I declare that POVERTY AND ENVIRONMENT: A CASE STUDY OF STONE CRUSHING AS A SUSTAINABLE LIVELIHOOD IN LUSAKA is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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SIGNATURE                              DATE
(MISS M E NYUMBU)
POVERTY AND ENVIRONMENT: A CASE STUDY OF STONE CRUSHING AS A SUSTAINABLE LIVELIHOOD IN LUSAKA

by

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Mutande Elizabeth Nyumbu

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June, 2013.
Abstract

Poverty and the environment are closely linked, as people use environmental resources to support livelihoods. Illegal stone quarrying evident in Lusaka, Zambia is symbolic of the use of environmental resources by the poor. Stone crushing provides income yet it is characterized by land degradation, large-scale excavation and dumping of waste materials. This study provides an analytical account of stone crushing as a livelihood in Lusaka and makes recommendations for improving the livelihoods of stone crushers to become sustainable. Using a livelihoods approach, a qualitative study collected data from various role players in Lusaka. Assets (physical, natural, human, social and political capital) for stone crushers were assessed, revealing that stone crushers lack livelihood assets, key options and are exposed to various shocks due to seasonal shifts. Increasing access to key livelihood assets, reducing vulnerability, improving infrastructure, access to justice and tackling social exclusion and gender inequality will enhance their livelihoods.
**Key terms:**

Poverty

Environment

Urban

Livelihood

Sustainable livelihood

Livelihood assets

Stone crushing
Acronyms

DFID - Department for International Development
UNFPA - United Nations Population Fund
IFAD - International Fund for Agricultural Development
WFP - World Food Programme
WDC - Ward Development Committee
FAO - Food and Agriculture Organisation
UNDP - United Nations Development Programme
CARE - Cooperative for Assistance and Relief,
OXFAM - Oxford Committee for Famine Relief
PRA - Participatory Research and Action
SADC - Southern African Development Community
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CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

The Zambian government defines poverty as “lack of access to income, employment opportunities, normal internal entitlements by the citizens to such things as freely determined consumption of goods and services, shelter and other basic needs that include education” (Zambia 1998 b: 25). For the purpose of this dissertation, this definition falls short as it gives a blanket description of normal entitlements by highlighting only basic needs and it does not touch on community participation, decision making, productive resources, the environment and sustainable livelihoods.

Poverty is also defined by the Department for International Development (DFID,2002:10,12) as deprivation in the most essential capabilities of life, including leading a long and healthy life, being knowledgeable, having adequate economic provisioning and participating fully in the life of the community, and is seen as a multidimensional, dynamic, complex, institutionally – embedded, and a gender and location specific phenomenon. This definition too falls short to fit in the dissertation because it gives a blanket description of essential capabilities and does not locate the environment and sustainable livelihoods.

Poverty as a concept may be defined by different people and organizations in a varied manner depending on the subject being focused on, however, the definitions tend to have overlapping meanings. For the purpose of this dissertation, the following definition by the World Summit for Social Development in Copenhagen 1995 is being adopted as its definition is closely linked to this research on stone crushing.

The World Summit defined poverty as:

A lack of income and productive resources sufficient to ensure sustainable livelihoods, hunger and malnutrition, ill health, limited or lack of access to education and other basic services; increased morbidity and mortality from illness; homelessness and inadequate housing; unsafe environments; and social discrimination and exclusion. It is also characterized by a lack of participation in decision making and in civil, social and cultural life – Article 19 (Beck & Hungler 2002: 5). This definition has been
adopted as it fits well in the research and therefore guides the areas to be probed in this urban context.

The environment is an important aspect of this study and it is defined by Hawkins, Belahunty and MacDonald (2002: 215) as “surroundings especially as they affect people’s lives. It is the natural world of land, sea and air.” These are the physical surroundings, conditions, circumstances etc in which a person lives especially as affected by human activity. Human beings interact with the environment and poor people are not an exception. People not only interact with the environment but earn livelihoods from the environment too. Poor people may also use environmental resources in their quest to make their livelihoods sustainable.

“A livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local, global levels and in the short term and long term” (Chambers and Conway, 1992:7). People pursue livelihoods whether they live in rural or urban areas. Both rural and urban populations can only survive if and when they have sustainable livelihoods.

The United Nations observes that poverty is growing faster in urban than rural areas. At least “one billion people live in urban slums which are typically overcrowded, polluted and dangerous, and lack basic services such as water and sanitation” (UNFPA, 2010: 2). Most of these people lack capacity to pay for the services available in the urban set up.

It is important to define the word urban in order to give a picture of the environment the poor stone crushers live and operate in. According to Simons, Seymour, Martin and Muller (1976:3) the word urban is taken to mean “a fairly close settlement of at least 20,000 people who do not grow their own food but live by working in industry, commerce, domestic service and other kinds of non farming activities.” This definition is amplified by Zambia (2008a:11) which states that “the main economic activity of the population must be non agricultural such as wage employment. In addition, the area must have basic modern facilities such as piped water, tarred roads, post office, police station, health centre, bank etc.” It is clear from these definitions that the urban set up is a cash demanding environment in which goods and services are provided on the basis
of cash. Poverty, therefore, makes them live in poor environments thus the link between poverty and the environment.

As an issue of livelihoods, discussion on the urban environment begins with basic natural resources: water, land and air and then includes broad considerations of the social, political and economic dimensions of urbanization in Zambia. Livelihoods consist of the capabilities, the assets - both material and social resources and the activities required for a means of living’’ (FAO 2008:5).

At national level ensuring physical environmental sustainability has proved to be a big problem. According to a report by the Post, Zambia’s forests continue to be under pressure due to wood harvesting for charcoal and clearance for agriculture and human settlement. Before the year 2005, the rate of deforestation is quoted to have been 30,000 hectares per annum, but by 2005 it became 80,000 hectares per annum. At this rate, Zambia risks having her forests wiped out in the next two decades unless drastic measures are taken (Mvula 2005:4). This deforestation entails loss of timber, charcoal, good agricultural land, wild fruits, mushrooms, wild animals, herbs and many other forest products which either act as sources of income or support livelihoods of people in various ways.

The deterioration of natural resources impoverishes poor people who depend on them. Some of the poor people who migrate to urban areas with the hope of getting a job to better their livelihoods face challenges as they fail to get jobs. However, survival for children, female headed households, widows and orphans becomes more difficult and many have to struggle to get food.

‘’The majority of the people suffer from weak purchasing power, homelessness and insufficient access to basic social services and necessities such as education, health, food and clean water’’ (Saasa and Carlsson 2002:27). Moreover the areas to which the poor can gain access seem to be the riskiest for health and income generation due to lack of water and sanitation infrastructure. While those who migrate from rural to urban areas get caught up in poverty situations further, they also meet urban families that are also impoverished and are moving from low cost residential urban areas to unplanned settlements as employment and wages deteriorate. Therefore, they find themselves competing for space and resources with those that are already established in urban areas but are adjusting their life styles due to economic hardships.
In addition, unemployment and deteriorating incomes hit the urban population in a strong way such that poor people are forced to employ survival strategies, some of which encroach further on the environment. With little or no relevant skills for the urban labour demands, the poor people resort to harvesting environmental goods in order support their livelihoods. At local level in Lusaka a booming expansion of small scale quarries in the urban periphery most of which are spontaneous in nature can be seen as poor people crush stones to sell and earn some income. These people live in unplanned settlements where basic services to support human survival are either lacking or non-existent, thus exposing this group of people to appalling environmental conditions.

This relationship between poverty and environmental conditions is amplified by Rowson (2010:2) who observed that “most of the illnesses associated with poverty are infectious diseases such as diarrhoea, malaria and tuberculosis. All of which are associated with lack of income, clean water and sanitation, food, and access to medical services and education which are characteristics of poor countries and communities.” Rowson (2010:3) pointed out that “the poverty experienced by the urban poor is hardly surprising given the number of people in the world who survive on meagre incomes.”

Rowson’s study reveals that there is a two way relationship between poverty and health, as disease often impoverishes the poor. Illness either prevents people from working or affects their productivity and thus lowering their income. The costs of obtaining health care both in terms of time off from work and in terms of money spent on services can also be substantial. Poverty is “a lack of income and productive resources sufficient to ensure sustainable livelihoods, hunger and malnutrition, ill health, limited or lack of access to education and other basic services, increased morbidity and mortality from illness, homelessness and inadequate housing, unsafe environments and social discrimination and exclusion” (United Nations Development Programme 2002:5).

The effects of poverty are not concentrated in one area or community or a particular rural or urban area in a particular country or continent but rather affect different communities in different countries and continents the world over. Therefore, poverty and its effects are a concern in most countries in the world. Poverty can be classified as a challenge for most leaders in the world, as the effects of poverty directly compromise development.
These effects of poverty in various countries have been observed to be widespread. This realization moved world leaders in the year 2000 to declare that “one of the Millennium Development Goals was to reduce the number of people living on less than $1 a day by the year 2015. To this effect in 2002 the World Summit on Sustainable Development in Johannesburg declared poverty the greatest global challenge of the time” (United Nations 2010:1). Therefore, global attention became focused on poverty and the livelihoods of the poor. The 2002 declaration acknowledged that poverty was compromising world development and therefore there was need to step up poverty reduction programmes.

In scaling up poverty reduction programmes to improve livelihoods, the United Nations in 2007 (2010:1) predicted that “most of the world’s urban growth, 95 per cent in the next two decades would be absorbed by cities in the developing world which were least equipped to deal with rapid urbanization. Globally, the slum population was set to grow at the rate of 27 million per year in the period 2000-2020.” The focus here shifted from rural to urban poverty after a realization that the urban population was also vulnerable especially those who were living in unplanned settlements of various cities. This meant that poverty was becoming an urban phenomenon too.

In Zambia, the rural poor can afford some food on the table which they grow in their fields or exchange for their labour. They are able to support their livelihoods from various environmental resources which are available, unlike the urban poor who live in environments where forests and water bodies have either been degraded or are no longer able to support livelihoods. The rural poor do not pay for water, toilet facilities, accommodation and while most of the urban poor need cash to access these services. Saluseki (2007) reported how the poor suffered from an urban penalty.

Saluseki (2007:7) pointed out that the United Nations’ 2006/7 report had broken new ground by showing that “the urban poor suffered from an urban penalty as the world’s one billion people who lived in unplanned settlements, were more likely to die earlier, experience more hunger and disease, attain less education and have fewer chances of employment than those urban residents that reside in planned settlements.” While the poor concentrate on earning income to bring food on the table, the people who live in planned settlements strive for access to better education, medical care, better food,
better jobs, better housing and many other good amenities available in the urban environment.

The urban poor are penalized by the harsh conditions that prevail in the urban environment. They cannot access good housing because renting a good house is costly and therefore out of reach for them. They are threatened by early death because it is very difficult to maintain good health while living in appalling conditions. This is made worse by lack of access to good medical care and sometimes no medical care at all when they are infected with disease. The poor have to surrender to nature to take control of their diseases in most cases. Since food is bought from markets and other suppliers of food, poor people experience hunger whenever they fail to buy food. Lack of income threatens not only the supply of food but even the type of food they can afford. The children a poor diet and a child who is hungry and unhealthy cannot do well in school.

Their situation is exacerbated by the education system which requires parents to meet certain basic payments for their children and provide school requirements which the school may not provide. These fees are high in higher grades resulting in more payments as a child progresses into higher grades. The poor have difficulty in sending their children to school to get educated and more so supporting their children up to higher grades. Therefore, these children attain less education and sometimes no education at all. This situation automatically disqualifies them from getting employment in the mainstream white collar job economy which demand standard levels of education attainment and qualifications.

Therefore, it can be concluded that less education reduces chances of employment which culminates into failure to earn a better income. Considering that the purchase of goods and services in the urban set up is controlled by money, it therefore entails that people with less income experience hunger, suffer from disease as a result of poor environment and are exposed to early death.

The focus on the role of cash in the lives of people is amplified by the Department for International Development which states that “people need access to cash, savings and credit in order to remain healthy and productive. Key assets are land and their houses, their capacity to sell their labour for money and the ability to participate in social networks. For poor people the high cost of living in urban areas, coupled with the need
for a secure income and asset base, can put additional pressures on their lives’’ (DFID, 2001:18). This additional pressure makes poor people attempt to get money by other means rather than formal employment which may not be available. They join the informal sector to get income and apply the minimum skills they have to survive the economic hardships.

Further analysis of urban poverty reveals that money is key in the purchase of food and non food items in the urban area. Considering the nature of poverty given above, urban poverty can be said to be complex. This introduction gives the basis on which the poverty situation in Zambia is discussed.

1.2 Background

It is worth stating that pre-colonial Zambia (before 1890) was characterized by subsistence farming and the people lived in villages and chiefdoms where skills which they developed were suitable for that environment. Commercial mining which was introduced during the colonial period (1890 and 1964) attracted mostly labour without specialised skills. Later as people began getting formal education they got white collar jobs both in the mining sector and other sectors of the economy. During this period some of the Zambian people attained formal education while most of them could not acquire any formal education at all. However, the colonial government had developed the mining sector and so post colonial Zambia (after 24th October, 1964) began running the country using resources mostly earned from the mining sector. Formal sector employment was becoming more attractive and with it came new demands for particular skills.

The economy which Zambia inherited was very strong at the time. Zambia (2007:2) ‘‘inherited a strong economy with the highest per capita income in Southern Africa at independence which was primarily based on mining. However, the economy began to deteriorate in the mid 1970s following a sharp decline in world copper prices compounded by the oil shock.’’ It was during this period that Government controlled most businesses in the economy while the private sector dwindled. Deterioration in economic activities resulted in an increased number of people losing formal employment. Unemployment led to the inability of many economically active people to have sustainable sources of livelihoods. The lack of sustainable livelihoods in turn
exposed many people to poverty since they had no money to purchase goods and services.

When people are poor and many have no income, they cannot contribute positively to the economy of their mother country either in terms of paying tax or offering specialised skills to develop their country. The Government has a duty to make her citizens viable not only for the purpose of their individual livelihoods but also for the positive development of the country as a whole. However, even though the government realised that many people needed to be supported to come out of the poverty trap it was not possible to create massive employment.

Therefore, the rising unemployment levels have made the size of the informal sector very large. This is exacerbated by low levels of education which “is still not high enough to build up the required level of human capital. Very few people have access to tertiary education” (Zambia: 2007:2). Women and youths are the most affected by poverty as they have limited access to land, other productive resources as well as employment opportunities in the formal sector. Since most of them have less education and lack the required skills for the labour market. While people in the rural areas exploit natural resources such as fish from lakes and rivers, honey from forests, grass from grasslands and land which they own, those in the urban areas burn trees to get charcoal for sale, mine sand and black soil for sale and mine stones and crush them for sale to earn a livelihood.

In Lusaka city in particular, there has been an expansion of small scale quarries in the urban periphery, most of which are spontaneous in nature. Hornby (2000:1035) defines a quarry as “a place where large amounts of stone etc. are dug out of the ground.” These small quarries being referred to in Lusaka are generally used for extracting building materials such as building stone. They are usually shallower than other types of open pit mines. These activities are prevalent in several compounds such as the compound along Alick Nkhata road; Kanyama compound along Mumbwa road; Misisi and John Laing compounds along Kafue road; and Bauleni compound along Leopards Hill road. This exploitation of environmental resources can be attributed to the harsh economic conditions that prevail in Zambia. In order to survive, many poor people have to employ livelihood strategies because of high levels of unemployment which are exacerbated by low incomes for those who are fortunate to get employed in the urban
areas. A livelihood strategy is “a collection of activities, assets and entitlements that allow a household to survive. Most livelihood strategies are based on a combination of some informal business activity, transfers from employed relatives, small scale agriculture and other odds on end” (Baumann 2004:13). In urban areas most poor people have no land to grow either food or cash crops therefore, they may depend on informal business activities and help from relatives and friends. This status of the poor has attracted the attention of both local and national authorities. Government has acknowledged that poverty has fuelled an increase in the number of people who are engaged in illegal stone crushing. Men, women usually with children on their backs, and school going children have resorted to this activity from which they earn a livelihood.

Kayaya (2009:7) reports that quarrying has become more serious as it is being done indiscriminately by some residents looking for means to earn a living. He cited the District Disaster Management Committee as having noted that many areas of Lusaka have been heavily quarried, creating deep depressions which are filled with water during the rainy season. The ponds in some of these areas do not drain and over a period of time, water becomes stagnant, creating health risks to residents. These health crises are evidenced by Kayaya in his study of quarrying where he states that “During the 2008/2009 rainy season, Lusaka recorded a total of 4,905 admissions of cholera. Out of this number 59 died at the cholera centres while 48 were brought in dead” (Kayaya, 2009:7). The seriousness of the situation made Government to come up with a Disaster Risk Reduction Intervention Programme, (DRR) as a proactive tool to reduce the adverse impact of disasters such as flooding and cholera in the district. However, this programme was not designed to address the root cause of quarries but rather the effect of these quarries which are dotted around the compounds.

Lipalile (2009) explained that “stone crushing around Kalingalinga compound has attracted the development of small scale quarries since the early 1990s. Stone crushing provides a number of jobs and a source of revenue from which people hope to improve their living standards, health, education, nutrition and shelter.” Groups of fathers, mothers and children crushing stones are a common sight around this compound. They are symbolic of the illegal quarrying for stones that is now so evident in dotted areas of the Lusaka city. Besides providing income to the stone crushers, land degradation, large excavation and dumping of waste materials are prominent.
1.3 Statement of the problem

Based on the points raised above on the problem, the focus of this study can be identified as follows:- In a country like Zambia, that is trying to reduce poverty among her citizens, promotion of sustainable livelihoods is of great importance. Stone quarrying and crushing is a crucial component of the socio-economic system in that it offers a form of livelihood to some people who cannot hope to get employment in the formal sector.

The quarrying activities do not only damage the environment but also fail to improve the lives of the stone crushers. Now we have what is called the working poor that cannot sustain their families because they earn low incomes. In addition, they depend on domestic natural resources which are being depleted and as such, threatening their source of livelihood. Through illegal quarrying activities in Lusaka, stone crushers have set up stone crushing sites where they crush the available stones and sell them to earn money to support their livelihoods.

Establishing the significance of stone crushing as a sustainable livelihood requires an exploration of the stone crushers’ livelihoods in order to learn about their situation. This research hopes to investigate the sustainability of the livelihoods of stone crushers. The study intends to give a descriptive analytical report on stone crushing as a sustainable livelihood. This is in order to describe the link between poverty and the urban environment from which stones are harvested and crushed by some poor people, in the quest to earn livelihoods. Stone crushing enterprises are small in scale, largely escaping the recognition, enumeration, regulation and government protection or support. The focus on this illegal stone crushing activity in the urban environment offers an opportunity not only to analyse and describe the links between poverty and stone crushing as a source of livelihood, but also to make recommendations for improving the livelihoods of stone crushers.

The environment here is being seen as directly linked to the survival of the poor who depend mostly on environmental resources for either consumption or production for sale. Addressing poverty among stone crushers is therefore necessarily a matter of improving their ability to derive livelihoods from more productive sustainable resources. By selecting some of the main themes common in the literature on the topic of poverty, environment and sustainable livelihoods, and discussing them in line with
stone crushers, the researcher will be able to provide information and insights which could be of interest to planners.

1.4 Primary and secondary objectives of the study

The primary objective of the study is to give a descriptive analysis of stone crushing as a sustainable livelihood in Lusaka and to make recommendations for improving the livelihoods of stone crushers. In order to meet the primary objective, the secondary objectives are:-

1. To provide an overview of the literature relating to urban poverty, environment and sustainable livelihoods.

2. To provide a situation analysis of the socio-economic situation in Zambia and then more specifically in Lusaka.

3. To outline stone crushers’ perception of stone crushing on their livelihoods in order to describe their needs and goals.

4. To describe the role of institutions in relation to the stone crushers livelihoods.

5. To suggest measures that can enhance the livelihoods of stone crushers.

1.5 Research questions

The research is guided by the following research questions:-

- Who are the stone crushers, what assets do they have and how do they construct their livelihoods?
- What have been the main changes in their business over different seasons and what factors have influenced these changes?
- What resources, socio-economic and gender relationships, organizations and institutions are relevant to the stone crushers?
- What scope is there for improvement in institutions and regulatory frameworks that would increase the opportunities for stone crushers to construct sustainable livelihoods?

These are the basic guidelines that are followed in the study on stone crushing in Kalingalinga. In addition the researcher uses a more detailed table of themes and issues referred to as the fieldwork framework. This is reproduced as Appendix 1. Many of the concepts and ideas used in the fieldwork are derived from international thinking.
about how poor people construct their livelihoods and how policies and institutions affect them.

1.6 Significance of the study

Zambia (2005:5) reports that “in the urban centres the majority of large families live in squalid environmental conditions in unplanned settlements on the fringe of the cities. Members of these communities are largely poor, unemployed, under employed and have inadequate access to urban social services.” A large number of vulnerable people including orphans increase pressure on the individuals limited resources and these guardians have to find a way to earn a livelihood to sustain their lives and those of their families.

The majority of poor people live in unplanned settlements where basic services have not been developed. They are faced with a struggle to get income, accommodation and social services. With pandemics like the Human Immuno Virus and Acquired Immune Deficiency Syndrome (HIV and AIDS), the situation of parents and guardians become even more complex as the burden to look after family members grows while resources to support their upkeep dwindle. The poor then have to encroach further on environmental resources for survival.

In addition, Zambia (2002:116) states that the relationship between poverty and the environment is characterized as a ‘vicious circle’ or a ‘downward spiral’. The poor often rely on the environment for their livelihood. At the same time, they are affected by the way others use environmental resources. “Rapid increases in the population combined with over exploitation of resources threaten the lives of poor people. The urban poor are especially affected by poor environment services such as sub standard housing, inadequate or polluted water systems, outdoor air pollution and indoor air pollution from low-quality cooking fuels. Urban poverty, therefore, needs to be dealt with by improving the environment” (Zambia, 2002:116). While the poor encroach on the environment to support their livelihoods, environmental degradation due to pressure for few resources tends to affect them negatively. Since they cannot afford good housing and other facilities which support a good life they end up living in hostile environments a situation which complicates their survival.
Poverty and the environment are termed to be a vicious circle because while the poor benefit from the environment in terms of environmental resources, a degraded environment threatens their survival. The vicious circle relationship of poverty and the environment creates vulnerability among the poor. Vulnerability refers to ‘‘the insecurity of the wellbeing of households, or communities in the face of a changing environment. Environmental changes threaten welfare. It can be ecological, economic, social or political, with these changes often come increasing risk and uncertainty and declining self respect’’ (Rakodi 2002:4). The study of the situation of stone crushers is significant because poverty and vulnerability are not permanent features therefore can be changed.

1.7 Focus and scope of the study

As mentioned in the statement of the problem (1.3), the concern of the study is to give a descriptive analytical account of stone crushing as a source of livelihood. Information relating to family, assets, seasonal changes, vulnerability, socio economic and gender relations including institutions relevant to the stone crushing or quarrying business is sought. This is to enable the researcher to describe, analyse and make recommendations for improving stone crushers’ livelihoods.

The study focuses on a descriptive analysis of stone crushing as a sustainable livelihood. The study also explores the roles played by the Lusaka City Council, Environmental Council of Zambia, Ministry of Community Development and Social Services and the Ward Development Committee in the stone crushers’ lives in Lusaka. Information on the sustainability of stone crushing as an income generating activity is also collected from the University of Zambia (Department of Development Studies).

The area of the study covers stone crushers along Alick Nkhata road in Kalingalinga compound. Specific attention is paid to the opportunities available for stone crushers to make their livelihoods sustainable.

1.8 Research design and methodology

This is a qualitative study in which multiple methods are used to collect data. The livelihoods framework of the Department for International Development is used in the study to guide the participatory reflection and action. Participatory reflection and action enables the researcher to learn directly from the stone crushers, on site, face to face.
Participatory reflection and action is being used to encourage an open discussion of the stone crushers’ own situation. A discussion on the ways and means to achieve the research objectives; research tools and sources of data employed in this study are given in the next section and a more detailed exposition is provided in Chapter 3.

1.9 Data collection procedure

The following means and ways are used to achieve the research objectives:

Secondary data is used to achieve objective number 1 which is to provide an overview of the literature relating to urban poverty, environment and sustainable livelihoods.

Secondary data and observation are used to achieve objective number 1 and 2 which are to provide an overview of the literature relating to urban poverty, environment and livelihoods and to provide a situation analysis of the socio-economic situation in Zambia and then more specifically in Lusaka.

Semi structured interviews and focus group discussion are used to achieve objective number 3 which is to analyse how the stone crushers perceive the effect of stone crushing on their livelihoods in order to describe their needs and goals.

Semi structured interviews and field observation are used to achieve objective number 4 which is to describe the role of institutions in relation to the stone crushers livelihoods.

Semi structured interviews are used to achieve objective number 5 which is to suggest measures that can enhance the livelihoods of stone crushers.

1.9.1 Primary data

This is collected through: observation of the site; semi structured interviews with stone crushers and one representative from each of these institutions - the University of Zambia, Environmental Council of Zambia, Ministry of Community Development and Social Services, Lusaka City Council; and a focus group discussion is conducted with the Ward Development Committee and stone crushers.

1.9.2 Secondary data

This is collected from: University of South Africa Library, University of Zambia Library, Central Statistical Office, Internet, Ministry of Lands, Ministry of Mines and
Minerals Development and other documentation such as books, newspapers and journals.

1.9.3 Data and information sources

Both qualitative and quantitative data from primary and secondary sources are collected. The primary and secondary sources are used as data and information sources.

1.9.4 Primary sources

The following are primary sources of data: Stone crushers, Ministry of Community Development and Social Services, Ward Development Committee, Lusaka City Council, Environmental Council of Zambia and the University of Zambia.

1.9.5 Observation

Observation of the study site and the activities going on at the site is done.

1.9.6 Interviews

Stone crushers and key informants from relevant institutions connected to the stone crushers’ lives are earmarked for interviews. The livelihoods framework of the Department for International Development (DFID) is being used in this case study to guide the participatory reflection and action.

1.9.7 Secondary sources:

The following are consulted to obtain secondary sources of data: University of South Africa Library, University of Zambia Library, Central Statistical Office, Internet, Ministry of Lands, Ministry of Mines and Minerals Development and other documentation such as books, newspapers and journals.

Research questions are answered through the application of participatory reflection and action methods on a Department for International Development livelihoods framework. The following steps are followed: selection of a location (Kalingalinga stone crushing site) and gaining approval from the Lusaka City Council office (local administrative leaders) and the Ward Development Committee (community leaders); conducting a preliminary visit to the local leaders and stone crushers (this was to share the purpose and objectives of the research); collecting both secondary and primary data on urban
poverty, environment, sustainable livelihoods, assets of stone crushers and role of institutions in the stone crushing business. Synthesizing and analysing the data is followed by identifying problems of stone crushers and opportunities to resolve them. These opportunities are ranked and a report prepared, giving recommendations for sustainable livelihoods. One semi structured questionnaire is used to collect data from the stone crushers on: who they are, what assets they have, how they construct their livelihoods, factors that influence change in their business, socio economic gender relationships among them and the role of institutions in the livelihoods of stone crushers.

Another four semi structured questionnaires are used to collect data from relevant institutions such as the Lusaka City Council, Ministry of Community Development and Social Services, University of Zambia, Environmental Council of Zambia, and the Ward Development Committee on their role in the livelihoods of stone crushers and on the scope for possible improvement and regulatory frameworks that would increase the opportunities for the stone crushers to construct sustainable livelihoods. The conclusions drawn from these interviews are discussed in Chapters five and six of this dissertation.

1.10 Importance of the study

Although various factors have triggered poverty levels especially among the low income and unemployed members of the Zambian community, it is important to have a close look at poverty in order to understand the situation. Rowson (2010:1) pointed out that “income levels may not be a helpful way to determine poverty levels especially when we are trying to think of ways to tackle poverty. He argues that poverty is a condition of life so characterized by malnutrition, illiteracy, and disease as to be beneath any reasonable definition of human decency.” This definition describes what it means to be in a state of poverty, denoting that in addition to lacking adequate income, one lacks access to basic health care, education, adequate food, adequate shelter and many more. The study of stone crushing as a sustainable livelihood is important in order to describe the state of poverty the stone crushers live in and what opportunities are available for them. Guidelines that will be formulated are aimed at promoting social and economic development on the basis of opportunities available for stone crushers in
Lusaka and other parts of the country as well. It is also hoped that the results of the study can help inform scholars in other regions where poor people have the same plight.

1.11 Chapter layout

The dissertation has six chapters. The first chapter gives information on introduction and background to the study, significance of the study, statement of the problem, importance of the study, focus of the study, primary objective, secondary objectives, research questions, scope of the study, research design and chapter layout. The key argument is that illegal stone crushing (an informal sector activity) is carried out by some poor people in Kalingalinga compound in Lusaka for survival. This information provides a link to the literature given in chapter two on the urban poor and sustainable livelihoods. It is also a guide for collecting information under Chapter four.

The second chapter provides literature review related to the research project. It gives a macro overview on urban poverty and the environment, a theoretical framework for sustainable livelihoods, definition of key concepts and viewpoints from selected studies on sustainable livelihoods. Key in this chapter is that unemployment and urban poverty hinder improvement in social and economic welfare due to pressure from the population on available physical and environmental resources. This information is important for analyzing the livelihoods of stone crushers in Lusaka using the tools given in Chapter three. It also provides a basis for understanding the socio-economic situation in Zambia given in Chapter four.

The third chapter gives a description of the research design and methodology. The key variables applied in the study, definitions, and scale of measurement is discussed. The sample design and sampling procedure is determined by purposive sampling, while data collection methods are primary, secondary and observation. Data is captured by use of semi structured questionnaires then analysed using content analysis. This is a qualitative study in which information is collected using an eclectic method. Variables such as income, sex, education, household size, headship and marital status together with the livelihoods framework provide a platform for data analysis in Chapter five.

The fourth chapter presents the context of Zambia in form of a situation analysis. Geographic location, land use, land zoning, mining, population trends, urbanisation, poverty and environment, developments in the economy, employment and
unemployment levels, land use, population and housing, socio economic status of the residents and environmental aspects of limestone quarrying are discussed. The chapter concludes that access to natural resources by the poor is limited by legal instruments which attract fees, forcing many poor people to resort to illegal activities such as stone crushing. The effects of the environment explained in this chapter are discussed in Chapter five.

The fifth chapter presents research findings through qualitative data. This is given in form of percentages, tables, a bar chart and pictures. These are used to describe who the stone crushers are, factors that influence changes in their business, socio-economic and gender relationships and institutions relevant to stone crushing business and opportunities that can enhance stone crushing as a sustainable livelihood. Key findings are that illegal stone crushing is carried out to earn a livelihood. Recommendations to enhance the livelihoods of the stone crushers are discussed in Chapter six.

The sixth chapter gives the findings from the study and provides a summary of the study and a conclusion. Recommendations for future sustainability of livelihoods of the stone crushers are also outlined. In conclusion, the study has benefited from various studies undertaken on sustainable livelihoods in the urban environment in other parts of the world. The researcher felt the need to investigate stone crushing which is so evident in Lusaka in order to get a comprehensive picture of how stone crushing as an income generating activity is a source of livelihoods. This was in order to give a descriptive analysis.

1.12 Conclusion

The key argument is that illegal stone crushing (an informal sector activity) is carried out by some poor people in Kalingalinga compound in Lusaka as a response to harsh economic conditions and the need to survive especially because unemployment and deteriorating incomes have hit the urban population. Background information in this chapter provide a link to the literature given in Chapter two and four on the urban poor and sustainable livelihoods and the socio economic situation in Zambia. The information in Chapter four enables the researcher to look at the livelihoods of stone crushers in light of situations described in other parts of the world given in Chapter two. Chapter one also maps out a path for data collection which is discussed in detail in
Chapter three and content analysis is applied on data collected so as to give a picture of stone crushing as a sustainable livelihood in Chapters five and six.
CHAPTER TWO

URBAN POVERTY AND SUSTAINABLE LIVELIHOODS: AN OVERVIEW OF THEORIES AND INTERNATIONAL LITERATURE

2.1 Introduction

The objective of this chapter is to provide an overview of the literature relating to urban poverty, environment and sustainable livelihoods. The chapter provides: a brief description of urbanisation and poverty; a macro overview of urban poverty and the urban environment; sustainable livelihoods, their advantages and disadvantages, sustainable livelihoods approaches that exist; and viewpoints from selected studies on sustainable livelihoods.

The theoretical framework used in this study is essentially a livelihoods framework. “A theoretical framework locates a study in a certain theory or theories and such theories are used to guide the study and make sense of the findings” (Kombo & Tromp in Matale 2011:20). The theoretical framework provides the analytical and interpretive lens for the analysis of findings. Included in the discussion of the theoretical framework is the existing literature relevant to the study.

The purpose of the review is to locate the study within a relevant domain, in this case urban poverty, urban environment and sustainable livelihoods. I begin however, by placing this case study in a global context, outlining various viewpoints from selected research on urban poverty, urban environment and sustainable livelihoods. The following section discusses urbanisation and poverty in order to illustrate that the perception that poverty was more marked in rural than urban areas has changed.

2.2 Urbanisation and poverty

Urbanisation has come to the centre of focus in poverty reduction strategies, as poverty is not only marked in rural areas but in urban centers too. In 2008, United Nations Population Fund (2010:1) reported that “the world was undergoing the largest wave of urban growth in history with more than half of the world’s population living in towns and cities. By 2030 this number would swell to almost 5 billion and be concentrated in Africa and Asia.”
This massive urbanisation would bring with it poverty and a high demand on all resources available as people need to survive. Since urbanisation does not occur in a vacuum, governments would need to address this historic challenge. “If poverty is to be reduced, it is important that national governments and international organizations understand the causes and the enormity of the urban challenge” (DFID 2001:17).

Although urbanisation contributes to growth and poverty reduction, as more people move to cities poverty is also urbanising and the growth of slums becomes a characteristic of urbanisation. It is therefore important to understand the root causes and magnitude of urban poverty if poverty reduction strategies are to be implemented successfully.

The United Nations Populations Fund (2010) was not the first organisation to point out the issue of urbanisation and poverty, but the recognition of poverty as a challenge in urban areas started sometime back. By the early 1990s, various writers had predicted how poverty would spread in urban areas. Reports by Serageldin (1994), and Mermoz (1997), stated how in the next two or three decades, a majority of the African region’s population was expected to live in urban areas. This urbanisation could well mean an urbanisation of poverty.

Serageldin (1994a:18) pointed out that a rapidly growing share of the world’s population was living in urban areas in the developing countries and this population would increase by 1 million people a week for the next 30 years. Many of these people would also lack clean water, poor sanitation and would face the threat of water borne diseases daily.

Another factor in urbanisation of poverty is the unprecedented rate of population growth. Faced with lack of clean water, poor sanitation and threats from diseases, this huge population would still face social and economic hardships which would have a negative bearing on the physical environment.

Mermoz (1997:57) noted that in most countries the urban population growth rate exceeded the overall population growth rate. This unprecedented growth could hinder improvement in social and economic welfare due to pressure of population on limited available physical, environmental and other resources in a limited area.
Rural-urban migration is a factor which would also push the unprecedented population growth. Many people in rural areas are attracted to migrate to urban areas which they believe have jobs available. In fact the urban environment was supposed to generate a type of development which would create many industries that would provide jobs for many people. However, this is not the case in many urban areas as joblessness is the order of the day and many people who migrate from the rural area to the urban area get stranded and caught up in a web of poverty. The issue of rural - urban migration is explained in the next paragraph.

Denkelman and Davidson (1994: 87) estimated that “70 percent of the rural people in the Third World (excluding China) lived on small farms or were landless by 1986. With some living in abject poverty, more and more were migrating to urban areas attracted by the prospects of employment and a better standard of living.’’

Migration of the landless poor to urban areas would entail an increase in the number of people that were poor in that these new migrants would carry over their poverty status from rural areas into urban areas. Thus this would exacerbate poverty levels in the urban areas as there would be no jobs or better sources of livelihoods to improve the standard of living for these people.

The World Bank (2012:1) states that while urbanisation is taking place ‘‘many of those who migrate will benefit from the opportunities in urban areas, while others, often those with low skill levels, may be left behind and find themselves struggling with the day to day challenges of the city life.’’ This statement shows how urbanization and poverty occur side by side. Urbanisation as a concept is explained by Aduwo (1989) below.

Aduwo (1989:207) described urbanisation and explained that ‘‘Urbanisation is a process of urban formation and growth in population and size. It is a function of population increase both natural and migratory and the spatial and non-spatial expansion of the settlements to accommodate increasing population. It brings tremendous pressure on the urban services especially urban housing and related infrastructural facilities.’’

This means any urbanisation that is not planned for, its growth in population and physical size would lead to an expansion of settlements which were to accommodate big numbers of people. However, this unprecedented growth would bring pressure on
urban services which would not match the increase in population. This in turn would lead to people not being able to access various services and infrastructure which is required for decent survival.

Urban poverty was becoming a challenge as prospects for a better livelihood in urban areas kept attracting people from rural areas to migrate to urban areas. This situation was slowly changing the long held view or assumption that poverty was a rural problem in the developing world.

Since the growth of urban poverty would also be pushed by migration from rural poor it means that more resources would be required to meet the demands of the population.

The sudden shift from rural to urban poverty entails that all resources whether physical or environmental would be in short supply unable to meet the demands of the poor urban population. Failure to meet the demands of the population would expose more people to the poverty trap. The increase in poverty levels in Africa is also mentioned by Lungu (2006).

Lungu (2006:5) reported that “Africa had the world’s highest rates of urbanization. Africa’s rate of urbanisation stood at 4.0 percent. The figure was almost twice that of Latin America and Asia. About 72 percent of urban residents in Africa lived in slums, without adequate shelter and basic services. By 2006, 37 percent of the total population in Africa lived in urban areas. The figure was expected to rise to 53 percent by the year 2030.”

Considering the statement above, it can be deduced that Africa’s urbanisation rate was not only highest but the figure was almost double that of Latin America and Asia. What is alarming here is that 72% of urban residents in Africa live in slums. Therefore, it can be stated that only 28% live in planned settlements. The increase in urban population means an increase in poverty since there is no adequate shelter and other basic services. The rapid increase in population has been recorded by United Nations Population Fund (2007) in the next paragraph.

The United Nations Population Fund (2007:1) stated that the rapid urban population growth in Africa and Asia would double between 2000 and 2030. By 2030, the towns and cities of the developing world would make up 80 percent of urban humanity which would be composed, to a large extent of poor people.
Though urbanisation was to take place in the whole world, the developing world and particularly Africa would get the bigger burden of urbanisation which would be composed of more poor people. However, a point of departure here in comparison to what was indicated by Lungu (2006) is that apart from Africa even Asia would experience a double up of the urban poor. This means urbanisation of poverty would be widespread not only in Africa but in Asia too. While urbanisation is taking place another factor that would contribute to a negative impact is the development of cities in which urban livelihoods are commonly classified as formal thus losing sight of other sources of livelihoods which sustain people especially the urban poor.

More people tend to be concentrated in the urban areas and this affects the cost of goods and services. Salaries for particular groups of workers may not be enough to sustain a livelihood. These workers would experience poverty too despite being in employment and earning an income.

This, therefore, called for future developers and decision makers to become accustomed to the challenges of planning sustainable livelihoods and environments to meet this urban population explosion. The important issue in this growth was determining how the unprecedented urbanisation of poverty could be handled as many of these urban areas would obviously be at dire social, economic, political and environmental risk.

Key points in the above discussion are that the rural poor would migrate to urban areas in the hope of getting better livelihoods but would end up joining the urban poor thus increasing the number of poor people in urban areas. The cost of living in the urban area would rise, inequality in the communities would rise, development of services and infrastructure would not match the population size thereby making it difficult for urban poor to access required basic services. Ultimately, the urban environment would not be favourable for the majority of the population to get better livelihoods. Therefore, urbanisation of poverty would spread and affect many towns and cities of the world especially Africa and Asia. In order to understand urbanisation and poverty in detail, it is better to locate urban poverty and the urban poor.

2.3 Urban poverty

The urban poor are characterized by a degree of vulnerability as poor urban households are exposed to changes in income and prices for basic goods and services and their
vulnerability is exacerbated by poor housing, deprivation of public services and increasing tension and violence in congested urban dwellings and settings. In fact, the degree of poverty in urban households appears to have less to do with the actual amount of monetary income they get. Rather it has more to do with the way in which resources are controlled, used and allocated. The various characteristics of urban poverty are expressed by different researchers as outlined below:

Berner (1997:169) explained that “the so called urban poor (people living in slums and illegal settlements) included not only the underemployed and members of the informal sectors but also major segments of the middle classes such as policemen, teachers, nurses, office clerks and sales personnel. State interventions of socialized housing had remained largely ineffective and had failed to benefit the alleged target group, namely the urban poor.”

The urban poor are not only members of the informal sector but a large group comprising even the formal sector such as teachers, nurses, policemen and clerks. The large size of the group involved and the wide area the group occupies makes it difficult for state interventions to reach the intended target. This situation compromises the provision of services to the poor by the urban authorities. Both the employed urban poor and the unemployed urban poor need to access services of one type or another, therefore, when state interventions are made it becomes difficult for the unemployed urban poor to access that particular service since the employed urban poor not only get to know about the interventions but have more influence too.

To illustrate the seriousness of rapid urban population growth, Nelson and Jones (1999:1) explained that “the growth of urban populations had been very rapid as between 1960 and 1990, the largest cities had grown at an average of 7 to 8 percent per annum. A rate which had made it next to impossible for urban authorities to provide low income housing, urban services or sufficient employment.”

These basic services described by Nelson and Jones are required not only by the poor in the informal sector but by the poor in the formal sector such as clerks, policemen and teachers. The negative effects of urbanisation that had affected different parts of the world and Africa in particular, had also affected sub-Sahara Africa. According to the World Bank (2012:1) sub-Sahara Africa is “home to over 839 million people and has a population growth of 2.5 per cent, the highest of all bank regions.” This entails a big
population that requires authorities to plan and implement development programmes effectively and efficiently.

The United Nations (UNDP 2007:11) stated that “in 2005, Asia had an urbanisation level of 40 percent and Africa 38 percent. However, despite being the least urbanised region in the world, sub-Saharan Africa had an urban population that was already as big as North America’s.” Apart from being the least urbanised region, slum growth was also a factor to note as reported by UNFPA (2007).

“In sub-Saharan Africa, urbanisation had become virtually synonymous with slum growth, 72 percent of the region’s urban population lives under slum conditions compared to 56 percent in South Asia. The slum population of sub-Saharan Africa almost doubled in 15 years, reaching nearly 200 million in 2005” (UNFPA 2007:16). The concentration of poverty in sub-Saharan Africa in which Zambia is located is a point to note.

While urbanisation has been taking place in many parts of the world, sub-Saharan Africa’s urbanization process has become synonymous with slum growth. This situation makes it even more difficult for urban authorities to meet the demand for basic services. Therefore, as the world is becoming increasingly urban, there is a growing demand for better understanding of the conditions of urban poverty. Different researchers have varying views on the degree and conditions of urban poverty as discussed below:-

Kamete, Tostensen and Tvedten (2001:29) pointed out that “shanty towns, squatter areas, informal settlements or slums were normally overcrowded and noisy, with small brick houses or iron shacks, inadequate access to water, electricity, sewerage and underdeveloped social services. The number of people present during daytime indicated limited employment and income in the formal economy and informal economic activities dominated by women yield minimal returns.”

These unplanned settlements are characterized by inadequate access to water, electricity, sanitation and poor housing. Many people are economically inactive and this is shown by their presence at home during the day. Most women who are employed do not receive good income to support their families. Urban services require cash and lack of income translates into failure by individuals to pay for various services. This
environment in which people have no access to employment, receive minimum or no income at all gives rise to social exclusion.

In order to highlight social exclusion faced by the poor, the Department for International Development (DFID, 2001:17; 22) observed that ‘‘many urban poor were socially excluded on grounds of cost, discriminatory administrative and legal practices and through failure of the political process and the failure of urban managers and social programmes to keep pace with the growth of settlements of the urban fringe where many poor residents lived’’ Urban poverty is therefore associated with overcrowding and poor living conditions within large slum settlements. People have limited or no access to basic utilities or services such as water, sanitation, affordable transportation, healthcare, education, energy, and security.

The degree of suffering faced by the poor in urban areas in sub-Saharan Africa is explained by Saluseki (2007:7) who reported that ‘‘annual slum and urban growth rates were highest in sub-Saharan Africa and that in many sub-Saharan African cities, the slum population accounted for over 70 percent of the urban population and the urban poor suffered from an urban penalty. The world’s one billion slum dwellers were more likely to die earlier, experience more hunger and disease, attain less education and have fewer chances of employment than those urban residents that do not reside in slums.’’

This urban penalty entails that the urban poor would experience hunger, disease and early death. Their situation would be made worse by failure to send their children to school so as enable their children get skills which could help them come out of the poverty trap. This is an unfortunate situation in that while urban areas are faced with high poverty levels the problem of massive population growth in the urban areas is still quite a challenge as explained below:

‘‘Most of the world’s urban growth of 95 percent in the next two decades would be absorbed by cities of the developing world which were least equipped to deal with rapid urbanisation. Globally, the slum population is set to grow at the rate of 27 million per year in the period 2000-2020’’ (Saluseki 2007:7). This situation of the poor in urban areas to a large extent depends on the poor’s determination to cope with the conditions in the urban environment as explained in the next paragraph.
DFID (1997:11) states that “the fact that people survive at all under these conditions is a remarkable testament to the human spirit. The poor men and women inclusive apply enormous creativity, strength and dynamism on a daily basis to solve their problems that those who live comfortably can hardly begin to understand.” These people do not have enough to eat, lack command over commodities, have minimum income and their living conditions are poor. They do what can be done and not what they can do.

Having read the various sources, it can be pointed out that urban poverty is a multidimensional phenomenon. This is so because the urban poor live with many deprivations. Their daily challenges may include; limited access to employment opportunities and income, inadequate and insecure housing and services, violent and unhealthy environments. These may also include little or no social protection mechanisms and limited access to adequate health and education opportunities. World Bank (2012:1) explains that “urban poverty is not just a collection of characteristics, it is also a dynamic condition of vulnerability or susceptibility to risks.” Therefore, it is worth noting that urban poverty is not solid and universal to all urban areas but has specific characteristics which may be associated with particular urban environments.

2.4 Urban environment


Leitman, Bartone and Bernstein (1992:132) identified “lack of safe water, inadequate waste management and pollution control, accidents linked to congestion and crowding, occupation and degradation of sensitive land as threats posed by rapid urbanisation. The cost of all these fell heavily on current generations particularly the urban poor who were most affected by poor health, lower productivity, reduced incomes and lowered quality of life.” The above description of problems of the urban environment show the burden of a degraded environment and how it affects the poor. While the urban poor face challenges outlined above their situation is worsened by disease outbreaks as described by Gilles in the next paragraph.

Gilles (1992:3) indicated that “a proliferation of water bodies increases the number of breeding sites for disease vectors such as mosquitoes (which transmit malaria, yellow
fever and dengue) and aquatic snails (which are the hosts for human schistosomiasis). In addition, deforestation and soil erosion expand the habitant of sand flies which transmit leishmaniasis.” Proliferation of water bodies therefore increases the disease burden for the urban poor who live in degraded environments which have been destroyed while people pursue livelihoods. Although different people carry out different activities on the environment, the poor also participate in pursuing environmental goods as explained below:

Gilles (1992:4) pointed out that “poor people often destroy their own environment not because they are ignorant but to survive. They over exploit thin soils, overgraze grasslands and cut down dwindling forests stocks for firewood. Poverty is both a cause and effect of environmental degradation.” The poor are not destroyers of the environment but rather they have to survive through the use of these environmental goods and because with time these resources begin dwindling the environment is degraded. This culminates in a two-fold challenge:- the population in the area is faced with not only scarce natural resources but also other problems such as inadequate infrastructure and social services. Dasgupta (2004) gives details of how this challenge affects the provision of services in the urban environment.

Dasgupta (2004:83-84) indicated that “rapid urbanisation creates pressures for provision of adequate infrastructure services such as water supply, sanitation and waste disposal. Even amongst those municipal piped supplies, interruptions in supply and improper maintenance of pipes cause frequent exposure to contaminants. It is in this urban environment that water borne diseases like cholera and gastroenteritis flourish.” The disease burden highlighted by Gilles (1992) is also repeated by Dasgupta here. It therefore becomes imperative to note as follows:-

Contamination of water is not only a problem of the urban poor who are faced with inadequate water supply and sanitation but even municipal piped water supply sometimes gets contaminated through broken pipes in these areas as maintenance is not regular. This could be more so in low cost areas and unplanned settlements where service providers in most cases cannot be put under pressure to do their best. The cost associated with provision and maintenance of these services disadvantages the urban poor as they do not have a strong base to negotiate for the provision for services. This
cost burden has a negative impact on the general status of urban environments and cities as will be seen from Serageldin (1994) in the next paragraph.

Serageldin (1994:1) stated that “urban environments or rather cities whether in the North or South share a common set of challenges, including crumbling infrastructures, environmental degradation, social unrest, unemployment and fiscal deficits and in many cases, the absence of consensus about how these problems can be resolved.”

The problems arising from urban environments are, therefore, common both for cities in the North and South. What makes the situation worse is that there is no common agreement on how these urban problems should be addressed as poverty reduction strategies are implemented in specific areas considering the ability of government or non-governmental organizations and situations in those particular areas.

In addition, Cineros (1994:8) observed that “when poor people become concentrated in precisely defined geographic areas, their problems grow exponentially such as soaring unemployment, increased and prolonged welfare dependency, profuse public health problems and rising crime.” This implies that when poor people are in one area, it becomes difficult for them to access better services and employment because the demand is greater than the supply. In addition, because of poverty they cannot raise resources to invest in developmental activities which would ultimately benefit them in the long run. Scarce resources therefore push people to continue in the poverty circle.

McGranahan (1994:17) also pointed out that in such a situation “resources are so scarce that people can barely eke out a living, physical crowding is so intense it is difficult to find an undisturbed place to sleep. Water even for basic household needs is undrinkable or inaccessible and waste collection has virtually ceased and acceptable household services are often too expensive or unavailable.”

Since the poor cannot get decent housing, they live in overcrowded places which are noisy, unhealthy and uncomfortable. Lack of money to pay for services makes it even worse for the poor as they cannot access free services.

McGranahan (1994:180) observed that “the more serious environmental problems at the household and community levels such as inadequate water and sanitation facilities and indoor air pollution are more prevalent in poor cities and neighbourhoods. It is
poverty rather than city size that determines exposure to household environmental problems.’’

Problems of shortage of water, lack of sanitation and indoor air pollution are more prevalent among the poor. The size of a city is not really a determinant of negative facilities. Rather, poverty makes the poor vulnerable to many environmental problems. Even if a city is big, if resources are available, not many people will be living under the poverty circle. This also means that even if the city is small, if there are no resources, many people will live in poverty. The poor therefore, find themselves more vulnerable in vulnerable environments.

Mink (1993:2) stated that ‘‘income is key in access to better facilities and services and locations inhabited by the poor are often environmentally vulnerable or degraded. Being poor entails lacking the means to avoid the impacts of environmental degradation, at the same time these places inhabited by the poor literally become dumping grounds for the waste of other wealthier communities.’’

Mink’s point could be explained as follows: the poor occupy environmentally degraded areas because these are the areas which municipal councils usually do not recommend for human habitation. When poor people come into towns they find these areas vacant so they turn them into homes. Since these areas were not initially earmarked for habitation, they literally have no suitable infrastructure to support the immigrants. Although with time through political pressure a few facilities may be introduced they do not match up to suitable infrastructure and services. In addition, setting up suitable infrastructure may be compromised by the cost attracted by engineering works required for degraded environments.

Cineros (1994:7) explained that ‘‘when economically, socially and politically enfranchised people abandon communities, they also abandon their stake in the physical well being of those places. They no longer have a direct stake in the environment of those communities. All in all the principal victims of environmental degradation are the most under privileged people and the majority of these are women. Their problems and those of the environment are very much inter-related’’ (Aidoo 1985 in Denkelman and Davidson 1994: xii).
The issue here is that the poor are excluded from mainstream development consideration arena because they occupy areas which are not on the development agenda. While the poor are victims of environmental degradation, women form a bigger number of the less privileged as they have to rely heavily on the environment in order to perform their roles as mothers and care givers. For example women as mothers, wives or just family members need to collect water for drinking, cooking, bathing and washing, fuel wood, the sun to dry up clothes which they wash, vegetables, herbs and fruits from the natural world and soil for their gardens and to manage waste from their homes and other environmental resources to support their family welfare.

Liddle (2000:386-389) explained that “an environmental resource system is related to environmental quality and natural resource capacity to support welfare and economic production and consumption. How total production and consumption activity is carried out at a particular time has an impact on the deterioration of both each country’s environmental quality and its succeeding natural resource capacity.”

The environment supports the welfare of people as economic activity is centered around the environment and its resources. What people produce and consume at a time in a country has an effect on the quality of their environment now and in the future. It means that when the environment cannot offer the much needed resources required for human consumption and production, then the quality of life for the people who depend on it will be poor and if the environment is degraded, then the future of their children and other coming generations is at stake. The failure to access environmental goods which support livelihoods creates unstable livelihoods as can be seen from the explanation.

Surjadi and McGranahan (1994:192;193) indicated that “the poor face most severe socio environmental conditions such as lack of piped water, shared toilets which are generally in deteriorating conditions and use mostly smoky fuels such as firewood. Their livelihood is made worse by their relying heavily on natural systems as they have difficulty in accessing man made systems.” Therefore, the poor’s livelihood is compromised by dependency on natural resources which get depleted in the long run. Their source of livelihood becomes unsustainable.

Pritchett and Filmer (2002:123) observed that “in areas where natural resources were managed as common property, greater population lead to pressures on and ultimately degradation on the natural resource base such as soil quality, water, grazing areas, and
fire wood availability. A significant part of property measured household income for the poor is generated by activities that use natural resources for which the cost is not fully internalised by the household.’’

The poor earned significant household income from natural resources, however, the cost of the use of the natural resources is not incorporated thus the loss of these resources is not recognised or rather accounted for in the search for livelihoods whose aim is sorely to survive. Since there is no accountability for these resources, the effect of their use is left to nature to take control. However, nature responds in its own way. For example, rain water can turn deep pits from where sand or gravel has been extracted, into small dams with stagnant water which are likely to become a home for breeding mosquitoes.

Hanyona (2005:6) reported that “the expansion of mining and other extractive industries could increase the incidences of diseases like malaria. In addition several diseases have been attributed to the environment, poor sanitation and urbanisation. Poor people are more affected by these diseases even though they are preventable as what is good for health is also good for the environment. The failure to check environmental degradation leads to an unsustainable environment.” For example, people who were sick were less able to work and children who were ill found it harder to attend and concentrate at school.

Likewise, Dasgupta and Maler (1994:4) explained that the relationship between poverty and environment as follows “this causality stemmed from the fact that for poor people in poor countries, a number of environmental resources are complementary in production and consumption to other goods and services, while a number of environmental resources supplement income, most especially in times of acute economic stress.’’

Much as environmental resources supplement income for the urban poor more especially in times of cute economic crisis, they at times depend solely on environmental resources for their daily survival. This means environmental resources play a significant role in the lives of the urban poor who earn income from such resources.
It is worth noting that the prevalence of urban poverty together with the disparity in income among and between urban dwellers exacerbates the effects of poverty on the environment. The effects of poverty on the urban environment are varied and have been highlighted in different situations as seen from various studies. The role of environmental resources in supporting the livelihoods of the poor cannot be over emphasized.

2.5 Sustainable livelihoods.

Before defining what sustainable livelihoods are it is important to explain what a livelihood is because ‘poor people live in a changing world to which they must constantly adapt, and often unprepared for the changes. There is a constant struggle to meet daily basic needs. Furthermore, their daily needs consist of more than food; vital non-food needs such as shelter, clothing and health compete with food needs in terms of a household’s resource allocation’’(Frankkenberger,1996 in World Food Programme 2013:2;3). Therefore, the study of livelihoods unveils a richer and more detailed understanding of how poor families cope with different types of risks and shocks in order to meet their basic needs.

A livelihood comprises the “capabilities, assets (stores, resources, claims and access) and activities required for a means of living” (Chambers and Conway, 1992:7). Besides comprising capabilities and assets, Singh and Gilman (1999:540) reported that “livelihood systems consist of a complex and diverse set of economic, social and physical strategies which are realized through the activities, assets and entitlements by which individuals make a living.”

How do individuals construct their livelihoods or make a living? People make a living using what they have such as land, skills, financial resources and help form social networks. They way they are able to use these assets determines the type of life they lead. However, while they make their living, external forces such as these explained by Punjab below can affect them negatively and make them vulnerable.

Punjab (2003:114-120) revealed that:- “poor people were vulnerable or subject to various shocks, seasonal changes and trends. These include drought, floods, unemployment and reduced job opportunities. Illness, death, increasing cost of dowry, increasing crime, increasing environmental degradation and natural disasters were the
other changes and trends. Socio-economic and institutional constraints resulting from the way markets, institutions, policies and processes influence their use of assets to develop livelihood strategies.’

The explanation by Punjab above shows that the poverty situation is compounded by the presence of many negative factors such as floods, droughts, crime and poor socio-economic structures and institutions which make it difficult for the poor to break through the walls of poverty. Since the poor depend more on natural resources, any attempt to sustain their livelihood may put pressure on natural capital which they value as key in their livelihoods. It is for this reason that further use of natural resources leads to depletion of those resources.

Therefore, in order to survive people come up with livelihood strategies. The Swiss Agency for Development and Cooperation (2013:6) defines livelihood strategies as follows: ‘‘Livelihood strategies reflect a range and combination of activities and choices that people make in order to achieve livelihood outcomes and goals. Livelihood strategies are diverse and in a constant process of change and adaptation.’’ The strategies are diverse and in constant change because livelihood options may not be static as the environment at any point in time has a direct link with how people access assets to earn a livelihood. The livelihood strategies determine their livelihood outcomes though the outcome may not be the same for all individuals in the group. Therefore, it can be concluded that livelihood outcomes are the achievements of livelihood strategies which can be placed in various categories.

The Swiss Agency for Development and Cooperation (2013:7) reports that the Department for International Development places livelihood outcomes in five categories namely: ‘‘more income, increased well being, reduced vulnerability, improved food security and more sustainable use of the natural resource base.’’ Since individuals experience effects of poverty differently they may also use different types of coping strategies. Coping strategies are strategies that the poor adopt in order to survive but not to improve their livelihood. Therefore, for a livelihood to be sustainable it should support current welfare as well withstand external pressures.

Moriarty (2002:4) explains that a livelihood is sustainable when ‘‘it can cope with and recover from stress and shocks and maintain or enhance its capabilities and assets both now and in the future while not undermining the natural resource base.’’ Any livelihood
which cannot support itself makes an individual vulnerable. Lazarus (2010:1) defines stress as a feeling experienced when demands exceed the personal and social resources the individual is able to mobilize.’’ In order to survive the effects of shocks and stress people require alternative sources of livelihood therefore, they depend on coping strategies.

Singh and Gilman (1999) bring out five key issues in their approach to sustainable livelihoods: capacity, choice, access, opportunity and coping strategies. The role played by coping strategies in sustaining livelihoods enhances the capacity of an individual to exercise choice while accessing resources from available opportunities. Poverty reduction programmes should enable people to exercise choice in an environment which avails opportunities in addition to resources which build long term survival systems. This entails that if the poor cannot exercise choice and have no coping strategies to enable them exploit available organization of services for the informal sector.

Conroy (2002:3) observed that ‘‘Common Pool Resources (CPRs) often contribute substantially to the poor people’s employment, income and assets accumulation in several direct and indirect ways. They could reduce income disparities between the landless and near landless on the one hand and the land rich on the other. However, this contribution to livelihoods varies tremendously from area to area, social group to social group depending on the availability of quantity and quality of these resources and the socio-cultural traditions of the communities.’’

Significant in Conroy’s observation is that Common Pool Resources’ contribution to livelihoods though tremendous is not uniform to all social groups and areas. Nevertheless, their key role in supporting the livelihoods of the poor is still cannot be ignored. It is for this reason that these resources are still a focus of attention in poverty reduction strategies. The poor need to access these resources and information on how to access them sustainably is important. Amarlic (1998) gives another dimension on the poor and common pool resources.

Amarlic (1998:3 pointed out that ‘‘access to productive resources, natural resources, credit, technology and information were key to sustainable livelihoods. There was also the need to re-assert the value of local knowledge and the need to develop appropriate
technology and appropriate credit schemes. The economy should be placed at the service of the people.”

It can be argued here that local knowledge is key in how people support themselves and apply particular technology. It is also important to re-assert local knowledge so as to use it in conjunction with new technology which is relevant and friendly. Credit schemes are also key because people need credit that will not impoverish them further. The economy should operate in a way that promotes service to the people since they are players and can only be able to contribute to economic growth when they are given opportunity to drive the economy so that benefits accrue in their livelihoods. However, as the economy generates action among the players there is need to consolidate this action.

In order to consolidate action, Amarlic (1998:33) recommended “the generation of associations, producer groups, community organizations, cooperatives and other networks.” It is worth noting here that there are many people with entrepreneurship skills among people living in poverty, persons who can initiate new economic activities or social entrepreneurs who organise communities. These should be looked at as the main agents (change agents) of poverty alleviation and should be given a key role in the implementation of poverty reduction strategies. Experts, technocrats, bureaucrats or business persons who come from outside those communities cannot therefore implement poverty reduction strategies on their own without the poor playing a key role. The advantages the poor have in contributing to poverty reduction can be learnt from the explanation given by Rakodi & Jones (2002) in the next paragraph.

Rakodi & Jones (2002:10) stated that “those who are poor may not have cash or other savings, but that they do have other material or non material assets. Their health, their labour, their knowledge and skills, their friends and family and the natural resources around them are also coping strategies. In addition, negotiation within different sorts of households cannot be understood in isolation from the ways in which both men and women are engaged in other areas and networks of relationships.” She however cautioned that although urban economies were highly monetised, and access to income was essential for survival, the poor used social capital to their advantage.

Rakodi and Jones (2002) here identified the role of gender in livelihoods as both men and women were connected to various networks. She also affirmed the fact that poor
people are also negotiators and mobilisers of resources in their own way and so it is important to use this strength which the poor people have when dealing with their livelihoods. Livelihoods operate in a complex and diverse environment as Sing and Gilman (1999) explain in the following paragraph.

The research proposed by Sing and Gilman (1999:540) in the above sentence links with observations made by Zambia (2010:1) about “the informal sector being dominated by small enterprises that face a number of challenges to growing their businesses and thereby contribute to the economy. This is because, the majority of them are owner operated, have no paid employees and are more like home based income generating activities than clearly structured businesses.” Small enterprises however require to grow their business so that they have secure structures which can provide them with financial security. In order for the small enterprises to grow there is need for them to operate in a favourable environment as explained by Zambia (2010) in the next paragraph.

Zambia (2010:1) recommended “there is need to increase access to financial and educational services within the context of enabling business environment. The weaknesses of small enterprises in the informal sector could be reduced if they accessed credit and they were organized properly to receive services.” Lack of a proper organised system or structure for these small informal groups makes them fail to access credit from financial institutions in order to boost their business. Failure to access credit from credible financial institutions makes the poor vulnerable to exploitation by loan sharks as Hartini (2004) observed in the following paragraph.

Hartini (2004:175) observed that “during a crisis people became flexible doing whatever work possible and became vulnerable to loan sharks. Although people had access to these loans they became even more vulnerable. Their only reliable coping strategy was social capital which proved to be the poor people’s most important asset during this crisis.” It therefore shows that while poverty itself makes a person vulnerable, this vulnerability also opens up more vulnerabilities thus making it difficult to reverse the situation. Apart from being vulnerable to loan sharks indicated here, poor people are vulnerable to seasonal changes. Poor people’s vulnerability is also explained further by Balochistan.
Balochistan (2003: 116-118) showed that ‘dependence on natural capital was traditionally very high. Poor people used coping strategies such as selling firewood, embroidery, mat-making. But the poor lacked financial capital, education and training, debts made them sell their assets. Socially constructed factors such as gender, ethnicity and caste worsened the nature of powerlessness.’ Apart from lack of assets to sustain their livelihoods, social factors did not make it better for the survival of the poor. For example, many communities still consider social factors like tribe, ethnic group and family history vital in leadership or even in taking charge of organizations. This can be ignored when one has attained a good financial and educational standing. Therefore, lack of financial capital, education and training disadvantage the poor even further. However, despite these challenges the poor still manage to organise themselves to survive as explained by Mendez (1998) in the next paragraph.

Mendez (1998:44,45) pointed out that ‘there was always some form of organisation enabling people to survive at the local level with dependence on various kinds of leadership. It is this kind of leadership that led the struggle for land, for water and for the installation of corn mills in Mexico. In the process people discovered the economic, political and social structures of their country, learned to negotiate with state institutions and understood their rights as well as their duties.’ As the adage says, ‘unity is power’ the poor organise themselves and network to establish structures which can work to their advantage. In cases where they are well organised, institutions become supportive to their livelihoods. This kind of empowerment among poor people can be motivated by pooling their efforts together and aiming to achieve results for the benefit of all. The various skills they have though not suitable for formal employment where skilled labour is required, still helps them to operate and survive in the informal sector which appears to be a silent economy.

Baumann (2004:12) stated that ‘millions of South Africans were only suited for unskilled jobs, or for jobs in declining sectors like agriculture and mining. But since the global market did not generate much demand for unskilled people, then millions of people were economically useless. Employers simply could not use them. It was as if they did not exist. In order to survive and cope with life, such people made a plan in the second economy.’ Since the poor people lack skills required in the formal economy, they develop their own trade and operate in their own economy which is
suitable for their type of trade. They also find a way of escaping difficult situations by relying on each other thus creating networks as explained by Bosman et al (1998).

Bosman, Marais and Viljoen (1998:29;33) observed that “where disintegration, instability and insecurity are widespread, employment opportunities are few and most people are dependent on the agricultural sector and natural resources to eke out a living. In such a situation, people apply a large variety of economic strategies to ensure a livelihood. They also relied upon one another, their neighbours and family for help and support.”

The following study presents a unique experience in the use of assets as coping strategies explaining how difficult it can be to use certain assets in certain situations.

Debate (2003:12) explained that “for a person living with Acquired Immune Deficiency Syndrome, coping strategies included human capital - having relatives and children as care givers. These care givers in turn lost to their other work. In addition, the children also lost out on school as they spent their time doing care work. Natural capital was useful as observed in the management of land, forests, fish, animals and water which had to adapt to altered demands and use during this period.” However, in this situation physical capital could not work as an asset as the sick or those busy with care cannot carry out routine repairs or even join in community work.

Sickness can be viewed as a part of the vulnerability context since a sick person and those who are care givers that time cannot mobilize any other form of capital due to the demand made them by the disease burden.

Besides the issues of assets, policies and institutions being key in addressing livelihoods, it is important to take into account the effect of exclusion from decision making when dealing with the poor. Zambia (2000:I) points out that “the poor are kept out of decision making processes in various ways: there are powerless in job selection, consumption, are isolated geographically as well as socially. Where there is no will, nobody can achieve any meaningful improvement of livelihood, regardless of the nature of the prevailing circumstances.”

In this regard, the key issue is to stimulate, promote and maximize the self reliance of the poor who already had low morale arising from many discouragements they have to
put up with in the social structure. The will from organizations and government can bring achievements in the livelihoods of the poor.

However, “assessing and addressing inequalities between men and women, boys and girls in relation to all strategic areas of concern and as an integral part of development activities is key when improving livelihoods” (DFID 1997:31). This entails a gender perspective in the approach to poverty reduction.

2.6 Sustainable livelihoods approaches

This outline gives the main elements considered in a Sustainable Livelihood Approach in order to locate the area where more action or strength is to be put when dealing with poverty reduction. According to Ashley and Carney (1999:4;6) “sustainable livelihoods approaches are based upon evolving thinking about poverty reduction, the way the poor people live their lives and the importance of structural and institutional issues. It is termed as a way of thinking about the objectives, scope and priorities for development, in order to enhance progress in poverty elimination.”

Poor people’s lives, institutions, objectives, scope and priorities for development can be looked at using livelihoods approaches in order to address poverty reduction. Sustainable livelihoods approaches enable planners and development analysts to systematically pursue objectives in poverty reduction programmes and strategies.

In addition to the explanation stated above, Proventionconsortium (2011:1) explains that a sustainable livelihoods approach is described as “a way of organizing data and analysis, or a ‘lens’ through which to view development interventions, taking a holistic view of a project (need, focus and objective), it provides a coherent framework and structure for analysis, identifies gaps and ensures that links are made between different issues and activities.”

Besides considering objectives, scope and priorities, sustainable livelihoods approaches assist in organising and analysing data, to enable people have a clear picture of poverty reduction strategies relevant for a particular situation. A general outline of the features of a sustainable livelihoods approach is given below, showing the elements to consider when applying the approach:
Content - the external environment in which poor people live their lives and which is responsible for many of their hardships; assets and capabilities (or capital), the resources poor people possess or have access to and use to gain a livelihood; policies, institutions and processes. The institutions, organizations, policies and legislation that determine access to assets and choices of livelihood strategies; livelihood strategies - the ways in which poor people deploy their assets and capabilities to improve their livelihoods’’ (Proventionconsortium 2011:2).

The content of the framework outlined above considers both internal and external environments for the poor, it takes stock of key players in the lives of the poor considering legal instruments which can either support their livelihoods or disadvantage them. Issues of access to assets, capabilities for livelihoods improvement are also considered. The framework appears to be inclusive or rather comprehensive and straightforward. However, the sustainable livelihoods approach as a framework itself has advantages and disadvantages outlined by Krantz (2001).

2.6.1 Advantages of the sustainable livelihoods approach

According to Krantz (2001:4) ‘‘sustainable livelihoods approach produces a more holistic view on what resources, or combination of resources are important to the poor. It includes not only physical and natural resources but also their social and human capital strengths. It provides a more realistic framework for assessing the direct and indirect effects on people’s living conditions than, for example, one dimensional productivity or income criteria.’’

The framework takes cognisance of the importance of living conditions in totality bearing in mind that human survival is not supported by one clear resource or strategy but rather by a complex web of resources and issues. It values and acknowledges that poor people are not completely helpless but possess various abilities which can be used to enhance their livelihoods. Nevertheless, sustainable livelihoods approaches require that development analysts should understand causes and factors that influence poverty by considering different resources whether physical natural or any other resource. Apart from the framework having advantages, it has some disadvantages too which those who need to use the framework should be aware of.
2.6.2 Disadvantages of the sustainable livelihoods approach

Singh and Gilman (2013:9) state that sustainable livelihoods approach is “eclectic in nature and this has led to people and organizations to interpret the concept in a number of different ways. The approach presents difficulties in establishing the link between micro realities and macro policies. It is difficult working with stakeholders who are used to working with local communities while essentially ignoring the larger environments impinging on these communities. In addition, the practical integration of strategic and technical approaches is also a challenge.”

Each developer may interpret the approach differently as there is no common fixed benchmark. The link between micro and macro policies may be difficult to understand or the understanding may vary between from analyst to another. Stakeholders using the framework may have problems to criticise their own institutions even when their findings reveal inadequacies, thus losing sight of strategic issues which should be addressed.

The above perceptions on approaches do not give a roadmap on how one can identify what opportunities the poor may have or where constraints may lie. In addition, despite all the prescriptions regarding the best way to apply the sustainable livelihoods approaches, none of the sustainable livelihoods approaches really deal with the issue of how to identify the poor that one is trying to assist. The identification of who the poor are may therefore, tend to be subjective. This becomes even more complex when what one community may consider as poverty may not be the same as in another community. These complex issues make it difficult to operationalise sustainable livelihoods approaches uniformly.

Krantz (2001: 23) points out that in the approach of the Department for International Department, it is explicitly stated that what constitutes poverty and who are the poor in a locality should not be established in advance, but should come out in the very process of analysing livelihoods according to the framework.” It is in this process that one may lose focus of who the poor are thereby making a wrong conclusion.

The Forum for Operationalising Sustainable Livelihoods (FAO 2010: 8;10) states that “it is demanding and complex to ensure that four aspects of sustainability for example, social, economic, environmental and institutional remain prominent throughout the
analysis. The framework is so broad, use of the sustainable livelihoods ‘lens’ has not been effective in strengthening understanding of the links between environmental change and poverty.’’

Due to this complexity, applying sustainable livelihood frameworks therefore, may present different challenges to different people. As these challenges arise, it may be difficult for individual researchers or development analysts to resolve issues on the ground, thereby, compromising the type of results presented for implementation. The following section deals with examples of sustainable livelihoods frameworks used by organisations in poverty reduction programmes.

2.7 Some of the sustainable frameworks that exist

A general view of the main elements of a sustainable livelihoods approach is being given above in order to give a background on how the Livelihoods Framework of the Department for International Development was selected. Before selecting this approach, the study looked at Livelihoods approaches of four different agencies namely:- Cooperative for Assistance and Relief (CARE), Oxford Committee for Famine Relief (OXFAM), United Nations Development Programme (UNDP) and International Fund for Agricultural Development (IFAD) in addition to the livelihoods framework of the Department for International Development (DFID).

2.7.1 The Livelihoods Framework of the Cooperative for Assistance and Relief (CARE)

The Forum for Operationalising Sustainable Livelihoods (FAO 2010:2), reports that the Cooperative for Assistance and Relief (CARE) “identifies the possession of human capabilities, (such as education, skills, health and psychological orientation), access to tangible and intangible assets; the existence of economic activities as key. The interaction among these attributes is used to define what livelihood strategy a household will pursue. The household livelihood security is linked to basic needs and rights based approach.” This approach considers human capabilities, assets and general economic activities as determinants of what type of livelihood strategy a household can pursue. Although one may define what basic needs and rights are, it is difficult to assess psychological orientation and link it with other prescribed assets.
Krantz (2001:16) states that “Cooperative for Assistance and Relief puts particular emphases on strengthening the capability of poor people to enable them to take initiatives to secure their own livelihoods through personal and social empowerment. It applies rapid and participatory livelihood security assessment in communities.” This framework is not suitable to be used in the study because the rapid and participatory livelihood security assessment in communities requires a lot of labour and proves to be costly for an academic exercise. It is also difficult to ensure that the capability of poor people are strengthened during the study as no resources are available for one to embark on such a venture.

### 2.7.2 The Livelihoods Framework of the Oxford Committee for Famine Relief (Oxfam)

The Forum for Operationalizing Sustainable Livelihoods (FAO 2010:9) reports that the Oxford Committee for Famine Relief (Oxfam)’s livelihood approach considers economic, social, institutional and ecological perspectives as outlined below: “Economic (the functioning of markets, credit supply); social (networks, gender equity); institutional (capacity-building, access to services and technology, political freedom); ecological (quality and availability of environmental resources). These should be considered in order to achieve food and income security, have access to secure paid employment, labour rights and improved working conditions and the right to life and security.”

This approach does not only consider access to food and income as important in poverty reduction but also access to a secure paid employment. The approach therefore, endeavors to connect the poor to paid employment. Considering the urban environment where unemployment is very high, it may be difficult to connect the poor to paid employment other than supporting them to enhance their informal income generating activities. The issue of labour rights may prove fluid when dealing with people who decide on their own working style and are threatened by the need to work as they earn.

The framework cannot be used in the study because the requirement to make an assessment which should lead to connecting poor people to paid work or secure employment and improve working conditions present a challenge impossible to achieve through an academic exercise due to limited resources.
2.7.3 The Livelihoods Framework of the United Nations Development Programme (UNDP)

According to the Forum for operationalizing sustainable livelihoods (FAO 2010:11; 13) the United Nations Development Programme (UNDP) livelihoods approach denotes that “it is the means, activities, entitlements and assets by which people make a living. Assets are defined as natural or biological (land, water, common-property resources, flora, fauna); social (community, family, social networks); political (participation, empowerment); human (education, labour, health, nutrition); physical (roads, claims, markets, schools, bridges); and economic (jobs, savings, credit.)”

For the United Nations Development Programme, the sustainability of livelihoods becomes a function of how men and women use assets, portfolios on both a short and long term basis. This definition points out the role of entitlements but in most cases one may find that situations of the poor are as they are because they cannot claim entitlement.

Krantz (2001:18) indicated that “importance of technological improvements, strengths, needs, policy and governance issues and sustainability should be constantly assessed and supported. United Nations Development Programme often works at national level as entry point then going down to communities.” The entry point therefore does not favour the application of this framework to an academic study as it also requires programming and feedback which is too costly for a student.

2.7.4 The Livelihoods Framework of the International Fund for Agricultural Development (IFAD)

International Fund for Agricultural Development (IFAD 2010: 2;3;4;5) places “gender, age, class (or caste) and ethnic group around the poor. In addition to natural, human, social, financial and physical assets, personal assets (people’s internal motivations) and the desire to engage in political activity are included in the framework. This includes enabling agencies and service providers which the poor use. Markets, culture, rights are placed in the framework. It introduces aspirations, opportunities and actions instead of strategies.”

This framework considers the effect of social class on poverty besides assets since class makes people either powerless or powerful. Culture and aspirations are a unique
attribute which seem to be of importance in this approach. However, it may be difficult
to classify people’s internal motivation as these could prove to be a subjective element.

This framework could not be employed in the study because, the seeking of aspirations,
opportunities combined with actions instead of strategies can be quite challenging to
concretise in an academic study. The idea of connecting poor people to paid
employment and inquire if they desire to engage in political activity can be
misconstrued by politicians and compromise the progress of the study.

2.7.5 The Livelihoods Framework of the Department for International
Development (DFID)

Krantz (2001:19) points out that the ‘‘DFID framework is built around five principal
categories of livelihood assets and their ability to put these to productive use. An
assessment of how organizations, policies, institutions, cultural norms shape
livelihoods, both by determining who gains access to which type of assets , and defining
what range of livelihood strategies are open and attractive to people.’’

The aim is to develop a real and dynamic picture of how different groups of people
operate within their environment. The objective of the Department for International
Development’s approach is to mainstream a set of core principles in a holistic way in
the programming of support activities to ensure that these correspond to issues or areas
of direct relevance for improving poor people’s livelihoods.

‘‘If more people have better access to assets they will have more ability to influence
structures and process so that these become more responsive to their needs’’ (Carney et
al in Krantz 2001). The Department for International Development framework can be
used in a study because it aims to develop a real but dynamic picture of how different
groups of people operate within their environment and link them to relevant institutions.
The framework of the Department for International Development is not meant to be an
exact model of reality applicable to programmes and projects but seeks to provide an
analytical structure to facilitate a broad and systematic understanding of the various
factors that constrain or enhance livelihood opportunities, and show how they relate to
each other. This can be applied successfully to a study.
2.7.6 Similarities between and among sustainable livelihoods approaches for the five agencies

A close look at the agencies reveals that all the five agencies adopted an asset based approach. All agencies recognize that the livelihoods approach is an approach with a good deal of potential that must be drawn in and used in order to build on the best of existing development practice if the potential is to be fulfilled. All the five agencies give at least some considerations to gender although described differently with regard to application in the field.

Common among the approaches of these agencies is that they link their ideas back to the early 1990s by adopting the definition of Chambers and Conway. This definition holds that:

“a livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; which contribute net benefits to other livelihoods at the local and global levels and in the long and short term” (Chambers & Conway 1992:7).

United Nations Development Programme in particular and to some extent Department For International Development include environmental criteria in their Sustainable Livelihoods definitions. “United Nations Development Programme emphasises the importance of technology in its framework as a means to help people rise out of poverty” (Krantz 2001:21). The Department for International Development also supports the technology aspects of livelihoods as an important aspect to consider in addressing poverty reduction. Technology is part of the development process and cannot be ignored. Appropriate technologies enhance production, reduce the cost of doing business and protect the people in that particular production line. Technology is key in considering sustainable livelihoods of the poor.

The Cooperative for Assistance and Relief, Oxford Committee for Famine Relief and Department for International Development consider macro-micro links, policy and advocacy while, the International Fund for Agricultural Development unpacks the Department for International Developments livelihood framework to suit its goals in its
own work. The Agencies not only have similarities in their approaches but differences too as explained in the next section.

2.7.7 Differences between and among sustainable livelihoods approaches for the five agencies

There seems to be some different understanding of sustainability among these agencies as they emphasise on different aspects of sustainable livelihoods differently. One possible explanation that can be given for this difference may be that the agencies’ focus in poverty reduction programmes are different and may be applied to suit their work in the pursuit of their goals.

The Department for International Development for example aims to understand livelihood strategies as part of its overall framework-focusing on assets, structures and processes. This is in order to maximise people’s opportunities over the long term. However, the United Nations Development Programme begins its process with identifying strengths rather than needs. The idea of considering strength before needs reveals a weakness in that it is more logical to identify a need and then seek to understand what strength the person has to address that need.

The Department for International Development includes power relations as one aspect of transforming processes to be examined compared with Cooperative for Assistance and Relief which places less emphasis in its framework and approach on structures, processes and macro-micro links. The emphasis on power relations can be alluded to the role power politics play in the distribution of resources. The influence of power relations as can be seen from the definition of political capital by Rakodi and Jones (2002:11) which states that it is ‘‘access to the political process and decision making. It is best seen as a gate keeper asset permitting the accumulation of other assets.’’

The United Nations Development Programme and to a lesser extent Department for International Development have a common entry point as they link assets to the role of institutions, while the Cooperative for Assistance and Relief, Oxford Committee for Famine Relief and International Fund for Agricultural Development link assets to social processes and livelihood supporting institutions. These similarities and differences between these institutions are likely to cause variations in the way strategies are brought out for particular cases under poverty reduction.
Krantz (2001:20) points out that the United Nations Development programme and Cooperative for Assistance and Relief use the sustainable livelihoods approach “to facilitate planning of concrete projects and programmes. The livelihoods framework of the Department for International Development is more of a basic framework for analysis than a procedure for programming.” It is an instrument to enhance the poverty orientation of different kinds of activities supported by the agency.

The Cooperative for Assistance and Relief in particular puts emphasis on household livelihood security while the United Nations Development Programme starts with strengths rather than needs assessment. The entry point for the United Nations Development Programme is the adaptive/coping strategies that people employ in their livelihoods (Krantz 2001:21). These variations may affect the results of a study or an analysis of the poverty situation.

Cooperative for Assistance and Relief supports household livelihood security primarily at community level as it is more concerned with the immediate needs as compared to long term environments which UNDP and DFID are interested in. United Nations Development programme and Department for International Development work at community level but also “emphasise tackling enabling policy environments, micro-economic reforms, and legislation for effective poverty reduction” (Krantz 2001:20).

The International Fund for Agricultural Development brings in a spiritual aspect which the Department for International Development, Cooperative for Assistance and Relief, United Nations Development Programme and Oxford Committee for Famine Relief do not focus on. This therefore adds an extra feature to the framework which makes it difficult for the sustainable livelihood approach to be treated as a single approach.

Considering the differences discussed above, one can conclude that the approaches are varied, their application is wide and the findings by these organizations also vary. While poverty reduction may be a target for these agencies it may be difficult to transfer the findings of one agency to fit the findings of another. This disparity could also be applicable to researchers as perceptions of situations which affect the poor may vary from one individual to another and one area to another.
2.8 Why the Livelihoods Framework of the Department for International Development was selected

The study focused on stone crushers in Lusaka and applied the livelihoods framework of the Department for International Development (DFID). “The study of livelihoods is essential for understanding poverty and poverty alleviation. Livelihood analysis is today applied in both academic and development research oriented networks as well as applied in policy environment” (Livelihood 2010:2). Livelihoods cannot be understood without studying them in a coherent and consistent manner. Livelihoods are analysed not only in poverty reduction programmes but also in academic work (like is being done in this research), development projects and policy environments. However, for a livelihoods framework to be used and understood a standard definition is established in order to guide the study and analysis of the framework.

This livelihoods framework is selected based on the premise described by the Department for International Development (FAO 2010:6) that “a poverty focused development activity should be people centred, responsive and participatory, multi level, conducted in partnership and should be dynamic. Capital assets such as: natural, social, physical, human and financial are important while taking into account the effect of development on people’s livelihoods.”

The assets: human capital, natural capital, social capital, physical (produced) capital, and financial capital presented in the diagram above are defined as concepts by Rakodi and Jones (2002:11).

Human Capital is “the labour resources available to households which have both qualitative and quantitative dimensions. Qualitative aspects refer to the levels of education and skills and the health status of household members. Quantitative aspects refer to the number of household members and time available to engage in income earning activities” (Rakodi and Jones 2002:11). It can be noted here that availability of labour, skills and the number of people able to contribute towards a livelihood in a household is an important element of sustainable livelihoods.

Natural capital is “the natural resource stocks from which resource flows useful to livelihoods are derived, including land, water and other environmental resources especially common pool resources” (Rakodi and Jones 2002:11). The natural resources
from which poor people can derived or support their livelihoods play a very important role in sustainable livelihoods.

Social capital is “the social resources (networks membership of groups, relationships of trust and reciprocity access to wider institutions of society) on which people draw in pursuit of livelihoods.” Social networks play a key role in alleviating suffering during stress and also enable poor people draw assistance even from institutions that operate charity projects” (Rakodi and Jones 2002:11. Poverty creates chronic stress which is prolonged stress that exists for weeks, months, or even years. People suffering from this type of stress may get used to it and may even not realize that they are under chronic stress. However, it is very harmful to their health. Social capital is therefore a necessary asset in livelihoods.

Produced capital “or physical capital is the basic infrastructure (transport, shelter, water, energy, communications) and the production equipment and means which enable people to pursue their livelihoods. It includes productive and household assets which are tools, equipment, housing and household goods, as well as stocks (such as jewellery). The ability to invest in production equipment may directly generate income and enhance labour productivity. Shelter is similarly multifunctional, potentially providing income from rent as well as a location for home based enterprise” (Rakodi and Jones 2002:11).

Financial capital is “the financial resources available to people (including savings, credit, remittances and pensions) which provide them with different livelihood options” (Rakodi and Jones 2002:11). These financial resources enable people to purchase what they are not able to produce, therefore, poor people too require finances to have a sustainable livelihood” The above defined assets are very important when considering livelihoods of the poor.

While people are the centre of action, institutions are important in facilitating processing these assets to add value to the livelihoods of the poor. Assets, stress, shocks are areas which are key in understanding the situation of the poor when considering and analyzing opportunities that may be available to enable the poor to improve their livelihoods.
In this study, stones are a natural resource and are being used as a common pool resource by the urban poor in Lusaka. The livelihoods framework provides a conceptual tool for improved understanding of the context in which stone crushers live. It contains principles of best practice – people-centred, holistic, flexible, dynamic, and is consistent here with stone crushing as a livelihood.

The framework was used as “it places people at the centre of development and views people as having access to assets (human, natural, social, physical, financial) which are mediated through the prevailing social institutional and organizational environment” (DFID, 2002:7). Below is the Livelihoods framework as depicted by the Department for International Development.

Figure 5.1 Livelihoods framework for the Department of International Development.

Source: Department for International Development (DFID) 2013.

The sustainable livelihoods approach of the Department for International Development was selected based on its being basic. Krantz (2001:3) states that “it is more of a basic
framework for analysis than a procedure for programming, while the United Nations Development Programme, Cooperative for Assistance and Relief and International Fund for Agricultural Development use sustainable livelihoods approach to facilitate planning of concrete projects and programmes.”

It can be observed from Krantz’s (2001) point above that the Department for International Development’s framework plays a big role in the analysis of issues surrounding the poor. This analysis is key in identifying strengths, weaknesses and opportunities, so as to map out a way forward in improving the livelihoods of the poor.

The sustainable livelihoods approach of Department for International Development was therefore, selected to facilitate the carrying out of a needs assessment among the stone crushers in order to have information for analysis and come up with recommendations. The approach was found suitable for use in this study since the research is not a project targeted at assisting the stone crushers in a practical way, but rather to take stock of the stone crushers’ needs, strategies and opportunities before them. Institutions relevant to enhancing their livelihoods, policies and processes that inhibit progress and can enhance the stone crushers’ livelihoods are also considered in the analysis.

2.9 Conclusion

Considering the literature recorded in this chapter, the following are salient features of the discussion. Urbanisation may be described as a process of urban formation and growth in population and size. As cities develop, the effects could include a dramatic increase in costs of goods and services. The United Nations Population Fund (2007:1) reported that “more than half of the world’s population 3.3 billion people would live in urban areas by the year 2008 and many of the new urbanites would be poor.” Poverty therefore, would continue being a challenge for many urban authorities in the world.

It becomes important therefore, for development agencies and researchers to assess the poor people’s assets – natural, human, social, physical (produced) and financial in order to learn about their needs, coping strategies, livelihood strategies, institutions relevant to the poor and what opportunities are available for them. This enables positive action as the poor are put at the centre of poverty reduction interventions. The livelihoods framework of the Department of International Development was selected to be suitable for the study as it allows a needs assessment and analysis of data with a flexible
approach during fieldwork. The stone crushers are involved in stone crushing, an income generating activity which is informal and illegal (as will be explained in Chapter four). They are also exposed to various vulnerabilities found in the urban environment.

Key in this chapter is that unemployment and urban poverty hinder improvement in social and economic welfare due to pressure of the population on available physical and environmental resources. Unemployment encourages the development of the informal sector which offers limited incomes that do not enable the poor to pay for social services as they lack assets to sustain their livelihoods. This information is important for analyzing the livelihoods of stone crushers in Lusaka using the tools given in Chapter three. It also provides a basis for understanding the socio-economic situation in Zambia given in Chapter four.
CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter covers the methods of research applied in this study. It gives key variables, issues of measurement, sample design and sampling methods, data collection methods and field work, data capturing and editing, data analysis, short comings and errors. The methods described in this chapter were used to collect information not only from stone crushers with regard to their livelihoods, but also from key informants in institutions whose work is relevant to the stone crushers’ livelihoods. This is a qualitative research in which the views of individuals (stone crushers) are added and issues (livelihoods, environment, poverty) that are not easily quantified are explained. The data collected helps the researcher to draw a picture about the stone crushers.

3.2 Design and methodology

This is a case study which is descriptive in nature and information was collected using a livelihoods framework drawn from the Department for International Development. “A case study is a detailed examination of a single person, group, institution, social movement, or event. It concerns the operations of a group by centering attention on a limited time range from as short as an hour to as long as several months but seldom more than one year or so” (Thomas and Brubaker 2000:102).

The case study drew on empirical data from an unplanned settlement in Lusaka called Kalingalinga. The data was collected through an eclectic methodology in which qualitative and quantitative methods were used in a complementary manner. In addition, Participatory Reflection and Action were applied on the study site during interaction with stone crushers. Kalingalinga site was selected for the study as it is centrally located and stone crushing has been carried out there over the years. In addition it is accessible and there is security as the stone crushers in this area are accommodative to discussion, such that observation can be carried out anytime during working hours without risk to personal safety.

The aim of a typical case study is to show how during a restricted period of time people interact and relate to their physical (social) environments. In order to show how stone crushers interacted and related to their environment, observation of the site was done.
This was done in order to get information on issues such as: source of stones to be crushed, type of transport used to ferry the stones, security of stones at the site, effectiveness of the technology applied (use of the hammer in crushing stones) and any other activity relevant to the stone crushing. The details about the effectiveness of the technology applied are discussed in detail in Chapter four.

The case study was carried out at one site (Kalingalinga) using the livelihoods framework drawn from the Department for International Development. Observations were made at the site and differences between male stone crushers and female stone crushers were drawn. The details of these observations and conclusions about stone crushers are described in Chapter five. The case study helped to trace the similarities and differences of the stone crushers as a working group, exposing the different roles men and women played, the status they held, relationships among the stone crushers themselves, interpersonal problems and many more aspects of stone crushing as a source of livelihood.

Qualitative research methods were employed in this case study. In addition to qualitative methods, quantitative methods were used as a basis for statistics that were meant for the purpose of backing up arguments in this case study. Creswell (2003:18; 181-183) defines qualitative research methods as research that:

(a) “Takes place in a natural setting,
(b) Uses multiple methods that are interactive and humanistic and involves data collection, interviews, documents, sounds, books etc.”

In distinguishing between these methods, Mario and Wodon (2001:6) pointed out that “qualitative methods make a unique contribution to the understanding of processes shaped by the subjective perception of the social actors. While quantitative methods provide the basis for the selection of the areas where the qualitative study is done and for the identification of specific groups of interest.”

The Economic Social Research Council Society (2011:1) states that “qualitative methods deliberately gives up on quantity in order to reach a depth in analysis of the object studied using techniques such as focus groups, content analysis, participant observation, individual depth interviews and applying unstructured or semi structured techniques. Qualitative methods make it possible to understand the meaning of the
numbers (statistics) produced by quantitative methods.” Broadly speaking it can be said that qualitative research involves the analysis of words as well as pictures and objects, in this case the words spoken during interviews with stone crushers, the pictures seen during observation at the site and the objects used by the stone crushers.

The study benefited from consulting works by these authors: Creswell (2003), Mario and Wodon (2001) and the Economic Social Research Council Society, as statistical information from the Central Statistical Office (quantitative data) enabled the researcher to have a broad overview of the poverty situation in Zambia and Lusaka in particular, thereby providing a basis for selection of illegal stone crushing carried out by poor people in Kalingalinga as a source of livelihood. The qualitative aspects of poverty, the urban environment and sustainable livelihoods enabled the researcher to get in depth information about the stone crushers’ lives. The researcher applied interviews, observation, focus group discussion and used published books as multiple sources of data.

To crown these methods, Participatory Reflection and Action (PRA) tools such as seasonal calendars, household interviews, problem priority lists on semi structured interview schedules were used on stone crushers on the study site. Participatory Reflection and Action tools as outlined in the Punjab Report (Balochistan 2003:41) are based on two essential principles – learning together and triangulation. “Learning together refers to the approach of working in partnership with poor communities, providing them with opportunities to apply their knowledge, experience and capabilities to analyze their own realities,” in this case the poor community of stone crushers.

Denzin (1978:1) explains that “triangulation is about taking advantage of multiple methods and sources of information to cross check every interpretation and deepen understanding.” It is the use of a combination of research methods which have been highlighted in this study. The different components of triangulation used in this research are: data triangulation and methodological triangulation. “Data triangulation involves time, space and persons while methodological triangulation involves using more than one method to gather data such as interviews, observations, questionnaires and documents” (Denzin 1978:1). The researcher interacted with the stone crushers in order to learn about their livelihood while giving them an opportunity to apply their knowledge, experience and capabilities. In addition, the stone crushers were given an
opportunity to analyse their own realities during interviews. The results of this analysis appears in Chapter five.

3.2 Case study with participatory reflection and action.

This was a case study with participatory reflection and action. The detailed information collected about the livelihoods of stone crushers and the detailed accounts of these livelihoods are presented in Chapter five. The International Institute for Environment and Development (2010:1) describes participatory reflection and analysis as ‘‘methods that are used not just for the insiders to inform the research, but also for the insiders analysis of their own conditions. This is particularly important in community approaches to livelihood improvement and natural resource management.’’ Stone crushers are part of the vulnerable groups whose voice is not heard, therefore, participatory reflection and action makes an effort to get their voice heard. Through interviews and dialogue they discuss issues surrounding them as guided by the Livelihoods framework. Stone crushers had to make an analysis of their own situation while informing the researcher too. This analysis helped the stone crushers to map out the strengths, weaknesses, opportunities and threats surrounding their livelihoods. Though the stone crushers had to analyse their own situation as a group, the researcher noted that they are not a homogeneous group. Therefore, variables had to be used in order to get in depth information about their situation.

3.4 Key variables

Slideshare (2010) states that, ‘‘Variables are things that we measure control or manipulate in research. Variables can be explained as anything that can affect or change the results of a study’’. In this study, variables were considered in order to understand differences between and among the stone crushers thus putting the stone crushers in categories. Variables could raise potential explanations which would need to be addressed for the results of the research to be valid. The following are variables which were used in the study.

Variables such as age, sex, education, household size, household headship, marital status, income, and sustainability were used in this study to help in the separation of the stone crushers into specific sub groups. Sex, age, gender, marital status and other factors could influence various issues in the framework, from livelihood assets to
vulnerabilities. For example, men and women could have differential influence over households, and poverty could impact upon them differently.

According to Nzaidtools (2011) ‘‘such social difference need to be taken into account in livelihood analysis.’’ For example, a middle aged married stone crusher without children could have an advantage in meeting the cost of the food basket given the same amount of income as compared to an old married stone crusher with children. These variables could also help in quantifying the data in some way. These variables were used to assess the effects or variations in the livelihoods of stone crushers. The variables were also used in order to identify stone crushers as individuals (using personal particulars), and identify their socio-economic status. These variables also could answer the research question: who are the stone crushers? It is important to have a standard meaning for each variable in order to have a clear understanding of each variable. Therefore, variables are defined in order to set observable conditions to be measured (interpreted) to enable the researcher to draw conclusions from those measurements.

3.5 Issues of measurement

Having done the conceptual definition of the variables in Chapter two, it is important to give operational and observational levels of the research in this chapter in order to guide the research to get a full picture of the livelihoods of stone crushers. According to Wrobinso (2011) ‘‘an operational definition’’ identifies one or more observable conditions or events and then tells the researcher how to measure that event.’’ For example in this study, the poverty line was based on the inability of the stone crushers to meet the cost of basic needs. Operational definitions were also used to obtain consistency with the conceptual definition and also ensure that data produced would be sufficient for making decisions during data analysis.

The operational definition of the poverty line guided the research in the issues of measurement. Public Policy Administration 696 (2010:2) points out that, ‘‘it is important to understand the level of measurement of variables in research, because the level of measurement determines the type of statistical analysis that can be conducted, and, therefore the type of conclusions that can be drawn from the research.’’ Content analysis was applied in the research, as the status of the food basket for each stone
The researcher used variables to create categories in order to clarify the real world situation of the stone crushers. The categories were created based on the responses given by the stone crushers during interviews in which the livelihoods framework was applied. The questions on the livelihoods framework covered the following: background of stone crushers; their livelihood assets; personal and environmental health; becoming or ceasing to be poor; perceptions of rights and entitlements; main changes affecting poverty and well being; relevant resources and infrastructure; relevant institutions and socio-economic and gender relations.

The research made observations of the lives of the stone crushers and the process allowed the stone crushers to demonstrate how they carried out stone crushing. The observational level showed the researcher things which she would otherwise never had the opportunity to witness (details of these activities are given in Chapter five). Other responses from stone crushers regarding various institutions were in descriptive form. The observations and responses helped the researcher to draw a pattern of positions for individual stone crushers. However, in order to clearly draw the positions for individual stone crushers scales of measurement had to be applied too.

### 3.5.1 Scales of measurement

A nominal scale was used in this study. Ibecker (2011) gives the following definition:-

“Nominal level of measurement uses symbols to classify observations into categories that must be both mutually exclusive and exhaustive name the attributes uniquely. The purpose of this scale is for identification. After identification it becomes easy to establish whether two observations are alike or different. For example, sorting the stone crushers into age groups, marital status, education levels and household headship it is likely that stone crushers may vary and could be similar in their age, sex, marital status and household headship. Observations in one category could be alike on some property and they could differ from the objects in the other category. For example both the widowed and the married could have a similar characteristic in that they could both be heads of households. They could differ in that the widowed could be single parents while the married could not be.”
3.6 Sample design and sampling methods

3.6.1 Sampling procedures

A ‘‘qualitative research does not attempt to derive representative samples. This being a qualitative research, the sample is taken to mean the specific set of people interviewed or observed for the study and therefore makes no technical reference to sampling theory’’ (aqr.org.uk (2011). The study used a purposive sample as the stone crushers were chosen based on their availability rather than their degree of representativeness of the stone crushing population in Lusaka. The group that responded to the questions represents the population that was available at the site and was willing to respond to the research questions. Therefore, purposive sampling was used because the research was concerned with a specialized area and therefore data from key informants whose work deals with poverty reduction, environmental issues, mining, land use, income generating activities, including the actors themselves (stone crushers) was required. The key informants were identified through information collected from the Ministry of Finance and National Planning. The study site had about twenty five (25) adult stone crushers operating. Purposive sampling was suitable for this study as only relevant data was needed to have an in-depth analysis and understanding of stone crushers’ livelihood.

3.6.2 Sample size

A sample of sixteen (16) adult stone crushers was adopted for the study. The number was adopted due to the fact that no single stone crushing site has more than twenty (20) adult stone crushers operating during the same period in a day. The study site at Kalingalinga had at least twenty (20) stone crushers operating during the same period especially on Saturdays. The researcher had observed that the stone crushers reported to the stone crushing site at different times and their knocking off time was not uniform. Interviewing a large number would have called for the researcher to visit other stone crushing sites in order to find other stone crushers whose schedule of work could match with the stone crushers at Kalingalinga study site. The stone crushers interviewed at the study site in Kalingalinga answered questions on the stone crushing process, their environment and how stone crushing impacted on their livelihoods. In addition, five (05) interview slots were allocated to key informants in the following institutions:- the Kalingalinga Ward Development Committee, Ministry of Community Development
and Social Services, Environmental Council of Zambia, Lusaka City Council, the University of Zambia (Department of Development Studies). The type of information collected from these five key informants is described under 3.7.2.2 in this Chapter.

3.6.3 Sample area

The study was conducted in the city of Lusaka and covered one area where people are living in poverty and has stone crushing activities. This area was purposively selected from a list of already identified unplanned settlements in the city of Lusaka. The selection was also based on the fact that there was a reasonable number of at least 20 adult stone crushers using the site consistently. The site was available for observation and the presence of the researcher did not affect the business transactions at the site. It also served as a typical low income area where stone crushing activities are purely initiated by individuals as an income generating activity which could enable them earn a livelihood. There are other stone crushing areas in other parts of Lusaka which belong to established commercial companies such as Makeni quarries, Lions quarries, United quarries, and Eastern quarries.

3.7 Data collection methods and field work

3.7.1 Schedule and procedure for gathering data

The following was the schedule and procedure for gathering data: The first step was observation of the study site which was followed by the researcher making an appointment to meet the area Councilor or his representative. After meeting the representative of the area Councilor in order to get clearance to interview the stone crushers, a meeting was held with the Ward Development Committee to get relevant dates to meet stone crushers for introduction.

Then an introductory meeting was held at the study site with representatives of the stone crushers in the presence of executive committee members of the Ward Development Committee and at the same meeting, appointments to have interviews with stone crushers were made. The researcher began interviewing the stone crushers following clearance by the Ward Development Committee and acceptance by the stone crushers and this step fulfilled the participatory reflection and action explained under 3.3.
Meanwhile, appointments with informants from key institutions listed below were made and the researcher interviewed the informants from Lusaka City Council, Environmental Council of Zambia, the Ministry of Community Development and Social Services, the Ward Development Committee and the University of Zambia by following specific dates allocated.

The data collected during interviews from the stone crushers was validated using Central Statistical Office documents which provided information for the basis of the selection of the study site. Information from key institutions indicated in the research and from published materials relevant to the research was used to collate the data. These steps fulfilled the use of multiple methods in qualitative research employed in this study.

3.7.2 Data collection process

The data was collected using both primary sources and secondary sources. The researcher had to visit libraries, access the internet, interview key participants, carrying out observations on the site and also interviewed the stone crushers themselves.

3.7.3 Data collection techniques and procedures

3.7.3.1 Sources of data

Both primary and secondary sources of data were used in this case study in order for them to supplement each other and enable the researcher to apply triangulation.

3.7.3.2 Primary sources

Primary sources of data were used to collect in depth information from:-

a) Stone crushers in order to describe their livelihood, their work environment and assess sustainability of stone crushing,

b) The Kalingalinga Ward Development Committee – to describe public services available for use by the residents (including stone crushers) in the area as well as the condition and status of these public services.

c) Environmental Council of Zambia – to describe specific environmental problems associated with stone crushing and how these problems can be managed.
d) Lusaka City Council to explain institutional arrangements made to regulate stone crushing as a trade by way of licensing it. To further explain why stone crushing has not been controlled, a situation that has resulted in a number of quarries developing around the city.

e) University of Zambia (Department of Development Studies) - to describe how stone crushing, as an extractive income generating activity, could contribute positively to the livelihoods of stone crushers.

f) Ministry of Community Development and Social Services - to describe how the lives of the poor including stone crushers could be uplifted.

3.7.3.3 Secondary sources

In addition to primary sources, the researcher also used secondary sources as follows:-

a) Central Statistical Office to quantify urban poverty through statistics of the population. This was done in order to describe the status of stone crushers on the basis of official acceptable standards of the categorisation of poverty. This also helped to evaluate the extent of poverty among the stone crushers. Zambia (2008:112) states that “the baseline for poverty in Zambia relates extreme and moderate poverty. Extreme poverty lines relates to the monthly cost of the food basket while the moderate lines relates to the monthly cost of all basic needs including non food items.” If a household or individual fails to meet the cost of the food basket (extreme line) then he/she is classified as extremely poor. If an individual meets the cost of the basic food basket but cannot afford the non food basic needs, he or she is said to be moderately poor. By January 2011 the basic needs basket for a family of six living in Lusaka was K2,895,550 ($564.37) to afford the necessities. The basic cost of food items was K812,760 ($158.41) which is over and above the Government minimum wage of K419,000 ($81.66) for non unionized workers and K250,000 ($48.72) for domestic workers as stipulated by Statutory Instrument No 1 and 2 of January 2011.

b) Ministry of Mines and Minerals Development – to explain how mining is controlled in Zambia. Information from this Ministry was collected and this helped to give an official picture of how mining and quarrying are supposed to be conducted as defined by government regulations. Officially, Mining and quarrying should be carried out in designated areas by people who have been
licensed by the government to do so. This information was useful in determining whether stone crushing carried out by stone crushers in Kalingalinga is conducted according to official regulations.

c) Documentation – such as official reports, newspapers, media reports, magazine articles, books and information on the internet was collected and integrated with the data obtained from the study site. This was in order to locate and strengthen the arguments in the study wherever necessary.

d) Published sources such as books and articles on poverty, sustainable livelihoods, common pool resources and income generating activities provided materials to give an overview of international literature on the topic. These materials are recorded in Chapter two and formed part of the theoretical framework which informed the rest of the study. The sources of this secondary data were the University of Zambia Library, University of South Africa Library, the Institute of Economic and Social Research Library and the Internet.

3.7.3.4 Observation

Observations were to be carried out at the study site in order to collect information on how changes in weather patterns affected the business of stone crushers, identify sources of stones being crushed, patterns in reporting for work, how stone crushers were conducting their sales and other information which would provide an in depth description of stone crushers. Observations would inform and enable the researcher to effectively carry out the following:-

i) Participation - working with stone crushers to identify their strengths and problems such as access to markets, pricing and weather conditions. This was to be done through observation over a period of one year in different seasons while recording activities, noting the changes and making follow ups on why certain changes had occurred. It was to be done in order to gain insight into access to markets and establish how pricing was determined.

ii) Technology- Identify technology used by the stone crushers and how effective it was. In addition, it was necessary to identify new technologies and practices that could improve their work and protect their health. The effectiveness of the technology (use of a hammer to crush stones) was to be determined through observation on how long the
stone crushers took to crush stones to fill a wheel barrow. It was done to gain insight into and establish the effectiveness of the tools. There was also need to establish whether dust emissions which come from the crushing process was harmful as the stone crushers inhaled it since they did not have protective clothing.

iii) Access- identification of systems which stone crushers could access to enable them hear about appropriate technologies which would enable them choose from appropriate technologies. Therefore, it was necessary to identify institutions from which stone crushers could get information on appropriate technologies. This was also done to gain a better understanding of the political and institutional factors that could promote or inhibit the use of new ideas. The Ministry of Mines, Ministry of Community Development and Social Services and the Lusaka City Council as institutions whose work is relevant to the stone crushers were selected to assist in providing useful information.

It was important to carry out these observations so as to give a correct description. As described by Mouton (2001:148), ‘‘such descriptions are embedded in the life-worlds of the actors being studied and aimed to produce insider perspective of the actors and their practices.’’

Observations were also used to record photographic images relevant to the study in order to illustrate and support the research findings. In addition, the pictures are useful for content analysis defined under data analysis in 3.9.

3.7.4 Ethical considerations

The researcher sought to protect both the information and participants from risk of harm resulting from their participation either in form of giving information or being photographed. The principle of voluntary participation was followed in that the research topic and objectives were explained to the participants before the interviews. Those who participated did so with informed consent and their participation was voluntary. The information they gave was treated as confidential and the identity of those who gave details of accounts on any issue remained anonymous unless in situations where they did not mind their names being recorded.
3.7.5 Gaining access to the subjects

The researcher faced some challenges that constrained work speed. She had to suspend carrying out interviews on two consecutive seasons due to unfavourable political climate (during these seasons, political parties were using stone crushers to achieve popularity). However, the researcher finally managed to get open access to the study site and the interviews finally took place with the support of the Kalingalinga Ward Development Committee. Interviews with the stone crushers were conducted in a local language called Nyanja while the responses were recorded in English. This was time consuming and led to lengthy interviews. However, this translation of Nyanja into English was not in any way a constraint because the researcher and all the research assistants speak both languages. The researcher was accepted by the stone crushers who also told her that being a woman and in government she could use the information to report their plight to potential developers and also link some of them to employment opportunities as garden helpers and maids to her colleagues. Many visits had to be made to some key informants as they were occupied with other duties in their institutions and therefore unavailable at appointment times. This proved rather costly for the researcher.

3.7.6 Dates and settings of data gathering

The dates on which interviews were set could not come to fruition several times. However, the final dates on which the interviews were finally held are as follows:-

- Stone crushers at the study site - 4th, 5th, 6th and 7th September, 2009.
- Lusaka City Council, Representative from the Council Site Office – 4th September, 2009.
- Ministry of Community Development and Social Services, Representative from the Department of Community Development and Social Services - 21st August, 2009.
- University of Zambia, Representative from the Department of Development Studies – 14th August, 2009.
- Environmental Council of Zambia - 10th April, 2009.
Settings of gathering data were that all institutional representatives gave the responses from their offices except for the Environmental Council of Zambia respondent who was interviewed when the researcher met her at a meeting. Three research assistants were drawn from the University of Zambia’s Department of Development Studies which at the time had introduced the livelihoods framework as a tool for understanding and addressing poverty. Observations were carried out on the site at intervals from November 2007 to December 2008. This was to monitor the effect of seasonal shifts and generally how business was being conducted.

3.8 Data capturing and editing

3.8.1 Semi structured interview schedules

(i) Semi structured interview schedules were used to collect data from key informants who were professional in the fields of:- land use, environment, mining and poverty. This was in order to allow for the formulation of the questions appropriate to the discussion (appendix b, c, d and e).

(ii) Semi structured interview schedules were used to collect information and record responses from stone crushers (who are actors in the study), and from the Kalingalinga Ward Development Committee which oversees development of the area (appendix 1a and f).

3.8.2 Camera

A camera was used to take photographic images which are representative of what happens on the ground at the study site. The photographs are used in Chapter five to give illustrations of situations as seen and observed during field work.

3.8.3 Tape recorder

This was used to record interviews whenever given permission. These recorded interviews were transcribed and then analysed. The tape recorder was useful in that the recorded information was used to fill in gaps in cases where, the notes taken during field interviews were not very clear. For example some stone crushers indicated to two research assistants that satanists had wanted to kill them by getting samples of air they were breathing. The two research assistants had recorded the statement in writing
differently. Therefore, the audio tapes were also used to understand statements which had not been written in full.

### 3.8.4 Note book

This was used to keep records of the main events of the whole process especially during observation and interviews. The notes taken were also used to link the observations to the interviews later. The notes taken in the note book helped to keep track of the field work. “In qualitative research, researchers tend to keep field notes as they participate in the fieldwork in natural field settings” (Mouton 2001:107).

### 3.9 Data analysis

Data was processed by coding manually, analyzed using qualitative forms and mapped using content analysis. “Content refers to words, meanings, pictures, symbols, themes or any message that can be communicated. The analysis of texts and documents is unobtrusive (non reactive) method, which means that errors associated with the interaction between researchers and subjects (such as observation effects) are avoided” (Mouton 2001: 165).

### 3.10 Data presentation

The data is presented in descriptive, percentage and table form. Field observations are presented in form of photographs and descriptions.

### 3.11 Shortcomings and errors

Errors could have resulted from the small sample size, the limited pool from which the sample was drawn, or the reliance on self reported work experience. Most of the time the researcher was operating away from her official work station and town which made it difficult to access the study site. In two consecutive seasons, the researcher had to suspend carrying out interviews due to political considerations. The possibility of having a sampling error could not be ruled out as some of the participants who had operated in one site for a long time could have been exposed to similar experiences (interviews) which could influence their responses. The exposure to similar interviews could make the stone crushers present their experiences in a tailored manner in the hope of getting attention. Other stone crushers could have been new at the site, as evidenced by the numbers. In 2007 when observations began, the number of stone crushers was about 16 on the study site but later rose to 25. The new stone crushers could have
operated at the study site for a short period, but presented themselves as having been working at the site for a very long time in the hope of being put on the priority list by the Ward Development Committee which was interested in the recommendations from the research. The Committee hoped to use the recommendations to address poverty among in Kalingalinga community in general and among stone crushers in particular, as other methods applied before had failed. It was difficult during the research to confirm which stone crusher had been crushing stones for the number of years they claimed as sometimes they do piece rate work elsewhere therefore, so only their word could be trusted.

3.12 Conclusion

Variables such as income, sex, education, household size, headship and marital status together with the livelihoods framework provided a platform for data collection for the analysis in Chapter five. The sample design and sampling method is determined by purposive sampling, while data collection methods are primary, secondary and observation. Data was captured by use of semi structured questionnaires which were applied during interviews, after which the data was edited, then analysed using content analysis. Short comings during field work could have been caused by political consideration, and errors by reliance on self reported work experience or interviewees having been exposed to similar interviews before. The key argument in this chapter is that, this is a qualitative study in which information is collected using an eclectic method.
CHAPTER FOUR

SITUATION ANALYSIS OF THE SOCIO ECONOMIC ENVIRONMENT IN ZAMBIA

4.1 Introduction

The objective of this chapter is to provide a situation analysis of the socio-economic situation in Zambia and more specifically Lusaka province. Data is presented beginning with an overview of the context of Zambia. It takes the form of a situation analysis which includes geographic location, land use, land zoning, mining, population trends, urbanization, poverty and environment, developments in the economy, employment and unemployment levels. Further, a detailed description of the study area showing historical background, climate, land use in Lusaka, population and housing, socio-economic status of residents is provided. Then, a brief discussion of research carried out by another scholar on stone crushing in Lusaka is presented and environmental aspects of limestone quarrying are outlined. It is important to discuss the other research conducted prior to this research in order to highlight both the negative and positive aspects of stone crushing. The chapter ends with a conclusion.

The literature in this chapter is linked to international literature presented in Chapter two in which a discussion of the urban poor is presented in detail and a livelihoods framework drawn from the Department for International Development (DFID) is outlined. The application of the livelihoods framework is discussed in detail in Chapter three showing sources of data and steps that were followed during the investigation of the sustainability of stone crushers’ livelihoods.

4.2 Geographic location

Zambia is a landlocked sub-Saharan country sharing boundaries with Malawi, Mozambique, Zimbabwe, Botswana, Namibia, Angola, Democratic Republic of Congo (DRC) and Tanzania.

According to the Central Statistical Office the country covers “a land area of 762,612 square kilometers, lying between longitudes 8 and 18 degrees south and latitudes 22 and 34 degrees east. Zambia is endowed with natural resources… land area of 39 million hectares is classified as having medium to high potential agricultural production, but less than half of potential arable land is cultivated. The country is prone to drought due
to erratic rainfall, as its abundant water resources remain largely untapped. In addition, Zambia has some of the largest copper and cobalt deposits in the world” (Zambia 2008a:1).

The total land area of 39 million hectares which is mentioned in the above paragraph is a resource which plays a key role in many people’s lives in Zambia. In order to locate stone crushing activities carried out by stone crushers in Lusaka, land use is discussed below.

### 4.3 Land use in Zambia

It is important to give highlights of how land is legally used in Zambia because legal ownership of land affects the stone crushers. This is because the status of ownership of land is vital in understanding why stone crushing in Kalingalinga is considered illegal.

According to Kalimakwenda (2009), land is a natural resource owned by the State and in the case of Zambia, all powers pertaining to the ownership of land are entirely in the hands of the Head of State (the President) with customary land being controlled by the Chiefs. There is statutory land which is exclusively owned by the State or the government. The administration of customary land is done through the traditional Chiefs who have power over all productive resources in their chiefdoms. When State land is given to an individual it is owned under freehold land tenure. Freehold land tenure is where land is privately owned (individualized) and regarded as private property. This is the type of land ownership which is very common in urban areas.

Kalimakwenda (2009) explained that since land is made available to the citizens through land rights known as land tenure system which is a legal, political and socio-economic arrangement governing the ownership and management of land, stone crushing is also expected to be carried out on land that is demarcated for that and by people who are legally authorized to do so. The legal demarcation of land for specific use is called zoning.

### 4.4 Land zoning

In Zambia, the Ministry of Lands demarcates land for specific use by the above mentioned process known as zoning. This is to ensure that the specified use of land is achieved. Unfortunately, the land from which stone crushers harvest their livelihood is
not officially demarcated for such use through zoning. Zoning is probably the most widely applied mechanism to regulate urban land use in many countries. The process broadly defines land for residential, commercial or industrial uses, and may impose narrow land use restrictions. The common methods used are exclusionary and expulsive zoning.

Exclusionary zoning has often been used to zone against rather than for a type of land use or development activity. Pogodzinski (2011:145) pointed out that “exclusionary zoning is the desire to exclude or restrict a member of some social class from occupying a jurisdiction. The class to be excluded includes the poor households, whose use of public services is expected to exceed their tax payments.” He observed that cost increasing zoning regulations may attract high income-households which accomplish the exclusion of low-income households or provide a guarantee with respect to other neighborhood characteristics such as congestion. In addition Allbusiness (2011) states that “exclusionary zoning is zoning laws of a community that would serve to prohibit low and moderate income housing; considered illegal. On the other hand expulsive zoning has pushed out residential usage and allowed ‘dirty’ (illegal usage) usage of industries to invade the community.” As a result of expulsive zoning, the poor and those who tend to rent houses largely inhabit the most vulnerable parts of available land thereby constitute the most vulnerable communities. With or without zoning, deed restrictions or other devices, various groups are unequally able to protect the environmental interest.

Bullard 2004 (in Yona 2005:11) explains that “Zoning ordinances, deed restriction and other land use mechanisms have been widely used as a nimby tool, operating through exclusionary practices. He indicated that historically, exclusive zoning (and rezoning) has been a subtle form of using government authority and power to foster and perpetuate inadequate environmental planning.” This type of authority is no exception to the Zambian situation as the government uses zoning to direct and control various activities such as setting up industries, mines, farms, residential areas and other infrastructure.

Therefore, considering the explanation of zoning given above, stone crushing in Kalingalinga is illegal. This can be explained with reference to the Mines and Minerals Act No. 31 of 1995, the Town and Country Planning Act No. 475 of the Laws of
Zambia and the Environmental Protection and Pollution Control Act No. 204 (Statutory Instrument No. 28 of 1997) which are explained by Machina (2000:35) as follows “under the Town and Country Planning Act, no developer may be allowed to change the use of a given portion of land or buildings other than the prescribed use.” The use of the land is prescribed by government therefore it is illegal to use land for other functions not stipulated on the documents issued when land is allocated. Machina (2000:35) further explains that the Environmental Protection and Pollution act No. 204 (Statutory Instrument No. 28 of 1997) requires the owner of the land to among other things, submit necessary documentation to the Environmental Council of Zambia before doing any such work on a given piece of land.” These application forms attached to relevant documents are used by government to grant permission to an individual or organization to develop a particular type of land in a certain way. If one has no such written permission, any development or use of that particular land becomes illegal.

The stone crushers in Kalingalinga do not meet these requirements and so, they do not qualify to conduct their business as it is against the requirements of the law, especially that Kalingalinga is not prescribed for purposes of stone crushing. Zambia (2004:16) reported that “the Mines and Minerals Act and the Mines and Minerals Environmental Regulation of 1997 addresses the environmental, health and safety aspects of the mining licenses delivered by the Mines and Minerals Development Department.” This process if not followed by the stone crushers when establishing their business makes them fall short of holding legal titles for their business. Therefore, it becomes important in this study to explain how mining is conducted in Zambia so as to show why the stone crushers find themselves conducting an illegal activity.

4.5 Mining

In Zambia, mining rights are under the jurisdiction of government. According to Yona (2005:13), “the Ministry of Mines and Mineral Development issues permits to intending miners as covered under the Mineral Act of 1976 and amendment of 1984. The Ministry also formulates policy and legislative framework for development of buildings and industrial minerals of the country. All miners are supposed to have licenses and those found mining without licenses are fined.” It can deduced from this statement that the mining regulations and procedures vested in this Ministry, determine specific fees that are supposed to be charged to those who want to engage in mining and
quarrying businesses or ventures. Therefore, any mining operation or procedures outside the Minerals Act attracts penalties as it is termed illegal.

Yona (2005:13) further points out that there are different types of mining such as “the small scale mining which includes registered and licensed non-mechanized or semi-mechanized mining operations run by society members or entrepreneurs with the use of hired labour and have a basic management structure; and the legally constituted small scale mining using highly mechanized mining techniques such as moving (washing) plants and draglines”.

However, stone crushers do not fall into the mining categories stated because they practice small scale mining or quarrying known as artisanal mining which encompasses the smallest and simplest operation. Artisanal mining is known for using simple tools. It is conducted as an informal spontaneous activity without legal title to the mining area. Predominantly the labour force is unskilled with little or no formal education and is small in number. This is mainly illegal mining which creates the environment-poverty nexus mentioned in Chapter two.

As already alluded to in Chapter one with reference to Lipalile (2009) “small scale quarrying has been on the increase in Zambia and Lusaka in particular, due to the growth in the construction industry which has encouraged many poor people to engage in this income generating activity in order for them to earn a living.” In order to understand the link between poverty and population, a discussion of population trends is given in the next paragraph.

4.6 Population trends

The demographic characteristics of any country are important in understanding the living conditions of the people through the impact they make on the socio-economic situation. According to the Central Statistical Office, “Zambia’s population was first comprehensively recorded at 5.7 million in 1980. It increased to 7.8 million and 9.9 million in 1990 and 2000 respectively. The population over the years has remained young with about 45 percent of the population below 15 years. The country’s average population density is 13 persons per square kilometer, Lusaka province has the highest average of 64 persons per square kilometer” (Zambia 2008a:1).
At national level, 65 percent of the population lived in rural areas while 35 percent lived in urban areas. This shows that most people live in rural areas. This situation has remained the same observing from the population figures given below for the 2010 census carried out in Zambia. According to the Central Statistical Office (2011) the population of Zambia was recorded as “13,046,508 million in 2010 with Lusaka having the highest population of 2,198,996 people while North Western province had the lowest population at 706,462. Out of the total population of 13,046,508, 61 per cent (7,978,274) live in rural areas while 39 percent (5,068,234) live in urban areas.” The population in rural areas is 22 percent higher than that of urban areas, a smaller percentage, therefore, than indicated during the previous census. This clearly demonstrates the “pull” exerted by urban areas as rural inhabitants migrate to urban areas in the hope of better livelihoods.

4.7 Urbanisation, poverty and environment

According to Zambia (2008a:14) “Lusaka and Copperbelt provinces are the most urbanized provinces with 85 percent and 79 percent of their population living in urban areas respectively.” These two provinces are not only the most urbanised but the most populated too. The pull and push factors around urbanisation are described by Heisler below.

Heisler (1997:9) states that “urbanization in the case of Zambia, entails three things, namely; the movement of people from rural to urban areas and the increase in the proportion of the population of Zambia who live in urban areas; the transformation of one kind of urban social system into another, and the unique resources of urban systems which distinguish them from rural systems.” The unique resources that are available in urban centers become an attraction for many people to migrate to these areas, but while some may get the benefits of these developments, many end up as disadvantaged citizens and fall into poverty. This can be amplified by the following “although urbanisation can constitute on one hand a stimulant to economic development by encouraging the employment of new techniques, technologies and skills to solve problems: on the other hand it could hinder improvement in social and economic development/welfare due to pressure of population on available physical environment and other resources.” (Mermoz 1997:57). Most of the rural-urban migrants may be
caught up in the latter situation thus end up in unplanned settlements with little or no resources to support their livelihoods.

It can be deduced from the explanations on urbanisation that in the case of Zambia, the latter explanation by Mermoz (1997) of urbanisation hindering improvement is happening especially in urban areas of Lusaka. This situation is made worse as “Lusaka province has 85 percent of her population residing in urban areas and is the most urbanized city in the whole country” (Zambia 2008a:14) thus the population pressure is massive on available resources. Therefore, while most people migrate to these urban areas, they are confronted with the nature of the urban environment which demands payment for most services. But despite difficulties involved in earning money in these urban areas, people still migrate to urban areas, and may end up in unplanned settlements leading a life of poverty especially because they fail to get an income that can sustain their lives.

This scenario is confirmed by Kambangaji (2006:vii) who stated that “many people in Lusaka live in slums. Sanitation in these compounds is well below standard and access to clean water is almost impossible. In addition to lack of access to clean water, four or more families have to share one toilet which is also used as a bathroom.” Most pit latrines are very close to the houses and during the rainy season the pit latrines get filled with water. The people who have no access to toilets go out at night by the road side, to answer the call of nature using empty opaque beer packets which they leave on garbage dumps.

Furthermore, Lungu (2006:5) pointed out that “in Lusaka 70 percent of the urban population live in unplanned sub standard settlements. This status has led to the shoddy delivery of social services to these communities.” Urban poverty in Zambia could be said to be concentrated in unplanned settlements where people are faced with the following challenges:- sewerage systems that often breakdown, water purification is inadequate, garbage is not collected on time thereby producing a heavy stench which invade dwellings and children have no decent safe place to play in. It is common for these unplanned settlements to experience outbreaks of cholera every year in the rain season.

The challenges pointed out above by Kambangaji (2006) and Lungu (2006) describe just a tip of the kind of life poor people lead in unplanned settlements. In order to
understand why empowerment of poor people and development of these areas has lagged behind, a close look at the developments in the Zambian economy is discussed below.

4.8 Developments in the economy

It is important to highlight what has been happening in the economy so as to see the path taken by government to develop the country as well as reduce poverty. According to the United Nations (UNDP 2007:19) ‘‘Zambia had one of the highest per capita incomes in Africa in 1964, was the largest producer of copper among developing countries, and the third largest producer after the United States and the former USSR with production twelve times of the world production by 1969.’’ It is also reported by the United Nations that in spite of this good performance in the mining industry, Zambia was faced with the following problems:- ‘‘ low investment during the independence years; the need to replace expatriate labour; and the disruption and subsequent closure in 1972 of the transport route through Rhodesia now Zimbabwe (resulting from the Unilateral Declaration of Independence by Rhodesia in 1965) which turned Zambia into a high cost producer on the world market’’ (UNDP 2007:9).

Due to the high costs in copper production and unstable labour force, Zambia was therefore, unable to invest during the years in which the price of copper increased. As a country, Zambia had just emerged from colonial rule and was struggling to move out of subsistence farming. Most people lived on the land, eking out a bare existence and were poor therefore they could not invest to have sustainable livelihoods. This can be said to have been the beginning of unstable economic performance which has resulted in one of the major challenges of high poverty levels still facing Zambia today.

The poverty profile in Zambia can be summarized as follows: According to Saasa and Carlson (2002:29) ‘‘Before independence, Zambia’s social indicators were among the lowest in the world and the distribution of income and wealth were highly uneven. The prevalence of urban poverty was negligible in the seventies (4 percent in 1975) but it increased to just under 50 percent of the urban population in the nineties. By 1991, poverty levels were very high with 68 percent of all Zambian living below a level sufficient to provide basic needs. By 1998 poverty levels were almost at 73 percent and this was attributed to the 10 percent rise in urban poverty which rose from 46 percent in 1996 to 56 percent in 1998 while that of the rural areas remained the same.’’ This
account on increase in poverty levels presented can be said to have been exacerbated by the country’s failure to invest in the economy in order to address the uneven distribution of income and wealth as well as promote the growth of agriculture which was mainly subsistence.

Zambia (2008a:113) reported that on the overall, “64 percent of Zambia’s total population was poor, and amongst these poor, 51 percent was most disadvantaged as they could not afford a minimum basic food requirement, hence they was extremely poor. Only 14 percent of the total poor persons could afford the minimum basic food requirements (food requirements to meet minimum nutritional requirements) but could not afford the basic non food requirements (such as health, shelter, education).” It can be said that no development can take place when people can only afford food without investing in education. The lack of education has perpetuated the cycle of poverty as poor people have not been able to engage in meaningful livelihood systems to promote their personal development.

The picture above reveals that one of the major challenges government was faced with at independence in 1964, was how to reduce poverty, which was not only increasing in the country but also beginning to strongly affect the urban areas. It became imperative for the government right from the onset of independence to begin putting in place policies to address poverty reduction. Below is a discussion on how government tried at different stages to reduce poverty.

The first stage was the adoption of free market policies, which was followed by the state controlling the economy. Then came an economic transition, stabilization and structural adjustment which was followed by the implementation of structural adjustment programme, after which came other economic developments during which a poverty reduction strategy paper and national development plans were implemented. However, in spite of all these attempts, poverty was still a challenge. These poverty reduction strategies will be discussed on the next page.

4.8.1 Free market policies

Poverty was identified at independence in 1964, as one of the major barriers to human development in Zambia. Therefore, the need arose to tackle poverty in the post independence era.
Poverty was a key issue that needed to be addressed. Zambia (2008b:1) states that “the government introduced free market policies from 1964 to 1972 in the hope of improving economic performance. During this period, the government pursued liberal economic and political policies with little or no state control, and put focus on provision of infrastructure and services.” Since the free market policies did not bear the desired fruits of reducing poverty, the government decided to take control of the economy in the hope of distributing the national cake to its citizens. The state control activities are explained in the next paragraph.

4.8.2 State control

According to Zambia (2008b:1) “the State controlled the economy from 1973-1984 and embarked on nationalization of companies. This period was characterized by a public sector led economy with excessive controls, parastatal monopolies and a pro-urban anti agricultural bias, which attracted maize subsidies, negative fiscal balance, high tariffs and borrowing to compensate for the steep decline in the international purchasing power of copper which began in 1975.” The result was agriculture activities dwindled as since they were not a priority. It was during this period that Zambia as a country experienced food riots as the cost of living became very high and this caused discontent among the citizenry. The economy was beginning to shrink.

Zambia (2002:16) states that “the economy deteriorated in the mid 1970s following not only a sharp decline in copper prices, but also the oil shock and the public enterprises that constituted a fiscal drain on state revenue as well. In addition, the period from 1965 – 1976 was affected negatively by transport disruption (explained under 4.8) which resulted in low investment in mining, a growing trade deficit and heavy indebtedness.” These factors made government realise that the economy was becoming fragile therefore there was need to bring stability into the economy.

4.8.3 Economic transition

It can be said here that “the 1980s marked the first phases of implementing structural programmes (SAPs) amidst a stagnating economy. During this period 1980-1990, Zambia’s economic growth was the second lowest in the Southern African Development Community (SADC) after Mozambique.” (Zambia 2002:17).
The period 1985-1990 was for economic transition and structural adjustment policies were introduced. Zambia (2008b:2) stated that “government introduced market based policies in the framework of multilateral loan conditionality. The country was taking up remedial steps to salvage the shrinking economy discussed above. However, few attempts were made to understand the national and regional causes of poverty in the 1980s and so in the second half of 1980s Zambia introduced structural adjustment programme (SAP).” This programme too did not produce intended positive results in terms of reducing poverty. The government was had to continue finding ways and means of reducing poverty in order to improve people’s livelihoods. The reasons why structural adjustment programme failed to bring positive results are explained in the following paragraph.

One of the components of structural adjustment programme was stabilization, whose major objective was to reduce government spending and involvement in the economy. These two aspects entailed cutting expenditure on basic social services and introducing cost – sharing for many services. However, these policy changes had adverse effects on the poor and vulnerable groups in the population required safety nets. It has been explained above that most people were so poor they could hardly afford basic food requirements, therefore the attempt to cut government expenditure on social services and also share costs with such groups of people proved hostile and retrogressive.

The effects of this attempt was described by the United Nations Development programme as follows: “Lack of growth and the negative welfare and distribution of effects of the conditionality based policies led the government to abandon the policies. As a consequence, relationships with multilateral companies deteriorated to the point of hostility, the effects of which would persist for twenty years” (UNDP 2007:19). Nevertheless, abandoning the structural adjustment programme was inevitable as the effects were negative since government could not achieve what she had wanted – reducing poverty.

The Government’s move to abandon the structural adjustment programme policies, led to the introduction of social dimensions of adjustment aimed at mitigating the negative effects of the structural adjustment programme. It is indicated by Zambia (2008b:109) that “government with support from the World Bank launched in 1991, the Social Dimension of Adjustment (SAP) priority survey 1 (PSI) to track the impact of
adjustment on the welfare of the people. Before this launch in 1991, it was not possible to clearly identify and locate the poor in Zambia. Since 1991, the government has conducted welfare assessments in the following years: 1993, 1996, 1998, 2002/3, 2004 and the last assessment was the 2006 living conditions monitoring survey.’’ The surveys provide benchmark data for poverty analysis in the country that has led to more informed and focused debate on how the poverty challenges may be tackled.

4.8.4 Stabilisation and structural adjustment

The United Nations Development Programme (2007:20) reported that ‘‘the introduction of structural adjustment programmes in 1991 brought profound changes to Zambia whose economy was ill structured to accommodate them. Trade liberalisation introduced competition which the State enterprises were unprepared to meet.’’ It was observed that the liberalised economic environment when combined with extremely high borrowing rates proved in practice to be biased against Zambian producers. The harsh environment was compounded by uncertainties in the business environment arising from unstable macro-economic conditions and unpredictable changes in implementation of the economic policy instruments. High prices for utilities such as electricity, water, telephones and fuel further worsened the difficulties faced by domestic industries.

With the harsh economic environment described above, (unemployment levels in Zambia 2005:24) Zambia’s economic performance continued to decline leading to the closing of the mines as well as most industries and companies. Zambia was plunged into a stage of massive unemployment. It became quite common to see able bodied men and women roaming the streets. Even the majority of Zambia’s qualified people, were not fortunate enough to get employed and had joined the country’s qualified unemployed.

The United Nations (UNDP 2007:20) also pointed out that ‘‘by the end of the implementation of structural adjustment policies, it became obvious that neither public intervention and ownership nor radically neo liberal policy frameworks had achieved the economic diversification and equity that was required for sustainable growth in Zambia.’’ These challenges which appeared in the economy therefore, meant that the government needed to adopt other forms of policies in order to activate sustainable economic growth and reduce poverty in the country.
Considering the different policies (free market policies, state control, economic transition and structural adjustment policies) adopted by the Zambian government, it can be concluded that, with little foreign exchange being earned amidst the entry of highly competitive consumer imports during the 1990s, the industrialization strategy failed, leading to increased unemployment.

The economic situation the government was faced with can be described as follows:-

“Over the period 1990-1999, Zambia had the least average annual growth rate in the Southern African Development Community (SADC) region at one percent. This was below the sub-Saharan Africa rate of 2.4 percent. Consequently, per capita Gross National Product (GNP) had shown a downward thrust. The real gross fixed capital formation averaged 12 percent of real Gross Domestic Product (GDP) and portrayed a steady but marginal increase from 8 percent in 1990 to 15 percent in 1999. The level was well below the 20 percent associated with sustainable growth” (Zambia 2002:16;17).

There was need for the government to adopt other forms of development in order to reduce poverty in the country. It became apparent that Government needed to draw up national development plans aimed at not only economic growth but also poverty reduction. The Zambian government drew up the poverty reduction strategy paper and the transitional national development plan.

4.8.5 Other economic development

Zambia (2008a:2) indicates that the Zambian economy improved considerably during 2002-2005 as the Poverty Reduction Strategy Paper (PRSP) and the Transitional National Development Plan (TNDP) were implemented from 2002-2005. “Real Gross Domestic Product averaged 4.8 percent per annum from an annual average of 2.2 percent in the preceding four years. The rapid expansions in mining and construction sectors were key drivers of the growth during this period.” It can be noted that agriculture was not one of the drivers of the economy yet the majority of the people in the country lived as subsistence farmers.

Nevertheless, with the improvement of the economy, Zambia’s external position strengthened. “In 2005, Zambia reached the completion point under the Heavily Indebted Poor Countries (HIPC) initiative resulting in debt forgiveness or cancellation” (Zambia 2008b:2). Additionally, Zambia also became eligible for debt relief under the
G8 initiative. However, despite all these achievements, Zambia today is still faced with the challenge to reduce poverty and achieve sustained economic growth for national development. This is in order to attain Millennium Development Goal number one which aims at eradicating extreme poverty and hunger. According to Zambia (2008b:1), this goal has two targets:- target number one is, halve between 1990 and 2015, the proportion of people living in extreme poverty; and target number two is, halve, between 1990 and 2015 the proportion of people who suffer from hunger.

The discussion below gives a picture of the employment status in Zambia, as employment enables people to earn income. Earning income alone is not enough but the sustainability of people’s livelihoods are key in determining whether Zambia will be able to reduce extreme poverty and hunger which threaten poor people including stone crushers.

4.9 Employment status

It is important to give information on employed persons to show the type of work they are engaged in for purposes of assessing whether it gives them sustainable incomes which can reduce poverty or if the incomes they earn still keep them trapped in poverty. Whereas economic growth and employment may not necessarily go hand in hand, poverty and unemployment are strongly correlated. Real income levels also serve as an important yardstick to poverty assessment in Zambia especially in urban areas where services require payment.

The living conditions monitory survey carried out in 2006 Zambia (2008a:65-66) reveal that while all these economic developments have been taking place, the employment status at national was that, by 2006, 51 percent of all employed persons were self employed, while 30 percent were unpaid family workers. This is against the background that 55 percent of all employed persons at national level in 2004 were self employed whereas the percentage of unpaid family workers stood at 26 percent. The private sector employment accounted for nine percent of all employed persons, while the central government accounted for five percent. As for the urban areas, 42 percent of all employed persons in urban areas were self employed, 27 percent were working in the private sector and 11 percent were working for the central government. Individuals working in private households account for four percent of all persons working in the
urban areas. Sex differentials show that more females (50 percent) than males (37 percent) were self employed.

It can be observed here that, while the number of self employed persons reduced by four per cent from 55 percent in 2004 to 51 percent in 2006, the number of unpaid family workers grew by four percent from 26 per cent in 2004 to 30 percent in 2006. This shows that more people were losing sources of income as they were becoming dependants. This growth in unpaid family workers is one of the factors that contribute to unemployment in the country. The unemployment situation in Zambia is explained in the next section.

4.10 Unemployment rates

Zambia (2008a: 61) indicated that, by 2006 the unemployment rate for the whole Zambia was 14 percent. This rate was much higher than that observed in 2004 (nine percent). In both 2006 and 2004, females had higher unemployment rates than males. For example, in 2006, the unemployment rate for females was 15 percent, while that for males was 13 percent.

The overall unemployment rate in rural areas at five percent was much lower than that of urban areas which was recorded at 32 percent. Lusaka and Copperbelt provinces recorded the highest unemployment rates each with 31 percent. The highest unemployment rate among males was observed in Copperbelt province (25 percent) while Lusaka province had the highest female unemployment rate (41 percent). Lusaka has been experiencing an accelerated urban growth as pointed out under section 4.6.

However, the labour market is not able to absorb all the people who are eligible for employment and this has led to large scale unemployment levels as it has been explained under section 4.10. “Formal sector employment went down from 12 percent to 11 percent between 1996 and 1999. Unemployment came down from 18.2 percent to 9.5 percent of the labour force, implying an increase in informal sector employment. This growth, however, had not contributed to a reduction in poverty from between 1996 and 1998, because while unemployment came down, poverty increased. This is because the average wage from informal sector jobs was insufficient to adequately meet livelihood demands” (Zambia 2002:19).
Considering the unemployment situation already outlined, it can be deduced that, the unemployment levels exacerbate living conditions of the poor as there is a high concentration of them in the same locality targeting the same jobs and resources. Most of the poor may be forced to venture into various activities such as petty trade to earn a livelihood. Lusaka has been identified by the Government as one of the urban areas where various income generating activities are carried out. Zambia (2010:73) points out that “urban areas have a proportion of 6.6 percent who are engaged in income generating activities while the rural areas have a proportion of 5.4 per cent.”

In spite of being engaged in these income generating activities, so many people still live in poverty as evidenced by the concentration of people in shanty compounds. In order to understand the scarcity of jobs and concentration of people in shanty compounds or unplanned settlements, it could be helpful to look at the history of Lusaka in the next section.

4.11 Historical background of Lusaka

Yona (2005:17) stated that, “Lusaka was significantly planned for a non African population residence before and during the federation years. It was generally assumed that the African who was employed would be living in a council or employer’s compound and that the African who was not employed should not live in town at all. Self built houses by the Africans were therefore not allowed and they were routinely demolished and migration to towns was controlled by the pass system (situpa).” Construction of houses was strictly controlled thereby preventing the mushrooming of illegal settlements.

When the federation and colonial regime ceased at independence, the ban or restriction on black people (Africans) coming into town in search of employment was lifted. This led to large numbers of Africans moving to towns in search of employment but the availability of employment in towns could not cater for the large number of migrants. There was also shortage of accommodation as according to Yona (2005:18) “the lack of accommodation forced people to find their own alternatives, which were outside the laws governing the local authority. This led to emergence of shanty compounds that were commonly called squatter compounds.” It has been generally observed that the condition of the houses that emerged on the periphery of the towns was really bad, this was exacerbated by lack of proper housing policies. People built their houses using
poles and home-made mud bricks. Although as time went by, people started building their houses using concrete blocks and cement, the quality of these buildings was below standard.

Kalingalinga compound is one such compound that emerged through unplanned settlements called squatter ‘settlements’. It is located in Lusaka the capital city of Zambia and is also home to many stone crushers who strive to earn their livelihood throughout the different seasons of the year. The seasons are important in the stone crushers’ lives as these present different challenges to the stone crushers. The different seasons of the year present specific climatic conditions as outlined below.

4.12 Climate

Climatic conditions do affect the livelihoods of stone crushers, as will be explained in Chapter five. An outline of the climate is given here so as to link it later to the different experiences and environmental conditions stone crushers are exposed to.

Zambia is affected by mostly south easterly air flow. The climate projection of Lusaka like any other tropics is ‘‘quite unreliable due to the stochastical nature of weather elements. These weather elements keep changing from time to time. However, Southern Africa’s sub continent climate is strongly conditioned throughout the year by the large body of ocean water surrounding it. A change in pressure between land and ocean initiates circulation’’ (50/50 2010). Kalingalinga is therefore affected by these weather conditions since it is located in Lusaka.

Yona (2005:20) explained that ‘‘in Zambia seasonal climatic conditions follow the sub continental air circulation pattern. The Lusaka area experiences similar sequence of weather as the whole country. The movement across the country of the Inter-tropical Convergence Zone (ITVZ) determines the seasonal pattern of weather’’. Four seasons can be distinguished and these are:-

i) Rainy Season (November – March)

ii) Warm season after the rains (April – June)

iii) Cold season (dry season) June – August)

iv) Hot season (September – November)
But locally, people have identified three main seasons as:-

a) The rainy season (November to April)
b) The cold dry season (May – July)
c) The dry hot season (August to October)

Yona (2005:21) pointed out that “the rainy season is particularly crucial to Lusaka’s limestone environment with annual average rainfall of about 803 mm. Lusaka sometimes records extremely high rainfall figures. During the rainy season the limestone can flood extensively and the floods may lead to loss of property loss or life”. The rain water sometimes collects in hallows which deepens with successive rainy seasons and the hallows continue caving. The seasonal patterns affect the land in various ways which support or limit different activities for the livelihoods of people. Below is a discussion on how land is used in Lusaka and specifically how it affects stone crushing.

4.13 Land use in Lusaka

The land use in Lusaka is varied. “The built up mosaic for the Lusaka environment includes; the commercial center or the Central Business Division (CBD) in the center of the city, the industrial zone in the north west of the city and a small area of industrial use south of the town which is dominated by quarrying and others” (Yona 2005:21). From observation during the study, the land in Kalingalinga is mainly occupied by houses, with unoccupied land on the west and south of the compound but the latter has now been occupied by some business entities that are aligned along Alick Nkhata road.

Sand mining and quarrying activities heavily excavate unoccupied land which is on the periphery along Alick Nkhata road. Machina (2000:5) reported that according to a research carried out by Mkandla in 1990, stone crushing or small scale quarrying in Lusaka started during the 1980s. The business was started by women when they saw an opportunity to raise money for purposes of supplementing their family incomes. Stone crushing is categorized by the Zambian government as an aspect of mining. From the early 1990s, men started joining the business, thereby, leading to an increase in the number of people participating in these activities.

The increase in poverty levels which was mainly attributed to loss of jobs as a result of poor performance of the Zambian economy after 1964 (explained under section 4.8)
contributed to the rapid development of informal business activities of which stone crushing is part and parcel of. People started creating their own employment so as to earn a living. Stone crushing in Kalinganga has a local market as most of the consumers are Kalingalinga residents who use sand and limestone for construction of houses. Other customers are construction companies and residents within Lusaka as well as people from nearby compounds such as Mtendere. Kalingalinga compound is not only occupied by stone crushers alone, but other groups as well who carry out different economic activities. Below is a discussion of the socio-economic status of Kalingalinga residents.

4.14 Socio-economic status of residents of Kalingalinga

Although teachers, nurses, office clerks and other working class also live in this compound, the majority of the residents are either unemployed or engaged in informal type of employment. Kalingalinga residents are mainly low cost housing dwellers. Zambia (2008a:114) stated that “in urban areas the low cost housing dwellers had the highest incidence of aggregate poverty at 39 per cent, followed by medium cost housing dwellers at 19 percent, while the high cost housing dwellers had the lowest incidence at eight percent”. This has created unstable life conditions for the residents. Therefore, many residents have opted for various types of ways to raise money to sustain themselves. This includes stone crushing and sand mining, hence the need to investigate the stone crushing as a source of livelihood.

The push button into this is that stone crushing does not require specialized skills, large capital investment and the business can be established without being subjected to registration, control and taxation. The ease at which this informal sector activity can be established led to increased scope for stone crushing. The major attraction to carrying out small scale quarrying is that they take place on any land that has been identified to be vacant. This is done without any legal authority to the land use.

Zambia (1998a: 5) states that “no owner or manager shall mine or permit mining or under any land within a horizontal distance of 100 metres from any building, roads, railway, river or any other object or surface requiring protecting, except with the written permission of the government mining engineer and subject to such conditions as he may prescribe.” Despite what the law states, the stone crushers carry out their business
along the road and next to buildings. This therefore poses a threat to the environment as will be explained in 4.16.

4.15 Research carried out on stone crushing in Lusaka

During the study, two research papers were identified as having been carried out in relation to stone crushing in Lusaka. These were carried out by Machina (2000) and Yona (2005). Machina (2000:6;7) identified other five studies which had been carried out by Mkandla (1990), Nkuwa (1992), Zambia (1996), Agyemang, Chirwa and Mbuya (1997) and Ngwenyama (1999). Machina (2000:6;7) reported as follows: Mkandla (1990) sought to find out why women engaged in stone crushing and how their problems could be solved. Mkandla recommended the provision of basic tools, marketing arrangements through cooperatives and rotating system of selling. Nkuwa (1992) focused on the geological features of Lusaka and pointed out that stone crushing caused drainage problems leading to flooding, ground water pollution, accelerated solution of marble due to percolation of acidic waste. Machina pointed out that the assessment carried out by the Environmental Council of Zambia on how to curb stone crushing in Lusaka recommended that, “the Ministry of Mines and Minerals Development should compel all stone crushers to obtain licenses if they had to continue with the business”.

Further, Machina (2000:7) stated that Agyemang, Chirwa and Mbuya (1997) focused on environmental conditions in Lusaka urban area. Their study revealed that inadequate solid waste management, inadequate and unsafe water supply and sanitation were some of the environmental concerns caused partly by stone crushers. Machina (2000) also reports that Ngwenyama (1999) carried out a study on the causes small scale quarrying in Lusaka and its effects on the environment. The report indicates that Ngwenyama (1999) concluded that small scale quarrying was carried out because it generated employment for many people in Lusaka, although the activity was uneconomic as it degraded the land. Apart from reviewing other studies, Machina (2000) carried out his own study on stone crushing, focusing on the socio legal aspect of women in the stone crushing business in Lusaka. The details of this study were presented in Chapter two.

Yona (2005:30;51) revealed that quarrying and mining were demand driven activities which supplemented basic household needs. Unfortunately, quarrying and mining for
stones degraded the land, while accumulation of water in the pits provided suitable breeding conditions for mosquitoes.

Although the above mentioned studies were carried out by different researchers, none of them focused their research on stone crushing as a livelihood. In addition, none of the researchers applied any of the livelihoods frameworks since their research either targeted at the environment, quarrying in general or just the economic aspect of stone crushing. Nevertheless, some of their findings and recommendations from these studies are similar to those discussed in Chapter six of this dissertation. Similar findings and recommendations are that stone crushing business was supplementing household income; stone crushing was being carried out illegally; there was need for stone crushers to form cooperatives and have licenses; stone crushing activities degraded the land and spread malaria as pits became breeding places for mosquitoes when they were filled with water.

The environmental aspect of quarrying, seemed to be prominent in the findings of the research carried out by Nkuwa (1992) Chirwa (1997), Ngwenyama (1999) as indicated in Machina (2000) described above and in Yona (2005). Therefore, it is fitting to give some attention to the environmental aspects of quarrying in section 4.16 below.

4.16 Environmental aspects of limestone quarrying

Studies done by Sebastino in Yona (2005:14) identified quarrying of limestone as having both positive and negative effects to the community and the environment. The positive aspects of quarrying for limestone “were job creation, income generation and government revenue”. However, the effects can also be negative: “Quarrying for limestone caused pollution such as air pollution from dust, sediment run off, open pits and erosion. The sources of this pollution were the cutting of stones, crushing and screening, loading and haulage.”

In addition, negative aspects of quarrying were linked to change of landscape and land degradation, destruction of roads and bridges, reduced air quality, industrial waste dumping sites which in turn caused poor health to people living nearby and poor sanitation. Gullies result from quarrying and mining due to run off water. These gullies got filled with water that provided breeding grounds for mosquitoes, posing a threat to the lives of people due to high probability of outbreaks of malaria. Excavation
influences the hydrology around the excavated area which may lead to more rapid seepage into the ground water system or may change the ground water table causing nearby streams or wells to become dry.

Social insecurity for the stone crushers cannot be underestimated as a result of mining, in this case illegal stone crushing which is not protected by law. The illegal status of the business pose a threat to the security of stone crushers as is discussed in Chapter five.

4.17 Conclusion

Zambia is a landlocked country which is endowed with natural resources, though access to these resources by the poor is limited by legal instruments which attract fees. The country’s young population presses a great demand on employment and the unskilled persons are further disadvantaged. This is because unemployment does not affect unskilled people only but even the skilled people have difficulties finding jobs to earn a living. Unemployment in the urban area is more of a threat as services require payment and so people who are not able to earn an income are disadvantaged by the demand for cash in the economy.

Urbanisation has exacerbated poverty as more people living in Lusaka urban area have little or no income at all to pay for the services available in the urban setting. Despite reports that the Zambian economy has made significant developments at macro level, the effect of these positive gains has not yet reached the poor.

Lusaka, being the capital city of Zambia, has experienced high levels of urbanization while having no capacity to develop the urban areas to match the rate of urbanisation. The high poverty levels coupled with unemployment has attracted the poor to crush stones in order to earn income. However, quarrying activities have destroyed the environment in that gullies have been created thus leading to breeding of mosquitoes thereby spreading malaria. In addition, the water gullies have compromised the already existing poor sanitation leading to outbreaks of cholera. In all these, the poor pay a high cost either in form of suffering or even losing their lives.

This chapter has discussed the poverty situation in the urban environment in Zambia and more specifically in Lusaka, the operational area of the stone crushers who were a focus of my study. Some of the information in this chapter is reflected in the findings in the next chapter (Chapter five) which guides the recommendations in Chapter six.
CHAPTER FIVE

DATA PRESENTATION AND DISCUSSION

5.1 Introduction
The objective of this chapter is to analyse how the stone crushers perceive the effect of stone crushing on their livelihoods in order to describe their needs and goals. In addition, the role of organizations such as the Ministry of Community Development and Social Services, the Lusaka City Council, the Environmental Council of Zambia and the Ward Development Committee in Kalingalinga whose work is relevant to the stone crushers is investigated. The University of Zambia - Development Studies Department was also consulted. Findings from the study area are presented as follows:- First from stone crushers and secondly from organizations whose work is linked to the stone crushers. These findings are presented in narrative form, supported by percentages, figures, tables, charts and photographs.

5.2 Who are the stone crushers
These are men, women and children who crush stones to earn a livelihood. Stone crushing is carried out due to poverty being encountered by men, women, widows and youths who are less privileged in their education or employment. Hence, they resort to stone crushing as a source of income. According to Lipalile (2009) stone crushing subjects people to hardships as they carry out the back breaking job for hours and ultimately get stressed. Nevertheless, it enables them to earn a livelihood despite the hard conditions involved. Stone crushing enables stone crushers to survive and also to be engaged positively as opposed to engaging in crime and other vices.

Stone crushing is a common pool resource which acts as a source of income and also a form of skill or trade. Stone crushers use mineral materials such as stones to provide construction materials for dwellings. The statement typifies the role of common pool resources as illustrated by Conroy. Conroy (2002:3) pointed out that “common pool resources often contribute substantially to the poor people’s employment, income and assets accumulation in several direct and indirect ways.”

5.2.1 Sample size
The sample for stone crushers was made up of 16 participants, five of who were male representing 31.25% and 11 of whom were female representing 68.75% of the sample.
5.2.2 Age structure

Age structure helps in understanding economic activity and social placement. This is because certain ages may be more vulnerable to social and economic pressure. The average age among the participants was 38 years of age, with the youngest aged 21 and the oldest 52 years of age. The majority of the participants were in the age group of 30 to 49 years as shown in table 1 below:

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Males</th>
<th>Percent</th>
<th>Females</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 - 29</td>
<td>2</td>
<td>12.50</td>
<td>1</td>
<td>06.25</td>
</tr>
<tr>
<td>30 – 49</td>
<td>2</td>
<td>12.50</td>
<td>9</td>
<td>56.25</td>
</tr>
<tr>
<td>50 – 70</td>
<td>1</td>
<td>06.25</td>
<td>1</td>
<td>06.25</td>
</tr>
<tr>
<td>TOTAL</td>
<td>5</td>
<td>31.25</td>
<td>11</td>
<td>68.75</td>
</tr>
</tbody>
</table>

Table 1: Age structure of stone crushers interviewed: Source: Field Data September, 2009

The participants aged above 50 years had difficulties breaking the stones as their energy levels were diminishing due to their age. They were also faced with huge responsibilities because at this age not only were they looking after some of their own children but grand children as well. They carry the torch for their families as they are looked upon for leadership. ‘We break these stones in order to earn money and being elderly we have to lead by example. It is difficult but it has to be done.’ This increased the pressure on them not only to find income but also to prove they were still in charge and cared for their families. The other participants aged between thirty and forty nine years had a burden of mostly looking after school going children. This age group had the highest number of female stone crushers who also had to split their time mostly between house chores and stone crushing. Production levels for crushed stones for these females was highly compromised by gender roles. But the male stone crushers in this age group had time to concentrate on crushing stones. The participants aged between twenty and twenty nine years did not have much family responsibilities and they were more productive in terms of amounts of stones crushed and sold. They were also swift in running for customers and making contacts for sale.
5.2.3 Education attainment

Among the participants, three males and six females attained primary school education while one male had attained secondary school education. Five females and one male did not attain any formal education at all.

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Males</th>
<th>Percent</th>
<th>Females</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>College</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Secondary</td>
<td>1</td>
<td>06.25</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Primary</td>
<td>3</td>
<td>18.75</td>
<td>6</td>
<td>37.50</td>
</tr>
<tr>
<td>No Education</td>
<td>1</td>
<td>06.25</td>
<td>5</td>
<td>31.25</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>5</strong></td>
<td><strong>31.25</strong></td>
<td><strong>11</strong></td>
<td><strong>68.75</strong></td>
</tr>
</tbody>
</table>

Table 2: Education attainment

From the level of education given in the table above, it can be seen that the participants did not go into college to have tertiary education. The lack of specialized skills due to little or no education at all deters these participants from getting better jobs. Many people with skills such as bricklaying, carpentry, metal fabrication and housekeeping are either working for companies, are part of established cooperatives or have established small scale businesses in Lusaka. The Ward development committee in Kalingalinga has also facilitated the formation of a cooperative for carpenters under the sponsorship of the Zambia Development Agency. This move has enabled carpenters to work as a team in order to have a sustainable source of income as access to market for furniture has been made available by their sponsor.

5.2.4 Household size and headship

According to Zambia (2008a:115) ‘‘the incidence of poverty increases with the increase of household size. For example single headed households are at more risk of living below the poverty line compared to households headed by two parents with household sizes of six or more.’’ The majority of the participants’ households were made up of between six to ten individuals and the average household size was seven point three. The general picture revealed by the interviews with stone crushers was that households with large household sizes were extremely poor in comparison with households with
small household sizes. Among these households, one female was married and was also head of a household. Five females were married and their households were headed by their husbands. Four widows were heads of their households. One female was single and the household she lived in was headed by her elder sister. Three married males were heads of their own households while two single males were heads of their own households. There were no interviewed participants who were partners in the stone crushing business.

5.2.5 Children and dependants

Nine families had children aged between zero to six years and the total number of these children or dependants was twelve. 13 families had children aged between seven to 12 and the total number of these children or dependants was 21. 14 families had children aged between 13 – 18 years and the total number of these children/dependants was 22. Ten families had children aged between 19 – 24 years and no family had a child or dependant aged 25 years and above living with them. Those children and dependants aged between 19 – 24 years, although seemingly in the adult group, were still not independent. This age group was also in the majority totaling 117.

The age group between 19-24, therefore, joined the unemployed youths thus further exacerbating unemployment levels in Kalingalinga further. The age zero to five put a lot of demand for care especially on the mothers. This age group consists of children who still need a lot of care and are required to be taken to under five clinic where they are given relevant immunizations and their growth is monitored. The zero to five age group was also vulnerable to diseases, therefore they required maximum care from their mothers. This demand for maximum care affected the amount of stones female stone crushers (who are mothers) could produce as time was divided between caring for the children and stone crushing. The age group of six to 18 of children or dependents of stone crushers showed that the stone crushers still had school going children that needed to be supported. However, this age group could be split into two. Age group six to twelve could access free education in primary school while age group 13 to 18 could not access free education in secondary school and were more likely to fall out of school when their parents failed to pay required school fees. This means that these children would be without adequate education to empower them to take on the economic battles.
This situation becomes a vicious circle as every child of a stone crusher who falls out of school would not have received enough education to enable him or her to get into formal employment. Thus, unemployment levels would keep on swelling. Baumann (2004:12) illustrated the predicament of such people when he stated that ‘the global market did not generate much demand for unskilled people and so millions of such people were economically useless. It was as if they did not exist. But in order to survive and cope with life, such people made a plan in the second economy where they operate informal businesses.’ This could be one of the reasons why the number of unemployed persons has been increasing as some school drop outs join their parents in similar circumstances.

5.2.6 Marital status

The majority of the participants were married (these were six females and three males). Three of the participants were single, one female and two males. The other four females were widows. This information is represented in table 3 below.

<table>
<thead>
<tr>
<th>STATUS</th>
<th>MALES</th>
<th>PERCENT</th>
<th>FEMALES</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>3</td>
<td>18.75</td>
<td>6</td>
<td>37.50</td>
</tr>
<tr>
<td>Divorced</td>
<td>0</td>
<td>00.00</td>
<td>0</td>
<td>00.00</td>
</tr>
<tr>
<td>Widowed</td>
<td>0</td>
<td>00.00</td>
<td>4</td>
<td>25.00</td>
</tr>
<tr>
<td>Single</td>
<td>2</td>
<td>12.50</td>
<td>1</td>
<td>06.25</td>
</tr>
<tr>
<td>TOTAL</td>
<td>5</td>
<td>31.25</td>
<td>11</td>
<td>68.75</td>
</tr>
</tbody>
</table>

Table 3: Marital status of stone crushers interviewed – No. of participants

It is most likely that those participants, especially female stone crushers without husbands, could experience serious difficulties in meeting their socio-economic needs. Female stone crushers who are widowed have no additional income to support the running of their households. These widows split their time between doing house chores and crushing stones to raise an income for their families. The amount of stones they crush is low, thus sales are low therefore they get low income. The low income cannot enable them meet socio economic needs. The stone crushers who are widows may also experience physical and mental fatigue as they carry on with the hand to mouth business, never making enough money and never having time to rest. ‘We get tired as
women because we have to do work both at home and here at the site.' Their poverty levels may be higher than that of other stone crushers especially the men. The stone crushers use shovels to load stones into wheel barrows which they use to measure for sales. Below is figure 5.2 showing women at the study site as one of them loads stones in a wheel barrow.

Figure 5.2 Picture showing a woman loading stones into a wheel barrow using a shovel. Source Field data 2009. The women in the picture sell the stones they crush on the road side in Kalingalinga.

5.2.7 Perceptions of poverty

The local terms for poverty is ‘kusauka’ while that of wellbeing is ‘nkalo’. Stone crushers fall in the category of ‘kusauka’. The Ward Development Committee (WDC) (2009) acknowledged that the Government was right to adopt a multi dimensional concept of poverty as this entailed encouraging economic growth which would benefit the poor. The Committee explained that to this effect government was supporting sustainable development which would create sustainable livelihoods for poor people, promote human development and conserve the environment. The Committee explained that community leaders were therefore tasked to identify poor people and propose ways in which poverty could be reduced from among such families which included the stone crushers.

The Ward Development Committee went on to say that the characteristics of a household that led Community leaders to classify it as either poor or not so poor were the type of house, if it was made of concrete bricks, well ventilated and spacious or mud weak structure without proper ventilation; type of toilet if it was a pit latrine which was
shared or not; source of water - whether communal tap; source of lighting - if the household used other sources of lighting other than electricity; source of energy for cooking - was it wood or charcoal; type of food - eaten did it form a balanced diet and number of meals per day; could the household afford to pay medical fees; could they afford to send children to school and what were the levels of affordability?

In addition, other characteristics of either poor or not so poor household were confirmed during a discussion with stone crushers. The stone crushers pointed out that the categories between very poor and very rich were recognized by local people based on their ability to pay rent for a good house and were employed, able to feed themselves, able to send children to school even if the house may not have water or electricity.

The participants pointed out that the distribution of poverty had changed over the last ten years due to the increase in unemployment. According to the Central Statistics Office ‘‘the incidence of poverty was that one third of the poor was extremely poor in urban areas and Lusaka’s extreme poverty was at 16 percent’’ (Zambia 2008a:114). The participants explained that people had started redefining poverty as the standard of living had gone up and one’s income determined the ability to purchase a relative amount of basic necessities of life. The participants pointed out that money had lost value as one needed to make more money to purchase the same amount of goods which could be bought for a lower amount in the past. ‘‘The levels of poverty have gone up in that we need more money just to buy a few items unlike in the past where money had value and government gave us free services.’’ Many people had also died from Human Immunodeficiency Virus and the Acquired Immune Deficiency Syndrome (HIV and AIDS). These deaths have resulted in the number of orphans increasing, thus putting pressure on little resources in the families therefore leading to more poverty in homes. This situation led families to require safety nets to cushion the poverty levels.

All the participants felt that government and non-governmental organisations’ programmes should mainly be about reducing chronic poverty and also about short term safety nets. They reported that poverty reduction programmes should target short term problems in order to prevent death and also attend to long term problems in order to achieve sustainability. The participants also explained that ‘‘ubwino mu nyumba usiyana chifukwa ca mapunzilo, mwambo na kumatula kwa akazi na amuna mumabanja’’ which means distribution of well being within the household depended on
education levels, the values placed on cultural norms and gender discrimination in that family.

The Ward Development Committee felt that government anti-poverty policy should also be concerned about reducing gender inequality. This should be done by looking at capacities and enhancing them, work on strengths and support those who are ready to work especially among the stone crushers. The importance of addressing gender inequalities was illustrated by the Office of the Secretary of State for International Development (1997:31) which pointed out that “assessing and addressing inequalities between women and men, boys and girls, in relation to all strategic areas of concern and as an integral part of all our development activities is key when improving livelihoods.” Therefore, sustainable livelihoods are a human rights issue as they border on rights of men and women to have a decent life.

5.2.8 Perceptions of rights and entitlements

The local word for right is ‘dango’ and is applied in various situations such as family entitlements. It is supposed to be applied in the same way to everyone although at times that is not done. The interviews with stone crushers revealed that the term was not applied universally or rather rights and entitlements were not applied universally for stone crushers. The situation was made worse because the participants could not claim their rights and entitlements due to fear of intimidation by certain authorities. However, in certain situations the participants were not sure of how to claim the minimum service standards that could reasonably be claimed as rights.

The participants acknowledged that they were aware that everyone has a right to a certain standard of living but how to demand the right was a problem. They explained that they understood such minimum standards were maintained through the civic leaders and all members of the community should be responsible for maintenance because for every right there was a corresponding duty. The participants agreed that they had a right to be healthy, to be educated and access justice but these rights are not attainable due to lack of money. The participants said that they knew about their legal entitlements but institutions were biased towards the rich.

The participants added that they had rights of access and ownership over natural (stones) and built resources but economic and social factors impeded these rights. The
participants also pointed out that women had the same rights as men in these regards but their vulnerability compromised claim over these rights. One participant said the following in Nyanja ‘masiku ano akazi na amuna tilingana, vuto chabe ni kusauka’ which means these days both women and men are equal, the only problem is poverty. The participants pointed out that because of the same claim for rights, women could report to various organizations dealing with gender if they felt discriminated against and they stood a better chance to get a positive response. Zambia (2000:45-64) gives guidelines on mainstreaming gender in the country. To this effect, different wings such as the Victim Support Unit under Community Police, Young Women’s Christian Association and National Legal Aid Clinic for Women work to protect women and reduce discrimination against them.

The female stone crushers felt a need to report their grievances to such institutions especially with regard to conmen who were collecting illegal tax from them in the pretext of bringing them licenses. The female stone crushers also said the Young Women’s Christian Association (YWCA) had handled the case of one widow whose property had been grabbed by her late husband’s relatives. This organisation had protected the widow from intimidation by the police and justice was delivered under their support. They felt that they could also get help from such supportive organizations in order to protect the few assets they have.

5.3 Assets and livelihoods of the stone crushers

‘‘Whilst the cash economy is at the centre of urban livelihoods, poor people use a broad range of natural resources in order to contribute to urban livelihoods, both as a direct source of livelihood and a substitution for expenditure’’ (Slater & Twyman 2003:11). The main elements in the stone crushers’ livelihoods, can be understood based on the definitions of what a livelihood, sustainable livelihood and livelihood strategy are as given under 2.5 in Chapter 2. In order for the stone crushers to earn sustainable livelihoods, they use livelihood strategies.

5.3.1 Elements of livelihood strategies

The main elements in the participants’ livelihood strategies were money and food. Participants reported that government programmes were not responsive to their livelihood issues. However, one church group operating as ‘Jesus Cares Ministries’
was highlighted as having taken care of the stone crushers’ vulnerable children by sending them to school and buying mealie-meal for their families. But this project was short-lived as it stopped giving help to the participants’ children in 2002. The participants explained the non responsiveness of government programmes to their livelihoods based on the absence of safety nets for the poor in general and themselves in particular.

The participants’ ownership of assets was assessed based on natural, produced, human, social, political and financial capital. Their ownership of assets was very poor and is described below in Table 4.

<table>
<thead>
<tr>
<th>ASSET</th>
<th>WOMEN</th>
<th>MEN</th>
<th>TOTAL</th>
</tr>
</thead>
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</tr>
<tr>
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<td>02</td>
<td>02</td>
</tr>
<tr>
<td>Human</td>
<td>01</td>
<td>04</td>
<td>05</td>
</tr>
<tr>
<td>Social</td>
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<td>04</td>
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</tr>
<tr>
<td>Political</td>
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<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Financial</td>
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<td>00</td>
<td>00</td>
</tr>
</tbody>
</table>

Table 4  Assessment of livelihood assets

5.3.2 Natural capital

Natural capital means “the natural resource stocks from which resource flows useful to livelihoods are derived. These include land, water and other environmental resources especially common pool resources” (Rakodi & Jones 2002:11).

Under natural capital, all participants were dependent on the common pool resources ‘stones’. The natural resources relevant to all individuals within the group were wood (charcoal), stones and other natural resources. However, stones could be accessed more than other natural resources such as timber from forests, grass from grasslands and reeds from rivers.
The participants stated that they preferred the natural resources in the following order. The stones were the first priority because it was the only resource that they use to support their well-being. Wood (charcoal) was preferred second because it was used as fuel for cooking and could also be sold to make money. Other natural resources were relevant and preferred but were not accessible in an urban area like Lusaka. The participants explained that they made use of the resources they had in the same way their neighbouring communities did. It was observed that the participants’ dependence on natural capital was very high but the stones around the compound were being depleted thus threatening their source of survival. This situation is similar to what Pritchett and Filmer (2002:123) illustrated by stating that ‘‘in areas where natural resources are managed as common property, greater population will lead to pressures on and ultimately degradation on the natural resource base.’’

5.3.3 Human capital

Human capital is ‘‘the labour resources available to households which have both qualitative and quantitative dimensions. Qualitative aspects refer to the levels of education and skills and the health status of household members. Quantitative aspects refer to the number of household members and time available to engage in income generating activities’’ (Rakodi & Jones 2002:11). Under human capital, one participant was a bicycle repairer and another participant was a traditional advisor. Three participants did piece rate work to raise extra income. All the money the participants made went towards the running of their homes. Therefore, they were not able to save money for a rainy day.

5.3.4 Produced capital

Produced capital or physical capital is ‘‘the basic infrastructure (transport, shelter, water, energy, communications) and the production equipment and means which enable people to pursue their livelihoods. It includes productive and household assets which are tools, equipment, housing and household goods, as well as stocks such as jewellery’’ (Rakodi & Jones 2002:11). In addition, the ability to invest in production equipment may directly generate income and enhance labour productivity. Shelter is similarly multifunctional, potentially providing income from rentals as well as a location for home based enterprise.
There were only two participants who owned produced capital. One rented out part of his house and the other one was a money lender. The two participants who had produced capital used it in combination with natural capital as a livelihood strategy to earn money for the running of their homes. The money made from these ventures neither went into any saving account nor used to produce more money. It was basically used for consumption. "The money I get from rentals assists in feeding my family."

This complex situation is illustrated in the Punjab report (2003:159) which states "the assets of the poor did not provide for developing strategies that were long term, which could lead to improved well being and remove the want and deprivation." The situation is drawn by the ownership of produced capital which instead of helping the two stone crushers to grow a business went into consumption thus failing to remove the want.

5.3.5 Social capital

Social capital are "the social resources (networks membership of groups, relationships of trust and reciprocity access to wider institutions of society) on which people draw in pursuit of livelihoods" (Rakodi & Jones 2002:11).

This was the most commonly owned capital as 12 of the participants belonged to church groups. One belonged to a football club while three had no group attachment. The sources of help for the participants was the church and friends. The most reliable source of help was the church followed by friends. The participants got financial and spiritual support from the church and financial and material support from friends. Some, however, indicated receiving no help from anybody.

The participants pointed out that the community had a few organizations such as churches, worldwide hope for orphans and widows, Human Immuno Virus /Acquired Immuno Deficiency Syndrome clubs, and Children in Distress (CINDI) which people could decide to join or not join. The participants explained that there was a problem as there was no relationship between these organizations. This, the participants observed, was a weakness as it became difficult for them to be identified and supported fully by these organizations. The participants proposed that the social networks should be organized to identify common areas of interest so that they have a combined effort to assist the stone crushers. "These organizations don’t work together as each one does what they want, they should be united to achieve better results." They believed such an approach would enable them get help which would in the long term make them self
sufficient. One positive issue which the stone crushers mentioned was that the chairlady in their community was able to identify orphans and was also able to link the orphans to charity organizations.

5.3.6 Political capital

Political capital entails “access to the political process and decision making and is best seen as a gatekeeper asset permitting or preventing the accumulation of other assets” (Rakodi & Jones 2002:11).

Not a single participant had political capital. While politics was an part and parcel of this community’s life, the participants had no role in governance issues. “We cannot afford politics because a lot of money is needed for one to be heard by the community” This was because the participants were not party cadres of any known active political party which had influence over the running of projects in their community. This is surprising especially that the community itself was extremely influenced by political party activities and projects were overseen by Councilors who were political figures.

Kalimakwenda (2009) pointed out that most of the poor, including the stone crushers did not benefit from projects initiated in the community because the people who were attached to benefit from projects were the same all the time. Kalimakwenda explained that community leaders had a tendency to attach their relatives and party cadres to the projects which were meant for the poor. The stone crushers were therefore, being excluded by their local leaders although government programmes meant for poverty reduction are for all people regardless of their background or political affiliation. This means the participants had no stake in local power relations. Therefore, political capital being a gatekeeper asset could be seen here as preventing the accumulation of other assets which were required to enhance the livelihoods of the stone crushers. This situation was illustrated by the Office of the Secretary of State for International Development (DFID 1997:30) which pointed out that poverty is exacerbated by “the indirect political impact that reduces poor people’s representation as elites cling to power in order to exploit opportunities for corruption.” Since the participants had no stake in political governance, decisions were made without their input and this means that their real world was imagined by the decision makers. This made solutions to the stone crushers’ plight unrealistic and unsustainable. The only organization participants
said consulted them was World Vision which had put up boreholes and discussed with them the use of these water resources.

5.3.7 Socio-economic status

The number of meals participants had per day are recorded as follows:-

Five of the participants could afford only one meal per day, eight others could afford two meals per day, two could afford three meals per day and one participant could afford either one or no meal per day. The most common type of food eaten regularly by the participants was nshima -thick porridge made out of maize meal (papa). One participant indicated having rice regularly while another indicated drinking tea more often. Tea which is a beverage was taken to be food in this case.

The average amount of money participants spent on food per day was K12,000.00 ($2.33) while the amount of money made from stone crushing was between K20,000.00 ($3.89) and K80,000.00 ($15.59) on a very good day. However, on most days there were no sales made at all. The participants used hammers as their tools to crush stones into the following sizes:- 5mm costing K120,000.00 ($23.38) per heap, 10mm costing K100,000.00 ($19.49) per heap and 20mm costing K80,000.00 ($15.59) per heap. Each heap was equivalent to ten filled wheel barrows.

Apart from getting income from sales of crushed stones, five participants earned money from other sources such as rentals, repairing bicycles and piece rate work. The participant who earned money from rentals was a land lord who was renting his two roomed house for K200,000.00 ($38.98) per month. Another stone crusher was a bicycle repairer who earned K100,000.00 ($19.49) in a good month from repairing bicycles. Three other stone crushers carried out piece rate work and earned at least K10,000.00 ($1.94) and K5,000.00 ($0.97) from piecework. The general picture given by the stone crushers was that the average total income for the month was between K80,000.00 ($15.59) and K300,000.00 ($58.47). Two participants reported receiving a total monthly income of up to K420,000=00 ($81.86).

The average income therefore, falls short of meeting the cost of the food basket for a family of six (06), which according to Maluba (2009:6) was K748,800.00 ($145.94) for

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1 US$1 @ K5,150 as at 26 January, 2011.
the month of October 2009 while the cost of the basic needs basket for an average family of six living in Lusaka was K2,200,630.00 ($428.92). The cost of the basic needs basket for September in the same year was K2,200,680.00 ($428.93) while the average monthly income in urban low cost areas amounted to about K600,000.00 ($116.94). These amounts when compared to the average income of the participants, falls short of meeting the family needs. It is evident that the income for stone crushers fell far below the requirements for decent human survival.

In order to get income, participants had to spend many hours at the site crushing stones. Hours spent on stone crushing were a minimum of five hours and a maximum of 11 hours. Most mothers with babies or small children spent less time as they had to shuffle between caring for the children and stone crushing. They had to prepare breakfast, later lunch and then knock off early to prepare dinner for the family. Most men spent about 10 to 11 hours on the job as they only went for lunch but spent the rest of the hours on the job as they did not carry out any house chores.

The difficulties stone crushers (as poor people) undergo can be illustrated by this statement from the Office of the Secretary of State for International Development (1997:11) as follows: “The fact that people survive at all under these conditions is a remarkable testament to the human spirit. The poor stone crushers, men and women inclusive apply enormous creativity, strength and dynamism on a daily basis to solve their problems that those who live comfortably can hardly begin to understand.”

Only one participant indicated spending time on other income generating activity regularly to repair bicycles. However, the time was not fixed as the business was not established. The rest of the participants only crushed stones and those who did piece rate work only did so when sales were poor, when they had no food and were therefore in a crisis. This situation was typical of that reflected in the research by Hartini (2004:175) that “during a crisis people become flexible doing whatever work possible.”

5.3.8 Housing status

One participant had a four roomed house and was a landlord. Three participants were squatting with relatives and 12 were tenants renting one or two roomed houses. Out of the 16 participants only one, the landlord lived in a four (4) roomed house while the rest were either in one or two roomed houses. Considering the household sizes described
under household size, these families did not have much space in their houses for all members of the family. They experienced overcrowding and therefore faced the risk of air borne diseases as McGranahan (1994:17) observed ‘‘resources are so scarce that people can barely eke out a living, physical crowding is so intense it is difficult to find an undisturbed place to sleep.’’

5.3.9 Livelihood options for the stone crushers

The participants indicated that given a choice, their preferred choices of livelihood would be trading in secondhand clothes, selling either groceries, fish or beans, charging batteries for television sets and making concrete blocks for sale. The reasons given for these choices were that stone crushing was a risky, difficult and dangerous business even though it helped them put food on the table. Participants pointed out that one advantage of the stone crushing business was that stones could not rot like tomatoes. Even if one fell sick one would still find the stones intact. Participants said that trading in other items was good and better as one got earnings from different sources and then one was less vulnerable to hunger.

Participants explained that it was also easier to sponsor children to good schools when doing works like repairing bicycles and selling in a shop. The work environment were also much cleaner and safer unlike crushing stones. Nevertheless, stone crushing made life better because one was able to earn money and feed their children and pay rentals. Even though sometimes business was slow, at least a bit of money was available to even buy some pain killers during sickness.

Participants indicated that they needed government to support their livelihoods through the provision of financial capital so as to enable them to change and have better opportunities. In addition, government was to regulate rentals which were skyrocketing every month thus eating the little profit they made. They felt that government could also assist in getting them linked to some banks so as to access soft loans as well as train them to build good business.

These suggestions echoed what the research in Balochistan (2003:118) indicated ‘‘being able to diversify into other livelihood activities or move to other areas requires access to financial capital and or education and training often lacked by the poor.’’
Financial capital is critical for the stone crushers who live in urban areas where provision of services is directly linked to money.

5.3 Vulnerability

The livelihoods of poor people are affected by a range of trends, shocks and seasonal shifts over which they have little or no control at all. These have been observed to have both positive and negative effects on their lives. The following were analysed in relation to the livelihoods of stone crushers.

5.4.1 Trends and main changes affecting the well being of stone crushers

Among the stone crushers interviewed, seven said there had been significant changes in livelihood sources especially in the past five years while nine said there had not been any changes at all. Those who said that there had been significant changes explained that they were able to raise money, feed their families and sponsor their children to school. The positive changes were attributed to a high demand for crushed stones as there was an expansion in the construction industry as many individuals were building houses. This had been a positive change.

The other nine said there was a negative change as life had become worse because they had difficulties to put food on the table. They explained that there were too many people crushing stones and the reliable sources for stones were now many kilometers away. These participants had to buy the stones and transport them at a cost to the site where they were crushing the stones. The participants said the changes had occurred because the land where they used to dig stones had been bought by individuals who were now constructing buildings. This meant that the land which the participants previously used as open land was no longer a source of the common pool resource. On the next page is figure 5.3 showing stone crushers working next to private plots with buildings on them.
Figure 5.3 Picture showing stone crushers operating near private property.

“The natural resource base has got worse and the business is no longer profitable as we buy stones and pay to transport them, offloading and also those who help us to crush the stones so as to meet target” said one stone crusher. Targets for stone crushers arose when they took orders from people that were constructing houses and were required to make available a specified amount of crushed stones at the customer’s preferred time.

The participants reported an increase in the number of people crushing stones and diminishing sources of stones. They explained that the factors (actions responsible for this) were that a lot of people were now crushing stones due to high levels of unemployment. Moreover, the sources of stones are also diminishing as most of the sites where there had previously been quarries have since been bought by individuals for construction purposes so the stone crushers cannot access free stones. Participants added that stones were also on high demand due to many constructions taking place so their value had gone up. Therefore, cheaper stones were being collected from far places and some conmen had swindled the stone crushers of their little profit.

The collection of stones from far off places had affected the participants’ livelihood negatively due to increased costs in production which reduced the profit. The participants said income was no longer enough because of the transportation of big stones from a place called Chalala south of Lusaka some 16 kilometres away from
Kalingalinga. Companies required a stone crusher to pay K40,000.00 ($7.79) while for two tones one has to pay K120,000 ($23.38). These prices were for transporting big stones from a place called Chalala near Woodlands in Lusaka South, some sixteen kilometers away from Kalingalinga. Participants indicated that it was now a struggle as one has to find a way of putting food on the table. The stone crushers expressed fear that life was becoming less secure considering the hardships that were developing in their businesses.

When asked whether government programmes or policies had contributed to these changes (as the land had been zoned into freehold land tenure when government allocated the land to individuals making the land become privately owned) and whether environmental policies had been taken into account, the participants said they knew nothing about environmental policies. The participants felt that these changes had nothing to do with government policies but selfish individuals who did not want to help the stone crushers themselves. However, they felt that no one in particular was in control of the situation and so things were not going well for them as their business was being threatened. The stone crushers gave these sentiments because they did not understand the legality of zoning. Therefore, they concluded that selfish individuals were responsible for problems they were experiencing in their business.

5.4.2 Seasonal shifts affecting the well being of stone crushers

Seasonality is also important for stone crushers, as different seasons expose them to different experiences in relation to earning their livelihoods. The rainy season was a stressful period as stone crushers got a lot of pressure caused by worries of how to bring food on the table. It was a period when participants had to find other ways to get food for their families. The rainy season was also an unstable period as market for stones was limited and unpredictable weather patterns negatively affected production of stones. The hot dry and cold seasons were stable periods as the stone crushers were able to bring food to the table since both market for stones and production was favourable.

On page 113 is figure 5.4 showing the level of stress experienced by stone crushers in different seasons. The shading in figure 5.4 indicates level of stress experienced during each season. The rainy season was seen to be the most stressful. It was observed that although the month of November was part of the rainy season, the levels of stress was not as those experienced in the months of December, January, February and March.
Although the month of November was part of the rainy season, the levels of stress was not as those experienced in the months of December, January, February and March.

<table>
<thead>
<tr>
<th>Levels Of Stress</th>
<th>Very High</th>
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<th>Mid</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainy season</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cold season</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot Dry season</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Bar chart showing levels of stress for each season as reported by stone crushers.](image)

**Figure 5.4 Bar chart showing levels of stress for each season as reported by stone crushers.**

Rainy season most unstable, most slow and difficult; Cold season most fair and stable; Hot Dry season fair, very good and stable.

The rainy season was described as the most unstable, most slow, difficult and very bad season for stone crushers. Most of the days nothing was sold and some days it was very difficult to crush stones as the rain would fall continuously and so people would be indoors. Participants said the rain disturbed business and one could not crush stones in large quantities because their work area became wet, muddy and damp, and so it was a very unfavourable environment to work in. Most people with building projects also put them on hold and so there were few customers. The participants said that this was the most difficult period to bring food on the table.
The cold season presented fair business which at times was stable. However, the weather sometimes would be so chilly and windy making it difficult to work in the open air. Dust was also plenty during this season and the participants reported experiencing a lot of coughing and sneezing. However, stone sales were better than in the rainy season and so one could put food on the table.

The hot dry season presented a fair to very good and stable business. The business was favourable as most building projects would be at their peak. Although the hot sun presented challenges but one got used to the heat. It was easier during this period to sell stones and buy food for the family.

It can be deduced here that stone crushers are vulnerable to harsh weather conditions due to lack of shelter to carry out their business and also lack of cash to buy protective clothing. The location of the work site is also too close to the road therefore exposing them to noise from vehicles, dust and the threat of being crushed to death. This situation is exemplified in figure 5.5 below.

![Figure 5.5 Picture showing closeness of the stone crushers to the road.](image)

### 5.4.3 Shocks affecting the well being of stone crushers

Stone crushers are affected by shocks. Shocks are occurrences that reduce the ability of stone crushers to earn livelihoods. The shocks listed beginning from page 115 to page 118 affect the well being of stone crushers.
i) **Natural disasters**

Natural disasters are a result of natural causes. Stone crushers were threatened by floods during the rainy season. The periods of stress in the stone crushers’ lives were mainly during the rainy season when building was disrupted, it became very difficult to crush stones on rainy days. In addition, piece work was rare and transporters were reluctant to ferry stones as the roads were muddy and slippery and many places were flooded. This period exposed families to hunger unless friends came to their aid. During sickness, stress was more as the local clinic rarely gave medicines but prescriptions. Demand on money was high and it was difficult to meet both medical bills and food requirements for the family.

(ii) **Environmental shocks**

Environmental shocks are caused by reactions from the environment. Stone crushers were exposed to smoke, dust and noise. The stones were mined from the ground through a process of quarrying. This quarrying is done using simple tools, digging around a rock then putting firewood on top and around the rock, burning the rock to let it crack into pieces then the pieces were collected and then crushed by the stone crushers using hammers. The rocks were also softened by means of burning tyres on top of them for easy breaking. Large volumes of smoke produced is a health hazard to both residents and the stone crushers.

The tools used to crush stones were hammer, flat big stone and a piece of cloth to hold the hammer (figure 5.6). The tools were used to crush stones into the following sizes of 5mm, 10mm and 20mm respectively. Some stones were cut into very big sizes and were sold to customers who were constructing soak aways for sewer lines. The crushing process produced dust which had stone particles flying into the air, causing pollution and threatening one’s face and eyes. The crushing process was also noisy and a disturbance to the ears. The next page has a picture depicting tools used by the stone crushers.
Participants reported that the hammer and flat big stone were effective while a few said although the tools were effective they were time consuming and not appropriate for large quantity production in short periods. Lietman et al (1992:132) pointed out that “the cost of the urban environment fell heavily on the poor, who were most affected by poor health, lower productivity and reduced income and lower quality of life.” This can be seen from the experiences of stone crushers in the paragraphs above and below.

The participants responded that the business posed some dangers to their health or environment such as body pains, bleeding from the nose when small particles of stone entered their noses, dust from the stones caused some chest pains as it caused damage in the lungs. Participants explained that it was common for them to have sore eyes, flu-like ailments, headache and the face was always at risk from flying stones. One stone crusher in particular said “when I am off duty the eyes pain but immediately I get back to work they stop, I am concerned about this because I know that one day when I will finally stop, this will become a very big problem.”

Participants said that they were stressed, overworked and tired most of the time. The environment was full of dust causing further pollution and threats to their health. The gullies created by the removal of stones from the earth were home to breeding mosquitoes and water logging. Sometimes children fell into these water filled gullies.
and died. Gullies around the community and working area tended to be used as dumping sites and were unhealthy to children who were also at a risk of catching diseases when playing there or falling in the deep pits. This situation was pointed out by Gilles (1992:2), Dasgupta (2004:83) and Hanyona (2005:6) that “proliferation of water bodies, increase the number of breeding sites for disease vectors such as mosquitoes and cholera. Poor people destroy their own environment not because they are ignorant but to survive. Therefore, poverty itself could be a cause of environmental degradation.” Below is figure 5.7 showing children at a garbage dump.

![Figure 5.7 Picture showing children playing at a garbage dump.](image)

Participants said the gullies were also a risk to those who moved at night as the place was dark and thus cannot differentiate between a gully and a safe path. The participants pointed out that the garbage dumped near their work area produced a strong, bad stench. They also felt that uncollected garbage contributed to the spread of water borne diseases like cholera which occurred every year during the rainy season in the compound. An interview with Mwape Ignatius (records worker) at Kalingalinga clinic revealed that stone crushers presented specific ailments resulting from accidents and prolonged exposure to dangerous particles in their course of duty. Mwape (2011) stated that, water borne diseases affected not only the stone crushers but also other poor people who had no access to clean water in the compound where the stone crushers lived. He pointed
out that in the year 2009 cases of cholera had been few while in the year 2010 there was no outbreak of cholera in Kalingalinga compound except for the nearest compound called Mtendere which had an outbreak that posed a threat to residents in Kalingalinga during that period. Mwape attributed the reduction of cholera cases to a lot of sensitization on hygiene which had been conducted in the community and the council’s efforts to clean up garbage dumps with the help of the disaster management and mitigation unit.

iii) Human and economic shocks

While on duty, most of the participants had accidents such as stone particles entering the eyes, a big stone while being rolled falling on one’s leg and hurting it, hammer slipping off the hands during crushing and hurting one’s foot. Participants explained that there were times when the accidents caused them to lose a toe or finger nail. Some of the scars were visible on the stone crushers. Out of the sixteen, only four had not had accidents. The participants indicated that they got injured (hurting their fingers) during work when crushing stones. This affected their work as they had to hire other people to do their work. One stone crusher said although accidents affected work, one had to continue because if they stopped they would not eat.

Land was also being sold to foreigners and the site where they were crushing stones had been bought and so they were being threatened with eviction. The participants were now operating in the area temporarily as the premises were now privately owned (figure 5.6). Participants reported that the new owners had warned the stone crushers to prepare to shift as soon as the construction works begins. This had made the participants anxious and they said they did not know where they would get their livelihood and feed their children once the eviction was effected. The participants’ desire was for government to give them a site of their own to carry out their business safely.
Figure 5.8 Picture showing temporary location of stone crushers below:

The picture above is also as described by Slater and Twyman (2003:11) who stated that “various grades of rock are sold on roadsides in locations in Lusaka, Zambia”

The following section describes the coping strategies employed by the stone crushers in order to cope with different shocks and is summarized in table 5.4.4.

<table>
<thead>
<tr>
<th>Shocks</th>
<th>Utilize multiple income sources</th>
<th>Borrow from relatives/ Neighbours</th>
<th>Sell stones cheaply</th>
<th>Get help from the church</th>
<th>Do piece-work</th>
<th>Get help from business-men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death or sickness</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss of job</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Poor business</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>

Table 5.4.4 Coping Strategies for different shocks.

The coping strategies were given by participants in terms of how often they used them. Two participants’ households coped with shocks by getting help from the church while two other participants indicated getting help from friends and relatives. Four participants said they did piece rate work, like washing people’s clothes and weeding.
gardens in return for food or money. Two other participants said apart from getting help from relatives or the church they sometimes sold stones to fellow stone crushers at a lower price in order to buy food. Two more participants said they helped other stone crushers in breaking the stones and then got paid. Two other participants said apart from doing piece rate work, they got help from businessmen or borrowed money ‘kaloba’ (a loan with high interest rate which is adjusted upwards frequently) to be paid back with high interest. When all coping strategies failed, one had to just sleep hungry and depend on God’s grace. Four participants indicated that they had no one to turn to.

During a financial crisis (losing a job, family illness, funeral) participants turned to such institutions such as the church, relatives, friends and traders with shops. This is in agreement with Debate (2003:12) who pointed out that “coping strategies included human capital having relatives and children as carers.”

The church was ranked as the most preferred during a crisis, then relatives second. Other existing coping strategies including government programmes were not mentioned at all in the preferences and so it was difficult to comment on them. The only comment made by the participants was that government needed to fund the church to help it cater for members effectively.

Participants said there were no perceived government and non-government safety nets for the vulnerable as they said they did not know exactly what government could do while others said people in government had proved to be irrelevant as they did not care for them. The stone crushers reported that there were no safety nets provided by government except for non-government organisations, like the Young Men’s Christian Association that provided school children with uniforms.

The church was identified as giving food to vulnerable households at times. Government was reported not to respond to any of the shocks experienced and that it had failed to reduce the risk of vulnerability to shock among stone crushers more so because government leaders (politicians) did not live up to their words.

Only a church group called Jesus Cares Ministries had intervened in reducing shocks at one time through the provision of food stuff, coffins at funerals of vulnerable families and sponsoring their children in school. However, at the time of the interviews, both
government and non government organisations were reportedly not playing any role in reducing the risk of vulnerability.

5.4.5 Becoming or ceasing to be poor

The participants reported that individual stone crushers stayed poor more often while even some people in the community who were rich at times moved backwards. They explained that it was very rare for a stone crusher to get rich but it did happen sometime back in 2007. However, the general feeling of the participants was that most of them stayed poor. Participants mentioned that those stone crushers who had progressed were believed to have a blessing from God. The stone crushers interviewed explained that they stayed poor and moved backwards because they worked for consumption. Getting profit in their business was unpredictable and rental charges and the cost of living in general kept on rising, thus eating into their profit.

5.4.5.1 Becoming Poor

The stone crushers during interviews gave typical stories from their own experiences of how individuals had fallen into poverty. The accounts of their stories are presented in summary form.

Story No. 1: There was a man who had worked for the Mine Stone Company, was retrenched without benefits and became stranded. He was unwilling to do piece rate work, felt shy to crush stones and so sold his property in order to survive and became poor.

Story No. 2: A wife also fell into poverty after her husband stopped work as she had no capital or even a skill outside the home which she could use to earn a living. Going into domestic work meant that she would need to employ someone to look after her children an option she could not afford.

Story No. 3: Another woman fell into poverty when her husband died and the property which she had in the marriage was grabbed by the deceased husband’s relatives. She had no business to raise income, failed to get financial capital to start a business and so she became poor.
Story No. 4: A man who was earning little money and was the sole bread winner for his family kept a lot of dependants. The little money he had was consumed in no time and he failed to meet the basic needs of his family. He fell into poverty as he was supporting his family from borrowed money. Others that fell into poverty were careless spenders and boastful when they had money and God punished them by taking it away, then thoughts haunted them.

Stone crushers interviewed identified the causes of poverty through the stories above and suggested that these circumstances could be avoided by encouraging people to plan and use their resources wisely. They indicated that working capital should not be spent on feeding family members but should be left to generate profit. They expressed their desire for well wishers to intervene and assist them in getting capital in order to reduce the poverty they were experiencing. All the stone crushers interviewed felt that there should be respect for customers so as to receive support from them. Support from customers could even assist them with employment as more stones would be required on the market. The female stone crushers in particular felt strongly that it would be helpful for sponsors to give loans to women to empower them with capital.

They proposed that in order to stop individuals or groups falling into temporary poverty, there was need to give them food in the interim. There was also need to give them loans which were flexible thus giving them enough time to pay back and with low interest rates. It would also be helpful if they were offered jobs and capital for others to start their own business. One stone crusher who had skills in repairing bicycles said, “if government can give me spare parts for bicycles, I would start my own business.”

The stone crushers suggested that individuals or groups could be assisted to move from poorer to better off categories by giving them relevant skills, assisting them with financial capital or employment or land for business and houses. The stone crushers said it was also necessary to give them machines to crush stones and I quote “we need free capital at first, then as the business grows and survives, they should start giving us loans so that business can stabilize.” They indicated that they did not expect anyone to give them free things throughout but just to give them a strong start.
5.4.5.2 Ceasing to be poor

Stone crushers interviewed gave accounts of typical stories of how some individuals had succeeded in getting ahead. The stories are presented in summary form.

Story No. 1: A friend to one of the stone crushers moved away from crushing stones and started working in a supermarket, his lifestyle became stable and he moved out of poverty.

Story No. 2: Some stone crushers got capital from stone crushing and started other business like selling fish and are now better off.

Story No. 3: Individual stone crushers with few dependants to look after had built small houses using money from stone crushing business and are now renting them out to get stable income.

Story no. 4: Other stone crushers had kept profit gained from sale of crushed stones and later built small shops. Among the former stone crushers one had built shops, one former stone crusher was now selling beer, the other one had rented out some of the shops and had been running other small businesses using money from rentals.

The stone crushers felt that these conditions could be reproduced by giving people skills training, using machines to crush stones, educating people on how to start a business and make it grow. In addition, make available capital to do business so as to apply the business principles effectively.

5.5 Socio-economic and gender relationships

Socio-economic relations are an important factor in assessing the ability of stone crushers to cope with negative shocks to their livelihoods. Particular groups of stone crushers or individual stone crushers with strong social ties and support are more likely to be able to cope than those without support. The following were discussed in relation to the livelihoods of stone crushers.

5.5.1 Gender relations

Gender relations are determined by the way women and men participate in the three categories of work, which are reproductive, productive and community work. Both men and women do some work to maintain households and communities. “However, society allocates different roles, responsibilities and activities to women and men that
bring about gender related differences and generally tends to overburden women’’
(Zambia 2000:vii). Apart from carrying out productive roles, women tend to do more of
reproductive and community roles than men. Women care for the children and so are
over burdened. They have a tough time balancing between house chores and crushing
stones. Men are better off as they crush more stones because they spend more hours on
the job. Five female stone crushers complained that some men were drunks and so spent
money on beer rather than contributing to family welfare. They said spending money on
beer rather than family needs worsened the poverty situation as the wives to the men
who drink beer had to find ways and means to bring food on the table since they were
the ones who cooked for their families.

Below is figure 5.9

![Figure 5.9 Picture showing women crushing stones using hammers under a tree
near the road.](image)

Participants explained that despite the burden of triple roles, women on one hand were
better off in a way compared to the past as they were now being employed without
question and could earn an income. In the past women could only be employed with
approval from their husbands or guardians. This was no longer the case as now what
mattered most was the interest of the woman and her ability to perform the job.
However, on the other hand women were worse off than in the past because many were
overburdened with house chores as well as earning an income either to meet the
family’s basic needs or supplement the expenditure for the family. The stone crushers interviewed acknowledged that there were changes in the roles men and women had traditionally played over the past two decades as many women were now bread winners and the females who were crushing stones were a good example.

Participants explained that some of the changes in gender roles among the stone crushers had occurred due to various reasons such as death of a husband, illness or unemployment of a husband. These changes had sometimes impacted negatively on the women as there was a lot of stress on them.

5.5.2 Local power relations

The Ward Development Committee members interviewed said the local councilor who is assisted by the WDC wields real power in the area. He was assisted by the Ward Development Committee. The Committee members expressed that some ordinary people benefited from the councilor's power through projects that were implemented for the community, as people were employed to participate in the projects. The Committee members interviewed explained that information came from the Ward Development Committee and went to the Councilor who reported to the City council and then the Ward Development Committee had to oversee implementation of the projects under the supervision of the Councilor. The Committee member however expressed fear that ordinary people may not benefit from this power when there was discrimination based on political party lines. This fear was also expressed by the stone crushers and Kalimakwenda (2009) who explained that people who were not cadres for political parties suffered discrimination most of the time when the political leaders in the community were given autonomous authority to implement projects.

When asked whether land was important, the participants pointed out that land was an important source of power and the pattern of land ownership in the community has been that land was owned by men. Most women who owned plots in Kalingalinga acquired these plots upon the deaths of their husbands. These plots were reported to be on thirty (30) years lease. Stone crushers and members of the Ward Development Committee who were interviewed felt that Government policy should be concerned with the redistribution of land (land reform) to empower women as this would assist female stone crushers get land as an asset. They reported that most of the land (big chunks) in Lusaka was in the hands of men who were even selling parts of it or renting parts out.
The Ward Development Committee felt that traditional land should be given through recommendation by traditional councils which should also consider the size to be given to an individual. They felt that Chiefs as individuals should not be allowed to give out land. The Western province of Zambia model in land allocation was noted and highlighted by one member of the Ward Development Committee as a good practice because it protected people as the land belonged to the family. Land was said to be the only welfare for people whether rich or poor, so it should be guarded jealously.

Currently, the government policy was that 30 per cent of the land scheduled for allocation to people (whether farm plots or residential plots) should be given to women. In addition, women were to compete for the other 70 per cent of land with men. However, fruits of this policy were not yet so visible country wide except for a few districts that had started making progress. Stone crushers were excluded in this land allocation by exorbitant application fees and other difficult procedures which favoured those that were in charge of land allocation and a few elites.

5.5.3 Labour relations

Stone crushing as a job affects men and women differently. The work environment demands long hours and is not safe for babies. Female stone crushers who were mothers cared for children and so were over burdened. One female stone crusher said: “When I come with a baby I cannot work because the baby might fall sick from dust, I am therefore less productive.” Female stone crushers pointed out that men had an advantage in that apart from spending long hours crushing stones thereby crushing more stones for sale, they were also swift in selling and so they made more money. However, five female stone crushers pointed out that despite making more money, some male stone crushers were drunks and so they spent money on beer rather than contributing to family welfare. This they said made life difficult for their wives (who had to perform triple roles as well as supplement family income as explained under 5.5.1) and children and did not give them a better life as compared to the female stone crushers.

The young and old were affected differently. Old people suffered as they had less energy and more responsibilities. One stone crusher said “nchito iyi ni yo limba, akulu avutika” which means this work is hard, the elderly suffer. The stone crushers interviewed said the harder one worked, the better earnings one was able to get. So the old found it more difficult to earn more money.
(i) Child labour

Child labour is one of the socio-economic relationships that make it difficult to move out of poverty. Children participated in stone crushing assisting their parents to meet targets. Some of the children failed to go to school while some went to school but were too tired to concentrate. These children were therefore excluded from an effective learning process which could empower them to come out of poverty. Saluseki (2007:7) pointed out this effect “slum dwellers were most likely to experience more hunger, attain less education and have fewer chances of employment than those urban residents that do not reside in slums.”

Participants pointed out that poverty and Human Immuno-deficiency Virus and Acquired Immune Deficiency Syndrome were the major causes of child labour as when times were hard, the orphans and vulnerable children were requested by their guardians to begin contributing to their own welfare by doing some form of work for money. The Post (2006:5) reported that “although Zambia is signatory to the conventions of the International Labour Organization (ILO), and although its laws do not allow children below the age of 15 to work for a living, for many of the stone crushers’ children, there is little alternative.”

When asked about the law in relation to child labour, the participants indicated that they did not know how the law governed these matters as they did not see any official from the Ministry of Community Development and Social Services or any other government department facilitating the implementation of such laws if they existed. It can be deduced here that lack of information on opportunities available for them and their children could be said to be a factor in preventing them from progressing.

5.5.4 Social exclusion and cohesion

Participants reported that some people or groups were reported to be left out of society or excluded from community life in decision making. The most excluded groups were the poor in general, widows, old people, the disabled and children. In most cases decisions were made without consulting them. The Ward Development Committee members interviewed reported that Kalingalinga Community was well organized politically into 15 zones. Chimbuya (traditional cousinship) was a traditional practice that promoted bonding in the community as a whole and provided a sense of solidarity.
This social cohesion could be seen during illness or death as tribal cousins took up their role to help reduce the negative impact of such calamities. The Committee members reported that social cohesion had remained stable despite hard economic times.

5.5.5 Crime and conflict

The participants reported that there was more crime than in the past and the maintenance of law and order was an issue for the stone crushers. According to the stone crushers interviewed, crime levels had risen as in the past there was no mugging and stones were not being stolen at night. The risk of one being mugged if one knocked off late in the evening was quite high, unlike in the past when customers could knock off from their work places and come to buy crushed stones in the evening without fear. Participants also expressed their concern on the size of the area the police is expected to protect. This is what they said: ‘‘komboni ya kulisa, akapokola niang’ono, akangiwa kuti yanganila’’ which means the compound is too big, such that the police are failing to provide protection for us. They attributed the failure by police to provide protection to not only the large area involved but also to the low staffing levels at the local police station. The participants complained that the police was also not proactive in its work as most of the time it worked more on defensive lines. Participants complained that there was a problem because the Police usually had no transport to attend to urgent reports and there were no preventive measures to crime and conflict. This, the stone crushers said, was a serious issue of concern as they wanted to do their business and sleep in their homes without fear of thieves.

5.6 Institutions

5.6.1 Introduction

Institutions play an important role in alleviating or aggravating the status of the poor. During interviews with stone crushers, a general picture of how institutions performed in relation to the stone crushers’ livelihoods was drawn. The relation of institutions to stone crushers’ livelihoods was determined using the analysis of how much power and ability (control) the stone crushers had over the running of certain institutions and how they could affect (influence) the running of certain institutions. Thirteen participants said they had no control over any institution or influence whatsoever. Two said they had influence over the church as they could get help when in need while one indicated
having influence over one non-governmental organization which always responded to his requests.

The most important formal or informal; government or non government institutions within or outside the community that influenced the stone crushers in a good way to bring about better results (affected them positively) and those that were bad or their effect was bad (affected them negatively) were stated as follows: non-governmental institutions and the church influenced people positively while most government institutions influenced people negatively. The government institutions were clinics, schools, the council and the police. The non government institutions were churches and hospices such as Mother Theresa and Kalingalinga hospice.

No ranking could be done as the stone crushers had no choice to apply preference. The safety nets provided especially by churches reached the stone crushers at times, although just for a short period.

5.6.2 Health institutions

The public health care facility available in the community is Kalingalinga clinic while private ones are Go Centre, Mother Theresa Hospice and Kalingalinga Hospice. The participants pointed out that private health care facilities attended to patients fully as they were fully examined by kind doctors and given medicine by caring nurses. However, the only problem was that one needed a lot of money to receive services from the private health facilities. This was a big challenge for the stone crushers. As for public health institutions, the participants said in the first place one needed the whole day to be at the health facility if they wanted to be attended to. This was because there were long queues. But even after being attended to by a clinical officer (as it was rare to be attended to by a doctor) the patient had to go to a chemist to buy medicine since participants were most of the time only given prescriptions for medicines. This, the stone crushers interviewed said, made life more difficult especially if one was very sick and could not walk around to do all those things. However, they said the public health institutions were cheaper as one could get a medical scheme at the clinic if they paid K5,500:00 ($1.07) to receive treatment for three months. Alternatively, if one had no scheme and fell sick suddenly, they had to pay K10,500:00 ($2.04) in order to receive treatment. The participants said because of too many people going to the same clinic,
medicine only lasted for a few days such that whoever went there thereafter would be given a prescription only.

The participants felt that the public health care facilities could be improved. They suggested that medicines should be provided and doctors and nurses should be recruited to attend to the large number of patients. The nurses and doctors should also change their negative attitude towards patients. The community should be consulted during health reforms so that the stone crushers could know their role or contribution towards access to healthcare.

Twelve participants felt that the most important basic healthcare provider was government for different individual stone crushers in the group. Four of the participants said non-government was an important health care provider but the costs involved in private clinics were prohibitive for the stone crushers to access the services.

The stone crushers interviewed explained that based on their observations from private health facilities, an ideal government health unit should comprise professional medical staff, reception area, consulting rooms, wards for females, males, children, maternity, injection room, pharmacy, x-ray room, dental room, voluntary counseling and testing section, mother and child section, incinerator, stores, laundry section, kitchen, television in designated places, good linen in wards and other rooms, enough medicines and medical equipment, stable electricity, reliable water sources, ambulance, spacious car park and be able to provide quality health care.

According to 14 stone crushers that were interviewed, the most important reproductive health provider for different groups in the community was government. The reasons being it was cheaper to receive services from government clinics. Two of the stone crushers interviewed said private health facilities were more important because the workers there did not go on strike and also treated patients with respect. The stone crushers rated the quality of health and education services in the following way: they said that the quality of health services was average in public institutions as there was frequent shortage of medicine and personnel.

The participants proposed that the quality of the facilities could be improved by strengthening staffing levels and equipping the institutions with right tools and medicines so that poor people could get treated instead of giving them prescriptions for
medicines. In addition, the participants said that services provided should be sustainable and not short lived. They suggested that government should work on the drainage system and provide them with mosquito nets so as to prevent malaria outbreaks during rainy season.

5.6.3 Educational facilities

The public education facility available in the community is Kalingalinga Basic School which offers education from Grade one to Grade nine. It is the only government education facility. The private schools are Chembo, Zoks, Good Hope, and community schools are Future Hope, and Jesus Army. These schools ranged from offering preschool services to basic education.

The most important primary education provider was identified by 12 stone crushers as the government school. Four stone crushers said non-governmental facility was the most important for different groups in the community. Government was identified as the most important and the participants said it was cheaper and learning was free from Grade one to seven. The four stone crushers who preferred non-government schools justified their choice by pointing out that teachers in non-government schools taught well and children were able to learn good English. In addition, the teachers in non-government schools did not go on strike and were polite.

According to the participants, an ideal government primary school should comprise professional teachers, good clean classrooms with black boards, staff room for teachers, telephone facilities, enough suitable furniture, tuck shop, a tap/s for drinking water, well ventilated toilets, library with sufficient books, play grounds, computer education facilities, English language syllabus, first aid facilities, extra-curricular activities, transport and offering good quality free education.

The stone crushers rated public education services as being average and hoped government could do its best to improve the situation. They pointed out that the differences between public and private education services were that education services in the private sector were stable as teachers, textbooks and other education facilities were available. Furthermore, in private schools the school calendar was followed to the letter as there were no strikes. In contrast, schools in the public sector are inadequately equipped and sit-ins and strikes occur every year. The education services are also
compromised by lack of teachers and overcrowded classrooms. Textbooks are few and the school calendar is rarely followed due to strikes.

While private education services attracted high fees, they are dependable. Public-education services attracted little contributions but they are not dependable as some of the costs come in form of pupils buying their own textbooks and also paying for private tuition without which they cannot get effective lessons.

Four stone crushers reported that private service providers were important for them because sometimes government neglected service provision. They however stated that, most private services were not accessed by the stone crushers due to cost and therefore only helped rich people who had money to pay for such services. Participants recommended that for further improvement, government education institutions should focus on educating even stone crushers’ children by equipping schools properly. Education should be free from Grade 1 to Grade 12. More schools should be built to decongest the classes so that teachers can give personal attention to pupils.

5.6.4 Credit and market facilities

5.6.4.1 Credit

The institutions which provided credit were banks. Participants said they did not know of any government or non-governmental programme that provided similar services. There were some other small organizations which belonged to individuals who provided the service. The stone crushers could not compare between Government and non-governmental organisations but had information about a credit organisation that had lent money to some women (in groups of five) although the paying back period and method was not user friendly. The men said they were not considered in the allocation of loans. Other women said they could not get loans because they feared losing their property if they defaulted in payment.

Participants said credit providers did not reach the poor as they only lent money to those who were able to pay back. But three women who had accessed credit did not agree with the allegation saying they were poor but had accessed the credit. However, the three female stone crushers who had accessed credit said that credit was not effective because the loan was given to a group and if one person defaulted in payment the others were made to pay for that person. It was also not effective because one had to
pay every week. The trio further explained that credit providers preferred giving a
group of five people an amount of K2,500,000.00 million ($487.27) which was to be
repaid in installments of K100,000.00 ($19.49) per week. They felt that this repayment
period was too short and suggested that the loan system could be effective if payments
were made at the month end.

5.6.4.2 Access to market facilities

This section contains the reports of participants as regards to access to market facilities.

Participants said markets and access to markets had changed. The market for the type of
skills they had was limited as there are few people who could hire them. The costs
involved in accessing land made it difficult for the stone crushers to invest in land. One
stone crusher said ‘‘I need to buy the application form and attend interviews if I am
lucky. Upon being offered land I should pay survey fees, service charges and money to
process title deeds. All these stages require plenty of money and the Council wants a
bank statement which I do not have. I am therefore excluded by these huge costs.’’ The
market for land discriminates the stone crushers technically because the process is
prohibitive as it involved procedures and payments.

Water was being rationed as market for it was plenty but access was restricted by cost.
The market for housing was plenty but access was controlled by money. Market for the
produce (stones) was limited as there were big quarrying companies in addition to stone
 crushers around Lusaka.

Participants attributed the increase in the number of people crushing stones to the
closure of some companies and generally to lack of employment in the country. They
also pointed out that business had become expensive as profits were minimal because
stones were being bought from outside Kalingalinga at a place called Chalala near
woodlands residential area. However, the stone crushers felt that no one in particular
really was responsible for the changes but the environment was just not favourable for
good business. The business environment was getting tough.

5.6.5 Security and justice

Security in the area was provided by the neighborhood watch and the police. Justice
was provided by the Chelstone Local Court in a nearby area. Within the area, the
Chairman handled some civil matters before they could be taken to the local court while the Victim Support Unit attended to gender based violence cases most of which were later handled by the subordinate court.

Fifty percent of the participants said the security and justice services were not satisfactory while the other fifty percent indicated that the services were satisfactory. The reason given by the former group was that there was corruption but others indicated that one could still appeal to get their case reheard and justice would prevail.

The 50 per cent who are satisfied said that the police are supposed to be given more power in order for them to become effective. The other 50 per cent reported that provision of security was not satisfactory because the police had inadequate transport and were expected to cover a big area carrying out foot patrols. The fifty percent that indicated dissatisfaction with the services of the police said some policemen had a negative attitude towards members of the community and this produced negative results in their work. They added that some policemen were very interested in back door payments (bribes) and this compromised the quality of their work. However, all the stone crushers interviewed agreed that the police ought to provide enough security in the area both during the day and night time. They also pointed out that the local court ought to provide justice in the area effectively without prejudice.

5.6.6 Resources and infrastructure

Participants reported that the community was well serviced by garbage bins but the road network was poor. Electricity was only accessed by those who could pay for it. Water was rationed from communal taps and attracted a fee whilst toilets were a problem as they were mostly shared pit latrines with poor ventilation. The stone crushers pointed out that there were no private programmes responsible for upgrading infrastructure and so everything fell on government. They noted that government had started working on the main roads only. However, the upgrading of roads was not working too well as sometimes the contractors abandoned the projects saying they had not been paid.

The stone crushers suggested that these programmes could be improved if more money was provided for the projects by the government and maybe with the help of donors. The participants proposed that roads once worked on should have street lights to protect
people from being mugged at night. There should also be a programme for maintaining the roads and infrastructure in general once upgraded.

5.6.7 Other services

The other services that were being provided for the stone crushers were water and sanitation services. The participants reported that Care International (an NGO) had sunk some boreholes in their community to assist with the provision of clean water. The stone crushers could access water by contributing a small fee of K50 for a 10litre container of water and K100 for a 20litre container of water. They also contributed to the running of the water kiosks in form of voluntary labour and this was done as an incentive to the service provider in order to cut down the running costs of the water kiosks.

The stone crushers however pointed out that they could not get water free of charge whether from the non-governmental kiosk or from the taps provided by the council because money was required to maintain these facilities. They needed to have money all the time so as to access these services. The stone crushers explained that people who had money got the service first and one had to have money in order to access not only water but other services like a good toilet, electricity, housing, health and education. The participants proposed that other non-governmental organizations could put more taps or kiosks in communities and also build more toilets because the current supply of services was not enough for the growing population. The participants expressed their desire for a senior secondary school and an old people’s home as these services were not provided in their community.

This situation appears as illustrated by the Department for International Development (2001:22) which stated that “urban poverty is therefore invariably associated with limited or no access to basic utilities or services such as water, sanitation, affordable transportation, healthcare, education, energy and law and order.” The issue of water and sanitation was also highlighted by United Nations (UNDP 2007:131) which stated that “one of the challenges for the provision of water and sanitation to low-income households is to cover peri urban areas. In Zambia, about sixty percent of the population lived in shanty towns. Communal taps and boreholes, financed by external donors and non government organisations provided most water in these areas. For sanitation, households relied on septic tanks, pit latrines and other similar methods.”
These findings by the United Nations Development Programme are similar to the situation explained by the participants.

5.6.8 Government structures and institutions

5.6.8.1 The Ministry of Community Development and Social Services

Ngoyi (2009) explained that this ministry played a vital role in promoting the well-being of the poor including the stone crushers. He pointed out that the promotion of the well-being of poor people which was being undertaken by the Ministry of Community Development and Social Services was an opportunity which stone crushers could seize. Ngoyi explained that through gender and development programmes, these poor stone crushers could be mobilized by Community Development Field Staff to form clubs through which they could be assisted. Under non-formal education, the stone crushers could be organized into functional literacy classes and upon graduating they would be expected to join skills training programmes in their provinces. He added that there were also self-help initiatives being encouraged to the poor so that they could run entrepreneurship activities and these could also benefit the stone crushers.

The Ministry provided sustainable livelihood skills training in metal work, home management, tailoring, fabric printing, wood work (carpentry) and bricklaying for people who just had basic literacy skills without demanding for any certificate. The Ministry provided food in schools to encourage children from poor families to continue going to school. In addition, through public welfare assistance, the children were assisted with school requirements. In the rural areas, villagers of poor status were also provided with farming inputs and small livestock like chickens, goats and pigs to enable them improve the nutrition status in their homes. To the contrary, food security packs could not work with stone crushers because they had no land on which to grow food crops.

The Ministry official however indicated that no effort had been made to form cooperatives for the stone crushers because their business fell under illegal mining which was an offence (details of illegal mining are discussed in Chapter four under zoning). It was illegal mining because the stone crushers were obtaining stones from areas which had not been designated for such practices. Ngoyi explained that if the stone crushers could not move to legalised areas, they would not be able to get support
from government. He, however, indicated that the ministry wanted to encourage the stone crushers who were not ready to move to designated areas for stone crushing to do other forms of business other than crushing stones in the land that was not theirs.

5.6.8.2 Lusaka City Council

According to Kalimakwenda (2009), normal land allocation was done when the council identified land, and advised people interested in the land to apply. The suitable candidates were interviewed by officers from different departments for example City Planning, Housing and others. Developments were normally done through the area Member of Parliament, Councilor and the Ward Development Committees who identified the priorities or needs for development in their community. Lusaka City Council being the overseer of development carried out, for the benefit of local people the role of monitoring the development of infrastructure. However, this role was being compromised by low staffing levels therefore some infrastructure was developed without following laid down procedure as they were not monitored during construction. Figure 5.10 Garbage dump

![Figure 5.10 Garbage dump](image)

**Figure 5.10 Picture showing a garbage dump which had stayed for over a month**

The Council in most cases collected garbage quite often especially from business enterprises. The time schedule was once a week for the trading areas and once a fortnight for the general community. However, sometimes there was no transport so the garbage would stay at the garbage dumps for over a month without being collected.
Mermoz (1997:57) pointed out how “pressure on available resources could hinder improvement in social and economic welfare due to pressure of population on available physical, environmental and other resources in a limited area” as shown by the inability of the council to meet the demand for clearing garbage dumps.

Most of the time, the Council faced a lot of challenges especially during these hard economic times where people looked here and there to make ends meet. Hence, people sometimes changed the land use without consulting the council as they said councils took a long time with their procedures. Fifteen of the stone crushers reported that government had not legalized their business as could be seen from the way their place of work had been allocated to individuals. But one said she felt that government had legalized their business because the Lusaka City Council Police which used to confiscate their stones stopped doing so.

Although this stone crusher felt so, what was actually happening on the ground was that the confiscation of stones and removal of stone crushers from the illegal area of operation had become a political issue. A named opposition political party was claiming that the council’s move to confiscate stones from stone crushers was a deliberate way to harass poor stone crushers who were innocent citizens. The same political party was questioning the ruling party’s fairness to the stone crushers. “The illegality of stone crushing had become a sensitive issue such that the council was now treading carefully on the matter while government was looking into the best way to resolve the issue without raising unrest” (quoted from a community leader (2009) whose name is withheld).

5.6.8.3 Environmental Council of Zambia

Most of the participants (stone crushers) had not received any environmental education. No sensitisation had been done in the study area for a long time therefore, the numbers of stone crushers have been increasing without them knowing what was at stake. Two participants that had worked at the site for about ten years reported receiving sensitization once but did not know the name of the organization which had given the sensitisation. Other 14 participants indicated that it could have been the same organization that had asked them to breathe out air into plastic bags but because they feared satanism, they had refused to do so. Participants indicated that they did not know
whether the Environmental Council of Zambia did assess damage in terms of dust emission, waste generation and noise emission.

It was observed that the Environmental Council of Zambia does not carry out regular monitoring exercises to find out how much damage has been done to the environment. In addition, environmental planning management was only applied to the licensed small scale mining and quarrying activities. In this regard, the Environmental Council of Zambia provided conditions which the miners were to adhere to with commitment.

According to information gathered from one official (2009) with regard to the land that has Zambia did an environmental impact assessment through the environmental inspectorate team which prescribed the actions to be taken to upgrade the degraded land but did not take responsibility. This was done with the participation of the Lusaka City Council and the Ministry of Mines and Mineral Development (officials interviewed requested their names to be withheld).

To help reduce the increasing effects of mining and quarrying activities in residential areas, the Environmental Council of Zambia and Lusaka City Council had in the past attempted re-locating stone crushers to an area called Shantumbu south of Lusaka but the stone crushers had declined to shift. It was observed that no logistics had been put in place for the stone crushers to establish their business at the new site.

Environmental Council of Zambia also carried out sensitization programmes to educate people on the dangers of mining and quarrying through the media: radio, newspapers, television as well as through community campaigns and distribution of printed education materials. The environmental campaigns carried out through literature and radio programmes were mainly done in the English language but unfortunately most stone crushers cannot read and write in the official language. They therefore did not get the message.

Participants reported that the Ministry of Lands and Environmental Council of Zambia did not attend to the problem of gullies, however, people who bought plots where gullies were located were burying them before putting up houses. The next page has a picture depicting gullies resulting from stone quarrying.
Below is figure 5.11

![Figure 5.11 depicting an open wide gully caused by stone quarrying.](image)

**5.7 Conclusion**

Stone crushers are men, women and children who crush stones to earn a livelihood. The sample of 16 in this research was composed of 11 women and 5 men. The majority of these stone crushers were aged between 30-49 years. Some of them had no formal education at all, while others had below basic education except one who had attended secondary education.

The stone crushers’ ownership of assets was very poor and income generated from stone crushing could not enable them meet the basic needs. The stone crushers pointed out their preferred livelihood options, however, they could not access them because they were not available to them. The stone crushers were vulnerable to economic trends, environmental shocks and seasonal shifts. These vulnerabilities brought different levels of stress, the worst being stress experienced during the rainy season.

Opportunities for selling stones had diminished as there were too many people crushing stones in Lusaka as a result of high unemployment levels. The demand for labour on the labour market was low and so many people went into self employment. Stone crushing attracted many poor people as they did not need financial capital or expensive equipment to carry it out.
Coping strategies were socially based such as getting help from the church, friends as well as neighbours while in some cases people did piece rate work. Women were overburdened as they had to carry out house chores as well as crush stones to supplement the running of their various homes.

The discussion given above shows that illegal stone crushing is not sustainable as the stone crushers have no capacity to exercise choice. Opportunities are limited by their illegal operations while the resources they use are being depleted in Kalingalinga. Therefore, considering the situation described above, recommendations to enhance the livelihoods of the stone crushers are discussed in detail the next chapter (Chapter six).
CHAPTER SIX

SUMMARY AND RECOMMENDATIONS

6.1 Introduction

The objective of this chapter is to suggest measures that can enhance the livelihoods of stone crushers. This chapter concludes the entire dissertation by giving a summary of the findings, a conclusion and recommendations for the sustainable livelihoods of the stone crushers. The study intended to give an analytical description of stone crushing as a sustainable livelihood in Lusaka. It was a qualitative study in which a livelihoods framework was applied. Fieldwork included observation at the study site and interviews with key informants from government departments whose work includes poverty reduction, stone crushers themselves and the Ward Development Committee members who oversee development in Kalingalinga. The adoption of these approaches which are discussed in detail in Chapter three, helped to uncover the experiences of stone crushers.

6.2 Statement of the Problem

This research hoped to investigate the sustainability of the livelihoods of stone crushers. The study intended to give an analytical descriptive report on stone crushing as a sustainable livelihood. This was in order to describe the link between poverty and the urban environment from which stones are harvested and crushed by some poor people, in the quest to earn livelihoods. Illegal stone crushing enterprises are small in scale, largely escaping the recognition, enumeration, regulation and government protection or support. The focus on this illegal stone crushing activity in the urban environment offered an opportunity not only to analyse and describe the links between poverty and stone crushing as a source of livelihood, but also to make recommendations for improving the livelihoods of stone crushers.

Lipalile (2009) explained that stone crushing around Kalingalinga compound has been attracting the development of small scale quarries since the early 1990s. Groups of fathers, mothers and children crushing stones are a common sight around this compound. They are symbolic of the illegal quarrying for stones that is now so evident in dotted areas of the city of Lusaka. Stone crushing provides a number of jobs and a source of revenue from which people hope to improve their living standards, health,
education, nutrition and shelter. On the other hand, land degradation, large excavation and dumping of waste materials is prominent.

6.3 Objectives of the study

The main (primary) objective of the study was to give an analytical descriptive analysis of stone crushing as a sustainable livelihood in Lusaka and to make recommendations for improving the livelihoods of stone crushers.

6.3.1 Secondary objectives

In order to meet the primary objective, the secondary objectives were:-

1. To provide an overview of the literature relating to urban poverty, environment and sustainable livelihoods.

2. To provide a situation analysis of the socio-economic situation in Zambia and then more specifically Lusaka.

3. To outline stone crushers’ perception of stone crushing on their livelihoods in order to describe their needs and goals.

4. To describe the role of institutions in relation to the stone crushers’ livelihoods.

5. To suggest measures that can enhance the livelihoods of stone crushers.

6.4 Addressing statement of the problem and objectives

The statement of the problem has been addressed through answering the specific objectives and the primary objective. The objectives have been answered in specific chapters. For example, Chapter two covers objective one by providing an overview of the literature relating to urban poverty, environment and sustainable livelihoods. Chapter four covers objective two and provides a situation analysis of the socio-economic situation in Zambia and then more specifically Lusaka. Chapter five covers objectives three and four by analysing stone crushers perception of stone crushing on their livelihoods in order to describe their needs and goals; and describes the role of institutions in relation to the stone crushers livelihoods. Chapter six has covered the primary objective of the study which was to give an analytical descriptive analysis of stone crushing as a sustainable livelihood in Lusaka and to make recommendations for
improving the livelihoods of stone crushers. In Chapter six, objective five which was to suggest measures that can enhance the livelihoods of stone crushers is also answered.

6.5 Observation

It was observed that stone crushing is a demand driven activity with a strong linkage to the housing sector. This was evidenced by the fact that most of the participants did their business to earn a living and their market was people constructing houses. Most of the participants perceive stone crushing in the following way:-

It is an activity which enables them to put food on the table on one hand or and on the other hand as an activity which has negative effects on their health as they experienced coughs, headaches, sore eyes and regularly hurt their fingers on the other hand. In addition, they indicated that their work environment is dusty and noisy. One suggestion made by a source from the Environmental Council of Zambia which could help the stone crushers would be, to educate them with relevant ideas and guide them on how to go about their business. If possible talk about the dangers such as dust inhalation encountered during stone crushing. The dust inhaled could cause chest problems which may result in death if not checked. This source indicated that “while earning a livelihood is important, stone crushers should be reminded that life should also be appreciated.”

It was observed that all the stone crushers had been extracting stones from land which had earlier on not been allocated for that specific use (quarrying). The zoning of the land by The City Planning Zoning Division’s allocation of land to private individuals created a problem for the stone crushers as their illegal use of these pieces of land became more pronounced thus threatening their source for survival.

In addition, field observations showed that the stone crushing activities had greatly affected the landscape of Kalingalinga due to pits created by these activities. Vast areas of land were rendered derelict and therefore residents could not use them. However, rich individuals were able to buy the land and rehabilitate the degraded land using specified bulky density standards. They rehabilitated the land by filling the pits with material specified for such work, then stabilized the land levels and proceeded to construct buildings. The rich individuals were doing this through the guidance of the Office of the Director of Engineering at the Lusaka City Council.
6.6 Views of the stone crushers

Interviews with the stone crushers revealed the following:- lack of livelihood assets, vulnerability to adverse shocks and trends, inadequate basic services, social exclusion and gender inequality and lack of access to justice and security.

6.6.1 Natural capital

The key natural assets here were stones which were being appropriated as a common pool resource but were now being restricted by zoning. Zoning had excluded the stone crushers not only from ownership but also from access to this land which they were getting stones from. Given the dependence of a large proportion of the stone crushers on stones, increasing access to stones (natural resource) is a key issue. However, this natural capital was a declining asset in Kalingalinga and limited access to stones was increasing leading to failure by stone crushers to meet their livelihood needs.

6.6.2 Produced capital

The study revealed that the quality of housing for stone crushers was poor. Key essential infrastructure such as electricity, water and sanitation was not benefiting the stone crushers because it was too expensive. In addition, affordable credit was not available for the stone crushers while health care facilities and schools were extremely inadequate.

6.6.3 Human Capital

Low levels of education and poor health status were prominent in the study. Skills that were reported by the stone crushers were the use of a hammer and flat stone. These tools however were not sufficient to enable the stone crushers produce more stones safely and earn a sustainable livelihood.

6.6.4 Social capital

Although some stone crushers reported benefits arising from patterns of association, the general observation was that social capital was declining. The stone crushers however, helped each other in times of economic shock and stress. For example, during funerals they supported each other and would not report for work in order to attend burial.
During illness, stone crushers took some hours off their work to visit the patient in order to render necessary assistance. Despite this the networks were breaking down as poverty increased.

6.6.5 Political capital

A common expression of the stone crushers was that they had no political capital and were excluded from decision making. Councilors, Chairpersons and the Member of Parliament were reported to have political power. Stone crushers reported that they were excluded from decision making as they were never consulted on any issue. They just saw things happening in the community and had no idea of the details of the projects on the ground. The stone crushers indicated that the only group which had consulted them was the World Vision, over the use of water from a borehole.

While this exclusion was reported by the stone crushers, the Decentralization policy and the citizen’s economic empowerment policy provides an opportunity to include the marginalized in decision making at the local level in order to set priorities correctly and direct developmental activities. However, local councilors and leaders of the ward development committee were not even known by most stone crushers and in cases where they were known, the stone crushers did not know the ward development committee’s role. The stone crushers acknowledged that the Non Government Organisations sector was a positive development, although benefits to the stone crushers were still very low. Notably, Non Government Organisations that were mentioned were said to have done valuable work for short periods. Therefore, the impact of the Non Government Organisations' contribution to the livelihoods of stone crushers was valuable.

6.7 Vulnerability

Increasing access to one or more livelihood assets however may not be sufficient for stone crushers to move permanently out of poverty. This vulnerability was being exacerbated by the following factors:
6.7.1 Environmental degradation

Since the stone crushers relied heavily on a natural asset (stones) the depletion, whether man made or natural affected the stone crushing business negatively. The drastic reduction in access to stones from nearby sources had directly affected the cost of dealing in stones. Environmental pollution, especially air and water, had negative effects on the stone crushers’ health. Kalingalinga experiences water borne diseases like malaria every year in the rainy season and dust from stones being crushed affected the stone crushers as they inhaled the dust directly since they did not use protective clothing.

6.7.2 Unemployment

The increased risk of unemployment was a key concern for the stone crushers. This was because there were no safety nets for the stone crushers. Income shocks were common among stone crushers thus making households fall into further poverty. In this urban environment, poor people including stone crushers relied on wage labour as a source of income. Therefore, unemployment was a major cause of poverty and was identified by stone crushers as having increased the number of people crushing stones.

6.7.3 Child labour

Child labour was evident on stone crushing sites and this did not exclude Kalingalinga study site. One could see children (especially at weekends and after school hours) helping their parents to crush more stones in order to get better sales. This practice was often a result of poverty as parents hoped to crush more stones with the help of their children in order to get more money. The study observed that Child labour also resulted in the perpetuation of poverty as child stone crushers were unable to obtain an education, experienced ill health and were unable to develop the human capital necessary to move out of poverty in the long run.

6.7.4 Decline in health status

A decline in health status was reported by stone crushers at the site. There were common incidences of accidents, coughs, sore eyes among the men and women crushing stones. The patients could not get proper medical attention because the public
health care facility did not give the stone crushers medicines but just prescriptions. Since the stone crushers did not have enough money most of the time to buy prescribed medicines, they ended up just waiting for the illness to end on its own. It was observed that illness of a breadwinner especially, plunged the family into hunger thereby furthering poverty.

6.7.5 Increase in the crime rate

Mugging, theft and other vices have increased in Kalingalinga community. The stone crushers reported that many unemployed youths were not only stealing from houses and attacking people but also stealing the stones at the site. The stone crushers reported that there were people pretending to be organizing development and therefore getting levy from the stone crushers, but no fruitful results had come out of the payment of that levy. This was a group of conmen who knew that the stone crushers were vulnerable and so were ready to pay amounts of up to K10’000=00 ($1.94) to protect their business.

6.7.6 Safety nets

Safety nets play an important role in protecting the stone crushers by helping them to cope with shocks. Formal institutions were reported to be of little use to the stone crushers. In fact the stone crushers reported that the formal institutions were not in existence. Even the Ministry of Community Development and Social Services which deals directly with poor groups was not mentioned by the stone crushers as providing safety nets for them.

6.8 Inadequate public institutions

Filed data revealed that public services had failed in that there were inadequate public institutions and the services provided were unsatisfactory. Stone crushers interviewed explained that although basic health and education services were available, service provision was poor and impacted negatively on their livelihoods. In addition to poor service delivery from basic health and education services, institutions that provided credit did not reach the stone crushers. The details of these services are given below.
6.8.1 Education and health facilities

It should be noted that most of the stone crushers have no formal education and if they have, it is inadequate. So they lack neither qualifications for better jobs nor skills to establish sustainable business. They can only take up low-paid piece-rate work or domestic service in other people’s homes. It was observed that there was a need to improve both educational opportunities and health care services for the stone crushers’ families. While the health facilities existed, the quality of service was poor. The stone crushers reported that clinic staff treated patients rudely, there was lack of medicine and adequately trained staff. The members of staff in public health facilities were not motivated as they earned low wages. Stone crushers explained that while education facilities existed, the quality of service was poor. For example, in public schools, teachers went on strike quite often, there was also lack of books, laboratories and libraries. They voiced their concern that lack of a secondary school in Kalingalinga has reduced the number of children’s education opportunities to attain secondary education as private services which were available were beyond the reach of the stone crushers.

6.8.2 Credit institutions

Access to credit facilities is very important for the stone crushers. The study revealed that the official credit institutions were inaccessible, expensive and uncompromising. Some stone crushers had few assets to use as collateral but interest rates were too high and therefore the risk of losing the little property was quite high. Credit was available largely through informal networks, but the terms of repayment were too rigid. Money lenders “shylocks” were the source of credit even though they charged high interest rates. These sources for credit caused problems for the stone crushers and therefore they opted to keep away from them.

6.9 Social exclusion

Exclusion is related to powerlessness and manifests itself through the active exclusion of particular groups from political life, education, employment, healthcare and access to justice, including the exclusion of women.

The case study in Kalingalinga revealed that stone crushers were socially excluded in that their access to justice from both the courts and the police was unsatisfactory.
Either, the cases took long in court and also the Police did not respond to the stone crushers’ calls promptly. In addition, where security could be provided by the police, the officers lacked certain powers to protect the stone crushers effectively. This was as a result of interference from an unfavourable environment in the community. Stone crushers did not participate in decision making regarding development programmes in the community. They also did not benefit fully from health and education services. In general terms, the stone crushers were excluded from social and economic opportunities.

6.10 Gender inequality

Stone crushing is dominated by females who form 68.75% of the sample. Gender inequalities in health, education, decision making and inheritance rights were factors that made women vulnerable. Women stone crushers in most cases were helpless especially upon the death of their husbands even though they had been contributing critically to the household income. Gender roles affected the women stone crushers more as they spent more time on house chores than on crushing stones. The result was production of stones was lower for female stone crushers when compared to that of male stone crushers. Stone crushing added too much to the women’s household workload and burden.

6.11 Access to justice

The stone crushers explained that some police officers only worked well when they were given tips. This made it difficult for the stone crushers who had no money to access justice. In addition to the local court which was situated at Chelstone, section chairmen also provided justice to members of the community. The section chairmen presided over civil cases and such cases were only taken to the local court if they were not resolved at community level. All criminal cases were handled by the Police which had prosecutors who were trained to work with the magistrate court and the high court. The Police also had a Community Services Department which assisted in handling gender based violence.

6.12 Conclusion

A general conclusion from the Kalingalinga study site is that access by the stone crushers to key livelihood assets is restricted. The quantity of this resource has been
compromised by zoning of land into private property which stone crushers had previously accessed as an open place. In addition, distance to the new sources of stones, the cost to purchase stones which are mined by other people and the income the stone crushers got, which was not just minimal but also unstable made life difficult. The stone crushers’ capacity to exercise choice, access to opportunities and other resources including coping strategies were limited. The linkages between stone crushers and institutions that should enhance their livelihood opportunities were not established.

What came out strongly was that stone crushers were determined to earn their livelihood and did not want to live on handouts. They were ready to move to suitable stone crushing sites if government or other institution could help them establish themselves at the selected site. They were also ready to earn their livelihood using other means other than stones and were also ready to be trained in other areas of small scale entrepreneurship to enable them sustain their livelihoods. They preferred to be assisted both in the short term so as to enable them feed their families and then in the long term to bring about sustainability in their livelihoods. Female stone crushers were more vulnerable and suffered extreme hardship in the stone crushing business as they carried out house chores and community work in addition to the back breaking job of crushing stones.

Illegal stone crushing therefore, is not a sustainable livelihood in Lusaka, considering that it is not supported by law and is not environmentally friendly as the stone crushers are locked in a battle for survival therefore have no time to consider environmental or health consequences. Illegal stone crushing is also obtained at a high social cost and the stone crushers cannot afford a decent livelihood that is assured and acceptable while being supportive of other development processes. Moreover, the stones are being depleted around the compound and stocks for the future may have to come from places far away from Kalingalinga compound.

6.13 Recommendations

The results from the study showed that a multidimensional and multifaceted nature of poverty exists among the stone crushers in Kalingalinga. Considering the current position of the government in addressing poverty issues, there is now an opportunity to create a new synthesis which builds on the role of the State in facilitating economic
growth and benefiting the poor. This opportunity can be used to address illegal stone crushing which has not been fully addressed for a long time by relevant institutions. Development agencies should bear in mind that stone crushers have assets in their own skills, in their social institutions, in their values and in their detailed and sophisticated knowledge of their own environment. This therefore calls for a wide range of strategies to address and reduce poverty among the stone crushers. The following are the recommendations to address this issue.

6.13.1 Increasing access to key livelihood assets:
Increasing access to key livelihood assets is important in order to enhance the livelihoods of stone crushers. This aspect is a problem that needs efforts of all stakeholders otherwise they will be illegal stone crushers forever without any improvement in their livelihoods. Looking at the social aspect, the people involved in illegal stone crushing are poor and depend on stones for their livelihood.

- As a first measure, stone crushers should be compelled to buy licenses and be moved to legalized and designated places which the council has identified such as Shantumbu area. Then the stone crushers could be organized into cooperatives and the government through the Ministry of Community Development and Social Services should facilitate support for them. The best way for them to sustain their business is to organize them and educate them, then link them to the relevant organizations or banks which can give them support to enhance their source of income.

- Alternatively, the deep open pits from limestone and quarrying that have not been filled should be fenced. Where possible, the pits can be transformed into fish farms which can be run by stone crushers themselves with supervision from the Department of fisheries.

- The stone crushers’ produce could sell if there is an increase in access to markets. This also entails a systematic production of suitable stones which can satisfy the market. Systematic production of stones would easily be done if the stone crushers responded positively to government’s recommendation of making their business legal in a designated area.

- It would also be important to examine ways to increase access to the political system by the stone crushers so as to enable them participate in decision
making. The stone crushers participation in decision making would give a chance to the community leaders to get correct and relevant information with regard to improving the livelihoods of stone crushers.

6.13.2 Reducing vulnerability

The Council and all other parties such as the Environmental Council of Zambia, Ministry of Mines and Mineral Development, Ministry of Community Development and Social Services should be proactive to facilitate licensing and moving the stone crushers from illegal areas. This could be accompanied by upgrading the technology the stone crushers are using and provide them with training on how to manage the environment in which they will be operating.

- There should be a deliberate effort to encourage protection of the health of the stone crushers to reduce health risks by promoting protective clothing or attire. For example loans sourced from banks could be used to buy protecting clothing such as dust proof masks, gloves, proper clothing, boots and goggles during quarrying and crushing activities. This could be done if stone crushers got licenses and moved to operate in legalized areas.
- The Ministry of Mines and Minerals Development should offer technical advice and guidance to the licensed stone crushers in order to increase the profitability of the sector once the stone crushing business is legalized and moved to Shantumbu.
- Since income is key to livelihoods in the urban area, it is important to invest in public works programmes to provide employment for the stone crushers. This can be done by encouraging the stone crushers who do not want to move into legalized areas to join skills training centres and then be fused into cooperatives such as those that sell farm produce, rear chickens, do carpentry and metal fabrication.
- In addition, in the interim while the licensing process is being done, the Ministry of Community Development and Social Services could examine options for introducing health insurance for poor households given the stone crushers’ vulnerability to the cost of illness. This can be done by linking the stone crushers to the department of social welfare which looks after vulnerable families and assists them to become self sufficient and reliant in the long run.
6.13.3 Improving infrastructure

In general terms, Government should look at ways of providing basic infrastructure as well as low-cost housing options for poor families and also examine ways of reducing the cost of electricity to enable the stone crushers access it.

- It is imperative to improve existing and build new drinking water and sewerage systems to improve the supply of drinking water and also sanitation levels especially in Shantumbu area where government through the council has been trying to relocate stone crushers to conduct their business legally.
- The Government should upgrade the Shantumbu road and work on the drainage system so as to make Shantumbu area attractive for licensed stone crushing business.

6.13.4 Making public institutions pro-poor

- Government should encourage banks to provide medium cost equipment in form of soft loans to stone crushers who are ready to operate in Shantumbu area with licenses. The equipment should be in form of appropriate technology which could enhance production of stones crushed as well as protect the individuals from hazards during the crushing process. Licensed stone crushing business could be a source of revenue for the government as the tax can be collected from the stone crushers in the long run. This would contribute to widening the tax base which government is currently pursuing.
- Stone crushers have difficulties in accessing credit, so it is important to examine ways in which credit schemes can be accessed by them for example through simplifying procedures and relaxing requirements for the stone crushers who may otherwise not qualify. The Indo Zambia bank scheme for micro financing is a good example at hand. An example of difficult procedures are those from the citizens economic empowerment commission which gives loans to citizens who want to run business and contribute to reducing poverty. But their application form is lengthy and complicated even for educated people and there is also a requirement to prepare a proposal with regard to the business. Such procedures technically discriminate the stone crushers. It would be helpful if the application process is made user friendly.
6.13.5 Tackling social exclusion and gender inequality

- Government and the community should protect the rights of stone crushers in order for them to have greater access to public institutions and the political system. This can be done by accommodating views of stone crushers and also making public institutions and political leadership practice ‘ubuntu’ (which means recognizing the importance of every human being) where stone crushers are recognized as an important element of micro entrepreneurs, whose contribution to the growth of the economy is vital.

- Given the extreme level of exclusion faced by female stone crushers, gender mainstreaming should be done across all areas of policy design. Programmes and projects which do not include a gender dimension should not be approved and supported by government and the donor community. Gender mainstreaming will help in addressing inequalities between women and men, boys and girls, in relation to stone crushing.

6.13.6 Credit facilities

- There is need to introduce targeted small loans/micro credit for literate young women who are crushing stones but want to stop crushing stones if an alternative source of livelihood was found. Some female stone crushers want to establish small businesses and so they could be considered under the Gender In Development Division which is accessing funds for women groups from the Citizens Economic Empowerment Commission.

6.13.7 Improving access to justice

- There should be a deliberate effort to ensure that access to justice based on the rule of law is applied equally to the stone crushers so that they develop confidence in the justice system and present their grievances without fear of intimidation. This would be much easier if the stone crushers have licenses and so they should be compelled to obtain artisan mining licenses so that they become a registered and recognised group.

- Enhancing the services of community police department to make it more accessible to the stone crushers should be a priority, as this will help the stone crushers
develop trust in the police and be able to report matters of security without hindrance. Issues of tips to some police officers should be discouraged.

6.14 Conclusion

In conclusion, the study has benefited from various studies undertaken on sustainable livelihoods in the urban environment in other parts of the world. The researcher felt the need to investigate illegal stone crushing which is so evident in Lusaka in order to get a comprehensive picture of how stone crushing, an income generating activity is a source of livelihoods. This was in order to give an analytical descriptive analysis of stone crushing as a sustainable livelihood. Although illegal stone crushing is not a sustainable source of livelihood, a legal stone crushing business would receive support from many stakeholders and would therefore, run as a profitable venture which would enable the stone crushers earn sustainable livelihoods. Finally, there is need to investigate the most effective way of moving and getting the stone crushers established at Shantumbu where they can carry out stone crushing legally and profitably.
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APPENDIX 1a

FIELD WORK FRAMEWORK (STUDY SITE)

SERIAL No…………………… Date of Interview …………….

I am a student at the University of South Africa carrying out a research project on stone crushing as a sustainable livelihood in Lusaka. The project is a fulfillment of the requirements for a degree of Master of Arts in Development Studies. Your answers will be treated with strict confidence and will be used for academic purposes only.

SECTION A

PERSONAL PARTICULARS.

1. SEX (i) Male □ (ii) Female □

2. Age ……………

3. Educational attainment ………………………………………

4. a) Household size ……………………………………………

   b) Head of household ………………………………………

5. Children

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
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<td>0-6</td>
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<td>7-12</td>
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<td>13-18</td>
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<td>19-24</td>
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<td>25 - above</td>
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</tr>
</tbody>
</table>
6. Marital status
   i) Single
   ii) Married
   iii) Divorced
   iv) Separated
   v) Widowed

<table>
<thead>
<tr>
<th>THEME &amp; ISSUES</th>
<th>POLICY PROBLEM</th>
<th>METHOD</th>
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<tbody>
<tr>
<td>LIVELIHOODS</td>
<td></td>
<td>Individual interview</td>
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<tr>
<td></td>
<td>What are the main elements in stone crushers’ livelihood strategies in this group?</td>
<td>Are government and NGO programmes responsive to people’s livelihood issues?</td>
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<tr>
<td></td>
<td>What assets do they have? <strong>Natural capital</strong> (including common pool resources) <strong>Produced capital</strong> (including physical infrastructure and credit). <strong>Human capital</strong> (nutrition, health, education, local knowledge). <strong>Social capital</strong> (the benefits of a dense pattern of association – rib ask about membership of organizations and institutions). <strong>Political capital</strong> (power or powerlessness)</td>
<td>If yes, how?</td>
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<tr>
<td></td>
<td>How do they use these assets in combination in a livelihood strategy?</td>
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<tr>
<td>Question</td>
<td>Response</td>
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<tr>
<td>Are there any significant changes in livelihood sources over the past 20,15, 10 or 5 years periods?</td>
<td>Has government or non government policies or programmes contributed to any of these changes? (probe for example)</td>
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<tr>
<td>If yes, what are these changes, why have they occurred and what is the impact of these changes on stone crushers’ lives.</td>
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<td>Which sources of livelihood are preferred, and why?</td>
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<tr>
<td>Does stone crushing make life better? How?</td>
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<tr>
<td>What are the periods of stress in the stone crushers’ livelihoods?</td>
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<tr>
<td>How does your household cope with shocks?</td>
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<tr>
<td>What is the role of communities, government and NGOs in helping households cope with these shocks?</td>
<td>Have government and non government programmes reduced the risk of vulnerability to shock? If yes, how? (probe for examples)</td>
<td></td>
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<tr>
<td>PERSONAL SAFETY/ENVIRONMENTAL HEALTH</td>
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<tr>
<td>What is the process of quarrying? What tools do you use to crush</td>
<td>Has government legalized your business e.g through the Lusaka</td>
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<tr>
<td>Question</td>
<td>City Council</td>
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<td>------------------------------------------------------------------------</td>
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<tr>
<td>stones? Are they effective?</td>
<td></td>
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<tr>
<td>What dangers do you know that your business poses to your health/environment. Give details.</td>
<td>Has any organization or government given you environmental education? If so how often ECZ?</td>
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<tr>
<td>Have you had an accident while on duty?</td>
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<tr>
<td>If yes, how?</td>
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<tr>
<td>If no, do you know a stone crusher who had one?</td>
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<tr>
<td>What was the injury?</td>
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<tr>
<td>What is the effect of the gullies surrounding you?</td>
<td>Does Ministry of Lands attend to the problem of gullies?</td>
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<tr>
<td>What is the effect of the garbage dumped near your work area?</td>
<td>How often does the council collect garbage?</td>
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<td></td>
<td>Is there a time schedule?</td>
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<tr>
<td>BECOMING OR CEASING TO BE POOR</td>
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<tr>
<td>Do individuals stay poor or rich, or do they move back and forth between these two conditions?</td>
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<tr>
<td>If they move back and forth, why does this happen?</td>
<td>What could be done to stop individuals groups falling into temporary poverty?</td>
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<tr>
<td></td>
<td>What would be the gains</td>
<td></td>
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<tr>
<td>Question</td>
<td>Answer</td>
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<td>------------------------------------------------------------------------</td>
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<tr>
<td>What would be a typical story of how an individual has fallen into poverty?</td>
<td>How could these circumstances be avoided?</td>
<td></td>
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<tr>
<td>What would be a typical story of how an individual/group succeeded in getting ahead?</td>
<td>How could these conditions be reproduced?</td>
<td></td>
</tr>
<tr>
<td>What needs to change for you to have better opportunities to move out of poverty?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAIN CHANGES AFFECTING POVERTY AND WELL BEING</td>
<td>Individual interview</td>
<td></td>
</tr>
<tr>
<td>Has the natural resource base got better or worse (time scale)?</td>
<td>What factors/actions are responsible?</td>
<td></td>
</tr>
<tr>
<td>If changed, how has that affected the lives of people?</td>
<td>Is anything known about environmental policies? e.g. through the Environmental Council of Zambia.</td>
<td></td>
</tr>
<tr>
<td>Is life felt to be more secure or less?</td>
<td>What could the authorities do to improve this situation?</td>
<td></td>
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<tr>
<td>What are the main threats or improvements?</td>
<td>Why has this happened?</td>
<td></td>
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<tr>
<td>Who is responsible?</td>
<td></td>
<td></td>
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<tr>
<td>How have markets and access to markets, changed? Markets for labour, land, water, housing and produce</td>
<td>How do people think the law governs these matters?</td>
<td></td>
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<tr>
<td>Are men and women affected differently by any of these changes?</td>
<td></td>
<td></td>
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<tr>
<td>Are the young and old or different ethnic groups, affected differently.</td>
<td></td>
<td></td>
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<tr>
<td>RELEVANT RESOURCES AND INFRASTRUCTURE</td>
<td></td>
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</tbody>
</table>
INSTITUTIONS AND SOCIO-ECONOMIC RELATIONSHIPS

<table>
<thead>
<tr>
<th>Resources and Infrastructure</th>
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</thead>
<tbody>
<tr>
<td>What natural resources are relevant to different individuals within the group?</td>
</tr>
<tr>
<td>How are they prioritized?</td>
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<tr>
<td>Do people make better or worse use of the resources they have than members of neighbouring community?</td>
</tr>
<tr>
<td>Is the group well served by public infrastructure (water, sanitation, electricity, gas, roads, irrigation)?</td>
</tr>
<tr>
<td>Are there, NGO or private programmes responsible for upgrading infrastructure?</td>
</tr>
<tr>
<td>How are these working?</td>
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<tr>
<td>How can they be improved?</td>
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</table>

INSTITUTIONS

<table>
<thead>
<tr>
<th>Individual interview</th>
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<tbody>
<tr>
<td>What are the most important formal/informal government/non-government institutions within or outside the community that influence people’s lives positively and negatively?</td>
</tr>
<tr>
<td>Are there any recommendations for further improvement?</td>
</tr>
<tr>
<td>Which institution do you think you have some control or influence over?</td>
</tr>
<tr>
<td>During a financial crisis (losing a job, family illness, funeral) what</td>
</tr>
<tr>
<td>Are government programmes mentioned?</td>
</tr>
<tr>
<td>institutions do you turn to?</td>
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<td>--------------------------------------------------</td>
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<tr>
<td>How are they ranked in terms of preference?</td>
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<tr>
<td>What are the perceived government and non-government safety nets for the vulnerable?</td>
</tr>
<tr>
<td>How are they ranked in terms of preference?</td>
</tr>
<tr>
<td>What public and private health care facilitates are available in the community?</td>
</tr>
<tr>
<td>Which is the most important basic health provider? (government and non-government) for different groups in the community?</td>
</tr>
<tr>
<td>What is an ideal government basic health unit?</td>
</tr>
<tr>
<td>Which is the most important reproductive health provider (government or non-government) for different groups in the community?</td>
</tr>
<tr>
<td>What public and private education facilities are available in the community?</td>
</tr>
<tr>
<td>Which is the most important primary education provider (government and non-government) for different groups in the community why?</td>
</tr>
<tr>
<td>What is the ideal government primary school?</td>
</tr>
<tr>
<td>Question</td>
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<tr>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>How do people rate the quality of health and education services?</td>
</tr>
<tr>
<td>What are the differences between public and private health and education services?</td>
</tr>
<tr>
<td>What institutions provide credit? How do different people in the group rank them in order of effectiveness?</td>
</tr>
<tr>
<td>What other services are provided/ not provided in the area</td>
</tr>
<tr>
<td>Who provides security in the area? And justice? Are the services satisfactory? If not how can they be improved?</td>
</tr>
</tbody>
</table>
APPENDIX ‘b’

INTERVIEW SCHEDULE USED AT THE LUSAKA CITY COUNCIL SITE OFFICE

TITLE: POVERTY AND ENVIRONMENT: A CASE STUDY OF STONE CRUSHING AS A SUSTAINABLE LIVELIHOOD IN LUSAKA

SERIAL No…………………… Date of Interview ………………………………………

I am a student at the University of South Africa carrying out a research project on stone crushing as a sustainable livelihood in Lusaka. The project is a fulfillment of the requirements for a degree of Master of Arts in Development Studies. Your answers will be treated with strict confidence and will be used for academic purposes only.

QUESTIONS:

1. What role does your institution play in the allocation of land in compounds?

2. What other role (if any) does your institution play in ensuring that compounds such as Kalingalinga are developed according to laid down rules and laws?

3. How would you describe stone crushing activities that are taking place in Kalingalinga compound?

4. Has your institution considered licensing and re-locating small scale quarries in order for the stone crushers to have a sustainable source? Explain

5. What would be the most ideal way(s) for small scale quarries to sustain their business?

6. What difficulties does your institution face in the monitoring of land use in compounds?

7. Give suggestions on how services provided by your institution in this compound can enhance the livelihoods of stone crushers.
APPENDIX ‘c’ INTERVIEW SCHEDULE USED AT THE ENVIRONMENTAL COUNCIL OF ZAMBIA

TITLE: POVERTY AND ENVIRONMENT: A CASE STUDY OF STONE CRUSHING AS A SUSTAINABLE LIVELIHOOD IN LUSAKA

I am a student at the University of South Africa carrying out a research project on stone crushing as a sustainable livelihood in Lusaka. The project is a fulfillment of the requirements for a degree of Master of Arts in Development Studies. Your answers will be treated with strict confidence and will be used for academic purposes only.

QUESTIONS:

1. How would you describe stone crushing that is taking place in Lusaka’s residential compounds including Kalingalinga?

2. Does your institution sensitize the stone crushers in Kalingalinga on the effects of their activities to their health and environment?
   a) What are the dangers to their health?
   b) What are the dangers to their environment?
   c) What is the ideal/ safe way for an individual to carry out stone crushing?
   d) How can the environment around these quarries be managed?

3. Are there any difficulties faced by your institution in monitoring environmental degradation (including that which is caused by quarrying in compounds)? Explain.

4. Give your comment(s) on stone crushing being carried out in Lusaka’s compounds considering the livelihoods of the poor.
APPENDIX ‘d’  INTERVIEW SCHEDULE USED AT THE MINISTRY OF
COMMUNITY DEVELOPMENT AND SOCIAL SERVICES

TITLE: POVERTY AND ENVIRONMENT: A CASE STUDY OF STONE
CRUSHING AS A SUSTAINABLE LIVELIHOOD IN LUSAKA

SERIAL No…………………… Date of Interview ………………………………..

I am a student at the University of South Africa carrying out a research project on stone
crushing as a sustainable livelihood in Lusaka. The project is a fulfillment of the requirements
for a degree of Master of Arts in Development Studies. Your answers will be treated with strict
confidence and will be used for academic purposes only.

Questions:

1. How would you describe stone crushing that is taking place in Lusaka’s compounds
   including Kalingalinga?

2. Does your Ministry play any role in promoting the well being of the stone crushers
   in Kalingalinga? If yes, how?

3. What role does your Ministry play in promoting sustainable livelihoods for the poor

4. Have there been any efforts to form cooperatives for stone crushers in order to
   enhance their business?
   Explain.

5. What opportunities are available for stone crushers to sustain their livelihoods?

6. Give any comment on stone crushing in Lusaka’s compounds considering the
   livelihoods of the poor.
APPENDIX ‘e’    INTERVIEW SCHEDULE USED AT THE
UNIVERSITY OF ZAMBIA

TITLE: POVERTY AND ENVIRONMENT: A CASE STUDY OF STONE
CRUSHING AS A SUSTAINABLE LIVELIHOOD IN LUSAKA

I am a student at the University of South Africa carrying out a research project on stone
crushing as a sustainable livelihood in Lusaka. The project is a fulfillment of the requirements
for a degree of Master of Arts in Development Studies.

Your answers will be treated with strict confidence and will be used for academic purposes
only.

Questions

1. How would you describe stone crushing that is taking place in Lusaka’ compounds
   including Kalingalinga?

2. In what ways can stone crushing as an income generating activity contribute
   positively to the livelihoods of the poor?

3. What are the conditions required for a livelihood to be sustainable?
APPENDIX  “I” INTERVIEW SCHEDULE USED FOR THE WARD DEVELOPMENT COMMITTEE AND SOME STONE CRUSHERS

TITLE: POVERTY AND ENVIRONMENT: A CASE STUDY OF STONE CRUSHING AS A SUSTAINABLE LIVELIHOOD IN LUSAKA

SERIAL No……………………  Date of Interview …………………………………………

I am a student at the University of South Africa carrying out a research project on stone crushing as a sustainable livelihood in Lusaka. The project is a fulfillment of the requirements for a degree of Master of Arts in Development Studies.

Your answers will be treated with strict confidence and will be used for academic purposes only.

<table>
<thead>
<tr>
<th>THEME &amp; ISSUES</th>
<th>POLICY PROBLEM</th>
<th>METHOD</th>
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<tbody>
<tr>
<td>Perceptions of poverty</td>
<td>Is the government right to adopt a multi-dimensional concept of poverty?</td>
<td>Interview</td>
</tr>
<tr>
<td>What are the local terms for poverty and well being?</td>
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<tr>
<td>Are stone crushers poor?</td>
<td></td>
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<tr>
<td>What are the characteristics of a household (in order of importance?) that lead people to say that it is either poor or not so poor?</td>
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<tr>
<td>What are categories in between very poor and very rich that are recognized by local people?</td>
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<tr>
<td>Has this distribution changed over the last one year, five (5) years or ten (10) years?</td>
<td>Should government and NGO programmes be mainly about reducing chronic poverty or about short term safety nets? If both, what weight should be given to each?</td>
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<tr>
<td>If yes, why and how has that happened?</td>
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<tr>
<td>How do different groups of participants see the distribution of well being within the household (male/female, old/young?)</td>
<td>Should anti-poverty policy be concerned about reducing gender inequality? If yes, why and how?</td>
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<tr>
<td>PERCEPTION OF RIGHTS AND ENTITLEMENTS</td>
<td>Interview</td>
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<tr>
<td>What is the local word for a right and to what things is it applied?</td>
<td>Are these terms ever applied to publicly provided services? What minimum services standards could reasonably be claimed as rights?</td>
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<td>Is it applied in the same way to everyone or in different ways to different groups?</td>
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<td>Is it applied in the same way to everyone or in different ways to different groups?</td>
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<tr>
<td>Do people feel that everyone has a right to a certain standard of living?</td>
<td>How are such minimum standards maintained and who should be responsible (the community or the state?).</td>
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<tr>
<td>Do people have rights to be healthy, to be educated, and have access to Justice?</td>
<td>What do people know about their legal entitlements?</td>
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<tr>
<td>Do people have rights of access and ownership over natural and built resources?</td>
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<tr>
<td>Do women have the same rights as men in these regards?</td>
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<tr>
<td>What can women do when they feel discriminated against?</td>
<td>What policies or programmes help reduce/enhance</td>
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<tr>
<td><strong>SOCIO-ECONOMIC AND GENDER RELATIONSHIPS</strong></td>
<td><strong>Interview</strong></td>
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<tr>
<td>Are women better or worse off today compared to the past? In what ways.</td>
<td>What areas still need to be addressed by government?</td>
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<tr>
<td>Are women of different groups (differentiated by class, age, ethnicity religion, etc) better or worse off today compared to the past? In what ways?</td>
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<tr>
<td>Are there any changes in the roles men and women (of different groups) have traditionally played over the past two or three decades, why have these changes occurred? What are the impacts of these changes?</td>
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<tr>
<td>Who wields real power in the area? How do ordinary benefit/ not benefit from this?</td>
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<tr>
<td>Is land an important source of power?</td>
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<tr>
<td>What is the pattern of land ownership in the community?</td>
<td>Should government policy be concerned with the redistribution of land (land reform)?</td>
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<tr>
<td>Are there any types of socio-economic relationships that make it difficult to move out of poverty (child labour bonded labour)?</td>
<td>What are the policy implications here?</td>
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<tr>
<td>Are some people or groups left out of society or excluded from community life in decision making (social exclusion)? If yes, who is left out, why and how?</td>
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<tr>
<td>Is the community well organized compared with its neighbours? If yes, why and how are they organized? (probe for examples)</td>
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<tr>
<td>Does it have many organizations that people can decide to join or not join</td>
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<tr>
<td>Question</td>
<td>Answer</td>
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<td>(social capital)?</td>
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<tr>
<td>What is the relationship of these organizations? Are they linked? If yes, do they collectively serve as a social network in the community?</td>
<td>How can social networks be strengthened in a way that they help the poor? (stone crushers)</td>
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<tr>
<td>What kind of transfer and support systems work within these social networks?</td>
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<tr>
<td>Are there any elements/events/traditions that promote a bonding in the community as a whole and provide a sense of solidarity? (social cohesion)</td>
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<tr>
<td>In what forms and actions is social cohesion expressed?</td>
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<tr>
<td>Is there more or less social cohesion than in the past? If there are changes, what are these, how and why have they occurred?</td>
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<tr>
<td>Is there more or less crime in the past?</td>
<td>Is the maintenance of law and order an issue for the stone crushers.</td>
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<tr>
<td>Is there conflict between groups in the community?</td>
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