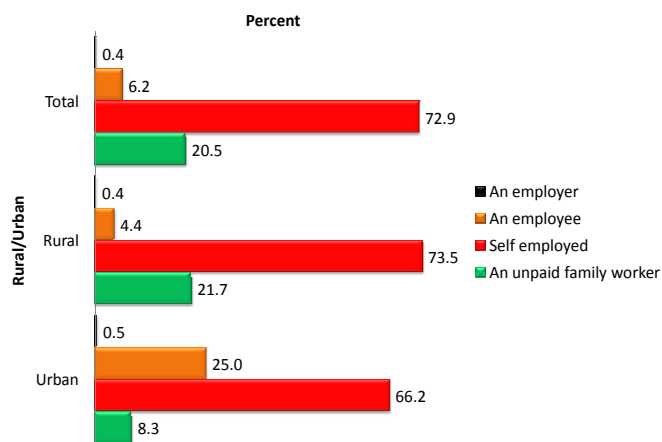
Source: 2010 Census of Population and Housing

11.7.2 Employment Status of Disabled Household Heads

Figure 11.16 shows the percent distribution of the disabled household heads by employment status. The largest proportion of persons living with disabilities was self-employed at 73.1 percent while the least were employers at 0.4 percent.

Figure 11.16: Percentage Distribution of Household Heads with Disabilities (12 years and older) by Employment Status, Muchinga Province 2010
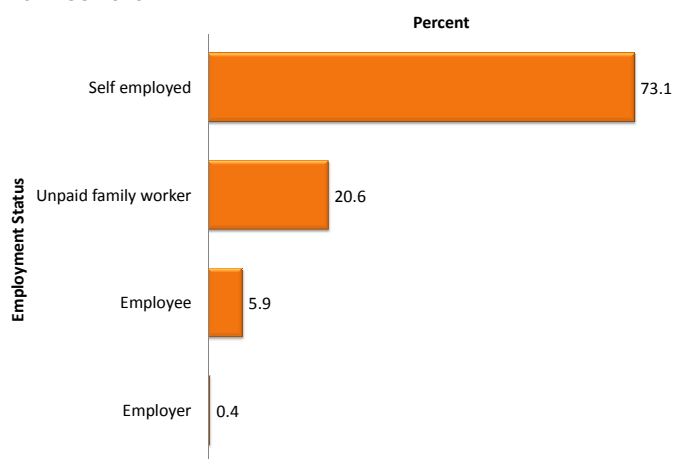
Source: 2010 Census of Population and Housing

11.7.3 Occupation Status

Occupation is described as the kind of work a person performs in his/her job or business. Figure 11.17 shows percent distribution of occupation by disability status. Among persons with disabilities, agricultural occupations were the most common (93.4 percent) while occupations in production and transport were the least common (0.6 percent). Persons without disabilities were mostly engaged in agricultural occupations at 89.3 percent while the least occupation they were engaged in was in production and transport at 1.1 percent.

Figure 11.17: Percentage Distribution of the Disabled Population by Occupation and Disability Status, Muchinga Province 2010.

Source: 2010 Census of Population and Housing

11.8 Marital Status of the Disabled by Sex

Figure 11.18 shows percent distribution of the disabled (15 years and older) by marital status and sex. There were more males than females living with disabilities who were married at 60.1 percent and 41.0 percent, respectively. Persons living with disabilities that were never married constituted 29.4 percent of males and 16.5 percent of the females.

Figure 11.18: Percentage Distribution of Persons with Disabilities (15 years and older) by Marital Status and Sex, Muchinga Province 2010

Source: 2010 Census of Population and Housing

CHAPTER 12
EVALUATION OF COVERAGE
AND CONTENT ERRORS

12.0 Summary

In 2010, the pattern of age composition, child woman ratio and dependency ratio in Muchinga Province was in line with the observed fertility and mortality declines.

The Myers Index reduced from 8.0 in 2000 to 7.8 in 2010.

The most preferred digits for age data reporting were 0, 5 and 8.

The age-sex accuracy index for Muchinga Province reduced from 40.3 in 2000 to 32.2 in 2010.

Chapter 12
Evaluation of Coverage and Content Errors

12.1. Introduction
Data evaluation is the assessment of the quality of the data. It provides reliable standards for adjusting data if needed. The adjustment is done based on responses to the questions which were asked during the census on:

• *Sex*
• *Age (in completed years)*
• *Rural/Urban status of household*
• *Number of children still living, and*
• *Number of children dead*

12.2. Concepts and Definitions
The following concepts and definitions have been used in this chapter.

The Age-Sex Accuracy Index: Mean difference in sex ratios plus the mean deviations of male and female age ratios multiplied by three gives an indication of the quality of age data.

Age Ratio: The ratio of the population in a given age group to one-third of the sum of the populations in the age group itself, the preceding and the following age groups, times 100 (Shryock et al, 1976).

Census Night: The night prior to the actual census count. In Zambia a rolling (varying) census night is used because enumeration is usually done over a period of about two-three weeks.

Census of Population: Total process of collecting, compiling, evaluating, analysing and publishing or otherwise dissemination of demographic, economic and social data pertaining, at a specified time, to all persons in a country or in a well-delimited part of a country, (UN, 2008).

Child-Woman Ratio: Number of children aged 0-4 years in a population to every 1,000 women aged 15-49 years in the same population.

Cohort Survival Ratio: The survival ratio of the population in a given age group to the next age.

Content Error: Error made in the recorded information in the census questionnaire either because the respondent provided incorrect information or the interviewer recorded incorrect information

Coverage Error: Under or over-enumeration in a population census due to either omission or duplication of an individual, household, or housing unit.

Data Smoothing: This is the use of an approximating function to capture important patterns in the data and removing the noise or outliers. For example, smoothing is done to help reduce the negative consequences of digit preference.

Dependency Ratio: Ratio of children aged 0-14 and persons aged 65 years and older, per 100 persons in the age-group 15-64 years old.

Digit Preference: Reporting of age by respondents often ending in certain preferred digits such as zero or five. This results in heaping of population in ages ending with certain digits.

Population Pyramid: A graphical illustration that shows the distribution of various age groups in a population

Sex Ratio: Number of males per 100 females in a population (Masculinity ratio).

Overall Survival Ratio: The ratio of the population of age, say, 10 years and older that will survive to 15 years and older.

12.3. Type of Population used in Evaluating the Coverage and Content Errors
In the analysis of the coverage and content errors, the de facto population was used.

12.4. Methods of Evaluation
There are numerous checks and controls directed at minimising errors in the census, during enumeration. Despite instituting data control measures, some errors can occur in the census data. For instance, some people may be omitted, others may be enumerated more than once, or some characteristics of an individual such as age, sex, fertility and economic activity may be incorrectly reported or recorded. In general, two approaches are used to evaluate the quality of data: direct and indirect methods.

The direct method involves the carrying out of the Post Enumeration Survey (PES). In a PES, a sample of households is revisited after the census and data are again collected but on a smaller scale (both in terms of scope and questionnaire content). These are later compared with the data collected during the actual census. The matching process of the two sets of data can then be used to evaluate the quality of the census data.

Indirect methods usually employ the comparison of data using both internal and external consistency checks. Internal consistency checks compare relationships of data within the same census data, for example, using the Myers index to check for accuracy of age reporting. External consistency checks compare census data with data generated from other sources. For instance, one can compare data on education obtained during a census with administrative data collected by the Ministry of Education.

12.3. Coverage Error
This type of error occurs when there is omission or duplication of individuals, households, or housing units resulting in under or over enumeration. Some factors which contribute to coverage errors are lack of accessibility or cooperation with respondents,

difficulties in communication and lack of proper boundary descriptions on maps. Coverage errors can be measured by examining certain statistics such as growth rate, age composition, child woman ratio and dependency ratio.

12.6. Age Composition
Examining age composition over time can help assess the coverage error in census data. The percentage for each group should not vary much from one census to another except where there had been major changes to the population. Fertility and mortality effects would normally result into marginal changes to the percentage of the broad age groups.

Table 12.1 shows the population composition of Muchinga Province by broad age groups for 2000 and 2010. The percentage of children aged 0-14 years increased from 48.2 percent in 2000 to 49.5 percent in 2010. The percentage of adults aged 15-64 years reduced from 48.7 percent in 2000 to 47.4 percent in 2010. The percentage of persons aged 65 years and older remained the same between 2000 and 2010 at 3.1.

Table 12.1: Population Distribution by Broad Age Groups, Muchinga Province 2000 and 2010				
Age Group	Population			
	2000	Percent	2010	Percent
0-4	92,852	19.1	130,097	19.2
5-9	77,628	16.0	111,376	16.4
10-14	63,532	13.1	94,047	13.9
0-14*	234,012	48.2	335,520	49.5
15-64	236,641	48.7	321,095	47.4
65+	15,113	3.1	20,892	3.1
Total	485,766	100	677,507	100

Sources: 2000 and 2010 Censuses of Population and Housing
Note: Not part of total.

12.7. Child-Woman Ratio
Figure 12.1 shows child woman ratio for census years 2000 and 2010. There was an increase in the child-woman ratio between 2000 and 2010. The child woman ratio increased from 836 in 2000 to 854 children aged 0-4 years per 1000 women aged 15-49 years in 2010. The change in child-woman ratio was in line with the change in the percentage of the population in the age group 0-4 years.

Figure 12.1: Child Woman Ratio, Muchinga Province 2000 and 2010
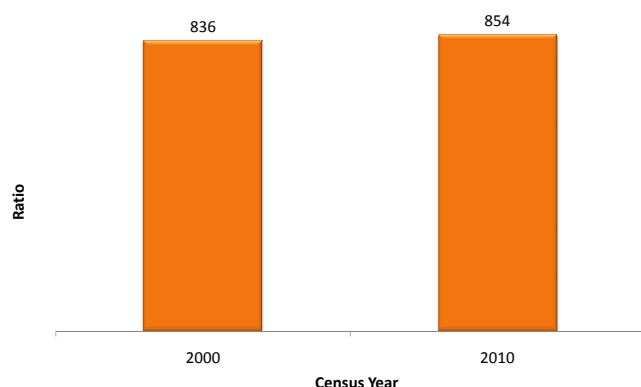
Note: Child-Woman Ratio is the number of children aged 0-4 years in a population to every 1000 women aged 15-49

Sources: 2000 and 2010 Censuses of Population and Housing

12.8. Dependency Ratio
The consistency in the coverage for the three censuses can be further explored through dependency ratios. Figure 12.2 shows dependency ratio for census years 2000 and 2010.

Figure 12.2: Dependency Ratio, Muchinga Province 2000 and 2010
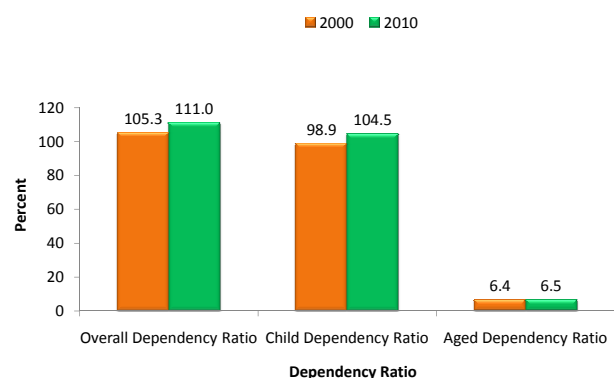
Note: Overall Dependency Ratio - Number of children aged 0-14 and the elderly aged 65 years and older, per 100 persons in the age-group 15-64 years

Sources: 2000 and 2010 Censuses of Population and Housing

The overall dependency ratio for the population of Muchinga Province for 2000 and 2010 were 105.3 and 111.0 persons, respectively. This means that in 2010 for every 100 persons in the age group 15-64 years, there were 111.0 dependants in the age groups 0-14 and 65 years and older. Child dependency ratio increased from 98.9 persons in 2000 to 104.5 persons in 2010. Aged dependency ratio also increased slightly between 2000 and 2010.

12.9. Content Error
Content errors refer to instances where characteristics such as age, sex, marital status, economic activity, etc. of a person enumerated in a census or survey are incorrectly reported or tabulated. Content errors are caused by either a respondent giving a wrong response or by an enumerator recording an incorrect response. For instance, a question about age in a census can be solicited by asking either "date of birth" or "completed number of years". These two questions may yield different ages. During the 2010 Census, age was recorded in completed years. Some content errors can be estimated by the use of the Myers' Index, Sex Ratios, Age Ratios, and Survival Ratios.

12.9.1. Digit Preference

Digit preference is mostly pronounced among population subgroups having a low educational status. The causes and patterns of digit preference vary from one culture to another. Age misreporting, net under enumeration and non-reporting or misclassifications of age contribute to heaping (Shryock, et.al. 1976).

In this analysis, the Myers' Index was used to investigate age heaping. Figure 12.3 shows the Myers' Index by rural/urban for 2000 and 2010. The maximum value of Myers' Index is 90 and the minimum value is 0. A high Myers' Index implies poor age reporting whereas a low Myers' Index indicates good age reporting.

Figure 12.3: Myers' Index by Rural/Urban, Muchinga Province 2000 and 2010
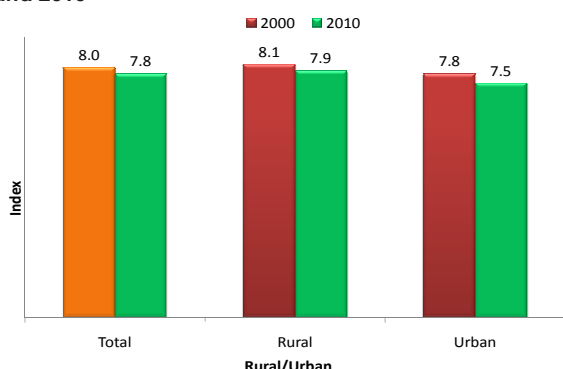
Note: A high Myers' Index implies poor age reporting whereas a low Myers' Index indicates good age reporting.
The maximum value of Myers' Index is 90 while the minimum value is 0

Sources: 2000 and 2010 Censuses of Population and Housing

In Muchinga Province, the Myers' index reduced from 8.0 in 2000 to 7.8 in 2010. The decline in Myers' index was also observed in rural and urban areas. In rural areas, the Myer's index reduced from 8.1 in 2000 to 7.9 in 2010. In urban areas, it reduced from 7.8 to 7.5 between 2000 and 2010. The decline in Myers' index shows that the quality of age data reporting improved in 2010 compared to 2000.

Digit preference can also be explored by looking at age heaping. Table 12.2 shows the most preferred digits by sex and rural/urban for 2000 and 2010. The most preferred digits are presented in decreasing order of preference. In Muchinga Province, preference for digits by both sexes were 0, 8 and 5 in 2000 and 0, 5 and 8 in 2010, respectively.

Table 12.2: Most Preferred Digits by Sex and Rural/Urban, Muchinga Province 2000 and 2010

Rural/Urban	Most Preferred Digits and Census Year		
	Sex	2000	2010
Muchinga Province	Both Sexes	0, 8, 5	0, 5, 8
	Male	0, 5, 8	0, 5, 8
	Female	0, 8, 5	0, 8, 5
Rural	Both Sexes	0, 8, 5	0, 5, 8
	Male	0, 5, 8	0, 5, 8
	Female	0, 8, 5	0, 8, 5
Urban	Both Sexes	0, 8, 5	0, 8, 5
	Male	0, 5, 8	0, 8, 5
	Female	0, 8, 5	0, 8, 5

Sources: 2000 and 2010 Censuses of Population and Housing

In rural areas, digit preference by both sexes followed a similar pattern at provincial level. In urban areas, both sexes preferred digits 0, 8 and 5 in both census years.

Errors in age data reporting are also presented in Figures 12.4 and 12.5. The figures show population distribution in single years for 2000 and 2010. The peaks on the curves indicate the most preferred ages in reporting while the troughs indicate the under reported ages.

Figure 12.4: Population Distribution in Single Years, Muchinga Province 2000
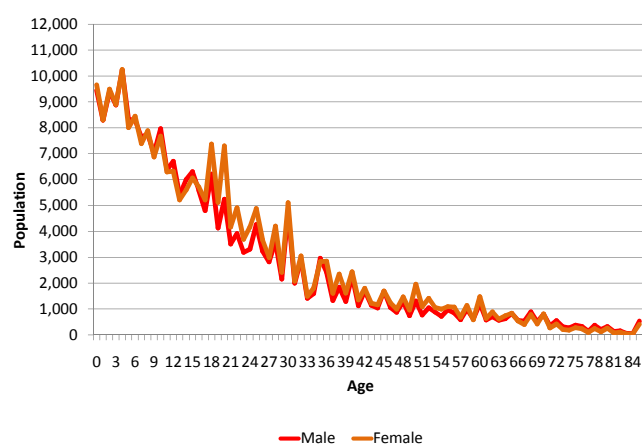
Source: 2000 Census of Population and Housing

Figure 12.5: Population Distribution in Single Years, Muchinga Province 2010
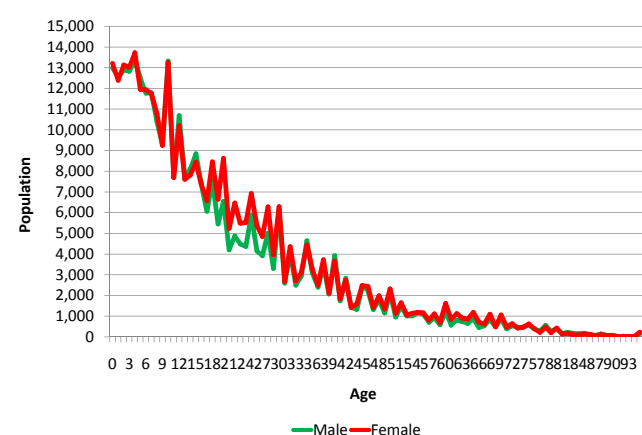
Source: 2010 Census of Population and Housing

A comparison of Figures 12.4 and 12.5 shows that the peaks and troughs were more pronounced for ages reported below 55 years in both censuses. The differences in the peaks and troughs for ages reported after 55 years were not that pronounced. This may suggest that both males and females tend to misreport their ages before age 55.

When single year age data is grouped into five year age groups, irregularities in age data arising from age misreporting tend to disappear. Figure 12.6 and 12.7 show population distribution in 5 year age groups for 2000 and 2010. The figures show smoothened curves after the single age data was grouped for both censuses.

Figure 12.6: Population Distribution by 5 Year Age Group, Muchinga Province 2000
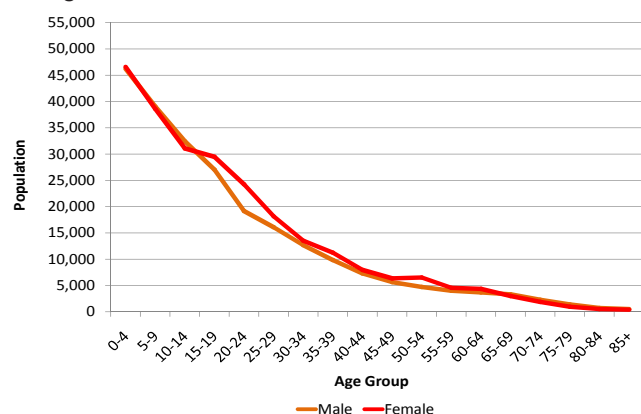
Source: 2000 Census of Population and Housing

Figure 12.7: Population Distribution by 5 Year Age Group, Muchinga Province 2010
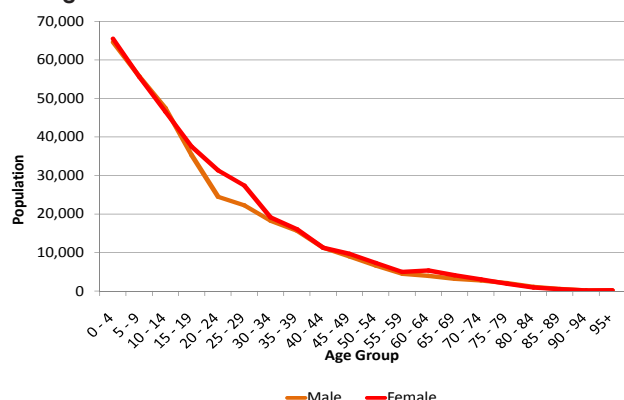
Source: 2010 Census of Population and Housing

12.9.2. Sex Ratios

The presence of omission errors, age misreporting and out migration may be detected by looking at the pattern of sex ratios. A sex ratio of more than 100 shows an excess of males over females while a sex ratio of less than 100 shows an excess of females over males. A sex ratio of 100 indicates an equal number of males and females. In the absence of big fluctuations in births, deaths and migration, the sex ratios are expected to be high at infant ages. After early childhood, the ratios are expected to decline continuously to reach very low levels at the highest ages when female mortality is much lower than the male mortality. Figure 12.8 shows sex ratios by rural/urban for 2000 and 2010.

Figure 12.8: Sex Ratios by Rural/Urban, Muchinga Province 2000 and 2010
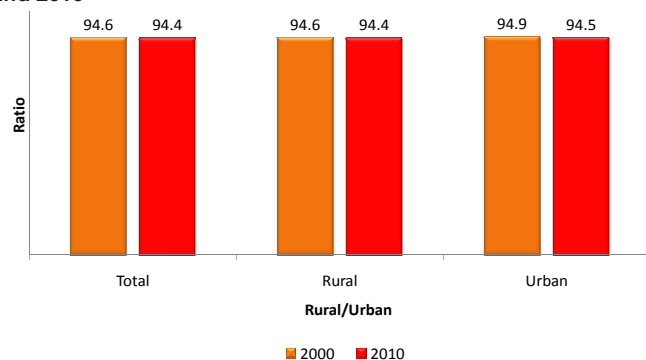
Sources: 2000 and 2010 Censuses of Population and Housing

Sex ratio for Muchinga Province reduced slightly from 94.6 in 2000 to 94.4 males per 100 females in 2010. Sex ratios for both rural and urban areas reduced slightly between 2000 and 2010. In rural areas, sex ratio reduced from 94.6 in 2000 to 94.4 males per 100 females in 2010. In urban areas, it reduced from 94.9 to 94.5 males per 100 females between 2000 and 2010.

Figure 12.9 shows sex ratio by five year age groups for 2000 and 2010. In 2000, an analysis of age-specific sex ratios shows more females than males in age groups 0-4 and 15-64 years. An analysis for 2010 shows more females than males in age groups 0-4, 15-39 and 45-74 years.

Figure 12.9: Sex Ratio by 5 Year Age Group, Muchinga Province 2000 and 2010
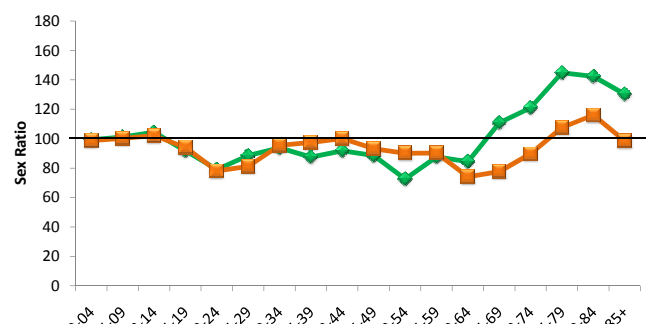
Sources: 2000 and 2010 Censuses of Population and Housing

Table 12.3 shows sex ratio by age and rural/urban for 2000 and 2010. Sex ratios over 100 were observed in the age groups 5-14 and above 65 years in 2000. In 2010, sex ratios above 100 were observed in age groups 05-14 and 75-84 years.

The pattern of sex ratio for both censuses suggest under enumeration of children since sex ratio is supposed to be high at age groups 0-4 and 5-9 years.

Table 12.3: Sex Ratio by Age and Rural/Urban, Muchinga Province 2000 and 2010						
Age Group	2000			2010		
	Total	Rural	Urban	Total	Rural	Urban
00-04	99.3	99.4	97.9	98.7	98.7	98.5
05-09	101.2	101.0	102.5	100.2	100.5	98.4
10-14	104.3	106.1	93.4	102.0	103.8	93.0
15-19	91.7	91.7	91.9	94.1	94.5	92.4
20-24	79.0	78.6	81.4	78.1	77.8	79.5
25-29	88.5	88.4	88.7	81.2	80.8	82.7
30-34	93.7	93.1	97.6	95.4	93.9	101.2
35-39	87.5	87.6	86.9	97.5	93.7	114.5
40-44	91.7	91.1	96.1	100.0	96.5	119.0
45-49	88.5	85.7	110.0	93.1	92.1	98.9
50-54	72.5	68.4	116.0	90.1	89.6	93.4
55-59	87.6	85.5	108.7	90.2	89.0	96.3
60-64	84.4	84.3	85.3	74.1	72.1	88.8
65-69	110.9	111.6	102.9	77.7	77.3	81.0
70-74	120.9	122.0	107.4	89.7	89.7	89.7
75-79	144.8	145.0	142.2	107.6	111.3	79.3
80-84	142.3	147.8	92.2	116.0	118.9	94.7
85+	130.2	134.8	87.2	98.4	104.1	64.8
Sources: 2000 and 2010 Censuses of Population and Housing						

12.9.3. Age Ratios

The quality of age data can also be evaluated by examining age ratios. When there are no major changes in fertility, mortality or migration, the age ratios do not deviate much from 100, hence, any substantial deviation is explained in terms of age misreporting. Calculations and comparison of age ratios have been done and the results disaggregated by sex are given in Figure 12.10.

The irregular patterns of the age ratios show that data could be affected by errors from age misreporting, digit preference, omission, migration or fluctuations in births and deaths.

Figure 12.10: Age Ratio by Sex, Muchinga Province 2010
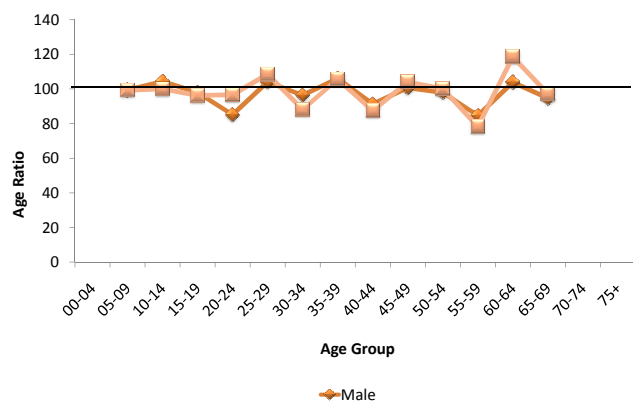
Source: 2010 Census of Population and Housing

The Age-Sex Accuracy Index describes the quality of age data. The United Nations defines age data as "accurate, inaccurate and highly inaccurate" if the Age-Sex Accuracy Index lies below 20, between 20-24, and 40 and above, respectively. Figure 12.11 shows the Age Sex Accuracy Indexes for 2000 and 2010.

Figure 12.11: Age-Sex Accuracy Index, Muchinga Province 2000 and 2010
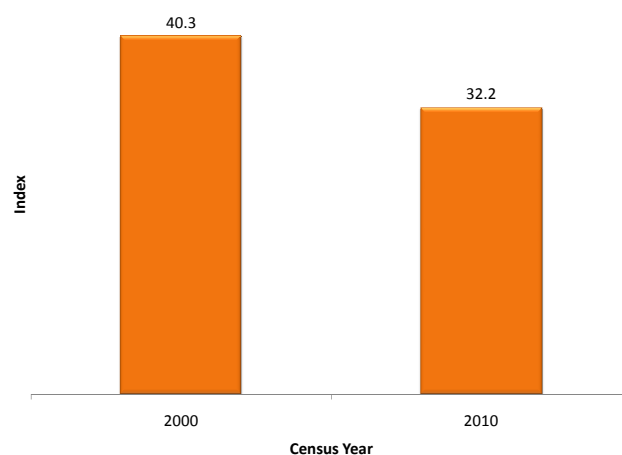
Source: 2000 and 2010 Census of Population and Housing

The Age-Sex Accuracy Index for Muchinga Province declined from 40.3 in 2000 to 32.2 in 2010. This implied that the quality of age data reporting improved in 2010 compared to 2000. Using the UN interpretation of the age-sex accuracy index, the improvement in the 2010 Census data on age data reporting, would be defined as "inaccurate".

12.9.4. Survival Ratios

Survival ratio is the probability that individuals of the same birth cohort or group of cohorts will still be living 10 years later. Survival ratios have been used to evaluate the quality of data and sex data from two censuses. This assumes that the population is closed to migration and influence of abnormal mortality due to wars, disasters and diseases over a 10 year period. Figure 12.12 shows cohort survival ratio by age and sex for 2000-2010.

Figure 12.12: Cohort Survival Ratio by Age and Sex, Muchinga Province 2000-2010
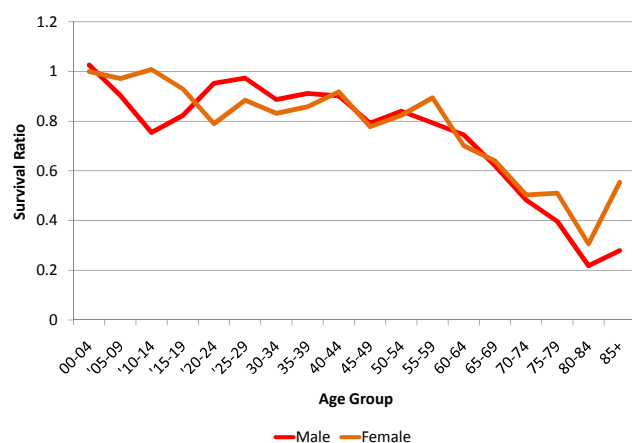
Sources: 2000 and 2010 Censuses of Population and Housing

The figure shows fluctuations in the cohort survival ratios rather than the expected systematic continuous decline with the increase in age. These distortions in data could either be due to age misreporting, under enumeration or over enumeration at some age groups.

Female ratios are generally expected to be higher than the male ratios because females normally have lower mortality compared to males. However, the figure shows higher survival ratios for males than females in age groups 0-4, 20-39, 45-54 and 60-64 years.

Figure 12.13 shows overall survival ratios by age and sex for 2000-2010. The overall survival ratios show a continued decline with increase in age. Females had higher survival ratios across all age groups except for the age groups 25+, 30+, and 35+ were males had higher survival ratios.

Figure 12.13: Overall Survival Ratio by Age and Sex, Muchinga Province 2000-2010
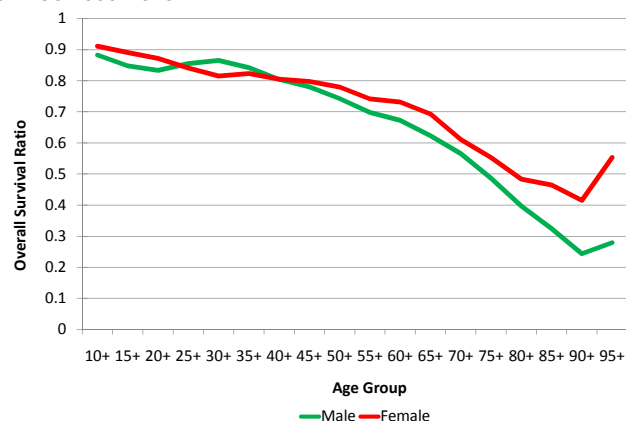
Sources: 2000 and 2010 Censuses of Population and Housing

12.9.5. Population Pyramids

Irregularities in the reported age data was analysed using population pyramids. Inaccuracies in census age data are easily spotted when data is distributed in single year than in five year age groups. The population pyramids for the 2010 Census data given in figure 12.14, 12.15 and 12.16, show age misreporting with preference for ages ending with 0 and 5. Figure 12.14 shows the population distribution by single age for 2010.

Figure 12.14: Population Distribution in Single Years, Muchinga Province 2010
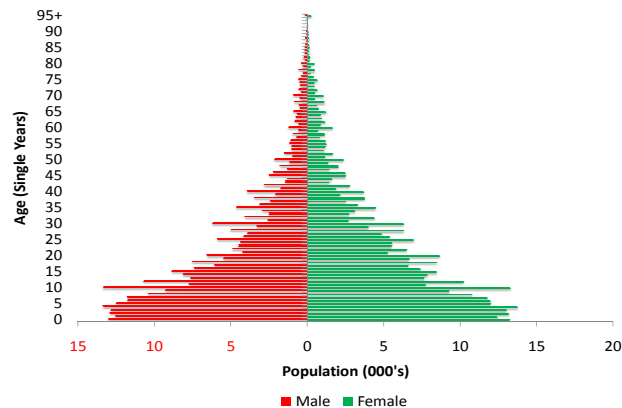
Source: 2010 Census of Population and Housing

Figures 12.15 and 12.16, shows the population distribution by age and rural/urban for 2010.

Figure 12.15: Population Distribution in Single Years, Muchinga Province Rural 2010
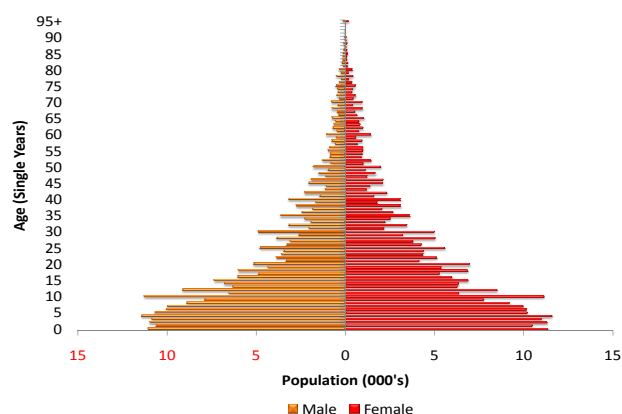
Source: 2010 Census of Population and Housing

Figure 12.16: Population Distribution in Single Years, Muchinga Province Urban 2010
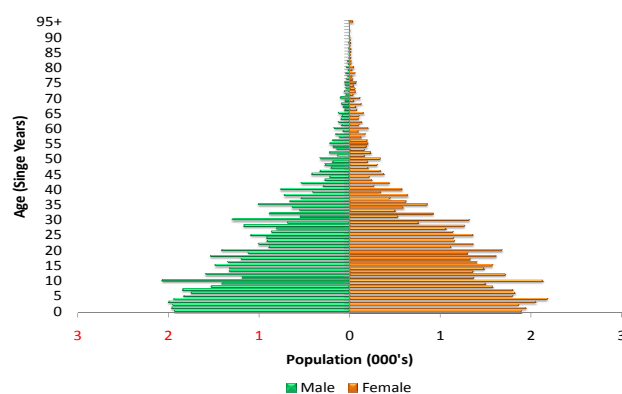
Source: 2010 Census of Population and Housing

Figures 12.17 and 12.18, shows the reported and smoothed population by age and sex for 2010.

Smoothing the age data using selected techniques for light smoothing of the population show that the irregularities in the structure were not severe to consider smoothing.

Figure 12.17: Reported and Smoothed Population for Males by Age and Smoothing Technique, Muchinga Province 2010
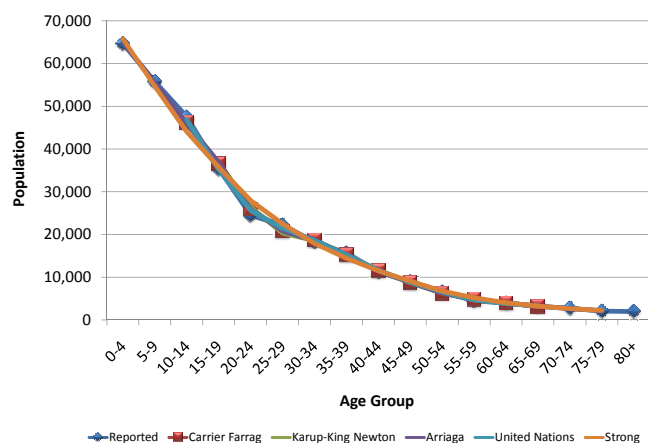
Source: 2010 Census of Population and Housing

Figure 12.18: Reported and Smoothed Population for Females by Age and Smoothing Technique, Muchinga Province 2010
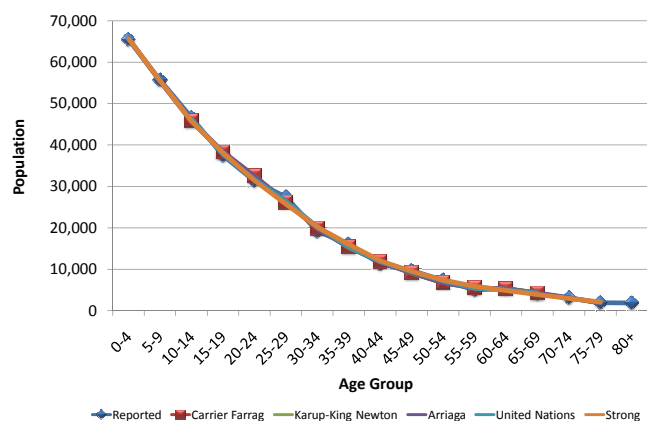
Source: 2010 Census of Population and Housing

Given that the irregularities were not severe, the age sex data used for analysis in the 2010 Census was not smoothened.

ANNEX TABLES AND REFERENCES

Annex A: Population Composition and Demographic Characteristics

A1: Percent Distribution of the Population (De jure) by Age Group, Sex and Rural/Urban, Muchinga Province 2010

Age Group	Total			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
0 - 4	18.6	18.8	18.4	19.0	19.2	18.8	16.5	16.7	16.3
5 - 9	16.2	16.5	15.9	16.5	16.9	16.3	14.3	14.5	14.2
10 - 14	13.8	14.2	13.5	13.9	14.4	13.5	13.5	13.2	13.7
15 - 19	11.1	11.0	11.1	10.8	10.8	10.8	12.5	12.3	12.6
20 - 24	8.4	7.8	9.1	8.1	7.4	8.7	10.2	9.4	11.1
25 - 29	7.4	7.0	7.8	7.1	6.7	7.5	8.8	8.3	9.4
30 - 34	5.6	5.7	5.5	5.4	5.5	5.3	6.7	7.0	6.4
35 - 39	4.8	4.9	4.6	4.6	4.7	4.5	5.4	6.0	4.8
40 - 44	3.4	3.6	3.2	3.4	3.5	3.3	3.4	3.8	2.9
45 - 49	2.8	2.8	2.8	2.9	2.9	2.8	2.5	2.6	2.4
50 - 54	2.1	2.1	2.1	2.1	2.1	2.1	1.8	1.9	1.8
55 - 59	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.4	1.3
60 - 64	1.4	1.2	1.5	1.4	1.3	1.6	1.0	1.0	1.0
65 - 69	1.1	1.0	1.2	1.1	1.0	1.2	0.7	0.7	0.8
70 - 74	0.8	0.8	0.9	0.9	0.9	0.9	0.5	0.5	0.5
75 - 79	0.6	0.6	0.5	0.6	0.7	0.6	0.3	0.3	0.3
80 - 84	0.3	0.3	0.3	0.3	0.4	0.3	0.2	0.2	0.2
85+	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.1	0.2
Total Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Population	711,657	349,872	361,785	590,575	290,490	300,085	121,082	59,382	61,700

Source: 2010 Census of Population and Housing

A2: Percent Age Distribution of the Population by Selected Age Groups and Rural/Urban, Muchinga Province 2010

Age Group	2010 Census		
	Total	Rural	Urban
10-19 (Adolescents ,WHO)	24.9	24.7	25.9
10-24 (Young People, UN)	33.4	32.8	36.2
<15 (Children)	48.6	49.5	44.3
<18 (Children)	55.4	56.1	51.8
15-19 (Middle and later Adolescence)	11.1	10.8	12.5
15-24 (Youths, UN)	19.5	18.9	22.7
15-49 (Reproductive Age Group)	43.5	42.2	49.5
15-35 (Youths, Zambia)	33.9	32.7	39.9
15-64 (Labour force Age group)	48.3	47.2	53.7
60+ (Elderly)	4.4	4.7	3.0
65+ (Elderly)	3.0	3.3	2.0
Total Population	711,657	590,575	121,082

Source: 2010 Census of Population and Housing

Annex B: Social Characteristics

B1: Percent Distribution of Household Heads by Age Group and Sex, Munchinga Province 2010

Age group of Household Head	Total Number of Household heads	Number of Male Headed Households	Percent of Male headed Households	Number of Female Headed Households	Percent of Female Headed Households
Total	138,783	108,853	100	29,930	100
12-14	82	47	*	35	0.1
15 - 19	1,349	907	0.8	442	1.5
20 - 24	11,719	10,000	9.2	1,719	5.7
25 - 29	21,395	18,428	16.9	2,967	9.9
30 - 34	20,691	17,659	16.2	3,032	10.1
35 - 39	18,759	15,613	14.3	3,146	10.5
40 - 44	14,486	11,557	10.6	2,929	9.8
45 - 49	12,222	9,315	8.6	2,907	9.7
50 - 54	9,681	6,884	6.3	2,797	9.3
55 - 59	6,699	4,633	4.3	2,066	6.9
60 - 64	6,579	4,041	3.7	2,538	8.5
65+	15,121	9,769	9	5,352	17.9

Source: 2010 Census of Population and Housing

B 2: Relationship to Household Head by Rural/Urban, Muchinga Province 2010

Relationship to head	Total	Percent	Rural	Percent	Urban	Percent
Total Population	711,657	100	590,575	100	121,082	100
Head	138,783	19.5	114,762	19.4	24,021	19.8
Spouse	105,695	14.9	88,290	14.9	17,405	14.4
Own Son/ Daughter	377,510	53	319,020	54	58,490	48.3
Step Son/Daughter	9,804	1.4	8,339	1.4	1,465	1.2
Parent	2,881	0.4	2,424	0.4	457	0.4
Brother/Sister	9,843	1.4	5,998	1	3,845	3.2
Nephew/Niece	12,462	1.8	7,882	1.3	4,580	3.8
Son/Daughter-in-law	4,360	0.6	3,553	0.6	807	0.7
Grandchild	35,580	5	29,661	5	5,919	4.9
Parent-in-law	931	0.1	755	0.1	176	0.1
Cousin	1,637	0.2	957	0.2	680	0.6
Other relative	10,274	1.4	7,732	1.3	2,542	2.1
Not Related	1,897	0.3	1,202	0.2	695	0.6

Source: 2010 Census of Population and Housing

Annex C: Education

C 1: Population 5 Years and Older by Age (Single and 5 Year Groups), Sex and Literacy Status, and Rural/Urban, Muchinga Province 2010

Age (Single and 5 Year Groups)	Total			Rural			Urban		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
Total	63.5	68.3	59.1	60.3	65.6	55.3	78.9	80.9	77.0
5	3.2	2.9	3.5	2.5	2.4	2.7	7.0	5.9	8.1
6	4.7	4.5	5.0	3.6	3.3	3.9	11.1	11.2	11.1
7	10.1	9.9	10.3	8.4	8.2	8.6	19.6	19.0	20.2
8	18.0	18.1	17.9	14.7	14.9	14.5	37.0	36.7	37.3
9	33.4	32.9	33.9	29.0	28.9	29.0	57.3	55.3	59.1
5 - 9	12.8	12.5	13.1	10.7	10.5	10.8	24.8	23.8	25.7
10	49.1	48.8	49.4	44.8	44.9	44.7	71.8	70.0	73.6
11	66.3	66.1	66.5	62.4	62.8	62.1	85.7	84.5	86.7
12	76.2	76.5	75.9	73.6	74.1	73.0	90.3	90.6	90.1
13	83.7	84.4	83.1	81.4	82.1	80.7	94.4	95.1	93.7
14	87.0	87.6	86.3	85.2	86.1	84.2	95.5	95.6	95.4
10 - 14	70.0	70.2	69.7	66.7	67.3	66.2	86.2	85.7	86.7
15	87.8	88.9	86.7	86.2	87.4	84.8	95.5	96.0	95.0
16	89.2	91.2	87.1	87.5	90.0	85.1	96.4	97.0	95.9
17	88.8	92.4	85.6	87.1	91.4	83.1	95.9	96.5	95.3
18	86.9	91.3	83.0	84.8	89.9	80.3	95.5	96.6	94.5
19	85.3	91.1	80.6	82.9	89.4	77.7	94.8	97.4	92.6
15 - 19	87.7	90.8	84.7	85.8	89.5	82.3	95.6	96.7	94.7
20 - 24	81.4	88.5	75.8	78.2	86.6	71.7	93.4	96.0	91.4
25 - 29	77.9	86.4	71.0	74.2	84.2	66.1	92.1	94.6	90.0
30 - 34	78.8	86.5	71.6	75.3	84.1	67.0	92.5	95.3	89.6
35 - 39	78.7	86.7	70.9	75.4	84.3	67.2	92.0	95.9	87.6
40 - 44	78.1	87.0	69.2	75.2	84.9	65.9	92.1	96.2	87.3
45 - 49	77.2	87.5	67.7	74.9	86.2	64.5	90.3	94.8	85.9
50 - 54	74.3	86.8	63.1	71.9	85.2	60.0	88.0	95.5	80.9
55 - 59	71.9	86.2	59.0	69.1	84.2	55.7	86.2	96.0	76.7
60 - 64	59.7	81.8	43.4	57.2	79.9	40.9	76.3	93.1	61.4
65 +	51.5	74.2	30.8	50.1	72.9	29.1	62.4	85.7	43.2

Source: 2010 Census of Population and Housing

C2: Population 5 Years and Older by Age, Sex, and School Attendance and Rural/Urban, Muchinga Province 2010

Age (Single and 5 Year Groups)	Total			Rural			Urban		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
Total	32.8	35.9	29.8	31.8	35.3	28.6	37.1	39.0	35.2
5	8.7	8.2	9.2	7.3	7.1	7.6	16.6	15.0	18.3
6	20.2	19.1	21.3	18.2	17.3	19.2	31.0	29.4	32.6
7	44.8	43.9	45.8	43.2	42.2	44.1	54.0	52.8	55.2
8	62.4	61.4	63.4	60.1	59.0	61.1	76.0	75.1	76.9
9	74.0	73.9	74.1	71.9	72.0	71.8	85.2	84.5	85.9
5 - 9	39.8	38.9	40.8	37.9	37.1	38.7	50.5	49.0	52.0
10	78.9	78.7	79.1	77.2	77.2	77.2	87.9	87.2	88.6
11	82.8	83.1	82.4	81.5	81.9	81.0	89.3	89.8	88.8
12	83.5	84.4	82.6	82.4	83.3	81.3	89.5	90.2	89.0
13	84.6	85.6	83.5	83.5	84.7	82.3	89.5	90.1	89.0
14	82.6	84.1	81.0	81.3	83.3	79.1	88.7	88.5	88.9
10 - 14	82.1	82.7	81.4	80.7	81.6	79.9	88.9	89.0	88.8
15	77.1	80.8	73.3	75.6	79.6	71.3	84.5	87.0	82.1
16	72.4	79.8	65.0	70.7	78.6	62.7	80.0	85.4	74.8
17	62.3	74.9	50.6	60.0	73.5	47.6	71.1	80.7	62.6
18	50.2	66.5	35.7	47.7	65.1	32.4	60.4	72.1	49.4
19	36.3	54.6	21.2	34.2	53.0	18.8	44.7	60.5	31.2
15 - 19	60.9	72.5	50.0	59.0	71.3	47.4	68.8	77.7	60.6
20 - 24	14.9	23.2	8.5	13.4	21.4	7.2	20.9	30.0	13.7
25 - 29	3.9	4.7	3.3	3.5	4.4	2.9	5.3	5.8	4.9
30 - 34	2.5	2.7	2.3	2.2	2.6	1.9	3.3	3.0	3.7
35 - 39	2.1	2.2	2.0	2.0	2.2	1.8	2.4	2.1	2.6
40 - 44	1.9	2.3	1.5	1.8	2.1	1.4	2.5	2.9	2.0
45 - 49	1.8	2.1	1.6	1.7	2.0	1.5	2.2	2.5	1.8
50 - 54	1.8	2.1	1.5	1.8	2.1	1.5	1.8	2.0	1.6
55 - 59	1.3	1.7	1.0	1.4	1.8	1.0	1.2	0.9	1.4
60 - 64	1.4	1.7	1.2	1.3	1.5	1.2	2.1	2.6	1.6
65 +	1.6	2.2	1.0	1.6	2.2	1.0	1.8	2.8	0.9

Source: 2010 Census of Population and Housing

Annex D: Economic Characteristics

D 1: The Usually Working Population (12 years and Older) By District, Muchinga Province 2010

	Total	Chama	Chinsali	Isoka	Mafinga	Mpika	Nakonde
Total	**248,373**	**42,468**	**53,116**	**26,403**	**25,860**	**65,083**	**35,443**
Rural	217,452	40,012	47,697	21,884	25,860	56,014	25,985
Urban	30,921	2,456	5,419	4,519	-	9,069	9,458
Male	124,049	19,199	26,621	12,696	11,874	33,291	20,368
Female	124,324	23,269	26,495	13,707	13,986	31,792	15,075
The Usually Working Population (12 years and Older) By Employment Status							
Employer	820	49	136	70	21	287	257
Employee	15,872	1,690	2,182	1,538	487	5,951	4,024
Self employed	118,113	19,747	25,633	13,603	12,493	31,578	15,059
Unpaid family worker	113,568	20,982	25,165	11,192	12,859	27,267	16,103
The Usually Working Population (12 years and Older) By Occupation							
Managers	695	47	60	58	13	376	141
Professionals	5,737	584	1,025	543	275	2,451	859
Technicians and Associate Professionals	2,875	228	248	142	49	1,124	1,084
Clerical Support Workers	581	28	70	52	3	250	178
Service and Sales Workers	10,323	933	1,335	1,376	188	3,207	3,284
Skilled Agricultural Forestry and Fishery Workers	188,990	38,578	45,983	21,726	24,441	39,678	18,584
Craft and Related Trades Workers	5,861	594	832	662	103	1,997	1,673
Plant and Machine Operators and Assemblers	2,211	218	230	289	54	717	703
Elementary Occupations	19,089	316	413	449	57	11,002	6,852
Not Stated	12,011	942	2,920	1,106	677	4,281	2,085
The Usually Working Population (12 years and Older) By Industry							
Agriculture Hunting Forestry and Fishing	205,986	38,596	46,085	21,831	24,334	51,185	23,955
Mining and Quarrying	294	51	23	17	18	119	66
Manufacturing	2,989	385	472	423	53	997	659
Electricity Gas Steam and Air conditioning supply	85	5	14	10	-	31	25
Water Supply	90	7	12	9	2	35	25
Construction and Allied Repairs	3,039	276	436	289	65	997	976
Wholesale & Retail Trade Restaurants and Hotel	9,016	748	1,180	1,314	183	2,787	2,804
Transport and Storage	2,321	67	97	165	12	845	1,135
Accommodation and food services activities	959	63	87	75	4	244	486
Information and Communication	635	64	84	61	8	307	111
Finance and Insurance	177	19	10	9	-	42	97
Real Estate Activities	24	1	1	14	1	3	4
Community Social and Personal Services	9,608	1,038	1,489	1,000	325	3,000	2,756
Not stated	13,150	1,148	3,126	1,186	855	4,491	2,344

Source: 2010 Census of Population and Housing

Annex E: Fertility Levels, Patterns and Trends

E1: Adjusted ASFR and TFR by District, Muchinga Province, 2010

Age Group	Total	Chama	Chinsali	Isoka	Mafinga	Mpika	Nakonde
15 - 19	0.1438	0.1865	0.1446	0.1348	0.1519	0.1340	0.1268
20 - 24	0.3229	0.3367	0.3329	0.3119	0.3629	0.3110	0.3045
25 - 29	0.3130	0.3351	0.3202	0.3067	0.3447	0.3097	0.2797
30 - 34	0.2679	0.2945	0.2846	0.2311	0.2789	0.2729	0.2324
35 - 39	0.2119	0.2369	0.2281	0.1810	0.2131	0.2151	0.1853
40 - 44	0.1114	0.1255	0.1196	0.0992	0.1104	0.1119	0.0967
45 - 49	0.0319	0.0338	0.0350	0.0295	0.0386	0.0316	0.0251
TFR	7.0	7.7	7.3	6.5	7.5	6.9	6.2

Source: 2010 Census of Population and Housing

E2: Observed and Adjusted ASFR, TFR and Mean Age at Childbearing (MACB), Muchinga Province 1990 – 2010

Age Group	1990*		2000*		2010	
	Observed ASFR	Adjusted ASFR	Observed ASFR	Adjusted ASFR	Observed ASFR	Adjusted ASFR
15-19	0.0879	0.0940	0.0928	0.1407	0.0959	0.1438
20-24	0.2501	0.2674	0.2118	0.2768	0.2511	0.3229
25-29	0.2746	0.2936	0.2116	0.2692	0.2516	0.3130
30-34	0.2543	0.2719	0.1846	0.2317	0.2177	0.2679
35-39	0.2112	0.2258	0.0420	0.1748	0.1746	0.2119
40-44	0.1203	0.1286	0.0710	0.0833	0.0973	0.1114
45-49	0.0549	0.0587	0.0290	0.0301	0.0321	0.0319
Obs. TFR	6.3		4.7		5.6	
Adj. TFR		6.7		6.0		7.0
MACB					33.0	

Source: 2010 Census of Population and Housing

E3: GRR and NRR by Rural/Urban, Muchinga Province 2010

Age Group	Total			Rural			Urban		
	ASFR(f)	Survival Ratios	ASFR at Current Mortality Rates	ASFR(f)	Survival Ratios	ASFR at Current Mortality Rates	ASFR(f)	Survival Ratios	ASFR at Current Mortality Rates
15 - 19	0.0485	4.1217	0.1977	0.0522	4.0881	0.2110	0.0330	4.3138	0.1397
20 - 24	0.1243	4.0194	0.4940	0.1316	3.9975	0.5191	0.0958	4.1627	0.3942
25 - 29	0.1244	3.8838	0.4775	0.1307	3.8711	0.4988	0.0999	3.9888	0.3940
30 - 34	0.1082	3.7103	0.3969	0.1142	3.7106	0.4182	0.0837	3.7607	0.3106
35 - 39	0.0868	3.5551	0.3021	0.0929	3.5696	0.3249	0.0578	3.5399	0.1984
40 - 44	0.0480	3.3944	0.1579	0.0507	3.4259	0.1688	0.0333	3.2889	0.1046
45 - 49	0.0150	3.2568	0.0465	0.0162	3.2978	0.0510	0.0084	3.0974	0.0240
GRR 2010	2.8			2.9			2.1		
NRR 2010			2.1			2.2			1.6

Source: 2010 Census of Population and Housing

Annex F: Mortality

F1: Proportion Distribution of Reported Deaths by Age Group, District and Rural/Urban, Muchinga Province 2010

Age Group	Total	Rural	Urban	Chama	Chinsali	Isoka	Mafinga	Mpika	Nakonde
0 - 4	0.496	0.526	0.344	0.592	0.446	0.509	0.531	0.478	0.458
5-9	0.061	0.065	0.046	0.071	0.071	0.053	0.044	0.068	0.042
10-14	0.035	0.035	0.034	0.041	0.035	0.024	0.044	0.036	0.027
15 - 19	0.035	0.035	0.034	0.031	0.029	0.036	0.046	0.038	0.033
20 - 24	0.040	0.036	0.063	0.027	0.041	0.039	0.040	0.041	0.054
25 - 29	0.047	0.043	0.067	0.030	0.049	0.051	0.039	0.050	0.057
30 - 34	0.047	0.039	0.084	0.031	0.048	0.035	0.034	0.053	0.062
35 - 39	0.039	0.033	0.071	0.028	0.038	0.033	0.019	0.045	0.054
40 - 44	0.033	0.029	0.051	0.019	0.041	0.029	0.031	0.035	0.037
45 - 49	0.027	0.024	0.042	0.018	0.029	0.031	0.023	0.027	0.032
50 - 54	0.023	0.022	0.030	0.019	0.028	0.013	0.021	0.026	0.024
55 - 59	0.017	0.014	0.027	0.016	0.023	0.024	0.014	0.011	0.019
60 - 64	0.018	0.017	0.023	0.011	0.023	0.031	0.020	0.015	0.016
65 - 69	0.018	0.016	0.025	0.011	0.017	0.021	0.020	0.021	0.016
70 - 74	0.022	0.023	0.016	0.013	0.027	0.023	0.024	0.024	0.022
75+	0.044	0.044	0.043	0.041	0.055	0.047	0.050	0.035	0.047

Source: 2010 Census of Population and Housing

Annex H: Disability

H1: Disabled Population by Sex, Rural/Urban and District, Muchinga Province 2010

Sex and District	Disabled Population			Percent Disabled		
	Total	Rural	Urban	Total	Rural	Urban
Total	15,110	13338	1772	2.2	2.4	1.5
Male	7,843	6966	877	2.4	2.6	1.6
Female	7,267	6372	895	2.1	2.2	1.5
District						
Chama	2,327	2218	109	2.3	2.4	1.6
Chinsali	3,178	2924	254	2.3	2.4	1.8
Isoka	1,541	1266	275	2.3	2.4	1.7
Mafinga	1,248	1248	0	2.0	2.0	
Mpika	4,643	4094	549	2.4	2.7	1.5
Nakonde	2,173	1588	585	1.9	2.1	1.4

Source: 2010 Census of Population and Housing

H2: Disabled Population by Age and Sex, Muchinga Province 2010

Age	Disabled Population			Percent Disabled		
	Total	Male	Female	Total	Male	Female
Total	**15,110**	**7,843**	**7,267**	**2.2**	**2.4**	**2.1**
0 - 4	865	512	353	0.7	0.8	0.5
5-9	1,351	753	598	1.2	1.4	1.1
10-14	1,486	808	678	1.6	1.7	1.5
15 - 19	1,259	680	579	1.7	1.9	1.5
20 - 24	884	474	410	1.6	1.9	1.3
25 - 29	876	463	413	1.8	2.1	1.5
30 - 34	850	452	398	2.3	2.5	2.1
35 - 39	858	453	405	2.7	2.9	2.5
40 - 44	827	428	399	3.7	3.8	3.5
45 - 49	861	416	445	4.6	4.6	4.6
50 - 54	799	393	406	5.7	6.0	5.6
55 - 59	635	288	347	6.7	6.4	7.0
60 - 64	781	318	463	8.4	8.0	8.6
65 - 69	668	284	384	9.2	8.9	9.4
70 - 74	755	374	381	13.0	13.6	12.4
75 - 79	605	334	271	15.2	16.2	14.1
80 - 84	410	231	179	20.0	20.9	18.8
85 - 89	198	119	79	18.5	21.1	15.7
90 - 94	62	38	24	19.3	23.5	15.0
95+	80	25	55	21.3	16.8	24.2

Source: 2010 Census of Population and Housing

Annex I: Evaluation of Coverage and Content Errors

I1: Population by Age Group, Sex, Age Ratio and Sex Ratio, Muchinga Province 2000

Age Group	Population		Age Ratio		Deviation from 100		Sex Ratio	Difference
	Male	Female	Male	Female	Male	Female		
0-4	46,252	46,600	-	-	-	-	99.3	-
5-9	39,038	38,590	99.2	99.3	-0.8	-0.7	101.2	1.9
10-14	32,440	31,092	98.2	91.4	-1.8	-8.6	104.3	3.2
15-19	27,035	29,473	104.8	106.5	4.8	6.5	91.7	-12.6
20-24	19,152	24,256	88.9	101.8	-11.1	1.8	79.0	-12.8
25-29	16,069	18,161	101.0	96.1	1.0	-3.9	88.5	9.5
30-34	12,676	13,532	97.8	92.0	-2.2	-8.0	93.7	5.2
35-39	9,850	11,256	98.6	104.7	-1.4	4.7	87.5	-6.2
40-44	7,309	7,968	94.4	90.4	-5.6	-9.6	91.7	4.2
45-49	5,640	6,374	93.7	88.0	-6.3	-12.0	88.5	-3.2
50-54	4,728	6,518	98.0	119.0	-2.0	19.0	72.5	-15.9
55-59	4,009	4,578	95.3	84.1	-4.7	-15.9	87.6	15.0
60-64	3,688	4,369	100.6	115.4	0.6	15.4	84.4	-3.2
65-69	3,324	2,997	111.3	95.8	11.3	-4.2	110.9	26.5
70-74	2,283	1,889	-	-	0.0	0.0	120.9	9.9
75+	2,703	1,917	-	-	-	-	141.0	-
Total	236,196	249,570	-	-				
Mean	-	-	-	-	4.1	8.5	-	9.2

Source: 2000 Census of Population and Housing

Age-Sex Accuracy Index = 3 times mean difference in sex ratio plus mean
deviations of males and females age ratios.
3 x 9.2 + 4.1 + 8.5
= 40.3

I2: Population by Age Group, Sex, Age Ratio and Sex Ratio, Muchinga Province 2010

Age Group	Population		Age ratio		Deviation from 100		Sex ratio	Difference
	Male	Female	Male	Female	Male	Female		
0-4	64,625	65,472					98.7	
5-9	55,735	55,641	99.4	99.3	-0.6	-0.7	100.2	1.5
10-14	47,482	46,565	104.3	100.0	4.3	0.0	102.0	1.8
15-19	35,279	37,480	98.0	96.2	-2.0	-3.8	94.1	-7.8
20-24	24,480	31,336	85.1	96.6	-14.9	-3.4	78.1	-16.0
25-29	22,242	27,392	104.1	108.5	4.1	8.5	81.2	3.1
30-34	18,255	19,141	96.4	88.1	-3.6	-11.9	95.4	14.2
35-39	15,645	16,054	106.1	105.7	6.1	5.7	97.5	2.1
40-44	11,247	11,244	91.3	87.5	-8.7	-12.5	100.0	2.6
45-49	8,983	9,651	100.7	104.0	0.7	4.0	93.1	-6.9
50-54	6,589	7,311	98.0	100.1	-2.0	0.1	90.1	-3.0
55-59	4,469	4,955	84.6	78.2	-15.4	-21.8	90.2	0.1
60-64	3,975	5,367	103.9	118.6	3.9	18.6	74.1	-16.1
65-69	3,182	4,094	94.7	97.1	-5.3	-2.9	77.7	3.7
70-74	2,747	3,063	-	-	0.0	0.0	89.7	12.0
75+	4,045	3,761	-	-	-	-	107.6	-
Total	328,980	348,527	-	-			-	
Mean	-	-	-	-	5.5	7.2	-	6.5

Source: 2010 Census of Population and Housing

Age-Sex Accuracy Index = 3 times mean difference in sex ratio plus mean
deviations of males and females age ratios.
3 x 6.5 + 5.5 + 7.2
= 32.2

Life Tables

Table 1: Abridged Life Table for Both Sexes, Muchinga Province 2010

Age,	Width,	nMx	nax	nqx	lx	ndx	nLx	5Px	Tx	ex
0	1	0.0891	0.3	0.0838	100,000	8,385	94,131	0.8777	5,294,925	52.9
1	4	0.0175	0.4	0.0659	91,615	6,036	344,732	0.9551	5,200,794	56.8
5	5	0.0046	0.5	0.0226	85,580	1,938	419,175	0.9838	4,856,062	56.7
10	5	0.0031	0.5	0.0154	83,641	1,289	412,405	0.9807	4,436,887	53.0
15	5	0.0040	0.5	0.0197	82,352	1,623	404,456	0.9714	4,024,482	48.9
20	5	0.0061	0.5	0.0296	80,729	2,386	392,906	0.9627	3,620,026	44.8
25	5	0.0079	0.5	0.0381	78,343	2,987	378,269	0.9512	3,227,120	41.2
30	5	0.0105	0.5	0.0501	75,355	3,772	359,803	0.9500	2,848,851	37.8
35	5	0.0105	0.5	0.0500	71,583	3,580	341,808	0.9431	2,489,048	34.8
40	5	0.0122	0.5	0.0577	68,004	3,927	322,346	0.9431	2,147,240	31.6
45	5	0.0120	0.5	0.0568	64,076	3,638	304,010	0.9353	1,824,894	28.5
50	5	0.0140	0.5	0.0657	60,438	3,968	284,334	0.9312	1,520,884	25.2
55	5	0.0147	0.5	0.0692	56,470	3,905	264,775	0.9262	1,236,550	21.9
60	5	0.0159	0.5	0.0744	52,565	3,911	245,223	0.9083	971,775	18.5
65	5	0.0205	0.5	0.0938	48,653	4,561	222,741	0.8651	726,552	14.9
70	5	0.0320	0.5	0.1399	44,092	6,169	192,700	0.8555	503,812	11.4
75	5	0.0334	0.5	0.1451	37,923	5,501	164,861	0.4701	311,112	8.2
80	+	0.0610	0.5	1.0000	32,422	32,422	146,251		146,251	4.5

Source: 2010 Census of Population and Housing

Table 2: Abridged Life Table for Males, Muchinga Province 2010

Age,	Width,	nMx	nax	nqx	lx	ndx	nLx	5Px	Tx	ex
0	1	0.0994	0.3	0.0929	100,000	9,293	93,495	0.8655	4,973,185	49.7
1	4	0.0193	0.4	0.0721	90,707	6,544	339,268	0.9499	4,879,691	53.8
5	5	0.0053	0.5	0.0257	84,163	2,161	411,089	0.9839	4,540,422	53.9
10	5	0.0030	0.5	0.0150	82,002	1,227	404,488	0.9808	4,129,334	50.4
15	5	0.0040	0.5	0.0196	80,775	1,586	396,739	0.9667	3,724,846	46.1
20	5	0.0072	0.5	0.0348	79,189	2,757	383,538	0.9584	3,328,107	42.0
25	5	0.0088	0.5	0.0424	76,432	3,239	367,583	0.9468	2,944,569	38.5
30	5	0.0114	0.5	0.0544	73,193	3,985	348,032	0.9425	2,576,987	35.2
35	5	0.0122	0.5	0.0579	69,208	4,005	328,019	0.9316	2,228,954	32.2
40	5	0.0148	0.5	0.0696	65,203	4,538	305,598	0.9262	1,900,935	29.2
45	5	0.0159	0.5	0.0743	60,666	4,506	283,052	0.9175	1,595,337	26.3
50	5	0.0181	0.5	0.0835	56,160	4,690	259,694	0.9145	1,312,285	23.4
55	5	0.0186	0.5	0.0857	51,470	4,411	237,499	0.8927	1,052,591	20.5
60	5	0.0244	0.5	0.1099	47,059	5,174	212,013	0.8954	815,092	17.3
65	5	0.0229	0.5	0.1040	41,885	4,355	189,828	0.8470	603,079	14.4
70	5	0.0371	0.5	0.1591	37,530	5,970	160,785	0.8405	413,251	11.0
75	5	0.0373	0.5	0.1596	31,560	5,037	135,136	0.4647	252,466	8.0
80	+	0.0622	0.5	1.0000	26,523	26,523	117,330		117,330	4.4

Source: 2010 Census of Population and Housing

Table 3: Abridged Life Table for Females, Muchinga Province 2010

Age,	Width,	nMx	nax	nqx	lx	ndx	nLx	5Px	Tx	ex
0	1	0.0792	0.3	0.0751	100,000	7,507	94,745	0.8897	5,629,210	56.3
1	4	0.0157	0.4	0.0596	92,493	5,514	350,121	0.9603	5,534,464	59.8
5	5	0.0040	0.5	0.0196	86,979	1,705	427,224	0.9838	5,184,343	59.6
10	5	0.0032	0.5	0.0158	85,274	1,345	420,320	0.9806	4,757,119	55.8
15	5	0.0040	0.5	0.0198	83,929	1,661	412,175	0.9752	4,336,799	51.7
20	5	0.0052	0.5	0.0254	82,269	2,091	401,936	0.9663	3,924,624	47.7
25	5	0.0072	0.5	0.0347	80,178	2,779	388,385	0.9553	3,522,688	43.9
30	5	0.0096	0.5	0.0458	77,399	3,547	371,033	0.9582	3,134,303	40.5
35	5	0.0086	0.5	0.0414	73,852	3,056	355,507	0.9548	2,763,271	37.4
40	5	0.0095	0.5	0.0456	70,796	3,230	339,443	0.9595	2,407,764	34.0
45	5	0.0083	0.5	0.0400	67,566	2,700	325,680	0.9519	2,068,320	30.6
50	5	0.0103	0.5	0.0490	64,866	3,180	310,018	0.9467	1,742,640	26.9
55	5	0.0113	0.5	0.0538	61,686	3,317	293,501	0.9528	1,432,622	23.2
60	5	0.0097	0.5	0.0464	58,369	2,709	279,650	0.9184	1,139,121	19.5
65	5	0.0186	0.5	0.0857	55,659	4,768	256,840	0.8819	859,470	15.4
70	5	0.0274	0.5	0.1221	50,891	6,212	226,504	0.8719	602,630	11.8
75	5	0.0292	0.5	0.1289	44,680	5,760	197,479	0.4750	376,127	8.4
80	+	0.0598	0.5	1.0000	38,920	38,920	178,648		178,648	4.6

Source: 2010 Census of Population and Housing

Table 4: Abridged Life Table Muchinga Province Rural - Both Sexes, 2010

Age,	Width,	nMx	nax	nqx	lx	ndx	nLx	5Px	Tx	ex
0	1	0.0928	0.3	0.0871	100,000	8,710	93,903	0.8734	5,375,845	53.8
1	4	0.0181	0.4	0.0680	91,290	6,211	342,801	0.9537	5,281,942	57.9
5	5	0.0048	0.5	0.0233	85,079	1,982	416,477	0.9838	4,939,141	58.1
10	5	0.0031	0.5	0.0154	83,097	1,278	409,733	0.9802	4,522,664	54.4
15	5	0.0041	0.5	0.0203	81,819	1,664	401,605	0.9732	4,112,931	50.3
20	5	0.0057	0.5	0.0276	80,155	2,209	390,834	0.9645	3,711,326	46.3
25	5	0.0075	0.5	0.0364	77,946	2,838	376,958	0.9566	3,320,492	42.6
30	5	0.0092	0.5	0.0442	75,108	3,322	360,590	0.9567	2,943,534	39.2
35	5	0.0090	0.5	0.0432	71,786	3,102	344,971	0.9493	2,582,944	36.0
40	5	0.0108	0.5	0.0516	68,684	3,543	327,477	0.9502	2,237,973	32.6
45	5	0.0104	0.5	0.0496	65,141	3,231	311,167	0.9403	1,910,496	29.3
50	5	0.0129	0.5	0.0608	61,910	3,766	292,604	0.9394	1,599,329	25.8
55	5	0.0128	0.5	0.0606	58,144	3,521	274,876	0.9337	1,306,725	22.5
60	5	0.0143	0.5	0.0670	54,623	3,660	256,646	0.9192	1,031,849	18.9
65	5	0.0178	0.5	0.0824	50,963	4,201	235,912	0.8683	775,203	15.2
70	5	0.0314	0.5	0.1377	46,762	6,438	204,839	0.8621	539,292	11.5
75	5	0.0315	0.5	0.1379	40,324	5,562	176,593	0.4720	334,453	8.3
80	+	0.0567	0.5	1.0000	34,762	34,762	157,860		157,860	4.5

Source: 2010 Census of Population and Housing

Table 5: Abridged Life Table Muchinga Province Urban - Both Sexes, 2010

Age,	Width,	nMx	nax	nqx	lx	ndx	nLx	5Px	Tx	ex
0	1	0.0686	0.3	0.0654	100,000	6,544	95,419	0.9023	4,985,885	49.9
1	4	0.0141	0.4	0.0537	93,456	5,023	355,739	0.9633	4,890,467	52.3
5	5	0.0039	0.5	0.0190	88,433	1,680	434,602	0.9844	4,534,727	51.3
10	5	0.0031	0.5	0.0152	86,752	1,322	427,811	0.9831	4,100,125	47.3
15	5	0.0035	0.5	0.0170	85,430	1,456	420,600	0.9649	3,672,314	43.0
20	5	0.0077	0.5	0.0371	83,974	3,119	405,835	0.9560	3,251,713	38.7
25	5	0.0093	0.5	0.0447	80,855	3,618	387,995	0.9311	2,845,878	35.2
30	5	0.0153	0.5	0.0717	77,237	5,539	361,262	0.9255	2,457,883	31.8
35	5	0.0160	0.5	0.0748	71,699	5,366	334,347	0.9144	2,096,621	29.2
40	5	0.0189	0.5	0.0869	66,333	5,764	305,726	0.9059	1,762,274	26.6
45	5	0.0208	0.5	0.0950	60,569	5,755	276,945	0.9076	1,456,548	24.0
50	5	0.0201	0.5	0.0921	54,813	5,049	251,348	0.8910	1,179,603	21.5
55	5	0.0247	0.5	0.1111	49,765	5,529	223,942	0.8795	928,255	18.7
60	5	0.0273	0.5	0.1216	44,235	5,381	196,964	0.8357	704,313	15.9
65	5	0.0400	0.5	0.1697	38,855	6,592	164,610	0.8406	507,349	13.1
70	5	0.0369	0.5	0.1581	32,263	5,100	138,364	0.8005	342,739	10.6
75	5	0.0503	0.5	0.2049	27,163	5,566	110,767	0.4580	204,375	7.5
80	+	0.0947	0.5	1.0000	21,597	21,597	93,608		93,608	4.3

Source: 2010 Census of Population and Housing

References

1980, 1990 and 2000 Census of Population and Housing Reports -Central Statistical Office, Zambia

2002 Uganda Population And Housing Census – Uganda Bureau of Statistics

Central Statistical Office (2011), Living conditions Monitoring Survey Report 2006 and 2010

Central Statistical Office: 2000 Census of Population and Housing, Volume 10;

Hill, K., Stanton, C., Gupta, N., Measuring maternal mortality from a census: Guidelines for potential users, in Measure Evaluation Manual Series 2001, University of North Carolina, Carolina Population Center: Chapel Hill, North Carolina, USA.

Lucas D. and Meyer P. (1994): Beginning Population Studies, second edition; Australian Center for Development Studies.

Ministry of Finance and National Planning, Annual Economic Report, 2010

Nsemukila, B.G., Phiri, D.S., Diallo, H.M., Banda, S.K., Benaya, W.K., Kitahara, N., A study of factors associated with maternal mortality in Zambia, 1998: Lusaka, Zambia.

Preston H.S. et al. (2001), Demography measuring and modeling population processes. Blackwell publishing. United Kingdom

Shryock H.S., Siegal J.S and Associates 1976,2004): The Methods and Materials of Demography condensed Edition; Academic Press Inc, New York,

Shryock, H.S., Siegel, J.S., The Methods and Materials of Demography. Vol. Fourth. 1980, Washington D.C: US Bureau of the Census.

Srinivasan K. (1997): Basic demographic Techniques and Applications; sage Publications, New Delhi

UNICEF, Levels and Trends in Child Mortality, Report 2011, 2011, UNICEF: New York.

United Nations (1973): The Determinants and Consequences of Population Trends, Volume I

United Nations (2008), Principles and Recommendation for Population and Housing Censuses. Revision 2. New York

United Nations, Manual X: Indirect Techniques for Demographic Estimation, 1983, United Nations: New York.

United Nations, Principles and Recommendations for Population and Housing Censuses,, 2008: New York.

US Census Bureau, Population Analysis with Microcomputers, 1994: Washington DC.

Weeks J.R. (2005): Population: An introduction to Concepts and Issues; Wadsworth, Cengage Learning, Canada

WHO,UNICEF, UNFPA & The World Bank, Trends in Maternal Mortality: 1990 to 2010, 2012: Geneva.

World Health Organization (2010), Trends in Maternal Mortality: 1990 to 2008. WHO Library Cataloguing-in-Publication Data

Jacob S. Siegel and David A Swanson (2004), The Methods and Materials of Demography 2nd Edition, Elsevier Academic Press, London, United Kingdom

Altman BM and Barnartt SN, eds, 2006. International views on disability measures: moving toward comparative measurement. Oxford: Elesevier, 42-54.

Central Statistical Office, 2005. 2000 Census of Population and Housing, Volume 10

Uganda Bureau of Statistics, 2006. The 2002 Population and Housing Census, Analytical Report, Abridged Version. Kampala, 136-139.

WHO, 2011.World report on disability.Geneva: WHO Press, 21-47. (http://www.who.int/entity/disabilities/world_report/2011/report/en/ pdf, accessed 3 February 2011)

2010 CENSUS OF POPULATION AND HOUSING QUESTIONNAIRE

REPUBLIC OF ZAMBIA

2010 CENSUS OF POPULATION AND HOUSING

CENTRAL STATISTICAL OFFICE

M-6193

IDENTIFICATION

Province [0-9]

District [0-9][0-9][0-9]

Consti-tuency [0-9][0-9]

Ward [0-9][0-9][0-9]

Region: Rural 1 / Urban 2

CSA No. [0-9]...

SEA No. [0-9]...

Census Building No. (CBN) [0-9]...

Housing Unit No. (HUN)

Household No. (HHN)

Village/ Locality Name

Residential Address

Chief's Area

INTERVIEW STATUS

- Completed (occupied) [1]
- Non-contact (occupied) [2]
- Not interviewed (vacant) [3]
- Non residential [4]
- Refused [5]
- Other [6]

MARK HERE IF MORE THAN ONE QUESTIONNAIRE [1]

Questionnaire ☐ of ☐

SECTION P - QUESTIONS ON POPULATION FOR ALL MEMBERS OF THE HOUSEHOLD

P1 NAMES of usual residents and visitors	P2 Membership status?	P3 What is (NAME'S) relationship to the head of household?	P4 Is (NAME) male or female?	P5 How old was (NAME) at his/her last birthday?	P6 PLACE OF BIRTH Where was (NAME) born?	P7 Was this part of the district rural or urban at the time of birth?	P8 Is (NAME) Zambian?	P9 If non-Zambian, code here then write name of country	P10 What is the main purpose of your stay in Zambia?	P11 What is (NAME'S) religion?

P2 Membership status: Usual member Present [1], Usual member Absent [2], Visitor [3]

P3 Relationship: Head of Household [1], Spouse [2], Own Son/Daughter [3], Step Son/Daughter [4], Parent [5], Brother/Sister [6], Nephew/Niece [7], Son/Daughter-in-Law [8], Grandchild [9], Parent-in-Law [10], Cousin [11], Other Relative [12], Unrelated [13]

P4 Sex: Male [1], Female [2]

P5: In Years — If less than 1 year enter "00"

P6: Write District/Country name then code

P7: Rural [1], Urban [2], Outside Zambia [3]

P8/P9: If Zambian, code here then skip to P11 → [1]; If non-Zambian, code here then write name of country → [2]

P10 Main purpose of stay: Employment [1], Family formation/reunification [2], Education/training [3], Settlement [4], Refugee/Asylum [5], Investor [6], Tourist [7], Other [8]

P11 Religion: Catholic [1], Protestant [2], Muslim [3], Hindu [4], Buddist [5], Bahai faith [6], Other [7], None [8]

Rows [1] through [8]

ENUMERATOR Name _____ Date _____

SUPERVISOR Name _____ Date _____

CONFIDENTIAL. The Census is being conducted under the Census & Statistics Act, CAP127 of the laws of Zambia. The information will be strictly confidential and used for statistical purposes only.

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99080946 (82)

M 6193

HOUSEHOLD SUMMARY COUNT

Usual members present		Usual members absent		Visitors	
Male	☐	Male	☐	Male	☐
Female	☐	Female	☐	Female	☐
Total	☐	Total	☐	Total	☐

INSTITUTIONAL

Type of Collective Quarters

Hotel/Motel/Lodge [1]	Police Cell [6]
Hostel/Guest House/Inn [2]	Refugee Camp [7]
Hospital [3]	Other [8] (specify below)
Learning Institution [4]	
Prison [5]	

Summary Count

Male	☐ ☐
Female	☐ ☐
Total	☐ ☐

FOR ALL MEMBERS PRESENT

Person Number: [1] [2] [3] [4] [5] [6] [7] [8]

P12 What is (NAME'S) ethnicity? — *Write and record code for ethnicity*

P13 What is (NAME'S) predominant language of communication? — *Write name of predominant language then code*

P14 Where was (NAME) residing in October 2009? — *Record code for district or code for foreign country*

P15 How long has (NAME) been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)? — YEARS / MONTHS — *Same as Head of Household*

P16 Is (NAME) disabled in any way? Yes [1] / No [2] → Go to P19

P17 What is (NAME'S) disability? *Mark all those that apply*
Blind [1], Partially sighted [2], Deaf [3], Deaf and Dumb [4], Hard of hearing [5], Dumb [6], Mental illness [7], Speech impairment [8], Intellectual [9], Physically disabled [10], Mentally retarded [11], Other [12]

P18 What is the cause of (NAME'S) disability? *Mark all those that apply*
Congenital/pre-natal [1], Disease/Illness [2], Injury/Accident [3], Spousal violence [4], Other violence [5], Unknown [6], Other [7]

P19 Is (NAME) an albino? Yes [1] / No [2]

ONLY FOR PERSONS LESS THAN 18 YEARS OLD

P20 Is (NAME'S) biological mother alive? Yes [1] / No [2] → Go to P22 / Don't know [8]

P21 Does (NAME'S) biological mother live in this household? Yes [1] / No [2]

P22 Is (NAME'S) biological father alive? Yes [1] / No [2] → Go to P24 / Don't know [8]

P23 Does (NAME'S) biological father live in this household? Yes [1] / No [2]

P24 Does (NAME) have a birth certificate? Yes seen [1] / Yes not seen [2] / No [3] / Don't know [8]

ONLY FOR PERSONS AGED 5 YEARS AND OLDER

P25 Can (NAME) read and write in any language? Yes [1] / No [2]

P26 Has (NAME) ever attended school? Yes [1] → Go to P29 / No [2]

P27 Is (NAME) currently attending school? Yes [1] / No [2]

P28 What highest level of education has (NAME) completed? — *Enter code from manual* — ☐☐

ONLY FOR PERSONS AGED 5 YEARS AND OLDER

P29 What is the highest professional or vocational qualification (NAME) has completed?

	None	Certificate	Diploma	Bachelors Degree	Masters Degree	PhD
	[1]	[2]	[3]	[4]	[5]	[6]

P30 What is the field of study for the highest professional or vocational qualification completed?

Write field of study and enter code.

ONLY FOR PERSONS AGED 12 YEARS OR OLDER

P31 What did (NAME) do in the last 7 days?

Worked - Paid non seasonal [1]
Worked - Unpaid non seasonal [2]
Worked - Paid seasonal [3]
Worked - Unpaid seasonal [4]
On leave [5]
Unpaid work on household holding or business [6]
Unemployed and seeking work [7]
Not seeking work but available for work [8]
Full time housewife/homemaker [9]
Full time student [10]
Not available for work for other reasons [11]

P32 What did (NAME) do in the last 12 months?

Worked - Paid non seasonal [1]
Worked - Unpaid non seasonal [2]
Worked - Paid seasonal [3]
Worked - Unpaid seasonal [4]
On leave [5]
Unpaid work on household holding or business [6]
Unemployed and seeking work [7]
Not seeking work but available for work [8]
Full time housewife/homemaker [9]
Full time student [10]
Not available for work for other reasons [11] → Go to P36

P33 What was (NAME'S) employment status in the last 12 months?

An employer [1]
An employee [2]
Self employed [3]
An unpaid family worker [4]

P34 What kind of work did (NAME) do in his/her main job or business during the last 12 months?

Write main occupation and enter code.

ONLY FOR PERSONS AGED 12 YEARS AND OLDER

P35 What kind of business/service was mainly carried out by (NAME'S) employer/establishment/business in the last 12 months?

Write name of industry and enter code.

P36 What is (NAME'S) marital status?

Never married [1] → Go to P38
Married [2]
Divorced [3]
Separated [4]
Widowed [5]
Cohabiting [6]

P37 How old was (NAME) when he/she first got married or started cohabiting?

Age at first marriage

FEMALES 12 YEARS AND OLDER

P38 Have you ever had a live birth (including babies who died after birth)?

Yes [1]
No [2] → Go to P46

Of the children born to you alive how many are....?

P39 Living with you now? Male | Female

P40 Living elsewhere? Male | Female

P41 Dead? Male | Female

FEMALES 12 - 49 YEARS OLD

P42 Did you have any live births in the last 12 months?

Yes [1]
No [2] → Go to P46

Of the children born to you alive in the last 12 months how many are....?

P43 Living with you now? Male | Female

P44 Living elsewhere? Male | Female

P45 Dead? Male | Female

PERSONS 16 YEARS+

P46 Do you have a Zambian National Registration card?

Yes [1]
No [2]

P47 Are you a registered Green National voter?

Yes [1]
No [2]

Person Number: [1] [2] [3] [4] [5] [6] [7] [8]

ENUMERATOR: GO TO THE NEXT PAGE TO CONTINUE WITH THE LIST OF THE HOUSEHOLD'S MEMBERS. IF THE PERSON IS THE LAST MEMBER OF THE HOUSEHOLD, PROCEED TO SECTION D

SECTION H – HOUSING CHARACTERISTICS

H1 Type of housing unit

Traditional	[1]
Improved traditional	[2]
Mixed	[3]
Conventional flat	[4]
Conventional house	[5]
Mobile	[6]
Part of commercial building	[7]
Improvised/Makeshift	[8]
Collective/Institutional quarters	[9]
Uninhabited	[10]
Other	[96]

H2 What is the main type of material used for the roof?

Thatch/Palm Leaf	[1]
Rustic Mat	[2]
Palm/Bamboo	[3]
Wood Planks	[4]
Cardboard	[5]
Metal/Iron Sheets	[6]
Wood	[7]
Asbestos	[8]
Ceramic Tiles/Harvey Tiles	[9]
Cement	[10]
Roofing Shingles	[11]
Mud Tiles	[12]
Other	[96]

H3 What are the walls of this housing unit mainly made of?

Burnt bricks	[1]
Mud bricks	[2]
Compressed mud	[3]
Compressed cement bricks	[4]
Concrete blocks/slab	[5]
Cement blocks	[6]
Stone	[7]
Iron sheets	[8]
Asbestos/hardboard/wood	[9]
Pole and dagga/mud	[10]
Grass	[11]
Other	[96]

H4 What is the floor of this housing unit mainly made of?

Concrete	[1]
Cement	[2]
Brick	[3]
Tiles	[4]
Mud	[5]
Wood (not wooden tiles)	[6]
Marble	[7]
Terrazzo	[8]
Other	[96]

H5 Type of Occupancy?

Single household	[1] → H7
One household in several housing units	[2]
Shared	[3]
Vacant	[4] → End
Non-contact	[5]
Non-residential	[6]

H6 (If shared) what is the number of households? ☐

H7 What is the main source of water supply for...

	Household use	Drinking
Piped water inside the housing unit	[1]	[1]
Piped water outside housing unit within stand/plot	[2]	[2]
Communal tap	[3]	[3]
Protected well	[4]	[4]
Protected borehole	[5]	[5]
Unprotected well	[6]	[6]
Unprotected borehole	[7]	[7]
River/Dam/Stream	[8]	[8]
Rain Water Tank	[9]	[9]
Other tap	[10]	[10]
Water Kiosk	[11]	[11]
Water Vendor	[12]	[12]
Mineral/bottled water	[13]	[13]
Other	[96]	[96]

H8 How many living rooms and bedrooms does this housing unit have?
LIVING ☐ ☐
BEDROOMS ☐ ☐

H9 How many persons usually sleep in the housing unit(s)? ☐ ☐

H10 Does this housing unit have a kitchen?
Yes [1] No [2]

SECTION HH – HOUSEHOLD CHARACTERISTICS

HH1 What is the main source of energy used for...

	Light-ing	Cook-ing	Heat-ing
Electricity	[1]	[1]	[1]
Gas	[2]	[2]	[2]
Wood	[3]	[3]	[3]
Candle	[4]	[4]	[4]
Paraffin	[5]	[5]	[5]
Cowdung	[6]	[6]	[6]
Charcoal	[7]	[7]	[7]
Coal	[8]	[8]	[8]
Solar	[9]	[9]	[9]
Bio fuel	[10]	[10]	[10]
Diesel	[11]	[11]	[11]
None	[12]	[12]	[12]
Other	[96]	[96]	[96]

HH2 Does your household have?

	Yes	No
A Radio	[1]	[2]
A Television	[1]	[2]
A Refrigerator/freezer	[1]	[2]
A Telephone	[1]	[2]
A Bicycle	[1]	[2]
A Motor vehicle	[1]	[2]
An Internet facility	[1]	[2]
A Computer/Laptop	[1]	[2]
A Motorcycle	[1]	[2]
A Plough	[1]	[2]
A Boat/Canoe	[1]	[2]
A Scotch Cart	[1]	[2]
A Donkey	[1]	[2]
A Mobile Phone	[1]	[2]
Oxen	[1]	[2]
A Wheelbarrow	[1]	[2]

HH3 How is the household refuse disposed?

Regularly collected	[1]
Irregularly collected	[2]
Burnt	[3]
Roadside dumping	[4]
Other dumping	[5]
Burying/pit	[6]
Other	[7]

HH4 What is the main type of toilet used by members of this household?

Flush Private connected to water sewer system	[1]
Flush Private connected to stand alone soak away	[2]
Flush Communal	[3]
Pit Latrine	[4]
Ventilated Improved Pit Latrine (VIP)	[5]
Bucket	[6]
Other	[7]
No toilet facility	[8] → HH7

HH5 Is this toilet inside or outside this housing unit?
Inside [1] Outside [2]

HH6 Is this toilet exclusively used by members of this household?
Yes [1] No [2]

HH7 Is this housing unit owned by any member of this household?
Yes [1] No [2] → HH9

HH8 How was this housing unit acquired?

Purchased	[1]
Mortgage	[2]
Freely	[3]
Inherited	[4]
Self built	[5]
Other	[6] → A1

HH9 Is this housing unit provided free by the employer, friend or relative of any member of this household?

Yes, Employer	[1] → HH11
Yes, By friend or relative	[2] → A1
No	[3]

HH10 Is this housing unit rented from the employer of any member of this household?
Yes [1] No [2] → HH12

HH11 Is this employer ...

The Central Government?	[1]
The Local Government?	[2]
Parastatal?	[3]
A private Organisation?	[4]
An individual?	[5]
	All skip to A1

HH12 Is this housing unit rented from ...

The Central Government?	[1]
The Local Government?	[2]
Parastatal?	[3]
A private Organisation?	[4]
An individual?	[5] → HH7

SECTION A – AGRICULTURE

A1 Has your household engaged directly in any of the following agricultural activities, that is: crop growing, livestock and poultry raising, fish farming and game ranching since 1st October 2009?
Yes [1] No [2] → M1

A2 On your holding, which of the following crops did you grow since 1st October 2009?

	Yes	No		Yes	No
Maize	[1]	[2]	Virginia tobacco	[1]	[2]
Sorghum	[1]	[2]	Sunflower	[1]	[2]
Millet	[1]	[2]	Soya beans	[1]	[2]
Rice	[1]	[2]	Paprika	[1]	[2]
Cassava	[1]	[2]	Sugar cane	[1]	[2]
Sweet potatoes	[1]	[2]	Cashew Nuts	[1]	[2]
Irish potatoes	[1]	[2]	Vegetables	[1]	[2]
Groundnuts	[1]	[2]	Orchard	[1]	[2]
Mixed beans	[1]	[2]	Coffee	[1]	[2]
Cow peas	[1]	[2]	Velvet beans	[1]	[2]
Wheat	[1]	[2]	Bambara nuts	[1]	[2]
Cotton	[1]	[2]	Pineapple	[1]	[2]
Burley tobacco	[1]	[2]	Other crop	[1]	[2]

A3 On your holding, which of the following livestock/poultry have you raised since 1st October 2009?

	Yes	No
Cattle	[1]	[2]
Goats	[1]	[2]
Pigs	[1]	[2]
Sheep	[1]	[2]
Donkeys	[1]	[2]
Chickens	[1]	[2]
Other Poultry	[1]	[2]
Other Livestock	[1]	[2]

A4 Has your agriculture holding included fish farming since 1st October 2009?
Yes [1] No [2]

A5 Has your agriculture holding included game ranching since 1st October 2009?
Yes [1] No [2]

SECTION M: GENERAL AND MATERNAL DEATHS

Please record information on the deaths that occurred in the household during the last 12 months.
Do not forget the children.

M1 Is there any member of the household who died since October 2009?
Yes [1] No [2] → End

If death of Woman aged 12-49

Death Number	M2 What was the sex of the deceased?		M3 What was the age of the deceased? Age in completed years. (Record 00 if less than 1 year)	M4 What was the cause of death?								M5 Did the death occur while pregnant?	M6 Did the death occur during childbirth?	M7 Did the death occur during the 6 weeks period following the end of pregnancy, irrespective of the way the pregnancy ended?
	Male	Female		Accident Injury	Suicide	Spousal Violence	Other Violence	Sickness/Disease	Witchcraft	Other				
[1]	[1]	[2]	☐☐	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Yes [1] → End / No [2]	Yes [1] → End / No [2]	Yes [1] / No [2]
[2]	[1]	[2]	☐☐	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Yes [1] → End / No [2]	Yes [1] → End / No [2]	Yes [1] / No [2]
[3]	[1]	[2]	☐☐	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Yes [1] → End / No [2]	Yes [1] → End / No [2]	Yes [1] / No [2]
[4]	[1]	[2]	☐☐	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Yes [1] → End / No [2]	Yes [1] → End / No [2]	Yes [1] / No [2]
[5]	[1]	[2]	☐☐	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Yes [1] → End / No [2]	Yes [1] → End / No [2]	Yes [1] / No [2]
[6]	[1]	[2]	☐☐	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Yes [1] → End / No [2]	Yes [1] → End / No [2]	Yes [1] / No [2]

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