

**Gold panning in Zimbabwe's Mutoko District: A strategy for rural livelihoods
and community development?**

by

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DECLARATION

I, Prisca Mutero, declare that the dissertation which I hereby submit for the degree of Master of Social Science (Development Studies) at the University of Pretoria is my own work, and has not previously been submitted by me for a degree at this or any other tertiary institution. Where secondary material is used, this has been carefully acknowledged and referenced in accordance with University requirements.

Signature

Date.....

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
COMZ	Chamber of Mines Zimbabwe
COTs	Community Ownership Trusts
EIA	Environment Impact Assessment
EMA	Environment Management Act
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IKS	Indigenous Knowledge Systems
ILO	International Labour Organisation
IPEC	International Programme on the Elimination of Child Labour
MP	Member of Parliament
NSSA	National Social Security Authority
RBZ	Reserve Bank of Zimbabwe
RDC	Rural District Council
SADC	Southern Africa Development Corporation
SPSS	Statistical Package for Social Sciences
SSMA	Small Scale Mining Association

UN	United Nations
UNEP	United Nations Environment Programme
WHO	World Health Organisation
ZANU PF	Zimbabwe African National Unity - Patriotic Front
ZMDC	Zimbabwe Mineral Development Corporation

ABSTRACT

This dissertation presents an analysis of gold panning in rural areas. It investigates the contributions of gold panning to rural livelihoods and community development in Zimbabwe. A qualitative design was used in this research because the relevant phenomena like the gold panners' behaviour had to be studied in the natural and context-specific settings. Research methods that were used in the field included interviews, field observations, focus group discussions, life histories and case studies. The dynamics in gold panning were expounded and contributions of gold panning to rural livelihoods and community development were discussed in detail. The study concludes gold panning contributes to improved rural livelihoods. The improved livelihoods in turn have some effects on community development. The effects can either be positive or negative. The study recommends that gold panning should be incorporated into the mainstream economy.

CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 CHAPTER INTRODUCTION

This chapter situates the study in its context. It gives the background by reflecting on the research design aspects including the problem statement, purpose of study, study objectives, research questions, limitations, scope and delimitations of study boundaries. It also looks at the rationale, conceptual and theoretical frameworks of the study as well as its geographical demarcation.

1.2 BACKGROUND TO THE STUDY

The theoretical framework, academic context and main knowledge domain of the study are located in the subject areas of rural livelihoods and community development with particular focus on gold panning as a rural livelihood and community development strategy for Makaha ward in Mutuko District, (Mashonaland East Province, Zimbabwe). The study investigated the livelihoods and development experiences of gold panners in the ward. The research design of this study is exploratory since the study seeks to explore the dynamics in gold panning activities to look at the lived realities of gold panners, to see how such an activity can contribute to rural livelihoods, rural community development as well as its effects on environmental health and safety issues.

1.2.1 Researcher's first encounter with gold panners

My first encounter with gold panning activities in Zimbabwe was in 2008 when I was working on a project on HIV and AIDS prevention in Mutoko District. My experience that afternoon left very strong memories that eventually prompted me to want to understand in greater detail gold panning as a source of livelihood for many in Chisambiro and Makaha wards linking Mutoko and Mudzi Districts in Zimbabwe's Mashonaland East Province. My first encounter with gold panning was when the project team visited one of the rural service business centres in Makaha Ward on the Mutoko side of the neighbouring two predominantly rural districts.

As we went about our HIV and AIDS business, administering questionnaires assessing community HIV and AIDS knowledge and attitudes in the surrounding villages, we were advised by people in the community to follow our target population at the nearby Nyarutepo river and at the nearest business centre close to that river as well. On arrival at the business centre in our all-weather project vehicle, I noticed that most patrons were drinking beer and smoking marijuana, a prohibited drug plant grown in the local community.

Young people, in their late teens, suspiciously patrolling the area in no time just disappeared in the nearby bushes, alerting people digging along the river bank of the arrival of strangers. Before we even got to the actual place where our project participants were digging, everyone there took to the hills and disappeared. The gold diggers left behind most of the tools that they were using. These included shovels, picks, hoes, water buckets and hammers and ran away with gold panning dishes.

Out of curiosity, I inquired what was going on from one of the community leaders who had accompanied the project team to locate a few of the intended study informants. His response was quite revealing to me as he explained that this was a common everyday experience in the area since it was a hive of gold panning activities that was taken as a major source of livelihoods for the people in the community. He said that gold panners always played hide and seek with the local police in their determined search for the yellow metal that literally transformed the lives of many in the area.

It was after a while that the people who had fled on our arrival started trickling back one by one when they found out that we were not the police. Asking one of our participants why they ran away at our sight, he said, 'This is our daily life. We ran away because we had mistaken you for the police. We have to be on the lookout for them because they sometimes flood the area to push us out of this lucrative business but we have learnt to live with these arrests. The police usually come to raid the river banks and disused gold mines either to stop us from panning for gold or to drive out criminals who have also flooded the same areas'. Asked why then they continue with the risky activity, he responded, 'It is because there is a lot of money in gold panning'.

The above encounter with gold panners was the beginning of a long journey to investigate the dynamics, opportunities and challenges of gold panning as a strategy for improved rural livelihoods and community development in Mutoko District. This study was motivated by the above field observations as the Researcher became quite interested and determined to find out more about activities and realities in this illicit underground livelihoods sub-sector.

Key study terms **gold panning** and **gold panner** have different contextual meanings and connotations therefore the key concepts were operationally defined and applied.

Gold panning is described as an informal, unregulated, undercapitalised and under-equipped operation where technical and management skills are lacking (Dreschler, 2001:05). Gold panning, also known as artisanal gold mining, is a poverty driven income generating activity present in over 70 countries (Telma and Viega, 2008:37). Artisanal mining is used to denote all small-scale as well as medium and large-scale mining that may be illegal or legal, formal or informal. Artisanal mining may be better characterised by a lack of long-term mine planning and use of rudimentary techniques (Hinton, Veiga and Beinhoff, 2003: 100).

For purposes of this study, the term gold panning shall be used more often than artisanal mining since the term is the one that is widely used in Zimbabwe. Gold panning can be legal or illegal. In some cases, especially where there are associations, gold panning can be organised, medium or large-scale but in most cases it is a disorganised small-scale operation.

Gold panning usually involves the extraction of gold from alluvial material that is concentrated by gravity processes (Hinton, Veiga & Veiga, 2003:107). It employs simple technologies and there is no planning for rehabilitation after the closure of the mining operations (Prasetyo, Krisnayanti, Utomo & Anderson, 2010: 207). Katanha (2005:15) adds that gold panning is a way of extracting gold which, due to its manner of occurrence and size, can be mined economically using basic and undeveloped tools. It is done individually or in organised groups on a full-time and part-time basis. Hollaway (2000: 17) highlights that gold panning can either be open cast or shallow underground mining and it heavily relies on manual labour. Scholars like Mawere (2011: 14) have widely criticised gold panning for being wasteful, inefficient, ineffective and damaging to the environment.

Gold panners or *makorokoza*: There is no single definition of the term *makorokoza*. It means different things to different people (Kori, 2006:2). The term *makorokoza* is a derogatory name given to gold panners. It is associated with illegal gold panning and has negative connotations (Katanha, 2005:8). The word was coined from the manner in which money is sought. The gold panners risk their lives to get money. Adventures made are risky hence anyone seen looking for money through dangerous adventures is also classified under *makorokoza*. Katanha (2005: 28) adds that both the legal and illegal gold panners involved in the small-scale gold panning activities are known as *makorokoza*. The reason for this is that at some point in time both legal and illegal gold panners are caught on the wrong side of the law especially when it comes to remitting their gold to official buyers or their agents. They somehow evade the formal channels and sell their gold at informal markets where prices seem more attractive and lucrative (Gono, 2005: 15). In Zimbabwe, gold panners are a mixture of people with different backgrounds, socio-economic status and origins united by a common goal of seeking a living. (Kori, 2006; Haruzivishe, 1995).

1.3 RESEARCH DESIGN

The research design essentially provides direction for the research by defining the scope, focus, thrust and boundaries of the study. Key components of the research design include the research problem, purpose, objectives, research questions, assumptions, approaches and execution frameworks (Denzin and Lincoln, 2004).

Creswell (2003:10) adds that research design is a general framework adopted to provide guidance about all facets of the study, from assessing the general philosophical ideas behind the inquiry to the detailed data collection and analysis procedures. Research design entails tactics and strategies the researcher selects in carrying out a piece of research that are carefully considered, aligned, harmonised, specified and clearly outlined to secure requisite emotional and practical commitment to follow through strategy execution plans (Robson, 1995:23).

A research design fundamentally guides key research processes and efforts harnessing specific theoretical and conceptual models. Apart from revealing the research theoretical framework and zooming on the proposed implementation roadmap, the research design also anticipates, pre-empts and reflects on potential problems in the research conduct (Denzin and Lincoln, 2004:34). The research design determines how far study boundaries may be stretched in both conceptual construct modelling and theoretical coverage.

It is therefore imperative that all research design components be guided by the research principles requiring that the identified research problem be at the centre of the research philosophical stance influencing all research design aspects, key methodological choices, fieldwork elements and reporting processes (Denzin and Lincoln, *ibid*).

1.3.1 Research problem

The Zimbabwean national census report of 2012 acknowledged that the national population structure was characterized as essentially and predominantly young, unemployed, poor and rural-based. The census reported acknowledged that over 85% of the country citizen live in impoverished rural areas where primary or main livelihood sources include subsistence farming, small scale income generation activities that entail exploitation of locally available natural resources to augment meagre family incomes mainly received from disposal of family assets like cattle. With a national unemployment rate over 90%, most unemployed youth resort to any economic activity that give them some of form of livelihoods. According to Maponga (2005), most Zimbabwean rural communities are underdeveloped. They lack sustainable rural livelihoods strategies and community development opportunities. Since the research area (Makaha ward in Mudzi district) has some gold deposits especially along river banks, most unemployed youths in the area resort to illegal economic activities like gold panning that are not only a huge threat to environmental conservation but also dangerous to human life.

A review of the existing literature on gold panning in Zimbabwe has shown knowledge gaps with regard to the personal experiences of gold panners as well as gold panning's significance to livelihoods and community development. This is because most studies focus more on the negative effects of gold panning on the environment, community welfare, and lifestyles of gold panners (Kori, 2006; Shoko, 2002).

Some studies focus on environmental implications of gold panning (Hoadoafia, 2014; Gandiwa and Gandiwa, 2012; Mawere, 2011). They do not pay much attention to the livelihoods and experiences of gold panners. They are interested in bringing out the environmental damage caused by gold panning activities and trying to find solutions to these problems. Some scholars describe the way riverbanks are collapsing, vegetation is being lost, and soil erosion and siltation of rivers are occurring as a result of the methods used by gold panners in accessing and extracting gold (Guvamombe, 2013; Gandiwa and Gandiwa, 2012; Haruzivishe, 1995).

While studies conducted by Guvamombe (2013), Gandiwa and Gandiwa (2012: 29) and Mawere (2011: 13), look at gold panners with a criminal eye, and see them in bad light, this study tries to fill the knowledge gap by bringing to light a different perspective that suggests that gold panning ought to be understood from a livelihoods and community development perspective.

To this end, this study is set out to explore the dynamics, prospects, challenges and contributions of gold panning activities to rural livelihoods and community development.

1.3.2 The purpose of the study

The overall purpose of the study was to contribute towards concerted national efforts to improve and enhance rural livelihoods and community development through research-based insights that support the formulation of relevant responsive policies and programs provoking future academic research interest to investigate practical ways of stimulating and promoting mainstreaming of poor rural communities in key national economic activities that both unlock individual, family and community capabilities for improved rural livelihoods and strengthen community development.

Since the primary aim of the study was to explore and highlight key dynamics, contributions, prospects and challenges of gold panning as a livelihood and community development strategy in rural Zimbabwe, the ultimate research thrust was to show the associational relationship between gold panning and the improved well-being of gold panners. Further, direct linkages between improved rural livelihoods and sustainable community development were explored.

1.3.3 Study objectives

To realize the above broad aim, goal and purpose of the study, the following specific secondary research objectives were set:

1. To explain the theoretical framework of the study
2. To analyse gold panning as a rural livelihoods and community development strategy.
3. To establish the relationship between gold panning and rural livelihoods
4. To determine effects of improved rural livelihoods on community development
5. To identify gold panning challenges.

1.4 JUSTIFICATION OF THE STUDY

Few research studies conducted on gold panning were able to unpack what really happens on the ground with respect to gold panning processes and prospects. This study therefore, sought to explore and fill in that knowledge gap by highlighting how gold panning contributes to rural livelihoods and community development.

Gold panning has been seen to be contributing to rural livelihoods and community development in the negative sense. It has often been discussed in the context of such social ills as environmental degradation, water pollution and being hazardous to health. The focus tends to be on the darker side with researchers advocating that it be rooted out. This research brings to light a different perspective. A perspective that suggests that gold panning ought to be understood from livelihood and community development perspectives.

1.5 SIGNIFICANCE OF THE STUDY

It is expected that the study may be appreciated by development stakeholders including government, policy makers, the academic community, the community at large. If recommendations are adopted by policy makers, this may eventually benefit the gold panners and will be relevant and significant to other players with interests in gold panning.

The study will have relevance and significance to policy makers and regulatory authorities like the Government of Zimbabwe and Local Governance Authorities. The study observations and recommendations may inform, enrich and improve policy formulation in order to improve the effectiveness of government monitoring, regulation and taxation mechanisms in the gold panning sub-sector. Experiences in other countries like Zambia show that instead of taking gold panning as an illicit economic activity, authorities encourage and support formalisation of gold panning in a way that makes it feasible to tax the gold panners (Dreschler 2001:45).

The society at large, and Mutoko community in particular, may benefit from the study in several ways that include being put on the spotlight to get the necessary policy attention through publicity, policy awareness, advocacy, lobbying and in-depth understanding or evidence-based information about their collective situation. The academic community, that is, other scholars, researchers and scientific institutions may benefit from the study by way of filling some of the identified knowledge gaps.

It is further hoped that this study will contribute to the existing board of knowledge on gold panning. It is also hoped that the study will stimulate further research interests, debate and discourse around gold panning theory and practice.

1.6 SCOPE OF THE STUDY

The critical focus issues of the study included rural livelihoods and sustainable community development in relation to gold panning. It also focused on the lived realities and experiences of gold panners looking at how gold panning impacted their own lives.

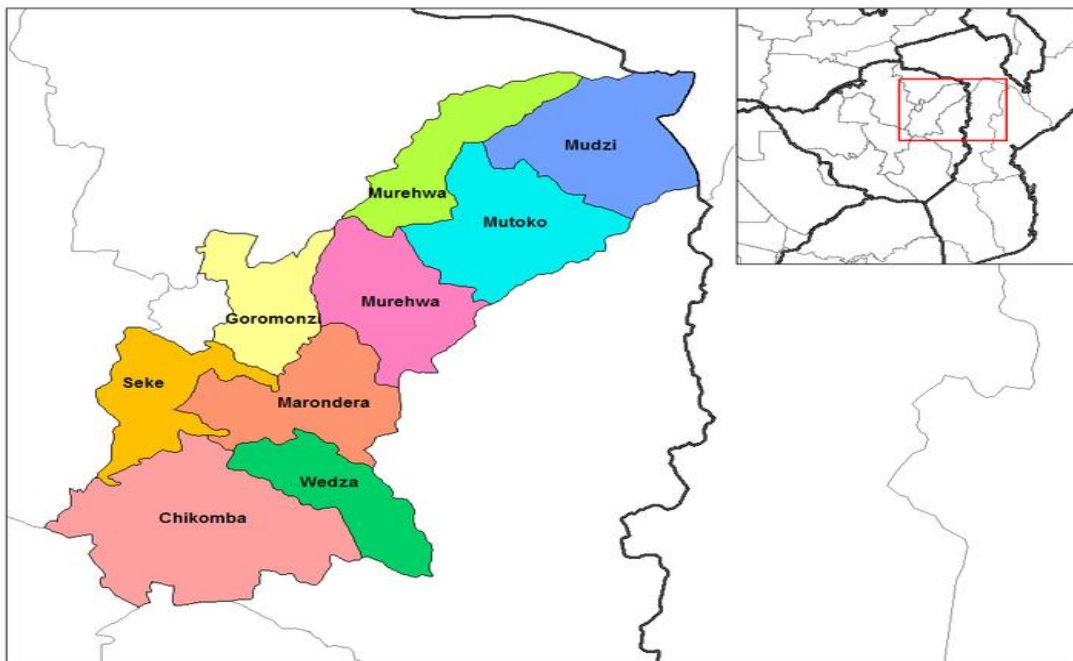
1.7 DELIMITATION AND LIMITATIONS OF THE STUDY

This section outlines the geographical coverage, theoretical and conceptual boundaries underpinning the study as well as the study informants.

1.7.1 Geographical demarcation of the study

This study was conducted in Mutoko District which is 170 kilometres northeast of Harare, the capital of Zimbabwe. The ward in which the study was carried out is 51 kilometres northeast of Mutoko rural service centre towards Mudzi District. The research area is geographically located between two adjacent administrative wards bordering Mutoko and Mudzi Districts (Haruzivishe, 2005; see Map 1 below).

Map 1: Mashonaland East Province Map showing Mutoko and Mudzi Districts



Wikimedia.org

Mutoko District has a total of 29 wards but the study focus area is ward number 18, called Chisambiro. The Makaha area which is ward number 14 of Mudzi district also forms part of the research since it lies at the boarder of Mutoko District stretching into Mudzi District. This area was selected because of the extensive gold panning activities that are carried out there as compared to other wards.

Most of the sub-catchment area that feeds the rivers in the study area is underlain by the Zimbabwe Craton. The greater part of the area consists of greenstones that include the Dindi Greenstone Belt, the Makaha Greenstone belt and Harare-Bindura-Shamva Greenstone Belt. Granitic terrain also covers a share part of the sub-catchment area while the far north of the catchment area is underlain by Zambezi mobile Belt gneisses. These rocks are known to produce the greater part of minerals in Zimbabwe and gold in particular (Maponga, 1995:25). Though most of the area's mining activities are concerned with gold production, nickel mining, dolerite quarrying and pegmatite mining are also prevalent.

The study area has three major rivers where the alluvial gold panning activities take place. The gold panning activities are concentrated at the confluence of Nyatsoko and Nyarutepo Rivers. These rivers are tributaries of Nyahunure River, a major river that runs across Mutoko District into Mudzi District. Gold panning is, however, dotted all over the banks of these rivers. The alluvial gold mined in the Nyahunure River and its tributaries is believed to derive from mainly the Shamvaian rocks, rocks that dominate the Shamva area (Haruzivishe, 2005:17). It is also possible that the gold originates from the Bulawayan rocks, rocks found mainly in Bulawayo, the second largest city in Zimbabwe (Maponga, *ibid*). However, a number of small streams passing through the sub catchment area washing away gold also feed into these rivers.

The study area is known for being a mountainous region of Zimbabwe and as such, exhibits many granite stone quarrying activities (Haruzivishe, 1995:23). Most of the economic activities in this area support the subsistence lifestyle of most of the people in the study area. The most common economic activity is subsistence agriculture. People in the study area, however, carry out a lot of different activities to support their livelihoods. They exploit natural resources in the vicinity of their settlements, do small-scale mining, market gardening, wildlife hunting, mat making, wood harvesting and wood sculpturing (Murwendo, Rusinga and Zinhiva, 2011).

The study area is also subject to periodic seasonal droughts, prolonged mid-season dry spells and unreliable starts of the rainy season. This leads people to exploit natural resources like gold for their livelihoods. Drought resistant maize varieties and small grains like millet and sorghum are grown, with cattle and goats kept as a more viable form of security than crops (Haruzivishe, 1995:23).

The study area also has two shopping complexes. The first shopping area has about eight old dilapidating shops. This was the first to be established before the gold rush in the area. The second shopping complex has five old shops and fifteen new ones that are currently under construction. The old ones are being renovated. There are many flea-markets. These flea-markets largely trade in second-hand clothes imported from Mozambique. Some shops supply agricultural inputs such as seeds, fertilizers, pesticides and farming equipment like ploughs, harrows and cultivators. Other shops supply groceries, electrical gadgets, and kitchen utensils ranging from firewood stoves to plates and spoons. The study area is surrounded by four schools, a clinic, and a police station. Land ownership in the study area is communal. Land use is divided into settlement area, portion for fields and grazing lands.

1.7.2 Theories underlying the study

The study was enriched by taking a multi-disciplinary theoretical approach and perspectives. Some of the key developmental theories informing the study include the modernization theory, dependence and self-reliance theory, sustainable rural livelihoods and community development theories.

1.7.2.1 Dependency and self-reliance theory

Dependency theory is the notion that resources flow from a "periphery" of poor and underdeveloped states to a "core" of wealthy states, enriching the latter at the expense of the former (Rodney 1972: 120). It is a central contention of dependency theory that poor states are impoverished and rich ones enriched by the way poor states are integrated into the "world system".

The theory arose as a reaction to modernization theory, an earlier theory of development rejecting the Modernization's proponents on development arguing that underdeveloped countries are not merely primitive versions of developed countries, but have unique features and structures of their own and, importantly, are in the situation of being the weaker members in a world market economy (Gardoso and Faletto 1979, Amin 1976, Sunkel 1966).

The theory essentially discourages over-reliance on externally-dependent development support, foreign-driven development agenda and development efforts that are not home-made while advocating for self-help, self-determination, self-awareness, self-management, self-emancipation, and self-advancement (Alvin 1999). The growing significance and relevance of the theory to sustainable development is based on calls for integrated, transformational and development initiatives, activation of inherent capacities in individual, family and community abilities and capabilities to find own solutions with minimum outside interference.

Contemporary development practices are increasingly characterized as demanding active and meaningful beneficiary involvement and participation in decisions and actions affecting their own destination, require taking ownership and responsibility for own welfare and populist calls like 'nothing for us without us, give me fish and I will eat one day only but teach me how to fish and I will be empowered to eat fish all the days of my life'. Theory values development efforts that make beneficiaries masters of their own destiny and is premised on assertion that there is dignity in self-help, independence development and self sustained growth (Tausch 2003).

1.7.2.2 Modernization theory

Modernization theory of development which hold that all societies progress through similar stages of development, that today's underdeveloped areas are thus in a similar situation to that of today's developed areas at some time in the past, and that, therefore, the task of helping the underdeveloped areas out of poverty is to accelerate them along this supposed common path of development, by various means such as investment, technology transfers, and closer integration into the world market (Kohler and Tausch 2002, Yotopoulos and Sawada 1999).

Proponents of the modernization theory to development hold a view that development stages are incremental in nature-gradual transformational movements (small changes, improvements, up-grading, progress and advances towards better living standards and quality of life) along a continuum from less to more developed conditions (Tausch and Herrmann 2002, Amin 1994c).

1.7.2.3 Sustainable Community Development

Principles of community development includes active participation in socio-economic development activities, exploitation of locally available resources, empowerment of individuals for them to be self reliant, self determination and liberation or freedom, a critical self awareness which is for fundamental for social development and personal advancement. Sustainable community development occurs when there is sustainable social service provision (Improved health, education, household food security, infrastructure and affordability of leisure). Sustainable community development also occurs where there is Social integration and cohesion where there is a strong civic leadership, community actions, community organization where community members are able to mobilise themselves for example into women's or men's league (Tausch 2003). Sustainable community developments also entails Social empowerment where there is community participation, active involvement, economic and social mainstreaming, supportive and enabling policy provisions for example institutionalizing gold panning as well as the sustainable exploitation of locally available resources, improved environmental conservation and improved agriculture (Bebbington 1999: 2031).

1.7.2.4 Sustainable livelihood theory

Livelihoods consist of the capabilities, assets (Employment, skills, social security, land, mining rights, cattle) materials like the mining equipment, social resources and activities mandatory for a means of living (Bebbington, 1999:2031). A livelihood in its simplest sense is a means of gaining a living through adequate stocks and flows of food and cash to meet basic needs of people (Bernstein, 1995:36).

Sustainability refers to the maintenance or enhancement of resource productivity on a long-term basis (Amankwah and Anim-Sackey 2003:133). Sustainability is thus a function of how assets and capabilities are currently utilised and maintained so as to preserve future livelihoods (Bernstein, 1995). The sustainable livelihood framework goes with the Indian proverb that says, “Give a man a fish, he will eat once but teach him how to fish; he will eat fish the rest of his life”. For sustainable livelihoods to occur, individuals or communities need to be given the start-up means in terms of capital, skills, enabling policy frames and supportive infrastructure to start doing their own things that will sustain them for the rest of their lives. They need to be taught environmental conservation.

1.7.2.5 Poverty reduction theory

Sen, in his Capability Approach (CA), views poverty as the deprivation of certain basic capabilities. He argues that these vary from elementary physical ones like being well nourished, being adequately clothed and sheltered, avoiding preventable morbidity and so forth, to more complex social achievements such as taking part in the life of the community and being able to appear in public without shame and so on (Sen 1995:15). He further argues that people have varying needs and thus require different levels of resources in order to achieve the same standards of living (Sen 2009:233).

1.7.2.6 Sustainable Rural Development

Rural development is improving the living standards of the rural poor masses of the low income population residing in the rural areas and making the process of their development self-sustaining (Chambers, 2012:17). It covers agricultural development as well as non-agricultural aspects of rural life such as health, education, housing and social infrastructure in order to offer a balanced process of economic and social change (Chambers, 2005:10). LENDRIZ (2012:29) adds that rural development integrates economic and social objectives to create better and more secure livelihoods for rural people thereby meeting many of the physical, social and economic needs.

The physical needs include lack of water, soil salinity, lack of physical communication networks and proneness to disaster hazards. The socio-economic needs are broad and diverse including challenges such as, community conflicts, inequalities, poverty, unemployment, social vices like crime, violence, prostitution and limited access to social services (Mutizwa, Mangiza and Helming, 1991).

1.8 CHAPTER SUMMARY

The chapter reflected on research design aspects of the study that included the problem statement, purpose of study, study objectives, limitations and delimitations of study boundaries. It also looked at rationale and theoretical frameworks of the study and its geographical demarcation. The next chapter reviews the literature in greater detail in order to locate the study in the context of the existing body of knowledge.

CHAPTER 2: LITERATURE REVIEW

2.1 CHAPTER INTRODUCTION

This chapter situates the study in its contexts. It is going to look at the theoretical and conceptual frameworks of literature review, looking at the theory behind literature review and its purpose. It is also going to focus on the review of other scholars' contribution to the body of knowledge on livelihoods, rural, community development and gold panning. It is also going to concentrate on the review of other literature on gold panning, case studies and do the situational analysis. Sources of literature to be reviewed include policy documents, text books on theoretical framework models, case studies, journal articles and publications, technical literature and other research findings and reports that either support, refute or contradict with the study results. The chapter also explores the evolution of gold mining in Zimbabwe and gives historical accounts of mining activities in the country. It brings out some of the key issues and themes under-pinning the study by reflecting on the Zimbabwean mining sector in general and gold mining in particular, narrowing the discussion focus to gold panning activities in Mutoko District in Mashonaland East Province. The chapter explores challenges facing mining corporations, organised and registered mining associations, unregistered small-scale mining cooperatives and gold panners who take gold panning as an alternative source of livelihoods. The chapter also focuses on contemporary development issues in Zimbabwe.

2.2 LITERATURE REVIEW: THEORETICAL AND CONCEPTUAL FRAMEWORKS

Robson (2007:01) understands literature review as part of a research report that provides an account of previous researches that has been carried out together with attempts that have been made to provide frameworks within which the research can be placed and understood. It is built through the investigation of published and unpublished documents on the topic under study (Boote & Beile, 2005:7). It is, therefore, an analysis of published or unpublished information, facts, records and substantiations in relation to the researchers' area of study.

Hart (1998:13) highlights that literature review serves many purposes in research studies. He states that it clarifies the research problem and justifies the study. He adds that it identifies the existing knowledge gap that is going to be filled by the study and locates the study in context of existing knowledge. Boote & Beile (2005: 7) go on to say Literature Review demonstrates the ability of the researcher to identify relevant information to the study and provides an opportunity for the researcher to interact with other scholarly works, interrogate various theoretical perspectives and contribute to current discourses and on-going debates on critical issues considered in the study.

The literature review of this research serves these purposes as well as allowing the researcher to learn and understand previous theories and practices on gold panning, rural livelihoods and community development.

2.2.1 SEN'S CAPABILITY APPROACH

The Capabilities Approach (CA) advocated by Sen is the main theoretical framework informing the study. Whilst this study was influenced by many theories as stated above, many socio- economic development theories, it was fundamentally informed by Sen's CA to poverty mitigation.

The capability approach focuses on what people are able to do and be, as opposed to what they have, or how they feel. When analysing people's well-being, Sen argues that there must be a shift of focus from 'the means of living', such as income, to the 'actual opportunities a person has', namely their functionings and capabilities (Sen, 2009: 253). 'Functionings' refer to the various things a person succeeds in 'doing or being', such as participating in the life of a society, being healthy and the like, while 'capabilities' refer to a person's real or substantive freedom to achieve such functionings like the ability to participate in the life of society (Sen 1999: 75). Of crucial importance is the emphasis on real or substantive, as opposed to formal freedom, freedom people have to promote or achieve functions they value since capabilities are opportunities that one could exercise if so desired. The capability approach places particular emphasis on the capabilities a person has, irrespective of whether they choose to exercise these or not.

Sen's CA focuses on what people are, able to do and be in relation to poverty mitigation. It puts emphasis on freedom, the real opportunity people have to accomplish what they value. The authentic self-direction, the ability to shape one's own destiny like the good life, the quality of a genuine choice, and not one in which the person is forced into a particular life however rich it might be in other aspects.

Sen's CA focuses on several policy and programming strategies to mitigate, manage and eliminate poverty in sustainable ways. The approach is both empowering and self-liberating. Its main focus is on integrated activities of social, economic, political, legal, cultural and technological interventions that enable the poor communities to fight poverty, unemployment, marginalisation, exclusion and alienation. It further advocates for targeted multi-level interventions encouraging individual, group, community, national, regional and international cooperation and societal interventions (Sen, 2005: 157).

Sen's CA is all-encompassing, integrative, holistic and comprehensive enough to address both presenting and underlying causes of poverty. Structural causes and effects of poverty are examined and proffer practical solutions and approaches to dealing with issues like poverty, underdevelopment, socio-economic and political inequalities. It recommends multi-pronged strategies to socio-economic development. These include meeting short-term basic survival needs, medium needs mitigation measures and long-term needs (Batterburry, 2008). The CA suggests that authorities should not blame but should rather enable the poor to liberate themselves, encourage self-determination by taking holistic supportive mechanisms (Sen, 2005: 157).

Choice of the Sen approach in this study to tackling poverty and underdevelopment was influenced by its sociological appeal. The approach is essentially a people centered approach which puts human agency rather organizations such as markets or governments at the centre of stage of development.

He says the crucial role of social opportunities is to expand the realm of human agency and freedom, both as an end in itself and as a means for further expansion of freedom to achieve functionings they desire. Sen says individuals should not be viewed in isolated terms. He argues that the options that a person has depend greatly on relationships with others and on what the state and other institutions do.

Sen's approach proposes that development interventions should begin where the poor and disadvantaged people are. The development practitioners should understand and build all interventions on the basis of the poor's own perspectives. It recommends that policy makers should include rather than marginalise the poor, address the structural causes of their challenges rather than focus on presenting problems (Sen 2005: 159).

It stresses that the policy makers need not victimise and criminalise the poor's survival strategies but create necessary supportive and integrative environments to help them out of their poverty traps and break their poverty cycles (Sen, *ibid*).

The CA can be practically applied in this research study. The theory suggests that livelihoods should not be criminalised without offering alternatives. The study fits in well since gold panning is just a livelihood which should not be criminalised because gold panners depend upon gold panning. They see it as a mere means of survival which should not be criminalised unless an alternative means for survival is given because gold panning is all the gold panners or the poor can depend or rely on for a living. Sen's Theory also suggests that the poor must be organised and provided with the necessary legal, financial support so that they can be able to make a living (Sen, 2005: 155). This makes it relevant to the study since there is need to organise gold panners into associations so that they can access capital to carry out their gold panning activities well and legally. The theory also proposes that the Government should empower the poor in order for them to break the poverty circle and to assist them to avoid relying on aid and be able to bring sustainable livelihoods and development (Batterbury, 2008).

This has practical relevance in the study because there is need to empower gold panners with educative information, to empower them financially, technologically and even morally so that they do not continue circulating in the poverty circle. They should be able to carry out their gold panning activities in a sustainable manner environmentally and in terms of livelihoods.

When gold panners are empowered financially, they will be able to strengthen their operational activities and improve the overall quality of their lives. As supported by Milne and Marongwe (1995), economic empowerment has an uplifting effect on individuals and societies. It enables, empowers and capacitates communities and individuals for positive change.

While adoption of Sen's capability approach was generally applauded especially considering its many perceived relevance and pragmatic benefits, the approach has its inherent application challenges. The obvious limitation of the capability approach lies in its implied assumption and conviction that the poverty cycle was easy to break and this could be done without external support.

Poverty circles are often so vicious that they even break strong human will, motivation and determination to succeed against all odds. When the human spirit (hope) is broken often through fatalism induced by sustained poverty hardships, external help may be necessary to kick-start, reboot and rejuvenate lost hope, confidence, self-belief and self-esteem. Mupedziswa (2014) advocates for use of multiple integrated approaches to breaking the poverty cycles therefore it may be naïve to regard and discuss the Capability Approach as if it the panacea to improving livelihoods and community development (discouraged adoption of straight line jacket and one size fits all solutions to complex social development issues like rural livelihoods and community development). Studies by Schumacher (2010) argues that socio-economic development themes and issues in less developed and resource-constrained countries like Zimbabwe were more complex and unpredictable than was the case in developed and affluent means countries.

Clearly this calls for adapting development strategies applied in affluent settings like Europe as a flexible, responsive and pragmatic and approach.

2.2.2 MOTIVATION FOR USING SEN'S APPROACH IN THE STUDY.

The motivation in using Sen's approach in studying gold panning as a rural livelihood and community development strategy is what Sen considers fundamental principles in breaking the poverty circle. His key tenets of capabilities, opportunities, freedom, what they have (assets, skills), choices and alternatives as a poverty mitigation model are very relevant in Zimbabwe's rural set up where communities have low motivation, low self-belief, limited resources, opportunities and assets. In such scenarios, the capability approach focuses on what people are able to do and be, as opposed to what they have, or how they feel.

Sen's Capability Approach (CA) contributes significantly to sustainable community development, sustainable rural livelihoods and economic empowerment that leads to self-liberation since development must be owned by the beneficiaries. Overall, CA principles are pillars of sustainable community development that entail active community participation and ownership of key development decisions, exploitation and use of the locally available resources, empowering individuals and communities for them to make rational decisions that result in them become self-reliant.

The CA suits people who need self-reliance as it encourages community self-introspection, self-awareness, self-determination and self-management in advancing what individuals and community groups deem they can do for themselves to get out of poverty rather than relying on donors. It is very relevant to community development in that community development does not rely on aid, it put emphasis on use of locally available resources. When aid comes in, it is just seen as a push start or it comes in as capital to enable them to do their own work. It is also very relevant to the study because it speaks of freedom to do things in ways they deem will deliver the desired development goals and impacts.

He is against the issue of aid because it curtails freedom. If given donations or depend on aid, the donors would automatically guide and direct the development process and it will no longer be locally driven.

2.3 REVIEW OF KEY STUDY THEMES

In this section, rural livelihoods, sustainable rural livelihoods, rural community development, poverty alleviation, environmental health and safety issues are reviewed in relation to gold panning.

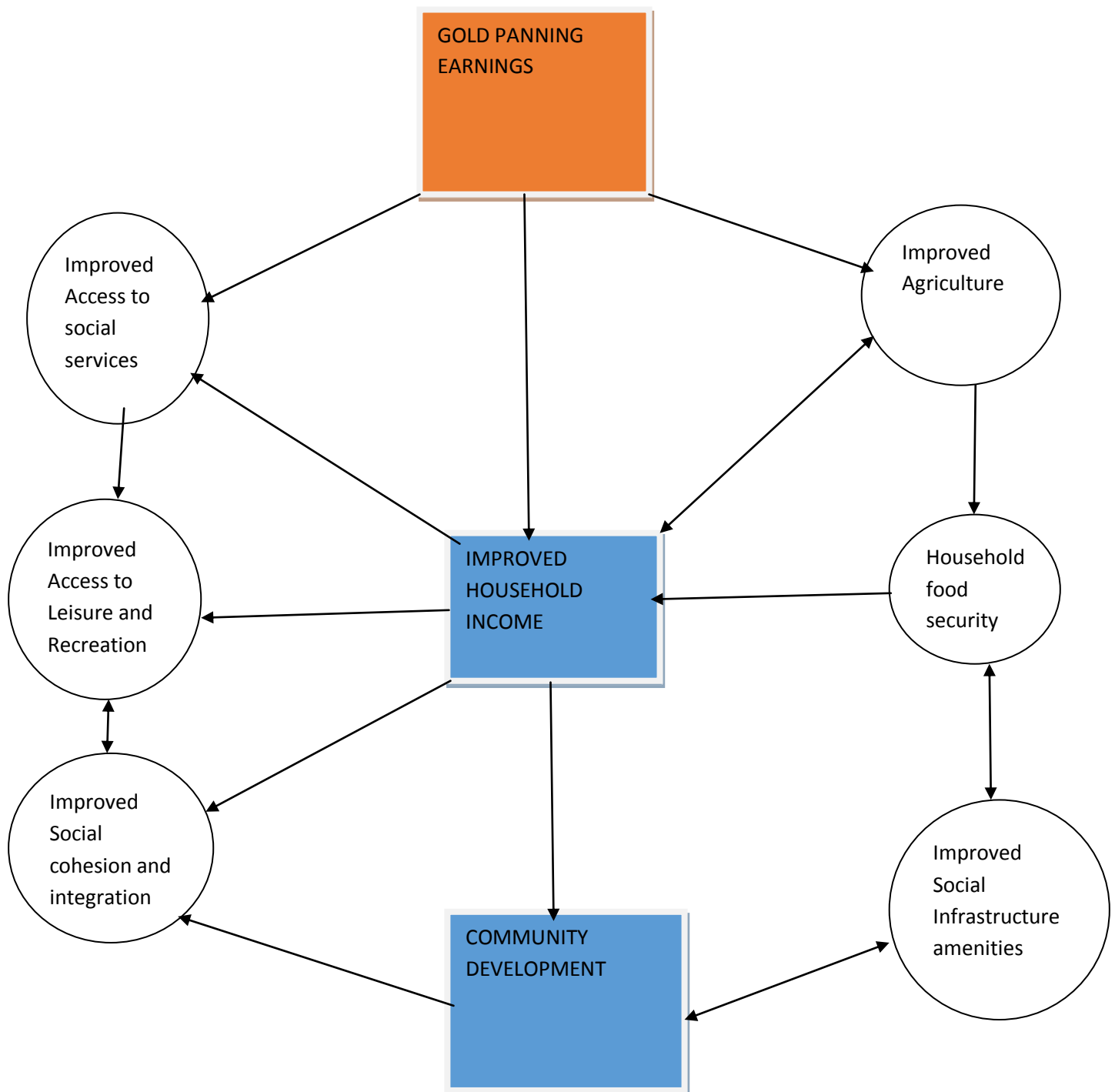
2.3.1 Gold panning and livelihoods

A livelihood consists of the capabilities, assets which are materials, social resources and activities mandatory for a means of living (Bebbington, 1999:12). Ellis (2000:18) adds that a livelihood in its simplest sense is a means of gaining a living through adequate stocks and flows of food and cash to meet basic needs. Gold panning has become a source of livelihood to a significant number of people in Zimbabwe especially the rural populace and has the greatest impact in the sustaining of rural livelihoods (Mahlangu, 1992: 24). Gold panners use their earnings from panning activities to pay for essential social services (education, health, housing, food security, leisure and recreation) that improve their overall quality of life as well as increase community assets, well-being and prosperity as demonstrated in the following linkage relationships diagram:

Diagram showing relationships between livelihoods assets and relationships

This diagram below was not taken from any source but was conceptualized from the study findings as the summation of the observed findings on the linkages between gold panning, livelihoods and community development.

Diagram 1: Linkages between livelihood assets and relationships



The diagram above is illustrating that gold panning income is a source of livelihood in that it enables gold panners to access social services. Gold panning income is taken as a means to an end as it enables access to social services. Access to social services in turn improves the quality of life. Social services are the essentials for everyday life including education, health and leisure and recreation. The gold panning earnings enables the acquiring of agricultural inputs which improves agriculture. When agriculture is improved, the housed food security is assured. With improved agriculture there is demand for social infrastructure like roads, bridges, electricity and communication systems. Improved social infrastructure changes the community's quality of life.

Gold panning as a crucial livelihood strategy is employing more than 13 million workers and sustaining 80-100 million people worldwide. Heemskerk and Oliviera (2003:114) state that people depending on small-scale gold mining are usually members of poor rural households in developing countries. Metcalf (2008: 6) also adds that gold panning is viewed as a 'golden' opportunity for the poor, despite its social, environmental and health challenges. Some rural populations depend on gold panning as a primary source of income or as a critical supplement to meagre farming revenues. In most African countries like Ghana, Madagascar and Zimbabwe small-scale gold mining has become important due to escalating poverty and lack of employment opportunities in the formal sector (Logan, 2004:25). Gold panning has become important for so many poor people and other vulnerable population groups since gold panners still have limited access to appropriate mining and mineral processing knowledge and technology (Chazovachii and Basure, 2013: 51).

In the Zimbabwean context, though gold panning is perceived as dirty, dangerous and disruptive, it is seen as profitable, productive and the only way out of poverty since the people involved in gold panning are poor people, individuals or small groups who are dependent upon panning for a living (Kori, 2006:3).

Chazovachii and Basure (2013: 49) argue that the resilience of gold panning activities in Zimbabwe especially during economic crises has proved to be one of the major sources of livelihoods in local communities where gold deposits are found since they provide income for the day-to-day survival. Gandiwa and Gandiwa (2012:29) claim that employee retrenchments that characterised implementation of structural adjustment policies in the 1990s significantly reduced the number of formal employment opportunities, therefore, gold panning earnings became a significant source of rural livelihoods.

2.3.2 Gold panning and sustainable livelihoods

Maponga (2005:14) argues that natural resource sustainability is an important consideration when talking about gold panning as a source of sustainable livelihood since the activity is reliant on limited natural resource supplies. In relation to gold panning in Zimbabwe, this refers to the capacity of gold panning operations to maintain production yield levels without destroying the natural environment, distorting market forces or breaking the law. It implies avoiding depleting natural resources to levels that result in an effectively permanent decline in the rate at which the natural resource base yields useful support services for future livelihoods.

Marufu (1992:30) asks whether gold panning maintains, enhances or depletes and degrades the local natural resource base looking at how gold panning causes desertification, deforestation, soil erosion, declining of water tables and siltation of rivers. He goes on to say the idea is to look at whether gold panning, as a sustainable livelihood strategy is able to reduce poverty or not since poverty reduction is an important element when looking at sustainable livelihood together with the notion of well-being and capabilities. Maponga and Ngorima (2003:152) argue that gold panning only becomes a sustainable livelihood if it results in the improvement of human health, raises income levels and improves the living conditions of the poor majority.

Maponga (1995:24) stresses the same point highlighting that gold panning becomes a sustainable livelihood activity when it creates gainful employment for the unemployed school leavers in the form of full-time engagement, part of a wage labour system or subsistence production. Scoones (2009:188) adds that any form of employment should generate a subsistence wage or living income, raise self-esteem that emanates from engaging in some meaningful economic activity. Marufu (1992: *ibid*) questions now is whether gold panning, as a form of employment, is able to foster productivity, that is, increase in the overall gold output in the economy and confer self-respect and sense of worthiness that come from gainful employment and self-reliance to the employed.

Livelihood sources are susceptible to change and are flexible to adapt to socio-economic conditions prevailing at a particular point in time (Magaramombe, 2001:16). It therefore, becomes very important to consider alternative income sources available to gold panners or their fall-back investment decisions when talking about gold panning as a sustainable livelihood source (Scoone, 1998; Kamete, 1992). Gold panning as a livelihood source should enable and capacitate the panners to deal with and recover from stresses and shocks for it to be classified under sustainable livelihoods (Marufu, 1992: 51).

Panner resilience in the face of economic and regulatory changes (stresses and shocks) is key to both livelihood adaptation and coping. Musingwini and Sibanda (1999) add that those people involved in gold panning activities who are unable to cope or adapt are certainly at risk and unlikely to achieve sustainable livelihoods. Haruzivishe (1995:17) adds that different types of shock or stress, in turn, may result in different responses from gold panners including avoidance, resistance or tolerance mechanism like drunkenness, prostitution and drug abuse.

Hoadley and Limptlaw (2004:10) argue that small-scale gold mining has a big role to play in improving sustainable livelihoods among rural communities with the government showing political will to support small-scale miners.

However, despite the immense growth of small-scale mining over the years, especially since Zimbabwe's independence in 1980, the sector has essentially remained subsistence and a significant complimentary activity to communal and small-scale resettlement agriculture (Murwendo, Rusinga & Zinhiva, 2011: 195).

2.3.3 Gold panning and rural community development

Rural development is defined as improving the living standards of the rural poor masses of the low income population residing in the rural areas and making the process of their development self-sustaining (Bernstein, 1995:25). Scoones (2009:38) offers the same sentiments as he underscores that rural development not only extends across agricultural development but also covers the non-agricultural aspects of rural life, including such matters as health, education, housing and social infrastructure in order to offer a balanced process of economic and social change.

Rural development integrates economic and social objectives to create better and more secure livelihoods for rural people thereby meeting many of the physical, social and economic needs. According to Mutizwa-Mangiza (1991:11), the physical needs in the physical environment include lack of water, soil salinity or erosion, lack of physical communication networks and proneness to disaster hazards. The socio-economic needs are broad and diverse including social, cultural, economic and political challenges such as, structural causes and designs of community conflicts, inequalities, poverty, unemployment, social vices like crime, violence, prostitution, lack of opportunities, and limited access to social services.

Whilst most rural development scholars appear to have consensus that rural communities were predominantly sustained by subsistence farming (agricultural-related livelihood sources), new trends are emerging in Zimbabwean rural areas following realisation that dry-land household farming was now a big livelihoods risk due to recurrent droughts as evidenced by high rates of rural-urban migration in search of alternative sources of family income (LENDRIZ, 2012; Scoones, 2009).

The apparent failing of rural agriculture has fuelled the growth of the informal sector in urban areas as well as gold panning and other forms of resource extractions (Bernstein, 1995:28). Gold panning is now being seen as an alternative route out of poverty since panning is fast emerging as a lucrative form of employment absorbing mainly unemployed rural youths (Chazovachii and Basure, 2013:49). Gold panning is a very important activity often related to direct and indirect creation of employment as other small-scale enterprises like catering and vending are attracted by viable business in these gold panning areas (Heemskerk and Oliveira, 2003: 11). It results in the generation of revenue for the national treasury leading to related infrastructural developments like roads, electricity and commerce.

Community development is a process where usual people partner government agencies and non-state development actors to improve their economic, social, cultural and political conditions. Through community development, particular communities and population sectors are united and mainstreamed in national development processes through various social empowerment actions and programmes such as, social service provision, human and public capital development, technological upgrading, social mobilisation and organisation, civic awareness and education for people to actively contribute to national progress (Blakely and Bradshaw, 2002: 35).

The genesis of community development is when people or communities decide to collectively initiate social action processes that upgrade, challenge, change and transform their economic, social, cultural, political, technological and environmental status quo. He concedes that community development increases choices, creating an environment where people can exercise their full potential to lead productive and creative lives (Chambers 2005, Sen 1995).

LENDRIZ (2012:10) postulates that community development entails fusion of community and development concepts. They argue that a community represents groups or people with shared cultural identity and common needs while development is an upgrading process that increases community choices, incorporating new options, diversification, thinking about apparent issues differently, anticipating change and improvement. Brett (2003:25) adds that development is a directed attempt to improve participation, flexibility, equity, attitudes, the function of institutions and the quality of life, creating wealth, the things people value most.

Community development, therefore, becomes an interaction between people and joint actions rather than individual activity. It means that the community itself engages in processes aimed at improving the social, economic and environmental situation of its constituent members and improves the ability of communities to collectively make better decisions about the use of resources such as, infrastructure, labour and knowledge (Chambers, 2005:28).

For community development to occur, people in a community must believe that working together for the common good can make a difference by bringing benefits of community development such as, social cohesion, self-determination, self-efficacy, self-reliance, self-awareness and employment creation. Infrastructure development in a community comes through local people changing their attitudes, mobilising the existing skills they have, improving their networks, thinking differently about presenting problems and effective use of communal local resources. In that way, community development eventually improves the general quality of community life as people pool resources together and find innovative ways to work together for the common good, harness and optimise full community potential and capabilities, improve livelihoods and availability of public assets (Brett 2003, Sen 1995). In addition, Blakely and Bradshaw (2002) highlight that community economic development, as part of community development, identifies and harnesses local community resources and opportunities, stimulating sustainable economic and employment activity, aiming at improving employment income and economic base of the community.

Gold panning is a major economic activity in many developing countries, particularly in rural sub-Saharan Africa (Andriamasinoro & Angel, 2012: 390). Kitula (2006) argues that for many centuries the small-scale mining of precious minerals has made a significant impact on the socio-economic lives of people and communities involved directly or indirectly in the sector. As a whole, gold panning has been an important sector in the mineral production system in Zimbabwe, as miners work on economic deposits often below the threshold levels of the larger operators.

Gold panning is growing fast as an economic activity in Zimbabwe (Manjange, 1994). In recent years, gold, like other minerals such as diamonds and emeralds, has provided a means of livelihoods to the unemployed people in both rural and urban areas of Zimbabwe (Kori, 2006). Literature has it that gold panning has come to be an important activity in many developing countries, mainly in regions where economic alternatives are limited. It has contributed and generated considerable local purchasing power that led to a demand for locally sourced inputs like food, equipment, tools and housing (Hinton *et al.*, 2003; Hollaway, 2000). The surge in gold panning activities in Zimbabwe has made significant contributions to the national gold output, foreign exchange earnings and employment among others.

There are varied effects with respect to gold panning and the general community. Small-scale mining has contributed positively in improving the lives of people in the form of employment, revenue generation, and in meeting the health, educational and basic family needs (Maponga and Ngorima, 2003:153). Dreschler (2001:10) notes that gold worth a billion dollars a year is produced by gold panners in southern Africa, making major contributions to gold exports and foreign exchange earnings. He goes on to say that gold panning can develop nations and economically give power to underprivileged groups by virtue of its low investment costs and short lead time from discovery to production. Scholars agree that in many ways, gold panning has become an integral part of the rural economy and can even lubricate the SADC regional economic development blue-print through employment creation and income multipliers.

However, in countries where the sale of gold is not clear, coupled with smuggling, much of the benefit to livelihoods is lost (Hinton *et al.*, 2003; Hollaway, 2000).

Gold panning is labour-intensive and thus provides employment and income to huge numbers of people who are unqualified, poor and live in remote rural areas where very few opportunities exist for formal employment (Murwendo, Rusinga and Zinhiva, 2011: 96). It is also estimated that in Southern Africa alone, more than 1.5 million people are directly employed in small-scale mining, a category where gold panning falls. In most of the SADC countries, Zimbabwe included, gold panning is known to be an economic alternative to agriculture especially for people in the rural areas (Maponga and Ngorima, 2003).

2.3.4 Gold panning and poverty alleviation

Poverty is a multi-dimensional concept that may be defined as deprivation of basic needs such as shelter, food, education, and being sick and not able to get medical attention. Poverty also means joblessness, inability to go to school and illiteracy, fear of the future, powerlessness, lack of representation and freedom (World Bank 2000, Sen 1995). Narayan (2002:38) adds that poverty is a result of low levels of socio-economic assets, coupled with low returns. He argues that the poor have very few assets beyond their own labour, which is inevitably spent in tedious, back-breaking, low paid work. They often possess little or no land and also tend to lack education, skills and good health. In addition, the poor have limited access to such public assets as community infrastructure, basic services and government schemes (Narayan, *ibid*).

The poor are more likely to be illiterate, not possessing higher levels of education required for development skills. They find it difficult to maintain good health because of poor diet and lack of access to health facilities (Clark and Hulme, 2005:50). Narayan (2002) suggests that since a large proportion of the rural poor is unemployed or underemployed, it is imperative that poverty alleviation strategies focus on creating employment for the needy. In order to enable poor households to come out of the poverty trap on a sustainable basis, it is essential that avenues of self-employment, economic empowerment and sustainable livelihoods are opened up for the rural poor.

Gold panning's strongest contribution towards rural and community development is in poverty alleviation, job creation and capacity building within gold panning communities (Maponga and Ngorima, 2003). Hinton *et al.* (2003: 100) state that gold panning is a survival strategy that averts hunger and poverty. The increasing number of gold panners in the recent years is a manifestation of poverty and an indication of the positive benefits brought about by gold panning because it has the ability to create employment and source of livelihoods (Maponga and Ngorima, 2003: 154).

The sector absorbs many people during crisis situations such as, drought and is able to release them again to engage in other economic activities like agriculture when the rain season begins. Gold panning contributes significantly to poverty reduction within gold panning communities since gold panners use earnings from gold panning to provide for their families. It raises peoples' income levels and improves the living conditions of the poor majority (Maponga and Ngorima, 2003: *ibid*). Investment in agriculture through money or surplus from gold panning is expected to kick-start the rural economy. Earnings from gold panning can be invested in the education of children and in accessing better health facilities.

2.3.5 Gold panning versus environmental health and safety issues

While gold miners consider gold panning as their key and sole means to survival, the number of negative effects seems to outweigh the merits that the activity brings to society. In that view, Mawere (2011:12) advances the argument that gold panning is causing more harm than good to humans, non-humans and the natural environment. Communities where gold panning activities are done run the risk of facing catastrophic changes in the physical environment, water sanitation, agriculture, aquatic and terrestrial biodiversity and the habitats thereof (Hollaway, 2000: 22).

According to Mawere (2011:18), gold panning has remained the biggest source of water pollution and environmental degradation. Researches have shown that there are high mercury levels in the rivers flowing through gold panning sites besides sediment concentrations that can be easily observed.

This is aggravated by illegal gold miners who are disorganised and continue to engage in activities that are perilous to humans, non-humans and the physical environments.

Shandro *et al.* (2009: 528), for example, note that gold associated environmental and health costs are high, as mercury continues to be used and lost to the environment, and cyanide which is very dangerous to livestock and other animals. He stressed that mercury is a heavy toxic metal with potential to bio accumulate in the food chain. It is hazardous to aquatic environments (fauna and flora) and humans (miners and people downstream) and intakes can occur via food, water and air. Mercury exposure amongst the gold panners themselves and community members associated with gold panning is therefore high (Swain *et al.*, 2007: 58).

This makes gold panning to remain a potential threat to all forms of life in all gold panning communities though it is a pivotal source of livelihood for many people. Gold panning has also been blamed for its failure to generate both local community development and environmental management. River banks collapse, vegetation is lost, soil erosion and siltation of rivers is occurring as a result of the methods used by gold panners in extracting and processing gold (Wambala, 1990; Whitlow, 1989; Whitlow, 1990; Warhurst, 1994) .

Kusemamuriwo (2004:10) gives a description of how panners use the most destructive horizontal tunnelling method of extracting gold and he explains the manner in which the pits are dug. He states that the whole panning area will be nothing but gold alluvial pits of various shapes and depths with barely walking space between them. The pits are dug in a disorderly manner and are too close to one another for comfort. The majority of the pits are holed into each other, by way of lateral tunnels mined in all directions in search of rich alluvium.

They state that gold panners in Zimbabwe generally work not less than fifty tones of earth per panner per month and this results in adverse geo-physical effects of the

activity. They further noted that panners leave behind landscapes in potholed environment consisting of piles of waste, abandoned excavations and vast stretches of land (Katanha, 2005; Kusemamuriwo, 2004; Kori, 2006). Photo 1 below shows the degradation of land from gold mining activities.

Photo 1: Land degradation due to gold panning



Maponga and Ngorima (2003:149) mention that gold panners put up unplanned mining compounds located close to water courses with poor sanitary facilities, resulting in extensive pollution from human waste.

Chemicals used in gold purification are with the passage of time dissolved and leached out by rain into local streams and community water resources. The impact of mineral pollution on an ecosystem may be severe and may result in the total elimination of animal life from the receiving waters (Manzungu & Sithole, 1999:15). Literature has shown many negative impacts of gold panning on health and safety issues (WHO, 2001:19).

Hollaway (1996:9), for example, states that gold panners and their families expose themselves to harsh working conditions for minimal income in a high risk context, endangering their health as well as destroying the surrounding environment.

Arduous work, combined with inexperience in mining and lack of knowledge about chemical exposures worsen the potential for injury or illness.

Ndhlovu (2002:17) contends that gold panning can be very dangerous with floods and cave-ins that result in the collapse of mines. Gold panners subject themselves to possible injuries from falling rocks, exposure to dust breathing and many other risks associated with working along flooded rivers during the rainy season when floods are common (Hinton *et al.*, 2003:28).

Health and safety issues that affect gold panners may be attributed to the informal and often illegal nature of gold panning, economic demands that result in inadequate equipment and total disregard of safety measures and a frequent lack of skill and inadequate training (WHO, *ibid*). It is postulated that most of the work-related hazards in gold panning sites are a result of frail and poor physical conditions such as, ground failure, shaft collapse and machinery accidents. Poor lighting and ventilation, electrocution and misuse of explosives are other common causes of accidents at most gold panning sites.

Although accidents are underreported due to the illegality of artisanal mining, accidents in gold panning are still six to seven times greater than in the formal and large scale mining operations (Love, 2002). Gold panners suffer numerous types of illness, injury and stress as a result of exposure to dusty, noisy and polluted environments as well as doing hard manual labour intensive jobs involving many hours of digging, carrying heavy weights and working in uncomfortable positions during panning. Such working experiences cause painful chronic injuries and exhaustion (WHO, 2001:25). To make matters worse, there are no public or private service providers to give health care and education at panning sites. They argue that such services literally do not exist (Maponga and Ngorima, 2003: 153).

The working conditions are typically hazardous and unhealthy and living conditions deplorable. Gold panners work without proper housing, hygiene and sanitation, clean water as well as educational and health facilities.

The internal or operation costs for small-scale mining are borne directly by gold panners. These costs include poor safety and health conditions in the mines (Mawere, 2011; Shoko and Veiga, 2004, Maponga and Ngorima, 2003). The externalised costs, such as, the environmental degradation around the mining area and social disruption in the form of prostitution and alcoholism are borne by surrounding communities (Maponga and Ngorima, 2003:153). Communities surrounding the mines suffer from environmental degradation, infectious disease and social problems. These adverse impacts remain for some time in an area well after the gold panners have abandoned the area (Mawere, 2011; Shoko and Veiga, 2004).

The sites also attract commercial sexual activities. Sexually transmitted diseases including HIV and AIDS spread among gold panners who take the virus to their homes, (Shoko and Veiga, 2004:110). Crime and violence are rampant as traditional authorities cannot control deviant behaviour among some migrant panners (Metcalf, 2008; Hollaway, 1999). They also added that inadequate public regulation, absence of law enforcement agents and poor medical provisions perpetuate chaos and insecurity in small-scale gold mining areas.

Kori (2006) postulates that drudgery of the work and the fear associated with the risks of gold panning have led to a high incidence of drug and alcohol abuse within the panning areas. Scholars have agreed that such high drug incidence and alcohol abuse has led to very serious cultural conflict, crime such as theft, prostitution, Sexually Transmitted Diseases (STIs) and other diseases brought about by gold panners (Kusemamuriwo, 2004; Milne and Marongwe, 1995; Shoko, 2002). In areas where gold panners invade the lands of local people, there can be serious cultural conflicts erupting.

2.4 DIFFERENT ASPECTS INVOLVED IN GOLD PANNING ACTIVITIES

This subsection reviews literature on various activities and aspects that are found in gold panning.

2.4.1 Indigenous knowledge systems (IKS), gold prospecting and extraction processes

Indigenous knowledge systems (IKS) are a body of knowledge of the indigenous people of certain geographical areas on which they have survived for a very long time (Altieri, 1995). They are forms of knowledge that have originated locally and naturally). Altieri (1995:19) argues that these forms of knowledge are interconnected to the communities that produce them and have failed to die despite the racial and colonial onslaught that the local people suffered at the hands of Western colonialism. Nyota and Mapara (2008) define IKS as local knowledge that is exclusive to a given culture or society. They observed that those natural communities are characterised by complex kinship systems of relationships among people, animals, the earth, the cosmos from which knowing emanates from. According to Nyota and Mapara (2008), these knowledge forms are also known by other names such as traditional knowledge, indigenous technical knowledge, rural knowledge as well as ethno-science or better known as ‘peoples’ science’ (Altieri, 1995:ibid). He argues that IKS manifest themselves through different ways. Among these are agriculture, medicine, security, botany, zoology, craft skills and linguistics.

In Mutoko, indigenous knowledge systems (IKS) have been used in identifying gold deposits. The use of divination and IKS were believed to be widespread and integrated in gold prospecting methods. Traditional beliefs, knowledge and science associated the presence of precious minerals such as, gold in an area with environmental features like availability of a particular stone type (Kori, 2006). As has been observed by other commentators, (Maponga and Ngorima, 2003; Mahlangu, 1992), gold panners use unscientific methods for prospecting to identify mineable areas. Prospecting methods range from knowledge of spirit mediums, dreams, oral tradition, known previous mining areas and trial and error.

Katanha (2005:28) added that gold panners believe the spiritual world plays a significant role in guiding them to rich gold deposit sites and protecting them against the many dangers inherent in their trade.

This included divination and African cultural beliefs associated with the existence of a certain type of a tree (*mukute*) in any geographical area with the presence of 'spirits of fortune'. Gold panners also value and develop very close relationships with nature including wildlife, birds, flora and fauna for supernatural guidance to rich and safe sites. The growth of acacias, occurrence of dry soil and poor herbage and the occurrence of small clover-shaped herbs are also used as indicators of gold's presents in a particular area (Kori, 2006:10).

Test panning along rivers is also used to identify potential gold panning areas. The presence of rich gold deposits was often revealed by gold particles in anthills and termite heaps, by noting the growth of plants characteristically associated with gold bearing soils, or by following alluvial gold deposit through to the placer deposits and finally to the gold reef. Gold panners also seek visible gold occurrences at the surface where erosion and oxidation take place at the reef, leaving a zone of secondary enrichment. They also find gold reefs by tracing alluvial gold up the rivers to primary sources in the hills. Prospecting for quartz reef outcrops with visible gold was an easy matter and reefs with no visible gold showing at the surface were not exploited (Kusemamuriwo, 2004: 17).

2.4.2 Gold extraction processes

Equipment used for gold panning is not sophisticated and so are the operations. Gold panners use basic tools like shovels, scales, chisels, panning dishes, hoes, picks, axes, crossbars, and hammers. These tools are used to open up deep slopes, and shafts in search of the gold containing ore. The openings are the ones through which the earth, ores and sometimes water are drawn out using tins (Maponga and Ngorima, 2002).

This is done by means of hauling buckets to the surface, using ropes. No pulleys or mechanical aids are available to most of the panners, so they improvise. Katanha (2005) adds that once the gold containing ore is out of the ground, it is ground to powder and the powder is washed in the nearby rivers until all the powder is washed away. Most panners make use of wooden pans (*mazamba*) to separate the gold from the ore. The ground ore (*mutaka*) is scooped into the wooden pans and then washed in the river.

The gold concentrate (*hundi*) then remains at the base of the wooden pan because gold is denser than soil and sand. The gold concentrate is then placed into an earthenware dish and is dried over the fire. Panning is no longer restricted to the banks and beds of rivers, but also takes place away from river banks, where miners work reef deposits to recover gold (Shamu and Wolff, 1994). Activities away from rivers are also described as panning since gravity separation is the final recovery method.

Kusemamuriwo highlights that there are two types of gold extraction processes, the alluvial and reef gold panning (Kusemamuriwo 2004: 17). He went on to say that there is not much difference between alluvial and underground gold mining processes. The differences are illustrated in Table 1 below.

Table 1. Differences between reef and alluvial gold panning

COMPARATIVE ASPECT	REEF GOLD MINING	ALLUVIAL GOLD MINING
Site location	Disused mines	Along river banks
Required skills	Technical appreciation ideal	No skills/experience needed
Technological status	Sophisticated equipment necessary	Basic equipment used
Regulatory frameworks	Panners need license	No licensing is required
Gold Purity	Needs further processing	Pure gold
Gold price	Cheaper	Expensive

The differences found between the two types of gold mining methods regardless of the differences noted above are classified under the umbrella term, gold panning or (*chikorokoza*). Alluvial gold mining is normally referred to as panning since it does not involve underground tunnelling. The gold is found on ground surface and normally in river banks and river deposits. Gold from alluvial panning is called alluvial gold. The concentration of gold panning activities are generally skewed towards alluvial open panning sites where there is lucrative business profits, flexible working conditions and individuals depend on their own labour. Small and shallow pits are normally evident where alluvial panning is done. Alluvial panning process is perceived to be easy because gold is easily accessible and very easy to extract using simple tools like hoes and dishes as was attributed (Kori 2006:6). No special skills are needed and it can be done by anyone. Gold from alluvial panning is called alluvial gold. It is usually pure gold which needs no further purification. In terms of market value, alluvial gold or pure gold fetches more on the market because it does not require further processing and purification unlike the reef gold. Reef gold from reef mining is usually in powder form and needs much more processing or purification. It is impure and it normally fetches less at the market as compared to alluvial gold because it is not refined (Katanha 2005:13).

Reef gold panning is referred to as underground gold panning. In reef mining, a lot of skills and know how is required (Kusemamuriwo (2004). When doing reef gold panning, skill is needed to identify where gold is and that is where surveyors come in. Skills in drilling, blasting, crushing and skirting, separating the ore are needed. Skill is also needed in operating all the machinery and the processes cannot be done by anyone who does not have the knowhow, the skills and technical experience unlike in alluvial mining (Katanha 2005:13. Because of the hard labour involved in reef mining, mostly men are involved in this mining method. Mukumbira (2000:14) actually attributed the less number of women found in reef gold panning to the hard, tough and rough nature of work involved in it. He however said just few women are found in reef gold panning as surveyors, administrators, sponsors and claim owners. He further argues that unlike in alluvial gold panning where children and women are normally found in larger numbers, reef panning sites are predominantly male-dominated.

2.4.3 The black market for gold in Zimbabwe

Since 1980, the marketing of gold in Zimbabwe has been governed by the Gold Trade Act. The Legislation requires that all gold is sold to Fidelity Printers, an arm of the Reserve Bank of Zimbabwe (RBZ) and the price paid for the gold is controlled by the Government. The RBZ then sells the metal on the world market. However, contrary to the stipulations of the Act, there was an increase in the sale of gold on the black market (Kusemamuriwo, 2004:28).

The reasons for the development of the black market appears to be the shortage of Reserve Bank buying agents at the panning sites and the Zimbabwe's centralised gold marketing system controlled by the Reserve Bank through Fidelity Printers is unsuitable for subsistence panners due to bureaucratic delays in getting payment for gold sold to the official buyers (Kusemamuriwo, 2004; Maponga, 2005).

Official gold prices are often lower than those offered on the parallel market and the price difference between the parallel market and the official market continues to fuel illegal trading of gold. Panners also get little gold so it would be convenient for them to sell it to mobile buyers who are always on the panning site because it defies the logic for a panner to spend a lot of time travelling to Harare or a nearby town to Reserve Bank agents to sell gold which can be as little as 0.2 grams. Thus, the convenience of having buyers at their door steps comes at a cost of low prices for producers when they could potentially obtain much better returns.

Another reason for the development of the black market is that many panners do not have licenses to sell their gold to the Reserve Bank through Fidelity Printers, they are illegal gold panners, therefore, they resort to selling their gold on the black market that naturally exempts them from regulatory scrutiny, paying statutory taxes and observing any institutional by-laws (Gono, 2005:17).

Chazovachii and Basure (2013:56) contend that a group of people are involved in the running of the black market. The people include the sub-buyers (shop owners, teachers and nurses) and the chief buyers. Rural shop owners and other local businessmen are the major players in the black market system. They exchange commodities such as sugar, salt and maize meal for gold and advance money to agents who buy gold from the panners. Money is given to sub-buyers by the chief buyers to source gold for them. The sub-buyers in turn contract the agents to do gold buying for them (Phiri 2002: 21).

The agents move from place to place in search for gold and surrender their gold to the sub-buyers who then sell the gold to the chief buyers and gold obtained this way is sold to countries like South Africa, United State of America and the United Kingdom. The gold smugglers find ways of exporting the metal illegally. Some make use of chartered aeroplanes and they usually do their trading at night to avoid inspection (Kusemamuriwo, 2004:25).

2.4.4 Gender roles in gold panning

Hinton *et al.* 2003:20 argue that gender roles are fluid and can shift over time, space and in different context. Mukumbira (2002:11) states that society's expectations of men and women, boys and girls change over time and the changes are influenced by global, local economic and cultural trends. Dove (1993: 19) states that the involvement in and the reaping of benefits from non-farm activities is skewed in favour of men and against women. For example, in Zimbabwe, women are engaged in the lowest levels of micro enterprises, household based income generating activities where there are no substantial barriers to entry into this type of activity in terms of skills and capital, yet they yield very low incomes. They are just survival activities.

In gold panning for example, because of its nomadic nature, men who are generally nomadic in search of economic treasure, find it much easier to move away from their homes and work under very difficult and unbearable conditions while women largely stay back home being responsible for socially defined day to day household chores like looking after the children, doing subsistence farming and caring for sickly or elderly relatives (Dreschler, 2001: 27). According to Mukumbira (2002:14), gold panning is an occupation that demands a lot of physical labour and it had, therefore, generally remained a male domain. However, women play key roles especially in rural areas where gold panning mainly takes place.

Hinton, Veiga & Beinhoff (2003:113) postulate that about 30 percent of the world's artisanal gold miners are women and their roles in gold panning communities differ significantly from those of men. They extend well beyond direct participation in the gold panning activities since they function in multiple capacities. They, however, tend to be engaged in specific roles throughout the world for instance, a woman working as a part-time gold panner may also double up as a sex worker, cook who engages in food production activities and informal trader selling basic goods in order to obtain extra income. Scholars are of the opinion that the imbalance of gender within the gold panning sector is usually found within the hierarchies in the gold panning sector. Only a few women are concession owners, mine operators, dealers, gold buyers and equipment owners. Most of the women in gold panning activities are found at the bottom of the sector's hierarchy doing subordinate work and are responsible for domestic duties. Their responsibilities in gold processing activities range from crushing, grinding, sieving, washing and panning, to amalgamation and amalgam decomposition (Hinton, Veiga & Beinhoff, 2003; Dreschler, 2001; Phiri, 2002).

Mupedziswa and Gumbo (2000:35) argue that women participation in any economic activity like gold panning is fundamentally socially defined, tied to their family roles and often constrained by their many household chores that do not require them to work away from home. Phiri (2002:24) adds that lack of resources and limited mobility due to domestic and agricultural responsibilities confine women to household chores.

They are not that flexible and able to move around the country side looking for the precious golden resource. Unlike their male counterparts who culturally have the liberty and freedom to be away from home for longer periods in search of the gold rush even in the remote corners of the country, women are usually tied to their households and they consequently tend to be engaged in seasonal gold panning activities that are done closer to their home areas. However, a study carried out by Mukumbira in 2002, has shown that panning for gold is no longer a male preserve especially in Zimbabwe. The study has shown that women have taken up gold panning challenges with amazing results and have agreed that gold panning, though it is hard work, provides the much needed extra family income (Mukumbira, 2002).

According to Mupedziswa and Gumbo (2000:33), gold panning fits well into rural women's schedules in a number of ways. They observed that most rural women undertake gold panning in their own spare time, after domestic household tasks or in between peak agricultural seasons. For most women, gold panning does not require skills or expensive equipment which is actually an advantage to them. Women also carry out many other economic activities at the panning site other than gold panning. They bring and sell meat, fruits, vegetables and cooked food, knit jerseys for sale, open and manage tuck shops and shebeens (backyard liquor bars), bake bread, brew beer and sell sex (Mukumbira, 2002; Mupedziswa and Gumbo 2000).

Mukumbira (2002:40) contends that these women's newly found income remains outside the usual male control of wealth as women can now pan and sell their gold as they see fit and have, therefore, become their own masters. Ndhlovu (2002:14) concludes that women's independent panning income has been seen to re-shape the intra-family relationships since female gold panners now have more voice and decision-making powers in households as they no longer quarrel for money to buy basic commodities in the house with their husbands. Ndhlovu (2002:ibid) goes on to say gold panning provides the much needed income they cannot find elsewhere and that is why they continue to join the gold rush despite real threats of police repression, dangers of collapsing shafts, unhygienic sanitary conditions, crowded squatter settlements, exploitation by middlemen, rape and AIDS infection.

2.5 CONTEMPORARY ISSUES

The contemporary issues highlight the discourses that are currently shaping the Zimbabwean economy.

2.5.1 Indigenisation of mining in Zimbabwe

This entails the indigenisation of all key sectors of the national economy, change of ownership structure from the hands of foreigners to the local people (COMZ, 2012). Indigenisation has been one of the major issues in the mining sector in 2012. However, Mpofu (2013:5) has highlighted that the perceived lack of clarity in the application of the indigenisation and empowerment regulations in the sector by foreign investors has resulted in some investors delaying to commit investments. Mpofu (2013:ibid) also added that a good number of investors do not want to acknowledge the indigenisation law speculating that it may be repealed.

In light of the above, this means there is need to explain this policy articulately to investors to make them understand that it is actually beneficial both to the investor and the country. The policy is good but the implementation part of it is poor. It ends up benefiting a few politically connected people. However, the mining sector has been at the forefront of complying with the indigenisation law. All major mining companies have complied and are the lead sector in terms of compliance. Some companies still have their proposals being evaluated by the relevant ministry (COMZ).

2.5.2 Economic empowerment

Economic empowerment is one of the elements of community development. It includes expansion of assets and capabilities of poor people to enable them to participate, negotiate, influence, control and hold institutions that affect their lives (Narayan 2002:7). Empowerment also entails the acquisition of necessary skills, supporting infrastructure and capital. According to Chambers (2012:35), this enables people to have a sense of ownership over development projects in their area and in this way, deliberate positive actions will be taken to mitigate impoverished conditions generally obtaining in rural communities by creating basis for future self-help programmes.

Empowering communities will help them in the future to have less reliance on external support, thereby enabling them to sustainably deal with poverty on their own (Castree, 2004; Stilltoe, 2002, Sen 1995).

Projections are that the overall growth of the mining sector will be around 17% if technical capacities of the small-scale miners are improved and gold panning is not criminalised but sufficiently supported by both state and non-state development actors. This can be done through an enabling legislative environment, skills and infrastructure improvement, capitalisation and seed funding, incentivising sector mainstreaming, organisation and empowerment for greater role in the national economy (SSMA). The Council, in 2013, organised an annual expo that brought together diverse categories of informal mining players under the theme “Extract value to boost national economic contribution” (The Sunday Mail, 21-27 July 2013).

In Zimbabwe the law has been used to create community ownership trust to hold the compulsorily acquired 51% of shares in all foreign-owned mining companies. The 51% compulsorily acquired shares are held in Community Ownership Trusts (COTs). COTs were created to empower poor communities that need mainstreaming in national economic activities despite their lack of requisite economic capacities (Chazovachii and Basure, 2013: 53). Community share ownership schemes have been set up as an empowerment strategy to enable the black majority to participate in the mainstream mining activities of the country (Murisi, 2012:43). The mainstreaming of the previously marginalised population groups into the key economic activities of the country has seen gold panners being recognised as key players contributing to the growth of national economy. Of late, there has been a provision of formalised funding and equipment from Brazil and a provision of 100 million United States of American dollar support has been made in the 2015 national budget to build capacity and infrastructure for small-scale miners.

2.6 A GLOBAL PICTURE OF MINING IN ZIMBABWE

Zimbabwe is endowed with abundant mineral resources of international value, (Spiegel, 2009:29). According to the Chazovachii and Basure (2013:47), Zimbabwe has a rich array of 47 different mineral deposits especially along the Great Dyke belt linking the country with its neighbouring nations Botswana, Malawi, Mozambique, South Africa and Zambia. The 47 different minerals include gold, diamonds, coal, nickel, asbestos, tin, copper, platinum and chrome. Mining is a major foreign currency earner in the country and contributes about 15% of the Gross Domestic Product (GDP). Minerals like platinum, diamonds and gold have been the most performing commodities on the market. Cumulatively, these high-value mineral resources have contributed no less than 90% total mineral export earnings. Diamonds, in particular, performed exceptionally well, earning close to \$ 1 billion in 2012 (COMZ, 2012:08).

There is general consensus among Zimbabwean development policy makers and researchers, that the mining sector in the country has been one of the key drivers of economic growth in the last three years, contributing about 60% of total national export (Gandiwa and Gandiwa, 2012:30). The sector's recent resurgence and boom is attributable to a number of factors including stable macroeconomic environment brought about by the adoption of a multicurrency system in 2009 (Chazovachii and Basure, 2013:52). The Government of Zimbabwe has recently embarked on the opening up of the sector previously dominated by foreign direct investment through indigenisation, value addition prioritisation and increasing government resolution of investing in exploitation of high-value natural resources for the benefit of an impoverished ailing national economy (Gandiwa and Gandiwa, 2012:ibid).

Spurred by the economic sanctions imposed against the country, Government of Zimbabwe came up with an assortment of enabling policy instruments and empowerment programmes aimed at fast-tracking the mainstreaming of majority of citizen participation in this capital-intensive but lucrative productive sector.

It is against this background that the ruling and liberation political party, ZANU (PF), in its 2012 Congress resolved to support gold panning within its broad employment creation and economic empowerment programming policies (The Herald, 06 February 2012).

2.6.1 Mining sector institutions in Zimbabwe

The main players in the Zimbabwe's formal mining companies are private sector companies that are key members of the Chamber of Mines Zimbabwe (COMZ), Public Enterprises or parastatals like the Zimbabwe Mining Development Corporation (ZMDC) as the sole Government mining regulatory, marketing and development authority, the Small-Scale Miners Association, and gold panners who are individually involved in either legal or illegal and unstructured mining activities (Gono, 2005). Some of the major mining companies in the country include Anglo-American, Rio Tinto, Bindura Nickle, Sabi, Mimosa and Zimplats just to mention but a few (COMZ, 2012:07).

2.6.1.1 Chamber of Mines Zimbabwe (COMZ)

Chamber of Mines Zimbabwe (COMZ) is a membership-based association of big mining companies in the private sector. COMZ was established as a private sector voluntary organisation in 1939 (COMZ, 2012:01). The primary objectives of the COMZ include advocating and lobbying in order to promote, encourage and protect the interests of the mining industry in Zimbabwe. Activities of the COMZ are concentrated in the fields of economic policy, investment promotion, labour and industrial relations management. It focuses on legal matters related to mining, representation of the views of the industry to Government and other stakeholders as well as providing various ancillary services aimed at promoting health and safety. COMZ also looks at manpower training, environmental protection and the support of mining associations (COMZ, 2012:05). The mining company members of the COMZ produce about 90% of Zimbabwe's total mineral output.

The above description is relevant to the study in that it gives contextual and comparative scenarios in both organised and informal mining institutions. Organised mining institutions provide numerous operational leveraging synergies, information sources, funding opportunities and advocacy capacities that are not enjoyed by informal miners like gold panners. Formal institutions have benchmarking operational standards and platforms for policy influence unlike gold panners.

2.6.1.2 The Zimbabwe Mining Development Corporation

The Zimbabwe Mining Development Corporation (ZMDC) was established in 1972 by an Act of Parliament ZMDC Act [Chapter 21:08] (Nxumalo, 1993:19). The ZMDC is committed to high standards of corporate governance and principles of openness, integrity and accountability in its dealings with all its stakeholders. Its governance strategy, objectives and structures have been designed to ensure that it complies with the Zimbabwe Mining Development Act [Chapter 21:08], any other relevant legislation and a number of best practise codes (Nxumalo, *ibid*).

ZMDC is further committed to managing risk, to protect its employees, the environment and its assets. In its activities, ZMDC has incorporated competitive governance and compliance practices for sustainable development (Marufu, 1992). Its mandate is to invest in the mining industry in Zimbabwe on behalf of the state, plan, coordinate and implement mining development projects on behalf of the state, engage prospecting, exploration, mining and mineral beneficiation programmes. It renders assistance to persons engaged in and about to engage in mining, to encourage and to undertake the formation of mining cooperatives. ZMDC also advises the Minister on all matters connected with corporate investments in the mining industry and make recommendations for the proper coordination of all investment programmes, review the general economic conditions and prospects of the mining industry and to carry out any other functions and duties that may be imposed upon the corporation by any enactment (ZMDC, 2012).

The vision of ZMDC is to be amongst the top 10 leading and most viable mining houses in Africa. Its core purpose is to invest in the mining industry in Zimbabwe and to contribute to the economic and social well-being of the nation. Their Mission Statement is to engage in prospecting, exploration, mining and mineral beneficiation in a sustainable, viable and environmentally friendly manner for the benefit of the nation, the shareholders and posterity (ZMDC 2012).

2.6.1.3 The Small Scale Miners Association (SSMA)

Unlike the affluent and influential COMZ, the Small Scale Miners Association (SSMA) is predominantly a membership-based club of upcoming, undercapitalised and struggling mining community groups, mining cooperatives and individual miners (Marufu, 1992; Nxumalo, 1993). The SSMA members do not have requisite capital, technical skills and management capacities as they are largely beneficiaries of various post-independence affirmative support initiatives adopted by Government to redress some historical colonial and racial inequalities. The role of SSMA is to provide platforms facilitating the coordination, advocacy and representation of fragmented voices, interests and expectations of its members in several engagement forums with Government and several other mining stakeholders (SSMA, 2013). The Government subsidies were recently scrapped due to national economic hardships.

In the absence of such structured government-packaged incentives to stimulate renewed commitment to entering the hitherto lucrative mining sector, most of the formally organised small-scale miners have since resorted to illegal gold panning activities that are not regulated (ZMDC, 2012:11). However, as a result of SSMA advocacy and lobbying activities, Government has, for example, since set aside a US\$100 000 revolving fund loan facility to support small-scale miners (SSMA, 2013). Further, as a result of repeated and strategic SSMA advocacy and lobbying interventions, some of the national laws that previously regarded gold panning as illegal economic activities have been relaxed and mining rights have since been incorporated in the reviewed Zimbabwean Constitution and economic empowerment regulatory frameworks (ZMDC, 2012).

2.6.2 Challenges in the mining sector

The Zimbabwean mining sector faces numerous challenges. The challenges include recurrent power outages, high tariffs, slowing down of international commodity prices since 2011, lack of medium to long-term lines of credit for working capital and recapitalisation, obsolete equipment and technology, ineffective infrastructure and technology, illegal sanctions imposed on the country that have compounded challenges on credit lines and access to competitive markets (COMZ 2012). The other challenge includes speculative tendencies by investors with regards to operating environment in Zimbabwe leading to lack of commitment on the ground (Chazovachii and Basure, 2013:51).

The country also has no control of prices on its minerals since they are sold on the international market. International market prizes are controlled by many factors beyond national influence and as a result not much could be done in terms of falling commodity prices since it is an external factor beyond the country's control (COMZ, 2012). The issue of electricity has been one of the major challenges in the mining sector since electrical power is a critical factor not only to enhancing performance of the mining sector, but also to refurbishing mining and manufacturing sector and the entire economic activities (Gandiwa and Gandiwa, 2012:35). Another challenge facing the mining industry is whether the sector is ever going to be able to unlock its inherent potential value and reach its previous productivity peak levels before the economic melt-down that started in the year 2000, especially considering that the country had pending elections in 2013. Historically, whenever there is talk of elections in Zimbabwe, investors tend to adopt a wait and see attitude resulting in a slowdown in Foreign Direct Investment (FDI). As the country was preparing for the elections, speculation was also rife that the economy was going to further shrink, as a result of currency and FDI inflow challenges. That adversely affected capitalisation of the rejuvenating mining sector (Chazovachii and Basure, 2013:51).

Another challenge that the Zimbabwean mining sector is facing include recurring mining safety disaster. The famous and historic Hwange mine disaster in the 1970s where over 700 miners perished in a collapsed shaft is vividly remembered by Zimbabweans as having been caused by human error, absence of adequate preventative safety procedures and management's slow and uncoordinated responses (Kori, 2006). In contrast, the recent 2012 Mimosa Mine disaster in Zvishavane had no fatalities largely because of stringent, comprehensive, elaborate and coordinated safety programmes observed at the mine site (ZTV, 05 May 2012).

There is also unrivalled labour unrest in the mining industry than in any other sector (LEDRIZ, 2012). The history of trade-unionism in Zimbabwe and elsewhere in the SADC region is more pronounced and grounded in the mining sector, a case in point being the recent highly published Marikana Industrial Labour unrest that almost paralysed the economy of South Africa in September 2012 (www.politicsweb.co.za accessed 16/05/2013). Trade unionism in Zimbabwe has its roots in the mining sector as most popular and significant Industrial Labour disputes had their origins in this sector. Trade Union leadership in Zimbabwe and South Africa historically evolved from the mining sector, for example, the current Prime Minister of Zimbabwe (Morgan Tsvangirai) hails from the sector (LEDRIZ, 2012).

There is a lot of political interest and interference in the mining sector than any other sector in Zimbabwe. Government in general and ZANU (PF) in particular, have located and aligned most indigenisation and empowerment programmes in the mining sector. For example, the thirteenth ZANU (PF) Annual Conference in 2012 endorsed party support for gold panning as its youth empowerment and employment creation programme that should not be criminalised but supported by government in the form of cheap or subsidised mining licenses in order for the gold panners to operate lawfully without police harassment (The Herald, 06 February 2012).

2.7 EVOLUTION OF GOLD MINING IN ZIMBABWE

The history of small-scale mining or gold panning in Zimbabwe dates back to the period well before colonisation in the late 1890s (Mberengwa, 2010; Maponga & Ngorima, 2003). Small-scale gold mining became a commercial activity in Zimbabwe in the 19th Century when the British South African Company (BSAC) received a charter to administer the country in 1890. In the early 20th Century, the BSAC liberally supported small-scale gold mining activities by granting mineral concessions and exploration rights to the members of the Pioneer Column. The small-scale miners were often dubbed 'small-workers' to distinguish them from the large-scale gold producers. The small-workers' operations exploited the small deposits that were not profitable for large scale mining and they also took advantage of the cheap African labour, (Metcalf, 2008; Hollaway, 1999). In 1906, there were 254 small-workers and by 1909 the number had nearly doubled to 500 miners against nine large scale miners. In 1910, small-workers employed about 34 494 African workers, (Metcalf, 2008:32).

Randles (1981:58) states that gold has been mined for centuries by local people in Zimbabwe and as in other African countries, gold mining was the basis for the wealth and power of many empires and kingdoms. He argues that gold was an important component of the pre-colonial economic prosperity. It was traded first with the Middle and Far Eastern entrepreneurs and later with the Portuguese. Phimister (1974:30) also adds that gold in pre-colonial Africa, was used for trade with the Portuguese and Arabs and they usually traded it with cloth. It was the attraction of gold that led to the colonization of Zimbabwe by Cecil John Rhodes in 1890. It is further argued that until the 1950s, local miners along the Mazowe River and its tributaries in Northern Zimbabwe continued their mining operations. Gold was sold to colonial government agents and was often used to pay an unpopular annual poll tax and for paying marriage goods. This fuelled growth of small-scale mining on the continent.

2.7.1 Historical background of gold mining in Mutoko and Mudzi districts

Gold has been mined in the research area since ancient times. Gold occurrences were first noted in 1872 by German explorer Carl Mauch who claimed the land and gold for Germany and named the area Kaiser Wilhelm goldfields (Haruzivishe, 1995:06). Gold deposits within rocks of the Makaha greenstone belt were also known as the Mutoko greenstone (Maponga and Ngorima, 2003:150). Rocks of the Makaha greenstone belt were assigned to the Bulawayan group, a sequence of rocks that were prominent hosts for gold deposits in many of the Zimbabwean greenstone belts (Mawere, 2011: 8). The greenstones were the oldest rocks exposed in the area and several mines were originally pegged at the beginning of the 20th Century on extensive ancient workings.

In the early 1990s, massive mining operations stopped due to mineral exhaustion and harsh economic conditions which were starting to unravel themselves to Zimbabwe. It was uneconomic for the mining companies to keep on injecting capital to work in small gold deposits for low returns. After mine closures, retrenched miners started working on disused mines and the small gold deposits. Due to economic hardships, the local people also joined in. Gold mining continues today in the study area through gold panners. They concentrate mostly in alluvial deposits, but also in some small underground operations. Some gold has been discovered from alluvial deposits along the Manyuchi River in Makaha area (Haruzivishe, 1995:06).

With the intensity of economic hardships, a lot of people from different walks of life flocked to gold panning in the Chisambiro Ward in Mutoko and Makaha Ward in Mudzi area as in many other parts of the country in order to augment their income or in search of a living. At first the gold panning activities were not regulated but as they became a threat to the environment, the government made a move to regulate gold panning by the issuing of mining permits (Haruzivishe, 1995:11). People who wanted to continue with gold panning were supposed to apply for the mining permit and would be given a gold claim, a piece of land entitled to them where they would do all their gold mining activities.

To be given that permit, an individual had to meet certain requirements. According to the alluvial gold act, any gold mining or panning without this permit or mining license would be illegal (Haruzivishe, *ibid*).

2.7.2 Contemporary growth of gold panning in Zimbabwe

After independence in 1980, small-scale mining activities in Zimbabwe increased due to unprecedented poverty, recurrent droughts and the economic structural adjustment programme (ESAP) which resulted in massive retrenchments in both public and private sectors (Katanha, 2005:16). Unemployment increased to over 80% due to economic and political crises which drove away foreign and domestic investments. Large-scale mines downsized their operations and even closed due to high operational costs and political uncertainty, releasing many people to small-scale mining (Kusemamuriwo, 2004:22). Shoko (2005:450) added that the whole scenario was exacerbated by the collapse of large-scale commercial farming activities following the Fast Track Land Reform Programme in the early 2000s.

Gold panning also increased phenomenally in Zimbabwe with the liberalisation of the economy in the early 1990s when the Government of Zimbabwe adopted the Economic Structural Adjustment Programme in 1991 (Murwendo, Rusinga and Zinhiva, 2011:197). Gold panning was initially concentrated along the Great Dyke which stretches from southwest to northeast across the Zimbabwean plateau but it later spread to all regions of the country due to the unspeakable economic crisis in the past decade. It became a viable livelihood strategy among poor families due to uncertainty and anxiety which characterise the Zimbabwean economic landscape (Katanha, 2005).

A combination of economic melt-down causal factors at the height of hyper inflationary period characterised by company closures, capital flight, relocation to other regional destinations, severe drought that forced many newly resettled farmers, the land reform beneficiaries off their farm lands into gold panning as an alternative source of livelihoods (Murwendo, Rusinga and Zinhiva, 2011:*ibid*).

The upsurge in artisanal gold mining in the 1990s, was also largely as a result of a deteriorating agricultural sector and the layoff of public sector workers following implementation of a series of economic structural adjustment programmes (Magaramombe, 2001:35). In recent years, the number of people involved in gold panning in Zimbabwe has increased substantially. Maponga and Ngorima (2003:145) observes that about 300 000 people are directly involved in gold panning. The steep rise in numbers of people who turned to gold panning between 2003 and 2006 may be attributed to many fundamental social, economic and political changes that took place in Zimbabwe then (Metcalf, 2008).

Kori (2006:3) emphasises that the gold panning sector grew in leaps and bounds in the last twenty years, fuelled by many factors including the economic decline that led to high unemployment as a result of retrenchments and severe successive devastating droughts of the 1980s that affected the country's agricultural production. Coupled with massive job losses in the mining sector, commercial farmers, scores of Zimbabweans turned to gold panning which became the only source of income for many households. Harsh economic conditions resulting from retrenchment of workers from paid employment, high unemployment levels pushed people into gold panning and this was worsened by poor agricultural yields due to poor rainfall patterns (Katanha, 2005:9). Gold panning was then seen as the solution for survival in such harsh living conditions.

2.8 ZIMBABWE'S LEGAL FRAMEWORK ON MINING

There are a number of legal and regulatory instruments that influence the administration of the mining resources in Zimbabwe. Some of the laws are specifically meant to strengthen administration of the mining sector whilst others are local natural resources management by-laws that are relevant to some specific mining sector aspects like disposal of industrial waste management and rehabilitation of the environment around mining sites (Maponga and Ngorima, 2003:154)

2.8.1 Mines and Minerals Act

The Mines and Mineral Act was enacted in 1961 and has over the years been amended several times. The current amended version of 1996 consolidated the Statutes relating to extraction and marketing of mineral resources (Shoko, 2005:500). All mining rights in Zimbabwe are vested in the State President in his capacity as the Trustee of all national resources. These mining rights can be acquired by individuals, companies or partnerships. The rights are in the form of a permit that gives the holder access to mine minerals within the registered mining location. The Mines and Mineral Act further states that the obligation of partnerships is that, no more than six persons shall be registered as the joint holders of a mining location (Katanha, 2005: 3). Haruzivishe (2005:10) argues that the requirement of partnerships in the implementation of the Mines and Mineral Act was an effort to improve community access and beneficiation of mineral resources.

However, Chazovachii and Basure (2013:48) commented that the limitation of numbers to not more than six defeats this very noble principle of peoples' participation since active community participation in mining activities entails the inclusion of all community people who are willing to participate in some form of mining activities. The partnership arrangement in terms of this Act is, therefore, an inhibiting factor for access by local communities to the mineral resources.

In 1991, the Mining (Alluvial gold) (Public Stream) Regulations, Statutory Instrument 275 was gazetted to give provision for the issuing of special Government grants to Rural District Councils (RDCs) for the exploitation of alluvial gold deposits on public streams. The councils after identifying the public streams and getting special grants from the Secretary for Mines, they would in turn give permits to individual persons, co-operative societies, partnerships or other associations to work on the alluvial gold deposits. The mining permit allowed permit holders to employ persons who reside in the council area of influence (Shoko and Kinabo, 2001:22).

The partnerships, co-operatives and associations offered opportunities for the implementation of community participation in accessing and using of the gold resources in their area. The newly adopted supportive small-scale mining regulations demonstrated Government commitment to facilitate the mainstreaming of poor rural populations in national development by creating and promoting broad-based and integrated policy frames merging sustainable livelihoods, community development and environmental management as cross-cutting themes in socio-economic development (Mambondimumwe, 1997:26).

In 1996, the Mines and Mineral Act Chapter 21:05 was revised as a move to merge and amend the laws relating to the mining sector. Current efforts are underway to further modify the Act so as to take on board the economic empowerment and indigenisation drive which the government is pursuing (Government of Zimbabwe Indigenization Act of 2010). The rural communities, however, do not have ownership of the land that supports the mineral resources because all the rights to minerals are invested in the state (Kori, 2006:27).

Because of the monetary value placed on mineral resources, it is not surprising that communities are aware, in general, of the prohibition to illegal access, control and ownership of all mineral resources. Shoko (2005:510) comments that due to the lack of ownership to mineral resources, communities have not been given the chance to get involved in the management of mineral resources in their localities. As a result, communities employ any opportunity to quickly access these resources to their best advantage.

Most of the mining activities by local communities are, therefore illegal in nature as the process of getting mining rights is so difficult. Furthermore, infrastructural investment requirements are capital demanding. By 2005, it was estimated that over 600 000 people were directly involved in illegal gold panning activities along Zimbabwe's major rivers. These so called illegal activities, however, do reflect aspects of community access to and use of resources (Metcalf 2008, Kori 2006).

2.8.2 Environmental Management Act

In 2002, the Environmental Management Act (EMA) was enacted as an over arching piece of legislation superseding even the Mines and Mineral Act (Chapter 21:05). The Act introduced the aspect of sustainable management of all natural resources including minerals. For the first time in Zimbabwe, environmental rights and principles are enshrined in legislation. The law provides for social, economic and environmental rights. The Act obliges every person in Zimbabwe to protect the environment for the benefit of present and future generations, to participate in the carrying out of the promulgation of reasonable policy and other measures that secure ecological sustainable management and use of natural resources while prompting justifiable economic and social development (Maponga and Ngorima, 2003:153).

One of the Act's environmental principles is that development must be socially, environmentally and economically sustainable. The principle stresses the concept of the triangle of sustainable development. The triangle serves to illustrate the importance of appreciating the delicate balance between the environment (natural resources), social and economic factors. The Act provides for the participation of local communities in mining activities through the undertaking of Environmental Impact Assessment (EIA). However, this consultative participation of the local communities does not necessarily lead to access and benefit sharing from mining proceeds. It highlights that certain types of projects cannot be implemented unless in each respective case the Director General has issued a certificate in respect of the project in terms of section one hundred following the submission of an environmental impact assessment in terms of section ninety nine (Shoko, 2005:507). As an umbrella piece of legislation, the EMA is progressive in nature as it provides positive environmental rights and principles which encourage the participation of all Zimbabweans in sustainable development (Kusemamuriwo, 2004:5).

2.8.3 The Traditional Leaders Act

The Traditional Leaders Act was enacted in 1998. The Act does not mention direct administrative function of traditional leaders over mineral resources. It gives provision for the setting up of a local traditional institutional framework. The Act confers to traditional leaders' roles which promote the participation of locals in community development through the proper management of natural resources (Mambondimumwe, 1997:15). Section 5 of the Act states that, a Chief shall be responsible within his area for, among other things, ensuring that natural resources are used and exploited according to the law and generally preventing the degradation, abuse or misuse of land and natural resources in his area. The function is bestowed to them on the understanding that local communities respect their leaders and, thus it is possible to influence behaviour patterns of the local people through the use of traditional leaders. In the case of mining projects, the traditional leaders form key representatives of the peoples' views during the consultative processes of EIA (Manzungu & Sithole, 1999:32).

2.8.4 Mining Alluvial Gold Public Streams Regulations of 1991

The current regulation that deals with gold panning is the Zimbabwean Mining Alluvial Gold Public Streams Regulations of 1991 (Statutory instrument 275 of 1991). This is aimed at controlling illegal panning at the same time preserving the environment and as a way of recognising the panners as part of the informal sector instead of hunting them down (Katanha, 2005:10). The regulation instructs, among other things, that every Local Authority should identify public streams in its area where gold deposits may be worked and should apply to the Secretary of Mines for a special grant to assign claims on specified rivers in areas under their jurisdiction. Prospective panners should then apply for permits to exploit the gold deposits from their respective councils provided they are over 18 years and are of a good character residing in the council area (Shoko and Kinabo, 2001:22).

The offer to access panning permits is also open to co-operatives and other associations, provided their members are over 18 years, are of a good character and they reside in the council area. The permit costs an annual fee of \$20 for each 50-meter stretch and should be available at the site of operations at all times when members are working on their deposits (Katanha 2005:10). The grants will be obtained after payment of a fee of \$40. The gold panners are also required by the same regulation to work on their pegged claims only which are three meters away from the banks of the streams and rehabilitate the claims after works. They are supposed to rehabilitate their operations by backfilling. However, these requirements are not followed mainly because of lack of consultative decision-making and monitoring and law enforcement structures (Shoko, 2005:507).

2.9 CHAPTER SUMMARY

This chapter situated the study in its context by looking at the theoretical and conceptual frameworks of literature review, looking at the theory behind literature review and its purpose. It focused on the review of other scholars' contribution to the body of knowledge on livelihoods, rural, community development and gold panning. It also concentrated on the review of other literature on gold panning, case studies and the situational analysis. The chapter explored the evolution of gold mining in Zimbabwe and gave the historical accounts of mining activities in the country. It brought key issues and themes under-pinning the study by reflecting on the Zimbabwean mining sector in general and gold mining in particular, narrowing the discussion focus to gold panning activities in Mutoko District in Mashonaland East Province. The landscape of broader mining activities in the country was also considered. The chapter explored challenges facing mining corporations, organised and registered mining associations, unregistered small-scale mining cooperatives and individual mining vendors like gold panners who take gold panning as an alternative source of livelihoods. The chapter also focused on the contemporary developmental issues in Zimbabwe. The next chapter considers the methodology of this study.

CHAPTER 3: METHODOLOGY

3.1 CHAPTER INTRODUCTION

This chapter highlights how data collection was planned, executed and analysed and also how data quality was ensured. It focuses on the methodological design choices and justification of the choices made. Focus will be on the theoretical framework of the study, the philosophical stance and the methodological approach, study informants, sampling techniques and procedures, data collection methods and tools, data pruning and organisation, data analysis, data presentation, ethical considerations, limitations of the study and chapter summary.

3.2 THEORETICAL FRAMEWORK OF METHODOLOGY

Neuman (2006:6) highlights that methodology is the general research strategy that outlines the way in which research is to be undertaken and, among other things, identifies the methods to be used in it. These methods, described in the methodology, define the means or modes of data collection or, sometimes, how a specific result is to be calculated. Valsiner (2006:16) points out that methodology does not define specific methods, even though much attention is given to the nature and kinds of processes to be followed in a particular procedure to attain an objective. Creswell (2003:20) says that methodology implies more than simply the methods you intend to use to collect data. It includes a consideration of the concepts and theories which underlie the methods. Bernard (2006:10) also adds that methodology is the systematic, theoretical analysis of the methods applied to a field of study and it comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge.

In essence, methodology is the discussion of methods. This includes the theoretical ideas and concerns that inform the use of different methods. It considers what the nature of academic work is more generally, and what this might mean for anyone who explores the topic at hand.

It provides a literature review, discussing what methods researchers have traditionally used to study the kind of topic that the project focuses on and it explains what methods this particular project uses and why (Cavan, 2001:3).

3.3 PHILOSOPHICAL STANCE AND METHODOLOGICAL APPROACH

Though the study adopted a mixed methodology approach, a hybrid of both qualitative and quantitative research methods, it had an apparent bias for the former. Choice of a fused philosophical approach combining qualitative and quantitative methods, techniques, tools, instruments and formats in a complementary ways was deemed necessary and consistent with dictates of eclectic methodological benefits including realization of fundamental need for balance, objectivity and scientific rigor (Creswell, 2003:13). According to Valsiner (2006:6), qualitative data refers to information gathered in narrative form, through individual, group interviews and field observations. Denzin and Lincoln (2000) added that qualitative research focuses on the collection and analysis of full, rich and contextual information about a phenomenon. On the other hand quantitative research focuses on the collection, analysis and presentation of precise, theory-informed numerical information (Bernard, 2006:13).

While the quantitative design strives to control the researcher bias so that facts can be understood in an objective way, the qualitative approach strives to understand the perspective of the research subjects looking at first-hand experience to provide meaningful data (Neuman, 2006, Valsiner (2006). Creswell (2003:ibid) however, argues that by combining the two methods, advantages of each methodology complement the other resulting in a stronger research design that ensures valid and reliable findings. He stresses that the inadequacies of individual methods would be minimised and threats of internal validity addressed (Creswell, ibid).

It is essential to mention that while quantitative elements were used in the study in the form of facts and figures to back up certain assertions and findings, the study was predominantly qualitative in nature because the study was exploratory and it sought to discover new ideas and insights or even generate new theories on the dynamics, prospects and challenges in gold panning and its contribution to rural livelihoods and community development. With the qualitative approach, informants were observed in their natural environment leaving no room for stage management or pretence (Bernard, 2006:7). The qualitative approach facilitated in-depth understanding of issues under study and helped in getting the rich data. It allowed the researcher to interact with the research process and gave room for the contextual interpretation of data in question. It focused on understanding the particular and the distinctive phenomenon and did not necessarily seek to generalise findings to other contexts (Cavan, 2001:27).

3.4 STUDY INFORMANTS

In planning how study informants were to be identified, both practical and ethical considerations were consciously and deliberately made. Some of the obvious practical considerations made during the study conceptual mapping and designing stages included: resource, time, logistical limitations of the study. Equally important was a deliberate decision to exclude minors (children aged 18 years and below) from the sample frame as a way of avoiding known stringent research ethical challenges when children, as vulnerable populations, are involved as either research subjects or research objects.

Since the study design was significantly skewed towards qualitative research design, all key methodological designs and choices were predominantly done to reflect this philosophical bias (qualitative research inclination). Bias for the qualitative research approach as the most preferred philosophical research design, was for example, demonstrated in the choice of interviews, field observations, case and desk studies and focus group discussions as main data collection methods.

Substantial use of qualitative data analysis frameworks including: life histories, content analysis and contextual interpretation of the narrative meanings and emerging data patterns around predetermined cluster themes further showed researcher commitment to a qualitative research paradigm.

The study population that informed the study included government officials, gold panners, community leadership and community members at large. The target population of the study was mixed in the sense that it included both men and women. The study area had a population of approximately 1 000 people. For practical purposes, the study selected a sample frame of 100 people to respond to most of the key research questions. The sample represented the target population in many demographic aspects including age categories, marital status, educational qualifications, social status and income levels. The criteria used in identifying these 100 research informants are described in the sampling techniques given below.

3.5 SAMPLING TECHNIQUES AND PROCEDURES

Various sampling techniques were used in drawing the sample elements representing respective predetermined informant clusters. The clusters included gold panners, community members, community leaders, government officials and local authority officials.

The population size of gold panners in the study area was approximately 150. A representative sample of 50 gold panners, a third of the population was selected for the sample because it was not practical for the researcher to talk to everyone in the research population. Gold panners constituted 50% of the 100 study sample elements. They consisted of and were dominated by young, unemployed, illiterate people from within and outside Mutoko District.

Since gold panning is generally considered to be an illegal economic activity undertaken undercover, the snowball sampling technique was used in selecting the gold panners for interviewing processes. The sampling technique was preferred since it allowed gaining access to informants who ordinarily were difficult to identify without relying on guidance.

A few known people in the gold panner category led the researcher to other informants in similar circumstances who were able to provide in-depth knowledge on gold panning activities in the area. In this instance, each interviewed gold panner was asked to identify or suggest additional panners with the same attributes for interviewing.

The number of government officials based in Mutoko District was approximately 35. A total number of five government officials including the District Administrator (DA), Ministry of Health Head (Community Health Officer), Mutoko District Police Head, Mutoko District Environmental Agency Head and Motoko District Community Development Head were selected for structured interviews. Purposive sampling was used in selecting these Government officials on the basis of their perceived relevance, appropriateness and importance to the phenomenon under investigation (Brace, 2008: 16). The DA, for example, was selected specifically for his relevance in the study since he represents Central Government at District level. The researcher also wanted to hear the opinion of decentralised Government officials concerning gold panners and gold panning activities in Mutoko District. The inclusion of police officers in the sampling technique was necessary especially considering that the law enforcement agencies were often involved in running battles with gold panners as well as monitoring and dealing with criminal and unlawful activities panners engage in. Selection of the health personnel was influenced by numerous health-related issues threatening the panners and communities in general.

Selection of ordinary community members, the mixed population groups of men, and women was done using the systematic sampling technique. The researcher predetermined to take into the study sample community members who had a surname beginning with the alphabetical letter “M”. The general pattern in Zimbabwe is that household surnames starting with the alphabetic letter “M” are relatively more than any other alphabetic letter, therefore, this category was more representative. The Makaha ward surnames beginning with the letter “M” were counted and every 30th number was drawn into the sample.

These community members living in communities near and around the panning sites were chosen to hear community perceptions about gold panners, their behaviour, effects of gold panning activities on the environment, how gold panning affected their community either positively or negatively and how they related with them.

Local authority officials that include ward councillors and senior council officials were selected using a cluster quota sampling technique. Predetermined ratios or proportions were allocated for each cluster for sampling purposes using pre-specified classifications, such as, administrative officials, policy makers and civic leaders (Kallet, 2004:14). The local authority representative officials in the sample frame were first put in clusters and the respective cluster provided specific number of representatives to the sample such that the eventual sample frame was made up of one administrative official, two policy makers and two civic leaders.

Convenience sampling was used in selecting gold panning industry stakeholders, such as, gold mine claim owners, the mining sponsors and private gold buyers into the sample. This technique was chosen because it was based on the availability, willingness, knowledge and convenient time of the stakeholders to participate in the study. Outlined below in Table 1 is an overview summary of sampling techniques used for various categories of the study informants.

Table 2: Overview of sampling techniques used in identifying informants

Informant category	Sampling technique used	Explanation of selection procedure (sampling technique)
Gold Panners	Snowball	Identified one leads to the next informant
Community Members	Systematic	Consider every 30th number
Government Officials	Purposive	Consider relevance and significance of function to the study
Local Authority Officials	Quota clusters	Specified composition ratio (2 official and 3 Councillors)
Industry Stakeholders	Convenience	Based on availability, willingness and knowledgeable

3.6 DATA COLLECTION METHODS AND TOOLS

Data collection methods used by the researcher to collect data included interviews, focus group discussions, observation method, case studies, life histories and desk studies. The researcher used different instruments to collect data from the study participants and these included questionnaires, interview schedules, focus group discussion guidelines, and field observations. Sources of research information included primary sources where raw, unprocessed information or first-hand information was obtained directly from informants' self-reporting experiences. Secondary information was collected from desk studies and other processed information. The researcher was given permission to tape record one-on-one interviews.

Interviews were conducted with gold panners, community leaders and community members. These interviews were done using structured interview guides. The interviews were done in a free atmosphere that was conducive for the interviewees to freely express themselves without fear of being overheard and quoted. Before starting the interview, the researcher created rapport with the participants in order to create a relationship of mutual trust between the researcher and the participants, an environment that enabled the study participants to pour out everything they knew on areas they would have been asked (Kallet, 2004:15).

The researcher also stressed the issue of confidentiality, highlighting that the research was purely academic and all the responses were going to be kept in strict confidence. During the interview, follow up questions and probes were used in order to get clarification and more information concerning the matter in question (Brace, 2008:7). Interviews were recorded using a tape recorder, transcribed and translated. The participants were informed when the researcher would switch on and off the tape recorder at the end of the interview. During the interview process, the researcher would take notes as well. Information considered by informants as personal, sensitive and confidential was collected through one-on-one interviews. Informant responses classified as bio-data and personal life histories were an integral component of interviews held with gold panners.

Gold panners, as key informants of the study, were interviewed in an exploratory manner which sought to investigate the subjective interpretations of the social phenomena. They were interviewed to explore on activities that were undertaken in gold panning, to have gold panners' opinions, perceptions, attitudes and feelings that gold panners have in common. The gold panners were given space to expand their answers and accounts of their experiences and feelings. Themes covered by interviews for gold panners included, gold panners' demographic information that included their age, marital status, gender and educational levels. Other themes that were explored into include gold panners' spending habits, panning motivation, their challenges, prospects of gold panning and their relationships with the regulatory authorities. On average, 30 minutes were allocated for each scheduled interview. Time allocations for individual interviews were carefully considered during instrument design stages with a view to sustaining informant interest and collaboration.

Community members were interviewed in order to collect diverse community opinions and perspectives on the effects of gold panning activities on the environment, social ills, contribution of gold panning to the community's livelihoods and development in terms of business opportunities, marketing opportunities and employment creation. Community leaders were also interviewed in order to have their opinions as leaders on the effect of gold panning on sustainable use of natural resources, effects of gold panning on cultural heritage and social ills associated with gold panning activities.

Focus group discussions for gold panners were mixed as the composition of the focus groups was predetermined in order to get a right mixture in terms of size, social status, gender and age groups. In designing focus group discussion guidelines, emphasis was given on common interest and experience issues. The purpose of the focus group discussion was to see areas of agreements and disagreements amongst the gold panners (Kallet, 2004; Brace, 2008).

Themes covered under focus group discussions included coping strategies, panning motivation, panning processes, panner experiences, panner livelihoods, indigenous knowledge systems, panning challenges, gender dimensions, panning contributions, perceived benefits (pull factors), panning pressure (pull factors) and the relationships of gold panners with government and civic authorities.

The focus group discussions were held under tree shades at gold panning sites. The focus group comprised of 10 participants. Two group discussion sessions were held at different panning sites in order to facilitate comparison and confirmation of group responses to thematic focus issues under discussion. On average, each group discussion session lasted about an hour. The researcher combined discussion facilitation and recording of proceedings. Information relating to common or shared gold panner experiences was collected through focus group discussions.

Self-administered survey questionnaires were hand-delivered to sampled Government Department Officials as well as Local Authority representative Officials. The questionnaires mainly focused on collecting policy related and the interface of gold panning and integrated rural (community) development practice information. The questionnaires were designed to collect demographic information, open and closed responses to coded questions, sentence completion and Likert scale questions. Themes covered included illegality, safety concerns, school drop outs, challenges of containing underground activities, integration of gold panning activities into economic mainstream, public health risks, leakages and seepages, and tax evasion issues. Completed questionnaires were also hand-collected.

Field observations were made as the researcher did transact walks in the community in order to observe different community dynamics and dimensions of gold panning activities without community knowledge that they were under observation.

Passive field observation was preferred to active participant observation since the researcher was mindful of need to remain emotionally neutral while observing gold panners in their natural everyday environment in order to minimise the effect of stage managed and demand-characteristic responses on the quality of collected data (Creswell and Clark, 2011:13).

Much of the field observations had a qualitative thrust, noting community responses, gold panner reactions, body language, and relationships with various population groups, general quality of life and lifestyles. The intention was to observe informants in their natural environment. Information of an observational nature that required researcher contextual and normative interpretation was collected through field observation. Content analysis and desk studies were also done to appreciate Government policies, by-laws and documented case studies relating to gold panning, environmental management and cultural heritage themes. Field note books and diaries were used to record observations, case study narrations, interesting events and direct quotations related to specific study aspects.

3.7 DATA PRUNING

Data pruning was used as a quality assurance procedure since the study used a mixed methodology approach which sometimes would have two response extremes. Because of the diversity of responses, there was need to prune them to have a common ground. In such cases, data pruning was used to moderate different responses to have a common denominator (Creswell and Clark, 2011:17). Data pruning moderated the research data so that it was within an acceptable range.

3.8 DATA ORGANISATION

Data organisation is arranging data according to themes, refining and collapsing many themes to fewer themes (Valsiner, 2006:5). This was done to avoid overlaps and repetitions.

3.9 DATA ANALYSIS

The data analysis framework was considered during the conceptual design stages of developing data collection instruments. Most of the data collection methods used for the study were qualitative in nature. These included interviews, focus group discussions, field observations and life histories. Decisions on data analysis were made prior to the data gathering stage and these were guided by the desired data form and content. From a qualitative point of view, data was analysed in terms of clustered themes, content analysis, contextual meanings and interpretations (Denzin and Lincoln, 2000:23). Data analysis was accomplished through content analysis looking at the emphasis made by informants on a certain aspects asked during the interview, analysing the frequency of words used by informants interpreting and giving meaning of what those words meant to them as well as the feelings and emotions attached. The researcher also analysed even the conversations that were over heard people discussing. These were interpreted and given meaning in context. Analysis was also done through interpreting emerging patterns from each data gathering method. Emerging patterns of informant responses like, the most popular sentiments common among panners, unique information to a specific informant category and the cumulative total pictures painted by all study informants formed the basis of the research findings, conclusions and recommendations.

Data analysis and interpretation was done manually without use of electronic tools, such as, the Statistical Package for Social Sciences (SPSS) as the research data was predominantly qualitative in nature. In particular, part of the study methodology required making contextual interpretations or giving meaning to information which most panners were not prepared to divulge, for example, information generally regarded as quite sensitive issues in their panning operations, such as, their individual average weekly earnings, how they avoid possible police harassment or arrests and discussing political issues of the research catchment area with strangers. In many instances they would suggest we move on to another topic. This indicated that personal and general political views, opinions and preferences during the time the research fieldwork was undertaken was a very hot and sensitive issue that people in Mutoko district did not want to talk about because of polarisation in the national politics.

Quantitative data analysis frameworks were influenced by descriptive accounts of the research question and the various fieldwork steps it was going to take. The data analysis plan ensured that the analysis was to be undertaken in a targeted manner. After data collection, the data had to be systematically processed and that involved data pruning, coding and capturing it in computer templates.

The quantitative data sets developed included information about the bio-data of gold panners, such as age, sex, marital status, qualifications, income and expenditures. Data interpretation was done using qualitative approaches where even the minority views were also taken into account since all informant inputs were taken as important to the study. The researcher would go back to the field to collect information to fill in any information gaps identified during the development of data sets. After data interpretation was done, meanings were given and conclusions drawn.

Study conclusions were drawn on the basis of both an inductive approach where the researcher explained observed social phenomena in the context of an already established theoretical perspective and a deductive approach where repeated consistent results observed over a long time under similar conditions. This enabled the formulation of new theories about the observed phenomena, as well as explaining and giving accurate meanings to both inferred and clear responses that were given to specific interview questions.

3.10 DATA PRESENTATIONS

Quantitative data were expressed in tables, graphs and pie charts. Data were presented in various formats for visual appeal (Khothari, 2004: 15). Qualitative data were presented in narratives, theme based issues, life histories and boxes.

3.11 RESEARCH VALIDITY AND RELIABILITY ISSUES

Data collection instruments were pre-tested on a proxy sample, other informants not included in the study sample but with similar characteristics to the population under investigation to see whether the instruments were giving consistent and accurate responses under similar conditions to ensure validity and reliability of research data (Bernard, 2006:7). Expert input and peer opinions were also elicited with a view to check research instrument validity and reliability of collected data. Triangulation was used to minimise possibilities of researcher bias by working with a mixed methodology (Creswell, 2003:13). The study predominantly focused on common thematic focus issues, areas of consensus and disagreement were used (balance achieved) using both corroborative and empirical evidence to strengthen key study arguments.

3.12 ETHICAL CONSIDERATIONS

According to Neuman (2006:35), research ethical considerations relate to researcher compliance with dictates scientific research obligating researchers to protect informants from any harm, physically, morally, and from any form of prejudice. Ethics in social research is seen as an essential consideration and as such, the researcher was guided by a very strict code of fieldwork practice and conduct premised on values of professionalism, integrity and ethical conduct (Bernard, 2006:17).

The researcher made it clear to participants that participation in the study was purely on a voluntary basis. No threats or some form of incentives were used to coerce participants to participate in the study. Prior to interviews, informed consent was sought from the individual participants, and consent was sought from the household head in instances where the wife or the children were to be interviewed. It was made clear that the purpose of the research was entirely academic.

Some community leaders and some over-researched participants were anticipating some form of token payment for participating in the study. They wanted payment in the form of money or beer. The researcher, however, reminded such demanding participants that she could not make any form of payment since the research was purely for academic purposes and was done on a voluntary basis.

Participants were assured that the voluntarily given information was going to be kept and used for academic purposes only and not for personal gain. The researcher was mindful of need not to go native but to remain emotionally detached, neutral, aloof and to remain professional, focused and ethical in all the interactions with informants. Informants were assured of confidentiality.

The researcher was conscious that the area of study was sensitive in terms of politics and the fact that the gold panning activity was generally considered illegal and could potentially harm or injure informants if the research data finds its way into wrong hands. The mere fact that participants were seen with the researcher who was seen as a stranger was good enough to raise suspicion amongst the community members. As such, all volunteered information and responses were going to be kept confidential and data was going to be held with strict confidence.

There were, however, some instances where participant partners would also want to be part of the interview process or would just want to sit close to their partners so that they get to hear what the discussion was all about. In such instances, the researcher had to explain that the interviews were supposed to be done by individuals only for confidentiality purposes. Use of other scholars' knowledge and contributions were acknowledged.

3.13 LIMITATIONS

The political climate in Mutoko was not conducive for exhaustive field data collection and interactive research processes with all the informants. Numerous stop and search roadblocks were mounted by ex-combatants in rural areas searching all vehicles entering and coming out the research area.

All independent newspapers largely viewed as opposing the ruling party, were banned in the district and development agencies like NGOs were working under political surveillance. The researcher thought that community entry was going to be easy since she had obtained the clearance letter from the District Administrator to go ahead with the research. However, acceptance by the Ward Councillor, the village heads down to the gold panners themselves was challenging.

Even when the clearance letters produced, it would take almost two hours for the researcher to introduce herself and be accepted at each community level. The village security people were suspicious about the research taking into consideration that the student confirmation letter had foreign (South African) addresses. They thought that the researcher had a hidden agenda of bringing a new political doctrine to their community. Consequently, the researcher was put under surveillance from political party activists planted in villages to track all stranger movements and that made the research more challenging.

The researcher, however, survived this tricky situation by adopting a number of fieldwork measures including strict compliance with professional code of practice, following all necessary protocols like explaining the study purpose, moving around with project clearance and approval letters, remaining apolitical and ethical in all community engagements.

Since gold panning is considered illegal in the area, both legal gold panners (those with prospecting and extraction permits) and illegal panners (those who did not have any form of permit) were not easy to identify. They would flee away at the sight of a stranger thinking that the researcher was a Criminal Investigating Officer (CID) on a mission to arrest them. It would be after a period that the panners would gain confidence and trust in the researcher. Because of the illegality of the activity in the area, some panners were not eager to volunteer private and sensitive information thinking that their personal identities would be known and given to the law enforcing agents. The research was also conducted during the day when some panners would be in underground tunnels extracting gold and it was not easy to convince them to come out just for an interview without an incentive or a payment attached, they considered it a waste of time.

3.14 CHAPTER SUMMARY

The chapter introduced research methods and techniques of the study, diverse data gathering instruments including questionnaires, structured interviews, focus group discussions, field observations, desk studies and practice inventories checklists were designed, pre-tested and successfully administered. The next chapter focuses on research findings and data presentation.

CHAPTER 4: RESEARCH FINDINGS AND DATA PRESENTATION

4.1 CHAPTER INTRODUCTION

This chapter presents and analyses research data, interprets emerging data patterns and draws conclusions from the data collected during fieldwork in order to give answers to the problem statement and problems that were stated in the first chapter of the study. Data are presented in tables, pie charts, bar graphs and boxes.

4.2 QUALITATIVE DATA ANALYSIS FRAMEWORK

The framework used to analyse qualitative data included use of themes focusing on issues emerging from interpretation of emerging patterns of data coming out of different data collection methods. Some of the qualitative analytical techniques and tools in the study included use of narratives, transcriptions and interpretations of observed field events.

4.3 COMPOSITION OF THE SAMPLE FRAME

The table below presents the composition of the sample frame.

Table 3. Composition of the sample frame

Informant category	Number of elements in sample	Percentage of sample frame
Gold panners	50	50%
Government officials	5	5%
Community leaders	5	5%
Community members	30	30%
Local authority officials	5	5%
Industry stakeholders	5	5%
Grand Totals	100 Informants	100%

A cross-section of study respondents informed the study. Different informant categories were preferred for the study to allow cross-checking, validation of key informants' (gold panners) responses and to get broader perspectives. As primary informants, gold panners in the sample frame constituted 50% of the total number of study informants. Community members constituted 30 % while relevant Government Officials, Community Leaders, Local Authority Officials as well as industry stakeholders constituted 5% each of the total number of study informants.

4.4 STUDY RESPONSE RATE

Tabulated below is the response rate obtained during field work.

Table 4. Study response rate

Informant category	Targeted number	Actual responses	Response rate
Gold panners	50	50	100%
Government officials	5	4	80%
Community leaders	5	5	100%
Community members	30	30	100%
Local Authority officials	5	5	100%
Industry stakeholders	5	5	100%
Totals	100	99	96.7%

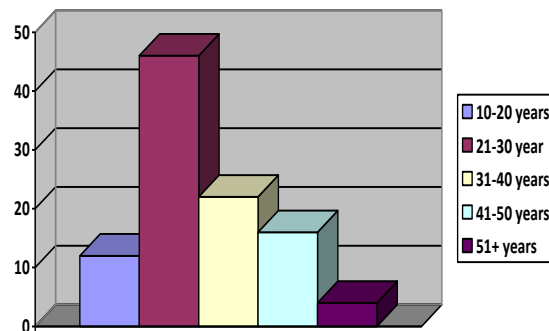
The study response rate was quite high with 100% response rate in all informant categories except the Government officials which had an 80% response rate. This was attributed to their busy schedules which made it difficult for them to attend to the questionnaires given out to them. Only one Government official did not respond to the questionnaire because he was constantly out of office on duty.

4.5 DEMOGRAPHIC PROFILES OF GOLD PANNERS

The demographic profile of gold panners covered the age of gold panners, their status, and educational levels.

4.5.1 Age distribution of gold panners

Bar Graph 1. Age Distribution of gold panners



Informants were not selected according to age but age categories came from the interviews conducted as shown from the above diagram. It is clear that the panning activities are dominated by young people aged between 21-30 years (42% of the informants) followed by those aged between 31-40 years (22%). The number of gold panners in each age category decreased as the number of years increases as indicated in the bar graph above. Only 16% of the gold panners interviewed were aged between 41-50 years. The number further went down to 4% in the 51+ age category.

As is shown in the above diagram, age is an important factor in gold panning activities. On close analysis of this phenomenon, it may be concluded that gold panning is dominated by young people in the 21-30 age group (42%) who cannot easily be absorbed in formal employment especially considering that the Zimbabwean economy has been shrinking in the last decade. This observation gives credence to observations made by Kori (2006:13) who attributed the age variable in gold panning activities to the physical demands required in the panning activities.

The fact that only 4% of the panners are in the 51+ age category confirms his argument that as people grow old, they no longer have the physical energy to actively participate in panning operations.

4.5.2 Marital status of gold panners

The concept of marital status has also proved to be an important factor when talking about gold panning. It has emerged that there are more married people in the gold panning sector than unmarried ones. This can be explained by the notion that most people were pushed into gold panning in a bid to fend for their families. They have nothing else to do to support their families except falling back on gold panning activities as a way of sourcing for a livelihood unlike their unmarried counterparts who do not feel obliged to be involved in gold panning since they do not have anyone to take care of. This is explained clearly by the life history in Box 1.

Box 1: Life history highlighting responsibilities of a married gold panner

'My name is Pedzisai. I was born in 1972 in Mushimbo Village, Mutoko. My village is about 30 km from this panning site. I am married and a father of four children. I have a second wife now. The first one left after I caught her with a boyfriend. I went up to form four but I did not do well in the exams. I had four subjects. I started working for a certain gold mine in Shurugwi when I was eighteen years in 1990. Then things were still fine and the economy was still stable. I got married to my first wife and had three children. With the salaries I was getting from the mine I managed to open and run several grocery tuck shops in Shurugwi and was able to take care of my family well. I was able to send them to one of the most expensive schools in Shurugwi. However, things began to crumble and the economy went down around 1998. Things changed and started moving the other way round. My tuck shops went down. I did not have the money to keep on stocking the tuck shops. Whenever I would stock the shops, I would run a loss after selling the groceries because prizes were continuously rising. It was difficult for me to go and buy some more stuff to put in the shops using the profit from the previous sales because it would have been blown by inflation. Most people lost their jobs and some left on their own. I am one of the people who left on their own. I joined gold panning so that I could take care of my family. As a father I could not just sit back and look at my family suffering. I just had to do something to provide for my family. That is how I am earning a living through gold panning'.

The unmarried people involved in gold panning may have other motivations besides providing for their families as explained below in the gold panners' expenditure habits or are forced by a situation beyond their control. This came to be true especially with single mothers involved in the gold panning sector. Since these women are not married, they themselves have to act as the heads of households and be involved in such risk and tedious adventures in gold panning in order to take care of their families. Only a few married women get into gold panning in search of financial freedom so that they do not solely depend on their husbands for everything.

Asked why she is involved in gold panning, one married woman stated that she needed to be independent financially. She said, “I am now independent financially and I no longer rely on or have to go and beg my husband for money to buy a small thing like salt. I can do that on my own”.

4.5.3 Educational levels of gold panners

Educational profiles of gold panners were also an important feature that came out on the demographic information of gold panners during the research. The table below shows the different levels of education of people involved in gold panning activities.

Table 5: Gold panners’ educational levels

Age	Primary Level	Secondary Level	Tertiary level	Professional Qualifications	Total
10-20	4	2	-	-	6
21-30	8	10	5	-	23
31-40	-	-	6	5	11
41-50	5	3	-	-	8
51+	2	-	-	-	2
Total	19	15	11	5	50

It is important to note that since stringent ethical standards apply where children under 18 years are used as either research objects or research subjects, as already indicated in paragraph 3.4 above, the researcher was satisfied that all the 6 informants in the 10-20 age category were not minors.

The educational levels amongst gold panners range from primary level to levels where people have their job qualification and are already working. The trend in the above table shows that the number of gold panners decreases as we go up the ladder in terms of attained educational qualifications. 38% of the gold panners went up to primary level, 30% stopped school at secondary level, 22% have tertiary qualifications and only 10% have professional qualifications.

The data above shows that gold panning is dominated by young people who only went up to secondary level in terms of their academic achievements. The majority of the informants, 38% of them do not have any academic qualifications. They do gold panning on a full time basis because they do not have any source of income or have anything to fall back on except selling their labour to earn a living. A young man aged 20 said, “I do not have any academic qualifications at all. I only have two certificates in my life. My birth certificate and my grade seven certificate. I went up to Grade 7. I could not proceed with my school because all my parents are late. There was no one to pay my school fees and had to find something else to do instead. Panning is the only job I could do which does not require any academic qualification and here I am”.

People who have their professional jobs are also involved in gold panning. The number of people in this group is relatively low, only 10%. These people are not involved full time into gold panning. They do it on a part time basis. They usually come into gold panning in the form of sponsors of panners, who sponsor gold panners with equipment needed for gold panning. Sponsors might be educated or uneducated as well depending on how one got the chance or the opportunity to get the money to sponsor the panning activities. In this instance, one gold panner happened to get a lot of money from gold panning and then decided to invest his money in buying assets used in gold mining and become a sponsor to gold panners and those who own gold claims. Some sponsors are actually professionals, accountants by profession. They have their formal jobs elsewhere. They are involved in gold panning on a part-time basis because they are fully employed elsewhere. They are involved in panning to supplement their income as shown by a quotation in Box 2 below from Mlambo, a 37 year old married man, an accountant by profession who sponsors one gold claim.

Box 2: Gold panning pull factor for educated gold panners

“I get more money from gold panning than I earn at my work place. In essence, I just keep my job for security reasons so that if I fail to get anything from gold panning I know I will have a salary to lean on and it is constant and definite. You know that come what may, at the end of each month I am getting something. That helps me plan ahead and that salary is the one I use to cover my medical aid bills and other insurances since it is covered at my work place”.

People in high political offices are also involved in gold panning activities in the form of contracted gold buyers. These have their businesses somewhere but they, however, joined gold panning for different reasons as highlighted in Box 3 below.

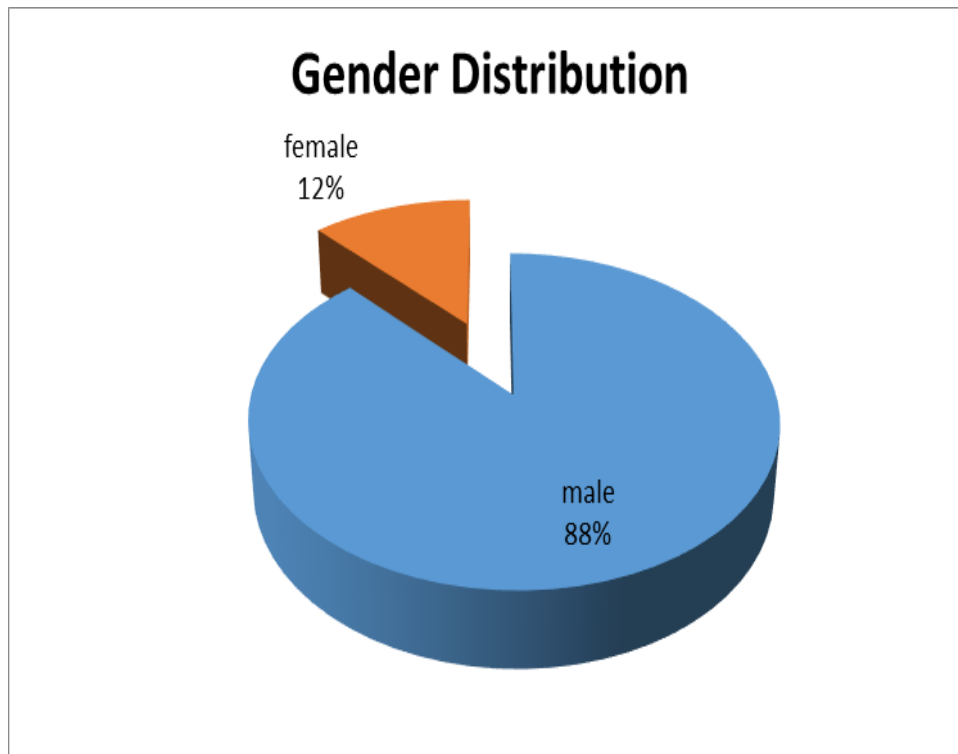
Box 3. Gold panning pull factor for politicians

“I am 42 years. I am married and to one wife and am a father of three handsome men. I have a Master’s Degree in Political Science from the University of Zimbabwe. I stay in one of the posh suburbs in Harare. I have businesses all over the country. I specialise in clothes manufacturing and I supply numerous shops. I also have electrical shops. I travel a lot. On top of that I am also a politician, an aspiring Member of Parliament (MP) to be precise for the opposition party. I contested for the MP position in our last elections and I lost out to the ruling party. I will not throw in the towel. I will not give up. I will keep on fighting until I get to that position. Anyway, I joined gold panning for numerous reasons. I want to diversify my businesses and when I buy and sell gold, it is one of the easiest ways of making big money out of nothing. There are no hustles at all. As an aspiring politician I need to have lots and lots of money at my disposal. Also by interacting with many people at different levels especially in my constituency, I gain political mileage. I become popular and these are the people who will vote for me”

4.5.4 Gender distribution in gold panning

The gender distribution amongst gold panners shows that the gold panning activities are normally dominated by men.

Pie Chart 1: Gender distribution among gold panners



Demographic data shows that there are more men than women in the gold panning sector. The pie chart above illustrates the gender dimension in gold panning activities. Men constituted 88% percent of the sample population while women constituted only 12%. The fact that there are more men than women can be attributed firstly to the nature of the occupation itself as was highlighted by Mukumbira (2002) that there are some jobs which by their nature can only be done by men.

Gold panning, because of the extensive manual labour, fewer women are being actively involved in the panning process as compared to their male counterparts. The harsh working conditions of gold panning excluded most women from gold panning leaving it a male domain.

It involves a lot of hard work. It came out during the research that gold is not easy to find. It is not easy to come by especially in reef mining where tough methods are used to extract the metal. This trend could be attributed to the nature of gold panning activities. Most sector activities are physically demanding, tough, risky and require being away from home for long periods and this naturally tend to keep women and girls away since these broadly fall under categories of jobs which by their nature are predominantly masculine and usually done by men.

The metal is found underground in granite rocks which need to be blasted, crushed and then separated. Even in alluvial mining which uses the simple methods of extraction, a lot of labour is involved. Matthew, a twenty year old man said, 'Ah, *panofiwa apa* (meaning 'it is hard work'). We can carry up to two tonnes of soil by head to the river or washing place and after all that labour we can recover only two grams of gold but I think it is better that way than to sit and watch my children die of hunger'.

The ratio of female to male gold panners at alluvium panning sites is much higher than at reef sites. Experiences from a case study done by Kori (2006:4) in Shurugwi have shown that at such sites, women and children dominate day-time operations while men operate during the night carrying out under-ground panning activities that are believed to be more dangerous, risky and physically challenging unlike alluvial surface panning which is ideal for women and children.

The migrant nature of gold panning activities also contributes to the exclusion of women from active and direct involvement. In rural Zimbabwe, it is quite common for most women, especially married ones, to be left at home, taking care of the family and doing all agricultural activities while husbands venture out in gold panning. It was also interesting to note the evidence of gender dimension during the study as women at panning sites played peculiar roles in the panning activities. Four percent (4%) of the interviewed women were independent operators who were managing their own mines. They said gold panning has strengthened their economic disposition.

Some women boasted that they were actually earning more than their husbands who had formal jobs. One female gold panner said, “I no longer have to look to my husband for all the domestic requirements. I can provide some of them from the proceeds I get from gold panning”. The financial empowerment of women has shown to result in both nutritional status and care of children.

A form of division of labour and specialisation was also evident in terms of roles played by members of each family in a mining operation. It seems the physical disposition and accessibility of the gold determined these roles. For selective vein mining, men are the ones who go underground to extract the ore manually by hauling it to the surface. Most women pound the ore, fetch water and play a greater role in the amalgamation process. Children tend to be assisting their parents than panning for themselves.

4.6 RESEARCH FINDINGS

In presenting the research results, findings and conclusions on each objective were highlighted and discussed.

4.6.1. Objective number 1: To explain the theoretical framework of the study.

Based on the empirical and corroborative evidence presented in the diagram showing the relationship between livelihoods assets and relationships, key elements of the CA approach as espoused by Sen were identified, examined, explained and applied in the context of gold panning in Makaha ward of Mutoko District [Research area]. Issues of freedom, choice, self confidence, empowerment, poverty alleviation, opportunities and abilities were thoroughly explained in relation to gold panning, rural livelihoods and community development.

4.6.2 Objective number 2: To analyse gold panning as a rural livelihood and community development strategy

As a rural livelihood strategy, gold panning was seen as a means to an end. Gold panning gave gold panners opportunities in the form of income to facilitate their access to diverse social services [Education, health, accommodation or housing] that in turn improved the overall quality of life that they so desire. Ranganai, a 43 year old man, gave his life history to confirm this viewpoint in Box 5 below.

Box 4: Gold panning as a livelihood strategy

“I was born in 1970 in Makaha village, Mudzi. I am married and have two children. I am a trained and qualified nurse. I worked for Harare Hospital and later joined another Private Hospital. I, however, resigned from work in 2008 when things got tough. Our dollar lost value as you all know. I was staying in Budiriro that time and required two taxis to get to work. Our salaries dwindled to the extent that one month’s salary could not be enough for me to get a single taxi home. This is because the fares were constantly changing and would change three times in a day. When you go to work in the morning you will be having a different fare from yesterdays. The fare would have doubled, in the afternoon that fare would have trebled? In the evening after work it would be a different story. What was exciting most during that time was that you would use more money than your salary to go and get your salary from the bank. So all I was doing was looking for money for transport. I then seriously thought about it and saw that I was actually going nowhere. I then decided to quit, go back home and join others who were doing gold panning. To my surprise they were doing better than me yet they were in rural areas. That’s how I began doing gold panning and here I am. When I started doing gold panning, my life was revived again. I was selling my gold to foreigners, gold buyers who were coming from neighbouring countries like South Africa, Zambia and Mozambique to buy gold. I am sure you have seen some of the cars of the gold buyers. They have foreign number plates. We would sell the gold in foreign currency and would change it at the black market. I got money my sister and I managed to build my four roomed house back home. I managed to send my children to good schools, have decent meals and proper clothing using money from gold panning. I bought ploughs, scotch cart and a harrow and when the farming season approaches, I am well able to prepare for it. I am earning a big deal here and life is moving on well. I appreciate gold panning a lot”.

Gold panning as a livelihood strategy was also demonstrated as a means to an end during the research when gold panners highlighted that gold panning is their only means to survival.

Research findings showed that gold panning is actually a source of livelihood to many people in the research area. One participant said, “Gold is our God-given natural resource that we survive on in this community. We earn a living through it and it is our only way of survival”. One community leader said, “Gold is our God-given natural resource which is communally owned and we make a living out of it as a community. Every person in this community is free to do gold panning because it is our communal resource”. The finding is in support of Sen’s approach that underscore need to promote beneficiary capacity to exploit locally available resource for own personal or collective benefit. During the research, it was observed that the area is rich in gold deposits as evidenced by pits that were all over. Some community members were noticed panning gold even at their doorsteps.

Some of the gold is found on the ground surface and is available to everyone to such an extent that the local people see and access it anytime. One female shop attendant said, “We wake up as early as four o’ clock in the morning to sweep the surface soil that we simply go and wash in the river to get gold” During a focus group discussion one young man said, “On a good day you can produce about 30 grams of gold. A gram costs between \$30 and \$35 depending on the buyer and the day”. He went on to say that although the returns from gold panning are sometimes very low, they have been kept in the business by the need for survival. “Sure the discovery of the mineral has brought some relief for the people in the area and has helped them meet their different needs”.

From the focus group discussions it came out that even the local leadership is also involved in the gold panning process. The gold panners said everybody including the local leadership is involved in gold panning. They said it is more of a communal activity in which everybody, young and old participate.

Responses from the focus group discussions held with gold panners identified at the shopping complex indicated that almost every person who was at the shops was a gold panner.

One of the participants in the focus group discussion actually said, “Everyone you see here sister is a gold panner. Many of them are here and are eating their money as we speak”.

As an end itself, gold panning gave gold panners a sense of self respect, self-satisfaction, boosted self-confidence and a dignity that comes from working. During an interview one gold panner said that despite all the hard work and risk involved in gold panning, people just flock to gold panning because that is the only available and feasible means of survival that any person from every walk of life can depend on, from the most to the least educated ones even the ones without any educational qualifications. They know that if they go and do gold panning, in one way or another, they will not come back empty handed despite the risk involved. This attitude was confirmed and summed up by one gold panner who said, “I would not mind even if I walk away with three dollars. It means a lot to me. Half a loaf is better than nothing. I consider it better to work for three dollars than just to sit at home doing nothing”. This finding agrees with Sen’s notion of freedom in his CA where people has the freedom to use what they have to achieve things they value (Sen 1995:15). In this finding, gold panners despite the risk involved in gold panning, they had the freedom to get involved in gold panning to get a livelihood.

Casual talks, engagements and interactions with the research community were revealing in terms of uncovering and explaining some of the puzzles of the commonly held community perceptions on gold panning. These included very strong population feelings and general consensus that only local people and groups should have unlimited free access and beneficiation to community resource like gold. A common observation made during the research period was that the community accepted, justified, defended and approved gold panning activities done by locals as a means of empowering the unemployed youth as was attributed by LENDRIZ (2012).

Most of the local community members for example were overhead by the researcher saying “Gold panning is a lucrative and rewarding alternative source of livelihoods for local youth and unemployed people in our area as there are not many employment opportunities here”.

Gold panning as a community development strategy gives gold panners opportunities to receive structured support by the government and other service providers in the form of government extension services like skills transfer, loans and technology that results in empowerment. This capacity building can be easily done when gold panners are organised and not as scattered individuals. Recently, the Government of Zimbabwe unveiled a 10 million dollar budget to support the gold panning activities. Gold panning as a community development strategy as well offered panners with an opportunity to present their issues with one common voice. They did this by successfully lobbying for the decriminalization of gold panning activities hence the unveiling of the 10 million budget to support the activity. This finding is in support of Sen’s CA notion of empowerment that people must have financial support in order to break the poverty circle and to avoid dependency syndrome on external support (Sen 1995:15). An empowering approach to development through capacity building puts community members or the poor at the centre of development and views them as the most important resource rather than as the problem. It entails community involvement in the provision of socio-economic infrastructure and services so that they take ownership of interventions (Chambers 2005, Sen 1995).

Literature findings showed that gold panning also gives gold panners an opportunity to participate in the mainstreaming of the national economic activities through contributions made when they pay taxes, royalties and development levies to the Government and the responsible local authorities. These levies improve the community when they are used in the construction and maintenance of structures like roads and bridges.

Literature research found that the ZANU PF now regards gold panning as an opportunity for youth employment creation, which is one of the oippare sof community development. The liberation political party encourages gold panning as a measure to create employment for the many educated and unemployed youths, school leavers who are finding it difficult to find formal jobs in the shrinking economy so that they become self-employed (The Herald, 06 February 2012). With the historic economic meltdown experienced in Zimbabwe since 2000, many mining companies have laid off many employees as they abandoned even some yielding mining tunnels and this has had the effect of ballooning the Zimbabwean national unemployment rate estimated to be around 90% (Government Census, 2012).

4.6.3 Objective number 3: To establish the relationship between gold panning and rural livelihoods

Research findings showed that there are relationships between gold panning and rural livelihoods. Use of gold panning earnings to improve agriculture, to improve people's access to social services like education, health services, leisure and recreation facilities creates a demand for the construction of the social infrastructure like schools, clinics, leisure centres and this results in community development. Improved agriculture leads to improved household food security which together with all other services results in the well-being of individuals, households and communities. Improved agriculture also creates a demand for the construction of road networks that would eventually lead to community development. Table 6 below shows and the following discussion shows the spheres in which gold panners spend their income from gold panning that affect the essential elements and components of community development.

Table 6: Gold panner's expenditures

Age Group	Agriculture	Education	Health	Subsistence	Leisure	Total
10-20				3	3	6
21-30	4	3	1	5	10	23
31-40	4	2		5	-	11
41-50	3	2		3	-	8
51+				2	-	2
Total	11	7	1	18	13	50

Interviews conducted with gold panners showed that gold panners spend their money on education of their children, health care, leisure, like going for beer drinking and playing games. They also spend their money on agricultural activities like ploughing, growing food crops like maize and cash crops like tobacco and cotton. Interesting to note is that the greater numbers of gold panners (36%) spend their money on subsistence, (26%) spend their income from gold panning on leisure. Twenty two percent (22%) spend their money on agricultural activities, 14 % invest their money in their children's education and only 2% spent it on health care.

Interesting to note is that the spending habits differ according to age. The 10-20 and 21-30 years age category spend most of their money on leisure. Chidhuza, an 18 year old boy said, "To be honest with you, whenever I get money here I drink all of it. I will drink until I vomit. What else would you want me to do? I'm not married, I don't have children. For your own information I move around with my whole family in my waist, they are in my loins. So whenever I get the money they will help me eat it".

This behaviour can be attributed to the fact that young people do not have families to take care of. They do not have children to send to school, hence no need even to invest in agriculture. Most young panners live on a hand to mouth basis. They do not plan for the future hence no development even in their own personal lives. Their money is mostly directed to buying leisure-related gadgets like radios, cell phones, satellite television dishes, solar panels, clothes, food and beer. In Zimbabwean rural set up, such gadgets are not a priority. They are secondary depending on how much a person earns.

Interviews revealed that these young age groups do not plan or budget for their money. They use the money as it comes by. They said they cannot plan their future basing on money found through gold panning because they do not know when they will get the gold. To them their future is uncertain. When they were asked why they behave in such a manner, one gold panner said, “you cannot plan for the future through money found in gold panning, you are not God. Gold is just a fortune which comes once in a while. So you cannot plan on the assumption that in case I might get a fortune”. In the case that one gets a lump sum of money and the money is not planned for, they become so overwhelmed that all they can do is to go and drink all the money.

They do not think that the money will one day get finished. Gold panners also pointed out that such money is easy to spend because you would not have worked for it. It would be something that you would have just come across maybe without any effort so it is very easy to spend anyhow. Luke, a 15 year old single boy said, “I tell you if I happen to get a gold nugget I will drink all the money like no man’s business. We believe that we have to spend it all so that we can go and look for the other money. When we still have the money we will not have the drive to go and look for some more”. Some gold panners, because of life responsibilities, tend to plan and use their money in constructive ways. The life history in Box 4 reflects this tendency.

Box 5: Gold panning as a source of livelihood

“I am 31 years and single. I stay here in Mutoko as well. I went up to form four but I did not do well. I do not have even a single subject so I decided to stay at home. My father is late. He succumbed to HIV/AIDS. My mother is still alive but is also HIV positive. We stay at home the two of us. I oversee and do everything at home since my mother cannot do any hard work now because of her medical condition. That is the reason why I cannot come and do gold panning on a full time basis. My elder brother and my three sisters are all in Harare. They help us with the money here but we cannot entirely depend on him for everything we need. I need to be responsible enough and fend for myself. I am a man on my own. I came here to do gold panning on a part time basis and that is what I always do. The main reason why I came here is that I want to get married. (Giggles). I need to get money to pay lobola and to prepare for the wedding. Can you believe it. I know my brother will chip in but I need to have something that I will contribute myself and I will need to take care of my wife after the wedding. So far I think I have gathered a quarter of the monies that I need”.

4.6.4 Objective number 4: To determine effects of improved rural livelihoods on community development.

Although gold panning has been labelled wasteful of a depleting resource due to high grading (cherry picking) and hazardous to human and environmental health, the study has proved that it empowers the economically disadvantaged communities and has the capacity to enrich nations and regions as attributed by Maponga and Ngorima (2002) and Maponga (1997).

Study findings have shown that indeed there are relationships that exist amongst gold panning, rural development and community development. Poverty reduction as one of the indicators of rural development is one aspect gold panning has managed to achieve. Money gained from gold panning and from buying and selling activities that take place at gold panning sites changed things significantly.

The study showed that on average gold panners produce between 0.2 and 1 gram of gold per day. Taking into account the prices paid in Mutoko during the time of the survey, this translates into between USD18 and USD89 income per day. Having indicated that they work on average six days per week producing as much as five grams per week, this earns them approximately USD446 per week during good days and this is close to the estimated USD625 that the average Zimbabwean family requires per month for a decent life (Maponga and Ngorima, 2002). Earnings from gold panning reduce poverty and make a significant contribution to the welfare of gold panners.

Evidence from observations made during the research showed that gold panning activities brought about market opportunities into the community where gold panners became a source of a ready market for people in Mutoko. The researcher observed that there was the mushrooming of flea markets, canteens and electric shops at the two shopping complexes which are two kilometres away from each other separated by a small stream where most people do the alluvial gold panning. Retailers come to do business in the community. Casual talks done by the local business woman revealed that business was doing well because of gold panners. She said, “These days business is doing extremely well”. She secured a cooking place where she cooks *sadza* (pap) and different types of relish like beef, Mopane worms, cattle offals and trotters. Her prices are thrice the normal prices of food in other places. A plate of *sadza* and beef costs \$1 in other areas but she offers the same plate for \$3. Her business is running smoothly despite the fact that she charges exorbitant prizes. The same applies to other grocery, clothing and hardware shops. They attributed this to the fact that panners have money and they just buy what they want and they do not consider how much the thing costs. The panning site has also become a market for market gardening produce. Mutoko is well known for market gardening, so gold panners have become a ready market. People produce their vegetables and they sell them to gold panners.

The availability of market opportunities alone meant income generation to the rural populace and employment creation to locals employed in retail shops contributing to rural development. As supported by Mahlangu, (1992) gold panning has become a source of livelihood to a significant number of people in Zimbabwe especially the rural populace and has the greatest impact in the sustaining of rural economies.

Guvamombe carried out a study on gold panning in Rusitu Valley, Chimanimani Zimbabwe. His observations gives credence to the research finding highlighted above. The following quotation from the case study shows how business in local communities has been revamped by gold panning activities.

‘Business people at Kurwaisimba Business Centre enjoy brisk business. Day and night the panners never rest. When others leave, others would be coming in. Gold buyers come and stay at the business center with ready cash. Suddenly, a huge flea market is thriving in a manner that would make any vendor at the popular Mupedzanhamo market place in Harare grin with envy. Actually, there is an assortment of merchandise’ (Guvamombe, 2013:2).

A lady cross border trader said, “panners buy things. They work for their money and they want to enjoy it. They buy beer in crates, radios and cell phones”. Suddenly there are too many prostitutes from Chipinge and Chimanimani towns and the night clubs here do not close. It is now a 24 hour service”. Phiri (2002) supports this finding showing how gold panners have become cash cows for enterprising women by availing themselves as ready markets for women in business.

Another evidence of gold panning contributing to rural development was the realisation that indeed there is a relationship between gold panning and agriculture, an indicator of rural development as well. The study concluded that gold panning, agriculture and economic activities are intricately linked. From the research it came out that gold panning contributes to agricultural development. This is because proceeds from gold panning are injected as capital into agricultural production.

Fifty percent (50 %) of the gold panners interviewed said that they use the money they get from gold panning to boost agriculture. They use the money to buy fertilizers and maize seed in preparation for the next farming season. The boosting of agriculture means an improvement to rural development since agriculture is one of the indicators of rural development (Scoones, 2009).

Another 20% of gold panners interviewed said that they also use the same proceeds to pay for medical expenses and for paying children's school fees. A 35 year old male gold panner said, "Whenever I get money, I put aside school fees, money for groceries, medical expenses, maize seeds and fertilizers".

Chipenzi, a 45 year old man said, "Sure if you are organised you can make a living and plan your future out of gold panning. Personally I am sending my children to school, I buy them new uniforms whenever they are needed and last year I managed to buy three bags of fertilizers, a pocket of maize seeds and an ox drawn plough and my life is moving well".

The research results have also shown that gold panning has provided employment opportunities for the unemployed educated youths. They see gold panning as a form of employment. The generation of employment leads to higher incomes, savings, investment and provision of adequate health services. Responses from focus group discussions and interviews showed that gold panning was actually taken as a form of employment. One hundred percent of the gold panners interviewed agreed that gold panning created employment for them. Regi, an 18 year old boy said, "Gold panning created jobs for us. We now have something to do". Interviews with community leaders showed that gold panning activities have created employment for most unemployed youths in the community where everyone even the uneducated get involved in doing something. Gold panners see gold panning as a full-time employment. They do not do other things or are employed elsewhere to supplement their income since they get higher proceeds from selling gold. One gold panner said, "On a good month most gold panners earn approximately US\$2 000.

One focus group discussion participant actually said, 'I am full-time here. I am busy throughout the whole day and do not have time to rest. I see no reason why I should look for another employment somewhere'. One participant said he wakes up at around five o'clock in the morning and goes to the panning site. He only breaks to have his lunch he gets from women who cook and sell sadza at the site. He dismisses himself from the site at around four o'clock in the afternoon. After "work" that is when he goes to have a social life at a rural service centre near the site till eight o'clock in the evening. Some shop owners have also employed the local people in their shops as shopkeepers, thus creating employment again for the community. Incomes earned through the creation of both primary and secondary employment opportunities raise the community's standards of living.

Evidence supporting the finding that there is a relationship between gold panning and community development is that there has been an improvement on infrastructural development back in communities where these gold panners come from. During the observation, a handful of new housing structures were noted dotted around the community. Upon enquiry it was confirmed that these structures were constructed by men who were involved in gold panning. Moreover, these houses were electrified and had satellite dishes on them. In the Zimbabwean rural context, the building of a modern house in a rural set up, use of solar power and use of satellite dishes are all indicators of development. One community member said that, 'some gold panners are doing very well. Some have come to build very beautiful houses and buying cars as well'. Some shop owners and some individuals have managed to electrify their homes using money they get from doing business with gold panners. Using the measures of sustainability as a point of reference, gold panning is seen as a sustainable livelihood.

4.6.5 Objective number 5: To identify challenges associated with gold panning activities

Research findings showed that there are a number of challenges associated with gold panning. These were put into two broad categories, effects of gold panning on the physical environment and the effects of gold panning on health and safety issues.

Effects of gold panning on the physical environment: Research data confirmed that gold panning affects the natural environment. The research has shown that gold panning affects and is detrimental to the natural environment. The environmental problems associated with gold panning that were highlighted during the research include vegetation destruction, sterilisation of resources, river siltation and chemical pollution from mercury (Maponga and Ngorima, 2003). This finding is supported by a case study conducted in Mozambique by Mawere (2011) who advances the argument that gold panning cause more harm than good to humans, non-humans and the natural environment. In his study Mawere (2011) concluded that while gold panners consider gold panning as their key and sole means to survival, the number of negative effects of gold panning seems to outweigh the merits that the activity brings to society. To support the above finding, the local Member of Parliament of the research area, bemoaned the extensive environmental degradation brought about by an increase in gold panning in his constituency, a situation he said has proved difficult to address. He said, 'Land degradation is one of the greatest challenges that are brought about by gold panning in the area'. He went on to say, 'There are many gold deposits in my constituency. As a result, from Mutondo Township to Makaha down to Rwenya, gold panners destroy land, forests, water sources by indiscriminately digging up anywhere in search of gold. There are holes as shallow as two meters to tunnels running up to eight meters long underground as the panners follow up the gold belts. Photo shows deep tunnels dug by gold panners.

Photo 2: Deep tunnels dug by gold panners



One of the community members added that the level of environmental degradation was worrying because the gullies created by panning activities were a safety hazard in the local area, not only for people but for livestock as well. He indicated that one community members lost his cow after it fell in one of the pits left open by gold panners. In an interview, the Councillor said that though beneficial in some way, panning activities were disrupting the smooth running of developmental activities in his ward. He remarked 'Sometimes I postpone important meetings organised to update people on developmental issues of my ward because most of them are out scouting for gold'. He also lamented the pollution of rivers in the area with the potential threat of the rivers drying up due to siltation. The box below is from a case study carried out on biodiversity conservation and artisanal gold mining in Chimanimani, Zimbabwe by Gandiwa and Gandiwa. It gives credence to the finding that gold panning is detrimental to the natural environment. It shows how destructive gold panning activities can be to the natural forests and the environment.

Box 6: Case study on gold panning environmental degradation

‘At the Allied Timber plantations in Rusitu valley, Chimanimani, huge pine and wattle trees lie dead, fallen and scattered, crisis-crossing over a more than 40 hectare plantation of pine and wattle trees. The plantation has been turned into deep dongas and a graveyard for dead trees by marauding gold panners. One of the gold panners boastfully said, “It is unfortunate that these big pine and wattle trees have to be brought down during panning and the plantation owners are not going to be able to harvest their trees. This is because even the roads here have been heavily destroyed. Believe it or not, people are making money here”.

About three decades of nursing and nurturing of the pine and wattle trees that should have culminated in a lucrative timber venture at Allied Timbers in Rusitu Valley, have been ground to naught by illegal gold panners. Allied Timbers, formerly Forestry Commission, has lost the battle to the gold panners.

Without urgent intervention, the level of environmental degradation will remain one of the largest scars on Zimbabwe’s landscape. The panners have diverted a nearby stream to have easy access to flowing water and that has had downstream effects. This is another gold rush, which if properly mined. Zimbabwe could go a step further in deriving maximum benefits from its vast mineral resources. It is sad that after years of treating and managing the plantations, fighting veld fires, pests and baboons, human beings are destroying the huge trees at the point of harvest.

(Gandiwa & Gandiwa, 2012:14)

The nomadic and migratory nature of gold panners was highlighted by community members as a major contributor to massive environmental degradation. One community member said, ‘The nomadic nature of gold panners’ activities means new settlements have to be constructed as panners move to new sites’. This is because the pole, dagga and grass thatched houses are a common feature in most panning sites. The use of timber as a primary construction material results in mass deforestation and land degradation.

Effects of gold panning on health and safety: The widespread use of mercury by gold panners for final gold recovery is a major health hazard pointed out by community members and the health personnel during the research study. Health personnel pointed out that, gold panners handle mercury without protective clothing and they burn amalgam in open areas which is hazardous to human health (WHO, 2001). The study also revealed that gold panners roast ore indoors which results in inevitable inhalation of mercury fumes which is detrimental to human health. Water collected along Nyahunure River exhibited unusual high levels of mercury. Results of case studies done along Umzingwane River also confirm this finding.

Research findings also revealed that gold panners face health problems arising from poor sanitary conditions, lack of ventilation, dust and contamination of water by faecal matter. Indirect health problems include malaria and AIDS. It came out during the interviews with the community members that gold panners live nomadic lives, moving between the panning areas and their communal homes to live temporarily next to the sources of alluvial gold. As a result, temporary structures have sprung up in the vicinity of water channels as panners move closer to the panning areas. Evidence obtained through observation showed that gold panners just put up temporary structures of poles and plastics to shelter them. Since most of the houses in the gold panning areas are temporary, no attempt is made to provide safe water and proper sanitary facilities.

As a result, there is no safe drinking water. Panners make use of the available little water and the environment is littered with human waste and domestic garbage which pose a health hazard to the panners and their families. This makes them prone to bilharzia, dysentery and typhoid. The following photo shows the poor conditions gold panners live in.

Photo 3: Gold panners during lunch time



Coming out in the picture is the king of food and water that gold panners use depicting the conditions gold panners live in.

It also came out that the risky and daring behaviour of some gold panners pose a serious health threats to the life of some gold panners. Some gold panners lead a risky life considering the type of work they involve themselves in. In terms of behaviour, most gold panners tend to be reckless with their lives. They lead risky lives in terms of sexual behaviour and carrying out of illegal activities like brewing and selling *kachasu*, a toxic beer which is prepared in seven days with rotten fermented ingredients.

Field observations showed that gold panning sites are a hive of commercial sex workers who come to take advantage and sell their bodies to these panners, especially those who would have left their wives at home.

These include the young single males and even the married ones too are sometimes caught in the same bracket. They act under peer and drug influence and will not be able to make proper judgements. Most of them are always under the influence of a certain illegal drug called marijuana and they make incorrect or improper judgments. Marko, a 23 year old single man said, 'We are not selective when it comes to having sex, we take anyone whom we find appealing and pleasing in our eyes despite their HIV status and we do not even want to use protection devices like condoms or hear about it'.

Mambo, a 28 year old man said, 'You cannot eat and enjoy a sweet wrapped in a plastic paper. Instead, for you to enjoy the sweet, you remove the wrapping paper and eat it. The same applies with having sex wearing a condom. You cannot feel the excitement unless it is unprotected sex'. This kind of careless behaviour exposes most of the gold panners at risk of getting infected and spreading of HIV and AIDS. However, not all panners are put in the same bracket or painted with the same brush. There are some who are responsible enough to take care of themselves and their families.

The gold panners also put their lives in several fatal dangers and risks. There are risks of tunnel collapse during the panning process. The tunnels are drilled anyhow and without expertise resulting in cave-in killing the panners. These tunnels are also very deep and can stretch for several kilometres along a gold belt as shown in Photo 5 below.

Photo 4 Deep tunnels holed into each other



Panners themselves fear that shops and roads may subside because some tunnels have been drilled under the shops and some under roads. There is also the danger of panners falling during the process of entering the gold mines since they do not have the necessary pulleys to do so. An incident occurred during the research when gold ore was being taken out of the tunnel using a metal tin. The rope broke and the tin went down and hit one of the panners down in the tunnel who sustained serious head and rib injuries and was rushed to the hospital. Photo 6 shows the pulley system used by gold panners to enter the deep tunnels.

Photo 6 Rope and pulley system used to enter deep tunnels



The study also revealed that lack of machinery, proper ventilation and protective clothing is dangerous to the lives of gold panners. An incident was cited by panners where five panners died when a water draining machine they were using produced carbon monoxide in a poorly ventilated tunnel.

Another incident also occurred when the panners had set explosives to blast a granite rock which had gold deposits. And by the time they wanted to get out of the tunnel, their lighting went off and they could not find their way out. The rock exploded whilst they were still in the tunnel and they sustained face injuries and burns.

Other injuries that occurred and were reported during the research include in cave-ins of the mining tunnels especially in old mines where gold panners tried to remove the tunnel supporting pillars in pursuit of gold behind the pillars that were installed to support the mine from collapsing and in an attempt to get that gold they removed those pillars and the mine collapses on them.

Intensive hard manual labour is another challenge faced by gold panners when carrying out their gold panning activities. The gold panning activities are labour intensive. A quoting from the case study by Guvamombe below shows the manner in which gold panning is done.

‘From underneath the multifarious array of deep dongas and gullies you could hear sounds of chopping, digging and pounding punctuated by low human voices. Behind the mounds of red overburden, the exposed tree roots and deep dongas were gold panners, half of their bodies immersed in red soil polluted ponds, while others were sieving and looking for even the smallest nugget of gold. Like bees, they hummed and worked, closely inspecting contents from a home-made wooden panning dish that has been craftily designed to trap the precious stone’ (Guvamombe, 2013:3).

Such manner of working requires hard work. Chidhuza of Mashande Village, Makaha said, “gold panning has no starting or knocking off time. It is controlled by the desire to produce as much mineral as possible to ensure one survives. It is a game for those with patience, the brave, the daring and iron muscled, those who are prepared to toil even for the whole day without getting a speck of gold but still can wake up early to burrow into mother earth, in hope of a score’. He went on to say the gold panners’ day is not defined, it depends on the will of the gold panners. Darlington, another panner added by saying,

‘Gold panning is a vocation that requires only the brave. I work up every day around 3 am daily, rush to my fathers’ compound to work up my two brothers to start work. We have to be up by this time every day to ensure that when the temperatures get hotter we would have dug enough ore for the day’. He, however, highlighted that despite being labour intensive, many people are still attracted to gold panning for the joys that it promises.

Harassment by the police is also a challenge highlighted by gold panners during focus group discussions. Gold panners lamented that they are always being harassed by the police. The action they have called the ‘cat and mouse game’. They are always being chased and running away from the police.

The police usually come to raid the area to stop gold panning or in search of criminals that have also flooded the area. This is supported by an incident that occurred during the first initial contact of the researcher and the gold panners where gold panners took to heels living everything suspecting that the researcher was one of the police in plain clothing.

One gold panner said during the focus group discussion, 'These police raids have made our work difficult. Most of us have fallen victim to these police officers who come to raid us of our gold and money when we are sure that the confiscated goods and money will never reach the Government coffers'. Gold panners said they have learnt to live with these arrests hoping that the Government will soon legalise their activities so that they do not get harassed every day. They said unless Government legalise their activities this cat and mouse game will continue.

Asked how gold panners relate with the police, Rogers, a 15 year old boy said, "Where there is the police there is money also and for you to get that money you have to make a bribe". The statement implies that where ever you find police, there is something valuable that they are trying to protect and for you to get that valuable thing you have to bribe them. One gold panner said, "Whenever the police come to raid the panning sites, we give them money and they leave us alone. We sometimes play the cat and mouse game with them. Whenever they come, they chase us and we run away but sooner or later they will be gone and we will be back again on our panning sites. But, when we give them something, they leave us do our work because they also need money. Sometimes we give them any amount of money or we give them pure gold and they go away. That is how we deal with the police"

Gold panners also risk prosecution by law enforcement agents since most of them operate unlawfully without permits. This is because gold panners make short cuts and pay bribes to cut short the long processes of obtaining proper mining documents. One claim owner, a 47 year old man, Mr Madzingi, not real name said, "Why should I take the longer route to get a permit if you can easily get it through shortcuts.

You just give those officers what they want and you get your permit'. Or else you get fake licence permits. Even if they follow all the procedures and fill out the application forms as required for them to get the permit, once the permit is out, they do not fulfil the promises made like rehabilitating the land they would have destroyed during gold panning.

The research showed that fraud is inevitable in gold panning activities. An incident occurred during the research period that involved theft in connection with gold panning. It involved one of the sponsors of one of the gold claims in the area under study. It was understood that the gold claim sponsor, who happened to be the manager of a local bank, took seventy thousand United States American Dollars (USD70 000) out of the bank through one of the dormant accounts in the bank. It was also reported that another USD600 000 was missing. The sponsor could not be found for comments in connection with the matter since he had gone into hiding during the period of the study. Workers at that claim suspected that he was using stolen money to sponsor all the activities that were done on this particular gold claim. They were even afraid that the police might come and take all the mining equipment and all consumables that he had supplied to this gold claim to recover the money and this would then mean an end to their jobs.

However, the tricky part of the whole investigation process was that one of the claim owners being sponsored by the person in question is actually a member of the police's Criminal Investigation Department. The incident raised suspicion among the panners who wondered whether he was not also involved and implicated in the scam. If that be the case, then the whole investigation process would become complicated. During the research one of the claim holders in the study area ran away with all the gold that had been processed before he gave salaries to the people he worked with. By the end the study he was still at large and his workers had started doing their own panning activities. There were speculations that he might have left the country. The situation was so bad because one of the workers had no money for the children's school fees.

Things became so bad to the extent that he, at one time, thought of going back to seek formal employment. He sent his Curriculum Vitae around and was invited for an interview. He went there, got the job but could not take the offer because the salary was way below what he was getting in gold panning. He decided to stay at home, picked himself up and started gold panning again. This case highlights the economic advantages realised by those doing gold panning independently over those working in gold claims for other people. They can manage or decide what to do with their monies at any point in time unlike waiting for someone to give them a salary at the end of the month.

In connection with fraud as well was the finding that the person who benefits more out of the whole gold panning process is the miller. This is the person who owns the mill that crushes the gold ore and refines it. In terms of payment, the gold panner and the miller decide and agree that the miller will take a certain percentage of the gold produced from the ore. Normally the payment is in the form of gold and not cash. So what normally happens is that after all the processing of the gold ore is done and payments are settled with the panners, the millers will go back and re-process the gold ore again. This is where they get most of their profits from. After reprocessing the ore they can get double the amount of gold they got when they processed the gold ore for the first time. Bhoicho, one of the panners shook his head and said, "These guys make a killing man, they will end up buying their own aeroplanes because they get double or even more money than gold panners. You may laugh yes but it is possible".

The law of the jungle where there is the survival of the fittest is another challenge that was highlighted by gold panners during focus group discussions. Most of the gold fields where gold panning is taking place have become self-contained worlds where the law of the jungle prevails. There are no guiding laws, there is no respect of persons and no respect of social values. This means survival of the fittest. There are some few gold panners who bully others. In an interview with one of the gold panners concerning criminal activities amongst the gold panners themselves, he said, 'There is no water without frogs.

Where ever there is something good happening or taking place you can be sure there will be an element of evil somewhere somehow. There are what we call bullies. Those people have an evil heart'. Explaining who these people are and what they do, the panners said that these bullies are a group of giants or heavily built people who are always under the influence of drugs and alcohol. These people do not have a mind to work and they do not even want to. They are very lazy. So what they do is that they move around the panning sites in groups of four or more looking at where other people would be working. When they get to a panning site or a working area where they think there is much gold, they kindly ask the owner to leave the area and the gold ore, non-compliance invites all kinds of trouble from the bullies who respond by either throwing stones in that pit whilst the rightful owners are still in or they beat them up and take all the gold ore or the gold itself.

Research findings showed that conflicts are inevitable in gold panning. This is because gold panners work in groups of three or more to ensure that they share manual labour that comes with gold panning. The group is composed of friends because the work is very risky. When it comes to profit sharing that is when many people have conflicts with their counterparts because of greedy. One panner said, 'my brother these are money matters and you need to be vigilant. You need to know all those you are dealing with to ensure that problems do not develop when you get the ore'. An incident occurred of some panners who were killed while fighting over gold.

The community and some local gold panners themselves were very hostile to those panning gangs that were known to be coming from far away. These were generally accused of plundering their God-given natural resources or heritage, engaging in cattle theft, house-breaking, spearheading most social evils and causing un-wanton deforestation, river siltation and gullies. Claim owners who come to peg their gold claims have to employ the locals to work for them and if they are not willing to employ local labour they leave. Conflicts always surface when a claim owner comes in and displaces the local gold panners from their panning territories.

They get hold of gold claims and displace the local people or those already doing their panning on the claims. This does not go down well with the gold panners especially those who reside within the panning areas. They feel they are being robbed of their God-given special mineral by outsiders who just come to loot their resources, get away with them without benefiting anything to the community or the local people. An incident occurred when one man came with a permit and he wanted to peg his claim in an area where gold panners were already working. Gold panners refused to leave their working area. They said the mere fact that someone comes holding papers in their hands doesn't give them the right to dismiss them from their working areas. It was only after the local leadership intervened and asked the claim holder to employ these panners that they agreed but some panners went away.

Community members highlighted that social ills are major challenges that the communities are facing as a result of gold panning. Societal decay was reported to be rampant due to prostitution, drunkenness, drug abuse and violence. For the community members, panning activities not only destroy the natural environment but also destroy stable families and community life as evidenced by increasing incidences of domestic violence, extra marital relations and family desertions brought to their attention. Traditional community leaders, as custodians of community culture and natural resources, also accused non-local gold panners of deliberately disregarding their cultural heritage, norms, values, beliefs, traditions and customs like defacing graves, cutting down certain tree species that are associated with ancestors and have deep cultural meanings and significance to the local community and killing protected species of snakes like the python as well as poaching and trading of protected wild animals like pangolins. One community leader said, "Things our society used to value as important and values the community used to uphold are no longer considered important anymore. Gold panners have no respect of areas that we consider sacred. Some mountains, rivers and trees we considered sacred are not supposed to be tempered around with but gold panners have despised all that, they cut trees, dig around the sacred mountains, pan along rivers and wash their gold in pools we consider sacred. They kill python snakes that we do not kill here because they are sacred".

When gold panners come across such snakes they kill them because they would want to get gold from their territory. Traditional community leaders like the local chief, headmen and village heads blamed poor rains, deteriorating health standards, failing farm seasons, natural disasters, social disintegration and moral decay on the mushrooming of gold panning activities in their respective areas. Most community leaders were in general agreement that many of the gold panners who spend their money on leisure and exude careless lifestyles such as, prostitution and engage in drug and alcohol abuse were predominantly non-locals.

Child labour is another challenge brought about by gold panning in the community. This was indicated during casual talks that were done in the community with community members. It was highlighted that one way by which children were used in gold panning activities was through the pooling of family labour including children in a gold panning enterprise. A headmaster from a local Primary School said, "It came as a surprise to me that some children start school as late as 8-9 years because they will be with their parents in the gold panning enterprise helping them with the fetching of water or panning their own gold to have their own pocket money. Unfortunately, it seems that by the time they are about 13 years they are seen as capable of working in the panning enterprise and therefore, easily give up schooling. Thereafter, girls might fall pregnant early as the community in the gold panning areas is predominantly male. As a result, early marriages, child sexual abuse and teenage pregnancies are higher in these panning communities."

Interviews with community members reflected that children also get involved in gold panning through "sub-contracting". Sub-contracting means that the children are hired to work on commission. For example, the claim owner can contract out the gold panning to school children and then buy the gold from them at \$20 per gram instead of \$30 or \$35, a prize which is below the average market rate. This ensures that children earn their money independent of the families and this often pulls them out of school and introduces them to many evil social vices early in their tender years.

The Member of Parliament in the research area commented during the interview that pupils from Makaha, Katsande, Mapombo, Nyamande, Chikwizo and Gozi Secondary Schools occasionally dodge lessons to join the search for gold and the pass rate in these schools has on average plummeted from 39% to 21%.

4.7 Chapter Summary

Following successful completion of the fieldwork phases that included the identification and drawing of the study sample elements, administration of research instruments, field protocols and logistics, data gathering and data processing, the chapter presented the collected data, interpreted emerging thematic data patterns and discussed the key study findings. The next chapter summarises the study findings and incorporate, conclusions, recommendations and evaluative reflections.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 CHAPTER INTRODUCTION

Based on observed emerging data patterns and logical inferences drawn from the presented empirical evidence highlighted and discussed in the previous chapters, the chapter presents summary findings, draws conclusions and suggests possible recommendations to address the research problem noted in Chapter 1 of the study. It will further reflect on potential future research areas. Study findings are put into context and are related to the research design while conclusions are informed by interpretations derived from the empirical evidence found on the ground. Study recommendations and suggestions are given as advice to finding feasible policy and practice solutions to the original research problem of the study. The chapter suggests ways of resolving the practice shortcomings that were noted and discussed during the study.

5.2 SUMMARY OF FINDINGS AND CONCLUSIONS

The demographic profiles of gold panners unpacked during the research include, age of gold panners, marital status of those involved in the gold panning sector, the gender aspect of gold panners and the educational profiles of those involved in gold panning activities. On the age aspect of gold panners, the study revealed that gold panning is mainly dominated by young unemployed school leavers in the 21-30 age group (42%) who cannot easily be absorbed in formal employment especially considering that the Zimbabwean economy has been shrinking in the last decade. The lesser number of old people, in the 51+ age category show that as people grow old, they no longer have the physical energy to actively participate in panning operations. This is due to the physical demands required in the panning activities

On gender, it came out that there are more men than women in the gold panning sector. The activity is dominated by men. This is attributed firstly to the nature of the job. Because of the extensive manual labour involved in gold panning, fewer women are found being actively involved in the panning process as compared to their male counterparts.

Secondly, the harsh working conditions of gold panning exclude most women from gold panning leaving it a male domain. Thirdly, the nomadic nature of the gold panning activities also excludes women from being actively involved in the gold panning processes as well.

On the marital status aspect, the study found out that marital status is an important consideration when looking at gold panning pull and push factors. The observed is that there are more young married unemployed people in the gold panning sector than unmarried ones. The explanation given for this was that most people are pushed into gold panning in a bid to fend for their families. The majority of gold panners in the study are middle-aged male bread-winners who have nothing else to do to support their families except falling back on gold panning activities as a way of earning a living unlike their unmarried counterparts who do not feel pressurised to be involved in gold panning since they do not have anyone to take care of.

Based on the demographic information gathered during individual and group interviews with study informants, it was apparent that the Zimbabwean gold panning sector is predominantly dominated by both unemployed educated and non-educated youths who cannot easily be absorbed in formal employment especially considering that the national economy has been shrinking in the last decade.

Dynamics in the gold panning sector that were revealed during the research included gold panners' spending habits. On gold panners spending habits, it was interesting to note that maturity counts when it comes to spending habits of people involved in gold panning. The study established that gold panners' spending habits significantly differ according to their age group. Young gold panners live on a hand to mouth basis. They neither plan nor budget for their money but spend whatever money that comes their way. They do not do anything to improve their own lives like going to school so that they may improve their lives academically. They spend most of their money on leisure.

This tendency may be attributed to the fact that most of the young gold panners do not have big extended families to take care of and children to send to school. Their money is mostly directed to buying leisure-related gadgets like radios, cell phones, satellite dishes, solar panels, fancy clothes, food and beer.

In a Zimbabwean rural set up such gadgets are not considered as basic things that people cannot live without. They are seen as luxury. Gold panners who are single and who have never been formally employed since they left school, are generally regarded by society as less responsible compared to their married counterparts who have family responsibilities, and previous working experiences. These have cultivated some culture of saving and investing for future rain days.

Unlike young gold panners, mature people in this industry because of families and other responsibilities, plan and budget their money and spread it to cover many aspects of their lives. It was indicated that they plan and save money from what they get from gold panning no matter how small the amount may be.

On social ills, the study found out that most gold panners engage themselves in social vices, behaviours not acceptable in the community, as copying strategies. Influenced by current discourses on rural livelihood in Zimbabwe, the study takes a stance that many of the social ills that gold panners involve themselves in are nothing but manifestations of escapism. The risky behaviour gold panners involve themselves in are coping strategies to conditions they get exposed to. There are things under normal circumstances panners would not do, but because of the need to survive or to have a source of a livelihood in a harsh Zimbabwean economic environment, they do whatever it takes to get the gold.

The study contends that most of the social ills that gold panners involve themselves in are essentially survival strategies designed to cope with tough and rough working conditions the panners are subjected to. The taking up of drugs like marijuana, for example, is often one way to cope up with stress and anxiety associated with physically demanding gold panning activities. Because of the hard labour required in gold panning and the harsh working conditions, gold panners resort to using drugs.

Prostitution also is inevitable especially considering that most gold panners engage in temporary make shift relationships since they go long periods separated from their spouses. And, as most of the gold panners, mainly men, leave their families behind and lead a nomadic life, they fall prey to prostitutes. Because of family separation they resort to prostitution. They determine themselves to getting the gold no matter what it takes.

Drinking themselves out is justified when viewed as a way of relieving stress especially when working in environments devoid of choices and alternative recreational services.

The study confirmed that gold panning is actually a source of livelihood to many people in the research area. As a naturally endowed or God-given communal resource as perceived by the gold panners, gold deposits in river banks, mountains and valleys are exploited to improve their livelihoods. They take gold as a natural resource that the rural community can solely survive on for a living.

Gold panning is also seen as a livelihood diversification strategy, a strategy to lean on in times of economic stress and shocks and a way of spreading risks especially in uncertain economic conditions. It has become a strategy which under normal circumstances would otherwise not have been done but is now preferred to cushion poor communities against poverty threats.

The study also showed that gold panning contributes to rural and community development. It concluded that there is positive correlation between gold panning activities and rural development. A closer look at the spending habits of most panners reveals that proceeds from gold dealings are channelled into various rural development related activities including investments in agriculture and children's education.

Empirical evidence supporting the notion that one of the first economic prosperity indicators in an impoverished rural community is improvement in social infrastructure like schools and hospitals, better houses, amenities, asset possession, thriving entertainment or recreation business. Like any other form of employment, gold panning income fundamentally improves the quality and standard of rural life and bolsters community confidence as it is mainly used to meet different basic individual and family needs. Gold panners buy farming equipment, invest in solar powered projects, start thriving businesses, have access to social services like health, education, housing, recreational facilities and leisure activities.

Another conclusion drawn from the research findings is that gold panning creates employment opportunities. Gold panning in the research area has absorbed educated but unemployed youths from both urban and rural communities.

With easy entry requirements, that is, no need of huge capital injection, previous experience, complex technology and regulatory compliance, the sector has provided employment opportunities for both unemployed old and young who are looking for money at whatever cost. Gold panning activities have created employment and wealth opportunities for both poor and rich people of diverse backgrounds in the community.

For the poor, destitute and unemployed people, panning transforms lives and fortunes overnight while for other classes the valuable golden resource has been a good and easy source of supplementary family and business income. Claim owners employ otherwise redundant local people to do an assortment of alluvial and reef mining activities for them thereby creating employment.

The opening up of ancillary trading shops, flea markets and downstream industries related services like canteens also created employment opportunities even for people who are not directly involved in gold panning activities. Some enterprising gold panners have even diversified their portfolios to a point where they hire supporting assistants.

The study observed that gold panning activity brought several market opportunities in the area as a result of subsidiary and supporting activities that come along with gold panning. Diverse merchandisers bring their wares to panning sites on the premise that panners have money and they just buy what they want regardless of price considerations. The panning site has, for example, become a market for clothing, food, hardware products, agricultural inputs and horticulture produce. Gold panners have become an alternative market to traditional markets as enterprising vendors in the neighbouring communities sell their assorted wares to gold panners at exorbitant prices.

The study also showed that gold panning is detrimental to the natural and health environments. Though gold panning is considered as a source of livelihood, the study showed that there are negative effects that come along with gold panning activities. These include severe environmental degradation through massive vegetation destruction and drilling of holes.

Gold panning has been underlined as the major source of water pollution because the continued use of mercury when amalgamating gold poses a health hazard to communities because of mercury's potential to bio accumulate in the food chain. It is harmful to aquatic environments and humans as well since intakes of mercury can occur via food, water and air. It also has health repercussions and poses safety threats to humans and other living creatures.

The study concluded that fraud is inevitable in the gold panning sector. Fraudulent activities and bribery happen at all levels, involving everyone and encompassing everything in the sector including prospecting, mining permits issuing, administration of mining claims, law enforcement, processing and selling the gold. The authorities who issue mining permits and licenses are bribed to short-cut the long cumbersome process of getting the license while other panners cheat the system by using fake licenses. Police and law enforcement officers are bribed and robed in as partners in crime, claim owners underpay and cheat their employees, gold processors cheat those who would have come to process their gold and the gold panners themselves steal each other's gold.

Gold panning is regarded, by the Government of Zimbabwe, as a criminal activity simply because of the manner in which its activities are done. The cat and mouse game gold panners play with the police, the relationship of continuously chasing after one another emanates from the introduction of the Precious Mineral Act during the colonial era. The colonial masters enacted the Act primarily to bar and disenfranchise indigenous people from dealing in precious minerals so as to leave this lucrative business as a preserve of the few superior whites and capacitated multi-national corporations controlled by colonialists.

5.3 SUMMARY OF RECOMMENDATIONS

Since the study has shown that gold panning is a rural livelihood source, it is therefore, necessary to review and amend regulatory instruments that make gold panning an underground economic activity by de-criminalising gold panning activities. The authorities need to be sensitive, responsive, adaptive, pro-active, and concerned about the plight of many poor and unemployed people whose livelihoods will be negatively affected if gold panning remains a criminal activity. Instead of criminalising gold panning, there is need for structured efforts to harness, redirect and refine the sector for national and community development as well as meet survival needs of individual miners.

A paradigm shift is needed with respect to effectively de-criminalising artisanal mining operations in Zimbabwe where the economic value of primary resources is historically locked up through discriminatory laws that marginalise and criminalise unregistered self-help efforts mainly by poor communities. Experiences from other countries like Ghana show that effective transformation and upgrading of informal economic activities require both political will and social commitment to reorganising, mainstreaming and regulating underground or illegal operations.

The gold panners may, for example, be encouraged to form associations, and cooperatives with clear leadership structures. These will be mandated to engage relevant authorities and organise structured capacity training for gold panners, spearhead environmental conservation in areas they operate, collect levies from gold panners and transmit them to local authorities. Leaders in gold panning associations and cooperatives will also solicit technical expertise to advise them on how to improve their mining practices. This will help in the rehabilitation of affected environments thereby lessening the negative physical environmental degradation caused by gold panning. The collection and remission of levies will help in the improvement and development of local communities where gold panning is done.

Multi-stakeholder support for efforts to organise, regulate and empower gold panners will come with Government demands and expectations for co-operation from the panners in terms of compliance with clearly articulated operational policy guidelines.

Fare policy interventions will compel gold panners to adjust reform and abandon resorting to illegal and devious means of operating which are harmful both to themselves and the environment. The idea of mainstreaming gold panning into the main economy will also force gold panners to become more responsible, accountable and transparent in their work as they submit to regulatory and administrative control.

In order for gold panners to be in total control of the development process of themselves and their communities through gold panning, panners must be taught about the mining regulations. Gold panners must be educated on how to register and legalise their panning operations so that they operate legally, thus avoiding the cat and mouse game they spend their time doing with the police.

Government officials must be able to reach out to panners with holistic and integrated development through educational programmes, raising awareness on environmental conservation, legal issues around mining, business management, community development, HIV and AIDS and health education including awareness campaigns on the dangers associated with the use of mercury.

Gold panners also need to be taught on the importance of environmental conservation so that they become aware and realise the impacts and negative effects of their operations. This can result in them taking responsibility of their operations. The same applies to issues of HIV and AIDS, Community Health Workers can teach them more on HIV and AIDS and the preventive measures they can take to prevent them from contracting and spreading HIV. Safety issues have to be addressed by NSSA since there is complete disregard of safety measures in gold panning activities.

The Government of Zimbabwe has a central role to play in facilitating capitalisation of the small scale gold mining operations in order to stimulate economic growth and development of the small scale gold mining sector through the facilitation of the acquisition and use of appropriate mining technologies and transfer of technical skills among gold mining actors, the formal and informal gold mining sectors, that is, the big mining companies and the gold panners respectively. The Government of Zimbabwe can also support the development of the small scale mining sector by creating enabling policy and regulatory frameworks that allow easy entry and active participation of new players.

The sector can also be supported by promoting capacity building, training of organised gold panning associations, enforcing sound environmental conservation and sustainable resource management practices such as, proper handling and disposal of mercury as well as rehabilitation of the ravaged environment. This enormous Government role needs to be coordinated and complemented with the assistance and cooperation of the public and supported by multi-level national and international institutions. There is, therefore, scope for public-private partnership investments in improving, developing and expanding the socio-economic contribution of gold panning to mainstream economy, community development and livelihoods opportunities.

Any solution to resolve problems brought about by artisanal mining must take into consideration the health and environmental impacts of the mining activity, the needs of artisanal miners and their extended families, the needs of future generations, the ability of the authorities to monitor and administer regulations, and the requirements of the large mining companies that often compete with artisanal miners for mineral extraction and access to land.

5.4 EVALUATIVE REFLECTIONS ON THE STUDY

The research project was more than just an intellectual exercise as it both improved and enriched the researcher's experiential learning-ability to incorporate relevant previous experiences, skills and knowledge to improve the design, credibility and scientific nature of the study. It enhanced the researcher's research competencies.

It indeed was a continuous learning and transformational process with numerous opportunities to improve critical research competencies including research design, fieldwork planning and logistics, data collection and analysis, research project reporting and disseminating of research findings.

The study processes also facilitated the researcher's self-discovery, critical and analytical thinking abilities as well as developing her interpersonal skills especially considering the essence of effective communication, controlled emotional involvement, active listening, bonding and establishing rapport with all study

informants as well as consistently observing high standards of professional and ethical conduct in successfully undertaking field research.

The researcher appreciated the need for trusting relationships with diverse informants and the necessity of creating enabling confidential atmosphere conducive for interviewing in order to extract useful and relevant information from a wide-cross section of targeted study sample elements. Establishing rapport, effective communication and purposive interactions were essential for successful fieldwork.

With recent Post-Constitutional Reforms in Zimbabwe, the hope and expectations are that relevant supportive policies will be crafted to stimulate the growth and strengthening of mining as the back bone of economic revival. Early Government policy indications suggested that gold panning and small-scale mining operations will be formalised, regulated and capitalised to create more employment opportunities, empower economically marginalised population groups, broaden and synchronise indigenisation laws of the country as well as opening up previously restricted mining activities to community ownership and majority participation especially by decriminalising gold panning. Based on this potential policy shift, mining and economic experts are already looking at ways to integrate gold panning into the main-stream economy since the future of Zimbabwe will be based on a robust and dynamic mining sector.

It is against this promising future and contextual relevance that the significance and contribution of this study should be considered and the hope that the study is timely and will be a useful reference point for government and local authority policy makers, academics, gold panners and other stakeholders.

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ANNEXURE A

INTRODUCTORY LETTERS



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

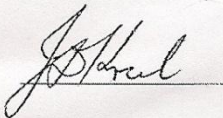
2010-09-08

TO WHOM IT MAY CONCERN

This is to confirm that Prisca Mutero is currently a registered student for the Master's degree in Community Development within our Department. The preliminary topic of her dissertation is *Gold Panning in Mutoko, Zimbabwe*. The field research that she will be conducting during 2010 and 2011 will thus be for academic purposes only.

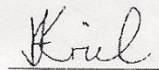
Should you have any further inquiries do not hesitate to contact us.

Sincerely



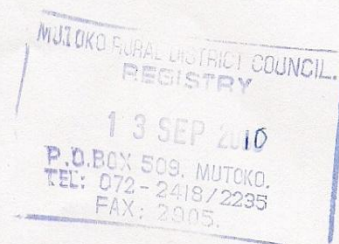
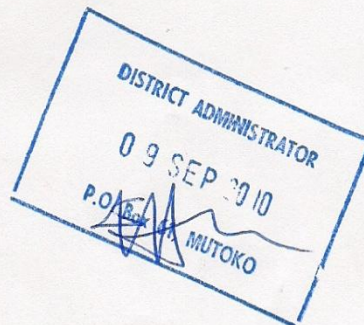
Prof. Johann D. Kriel
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Supervisor

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Approval Letter

Approval Letter to carry out Research on Gold panning in Mutoko, Zimbabwe

The District Administrator,
Box 143,
Mutoko,
Zimbabwe

May 2010

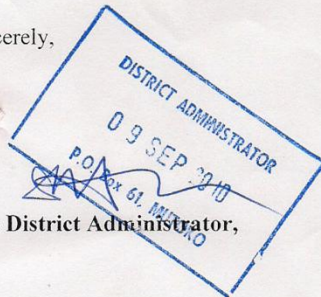
TO WHOM IT MAY CONCERN

It is my understanding that Mutero Prisca (s29267252) will be conducting research in Mutoko on gold panning. Mrs Mutero has informed me of the research design of the study as well as the targeted population. I do hereby grant the permission to carry out the study and I will provide any necessary assistance when required.

If you have any questions, please do not hesitate to call. I can be contacted at +263912620822

Sincerely,


The District Administrator,



ANNEXURE B
INFORMED CONSENT FORM



**RESEARCH PROJECT: GOLD PANNING IN ZIMBABWE'S MUTOKO DISTRICT:
A STRATEGY FOR RURAL AND COMMUNITY DEVELOPMENT?**

My name is Prisca Mutero. I am a Masters student (nr. 29267252) in the Department of Anthropology and Archaeology at the University of Pretoria and I am conducting field research on gold panning. Permission to conduct the research was granted by the District Administrator (DA) of Mutoko. Inge Kriel of the above department will act as my supervisor.

**Will you please participate in my research project by joining in
the discussions and interviews?**

I will do my utmost to ensure your anonymity in all my written reports by using either code names or pseudonyms. I do not expect you to divulge any information that might compromise you in any way. All information will be treated as confidential and you may withdraw from discussions or interviews at any time without any consequences. My aim, objectives and research methods are summarised below. I will provide you, upon request, with any additional information on my research project and answer any questions about my studies, my research methods, and myself. You may also contact me at the following telephone numbers: +263 773 265 099/072 078 3703.



I, the undersigned, have read the above and I understand the nature and objectives of the research project of Prisca Mutero as well as my potential role in it and my right to withdraw from it at any stage

I voluntarily consent to participate in all discussions and interviews.

Full name of participant	Signature of participant	Date

AIM AND OBJECTIVES OF THE RESEARCH

The aim of the current research project is to explore and understand the gold panning processes in Zimbabwe and their contribution to rural livelihoods. My research will be entirely qualitative in nature. As such, I have formulated the following research objectives:

- ✓ To explore the different aspects in gold panning activities
- ✓ To establish the relationship between gold panning and rural livelihoods
- ✓ To determine the effects of gold panning on rural and community development
- ✓ To identify environmental health and safety issues around gold panning
- ✓ To identify challenges in gold panning activities

RESEARCH METHODOLOGY

Different techniques for data gathering will be used. The research study will start off with observing panners at the panning site. The observation will be done to see the activities at the panning site and how the panning is done. The principal research method to be used during the entire field research will be participant observation. This requires the researcher to simultaneously become a member of a particular household at the panning site. This will make it possible to create maximum rapport with the panners and develop a relationship of trust with everyone. This, of course means that great care has to be exercised to remain as objective and unbiased as possible. Becoming part of the participants allows the researcher to become involved in ordinary daily activities. During the research period I intend to rent a room and stay at the local shops close to panning site during the week and travel a two and half hour journey drive back to Harare over the weekends. I intend to spend six months in the field.

To obtain a representative of diverse views, interviews will be conducted with a large number of people. The District Administrator (DA) will be interviewed to have his views on the legality and general welfare of the panners. Police will also be interviewed in relation to crime perceived to be associated with panners such as theft, and hooliganism. Interviews with Health professionals will also be conducted in relation to issues pertaining to HIV and AIDS and STIs, since the panners are perceived to be promiscuous. The Village Head and people randomly selected from the surrounding communities will be interviewed to establish the relationship between the panners and people from the surrounding villages. Interviews will also be conducted with the panners themselves to have their own views on gold panning activities, how it contributes to their lives, their relationships with outsiders or newcomers, to establish the social aspect side of their life, their life in general at the panning site and to establish the organisation of their panning community. Interviews will also be conducted with the gold buyers at panning sites to establish the market links. The local language (Shona) will be used throughout the interviews since the researcher is familiar with the language.

—
Prisca Mutero

ANNEXURE C

DECLARATION OF ETHICAL INTENT

I, Prisca Mutero, subject myself to the 'Code of Ethics' approved by the American Anthropological Association in June 1998¹ and the 'Ethical Guidelines for Good Research Practice' adopted by the Association of Social Anthropologists of the UK and Commonwealth in March 1999² as well as the University of Pretoria's Code of Ethics for Research (Rt 429/99)³

I therefore, willingly subject myself to the general moral rules of scientific and scholarly conduct and will seek to incorporate the body of ethics and moral principles that constitute scientific integrity into all my research endeavours.

In conducting my research I shall endeavour

- to protect the physical, social and psychological well-being and dignity of everyone that may become involved in my research and to respect their rights, interests, sensitivities and privacy;
- to minimise intrusion into the private and personal domains of my research subjects and to refrain from uninvited infringement upon the 'private space' (as locally defined) of all individuals and groups involved in my research;
- to communicate all information that may be material to my research subjects' willingness to participate in the study, to obtain the informed consent of all participants and to inform all participants that they may withdraw from the discussions or interviews at any time without any consequences;
- to anticipate problems likely to compromise the anonymity of my research subjects, to make it clear to them that their anonymity may unintentionally be compromised, and to inform them that the results of my research will become part of the public domain; and
- to try my utmost to ensure that my research activities will not jeopardise future research and to preserve opportunities for future fieldworkers to follow me to my research area;

Prisca mutero

¹ <http://www.aaanet.org/committees/ethics/ethcode.htm>

² http://www.theasa.org/ethics/ethics_guidelines.htm

³ http://www.ais.up.ac.za/research/code_ethics.pdf

ANNEXURE D

INTERVIEW SCHEDULE

INTERVIEWS FOR GOLD PANNERS

1) PERSONAL PROFILE

- a) What is your name? (pseudo or trade name-what other panners or peers use when calling you)
- b) How old are you?
- c) Marital Status: *single, married, divorced, widowed.*
- d) If married, how many wives/ husbands/sexual partners do you have? Give reason.
- e) How many children/dependents do you have?
- f) How many people are under your direct care and regular support?
- g) What is your highest level of education? *Primary, ZJC, "O" level, "A" level, Tertiary.*

2a) When did you start doing gold panning activities? / How many years have you been involved in gold panning activities?

- b) What motivated you to join gold panning?
- c) How long do you spend away from home on gold panning activities?
- d) What challenges do you normally face in gold panning?
- e) What is your major source of income/ livelihood?

3) What is the relationship between gold panners and non-panners, gold panners and new comers?

4) How much on average do you get from gold panning in a month?
what normally takes most of your income from gold panning activities?

5) SOCIAL ACTIVITIES

- a) What do you do during your spare time?
- b) Where do you go for fun?

6) IDENTIFICATION AND EXTRACTION OF THE GOLD

- a) How do you identify a place with gold?
- b) How do you extract the gold?
- c) What tools/equipment do you use to extract the gold?
- d) How do you process/purify the gold up to the end product?
- e) What challenges do you face in the extraction process?
- f) What dangers/risks do you face when extracting gold?
- g) Have you ever heard of any incident where such dangers/risks occurred in this area or somewhere else you know?
- h) What really happened/transpired?
- i) How do you think you can overcome some of the challenges and risks in gold panning/ what measures have been put in place to avoid such incidents from occurring again?

7) What are some of the benefits or advantages of gold panning in your personal life and the community as a whole?

8) Any Government interventions in gold panning?

9) What are the future prospects of gold panning?

10) Are there any other comments or recommendations you would like to make?

11) Anything interesting you would want the researcher to know about gold panning or about yourself?

FOCUS GROUP DISCUSSIONS

Questions for gold panners

- 1) What are your experiences with the law enforcement agents (police)?
- 2) What are your experiences with the gold buyers/dealers?
- 3) What are your experiences with the authorities in terms of getting mining licences?
- 4) What are your experiences with the local authorities?
- 5) What are your perceptions about gold panning?
- 6) How do you see/ perceive yourselves in relation to gold panning?
- 7) What are the benefits, and contributions of gold panning activities?
 - a) How is gold panning benefiting you as individuals and the community as a whole?
 - b) What are the challenges you face in gold panning activities?
 - c) How do you see these challenges being resolved?
- 8) The actual gold panning activities
 - a) What are the gender dimensions in gold panning activities?
 - b) What prospecting methods do you use to find areas rich in gold?
 - c) In which seasons do you do gold panning?
 - d) What type of equipment do you use in gold panning?
 - e) How are your dealership networks like, the extraction process, marketing processes?
 - f) What has the Government been doing to better your conditions?
 - g) Recommendations and suggestions: What would you want to see being done to improve conditions of gold panners?

INTERVIEW SCHEDULE FOR COMMUNITY MEMBERS

- 1) How can you describe your area?-what natural resources are found in your ward? What economic activities are normally undertaken in your area?
- 2) How many schools are in this area (primary & secondary schools)-how far is the nearest school to/from where you stay? What are some of the causes of school drop outs in your community?
- 3) What is the nature of the relationships between gold panners and non-panners (community members), amongst gold panners themselves and new comers?
- 4) Economic Background of the Area
 - a) What do you do to earn a living in this area?
 - b) How was gold discovered in this area and by whom?
 - c) When did gold panning start in this area?
 - d) Who started the gold panning process?
 - e) Who is now involved in the panning process?
 - f) How is gold panning benefiting this community?
 - g) What challenges are being brought about by gold panning activities in this area/neighbourhood?

INTERVIEWS FOR GOVERNMENT OFFICIALS

1. How are you working with the gold panners?
2. Do you have plans to integrate them into the socio-economic development programme in the area?
3. What are the adverse effects of gold panning activities to the local community?

OBSERVATION TOOLS

- 1) Gold panners' behaviour to validate/confirm, information from literature like drinking habits and issues of violence
- 2) How gold panners operate
- 3) Roles of men, women and children
- 4) Relationships amongst themselves, with buyers, community members, strangers and intruders
- 5) Gold panners' spending habits
- 6) Coping strategies in terms of their nature of work and in case of accidents, hard manual work, family separations and stress