Cape Peninsula University of Technology

PLANNING AND DEVELOPMENT OF MINING TOWNS IN GHANA: AN EXPLORATION OF MINING AND URBAN DEVELOPMENT FRAMEWORKS AND PRACTICES

by

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DECLARATION

I, SARAH GYOGLUU, declare that the contents of this thesis represent my own unaided work, and that the thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

Signed **Date**

ABSTRACT

Ghana has had a long history of mining especially with respect to gold, dating back to the Trans-Saharan Trade where gold precipitated civilisations and was a main commodity of trade among Europeans, merchants and ancient kingdoms. In the 21st century, globalisation coupled with increasing urbanisation has been driving demand for mineral resources and thus the resurging commodity booms. This increases foreign direct investment (FDI) in mining countries like Ghana resulting in not only growth in gross domestic product (GDP) but impacts that transcend macro-level and have direct and indirect impacts on communities in mining regions. The result is often that livelihoods are altered, spin-offs on the local economy emerge and the attendant settlement functions impact on the efficacy of existing mining and development planning and regulatory frameworks. Tarkwa is one of Ghana's traditional gold mining towns and is the substantive context of the research.

The main objectives of the research were:

- To identify the existing key mining and development planning regulations, gaps present and how these have impacted on the efficacy of governments management practices in responding to consequences of mining-led development.
- To analyse the urban household's perceptions of mining impacts on livelihoods, business enterprises and livelihood coping strategies and mechanisms.
- To assess the implications of these emerging planning and development frameworks and trends for the effective planning and development of mining towns in Ghana

The highlights of the findings of the research in relation to the above objectives included:

- The research revealed that urban households' perception of mining on their livelihoods was mixed. One of the perceived negative impacts of mining that stuck out from overall responses was scarcity of land for purposes of farming and building.
- With respect to coping with mining impacts, respondents largely employed a combination of assets to survive the mining environment. However, respondents' dependence on human capital-that is, their ability to work and generate income underpinned all livelihoods capitals.
- Over 96 percent of business enterprises, perceived purchasing power of people and related available or potential market as the most positive spin-off from mining yet. The informal economy was dominant in terms of business enterprise ownership with informal trading as the most principal form of business enterprise in the informal economy.

The research findings have significant meaning within the broad context of mining-led urban development and with implications for theory, the development and planning for resource-driven settlements (practice) and for further research. For example, with regard to development and planning practice, some glaring challenges include the lack of a proper land management system, “superiority” of some institutions (mine houses)in dealing with the Town and Planning Department and Municipal Assembly, lack of effective collaboration between related institutions, gaps in planning legislations make planning near impossible in Tarkwa.
The effect being that Tarkwa is growing (spatially to accommodate businesses and people coming in) but without an effective and responsive development planning system to effectively channel and coordinate this growth so that long term development is sustained.

The study concludes and recommends that, there is need for a rethink in the way mining towns are planned for and developed in Ghana and should include: a review of the Minerals and Mining law (Act 703) to engender more rights and protection to the communities, a constant review of concession and other agreements to reflect a constantly changing world order, institutional collaboration for planning and development, and long term planning which synchronises spatial and economic planning to capture advantages of agglomeration in and around the Tarkwa mining region.

NOTE ON REFERENCING

The referencing style adopted in this research was based on the Harvard method of Bibliographic citation as recommended by the Cape Peninsula University of Technology. In this regard, dates of publication and page numbers are generally provided in in-text citations, except in cases where general references are made to the text, or where internet materials are cited. In such cases only authors and dates of publication are cited. Following from that, “n.d.” was used in cases where the referred materials had no date and “n.p.” for materials without page numbers. With respect to this study, “n.d.” was largely used in the case of institutional and company websites. However, the date of access of data/information was provided for in the bibliography. “Anon” was used for reports with no author.

Attached to this thesis is an addendum of some interviews used in this research and summaries generated from qualitative data software (Qualitative Content Analyser).

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My sincerest gratitude to all who helped me in diverse ways with this research and for which I could not state their names. God abundantly bless you all.

Lastly, to the Cape Peninsula University of Technology for financial support without which this research output would have been impossible.

DEDICATION

To my late brother, Anthony Kanyiri Gyogluu; though your life was short-lived, the memories still linger and will always be with us ….

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EXPLANATION OF KEY TERMS AND CONCEPTS

The concepts and terms explained below are used in context of relevance to this research

Mining-Led Urbanisation, Growth and Development

Since this research is focused on mining-initiated growth, the urbanisation that ensues therefrom will be explained as an increase in population and changes in the physical extent of mining regions due to the attractive pull of the extraction of mineral resources and related activities as well the socio-economic changes in lifestyles. Mining-led urbanisation result from the intrinsic character of mineral resources which is associated with “boom and bust” nature of mining economies. This term “boom and bust” originated from business and economics circles and refers to: (a) “pattern of performance over time in an industry or economy that alternates between extremes of rapid growth and extremes of slow growth or decline as opposed to sustained steady growth thus a boom and bust cycle or sequence”. (A boom town is) a town that develops or rapidly expands, as a result of a population influx in response to the discovery of a valuable resource (example oil, gold) in the area (Cleveland & Morris, 2008: 58).

In terms of the focus of this research, the emphasis of mining-led urbanisation is not on the process as it is with the changes that take place in socio-economic and spatial terms, and how this impacts livelihoods, business enterprises and the outlook of mining towns in general.

Within the context of this study, a distinction is made between mining-led growth and development. Mining-led growth will refer to spatial and socio-economic changes (positive or negative) that take place as a result of mining-led urbanisation and injection of investment capital into a mining region. Mining-led development looks at the broader and long term picture of how the transformation of mining regions can make for a self-sustaining region after mining has ceased. Both concepts intrinsically also raise the question of *urban development* and *urban management*.

Urban Development

According to Van Dijk (2006) the schools of thought on urban development relate to the spatial with some emphasis on planning and the economic issues and which stress the need for competitiveness of the urban area in its management. This research associate urban development to be influenced by the two main processes of urbanisation and urban growth (Bhatta, 2010 makes a distinction between the two) and essentially the two processes are

associated with some form of change. In the mining region this change is manifested in either a growth or shrinkage. Within the context of this research, emphasis is placed on development planning aspects of urban development in dealing with this change in the mining region; which was not defined within the strait-jacket blocks of spatial or economic aspects of urban development. Thus issues of urban management are brought to the fore.

Frameworks

Frameworks as used in this research refer to policy and regulatory environment for mining on one hand and development planning on the other hand. This research focused on the key policies and regulations as both mining and planning have numerous policies and legislations.

Galamsey

A term used to refer to illegal mining in Ghana. “Galamseyers” refers to people engaged in the activity of galamsey. Also referred to as “zamazama” in South Africa and “Uchimbaji haramu wa madini” in Swahili in East Africa.

ACRONYMS

ARC	Appalachia Regional Commission
DFID	Department for International Development
EIR	Extractive Industries Review
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GES	Ghana Education Service
GLSS	Ghana Living Standards Survey
GoG	Government of Ghana
GPRS	Ghana Poverty Reduction Strategy
GSGD	Ghana Shared Growth and Development Agenda
GSS	Ghana statistical Service
ILO	International Labour Organisation
MoFEP	Ministry of Finance and Economic Planning
MoLG&RD	Ministry of Local Government and Rural Development
MMDAs	Metropolitan Municipal & District Assemblies
MNC	Multinational Companies
NGO	Non-Governmental Organisaton
NVTI	National Vocational Technical Institute
OECD	Organisation for Economic Co-operation and Development
RECA	Rural Environment Care Agency
SEED Programme	Sustainable Economic Empowerment and Community Development
SPSS	Statistical Package for Social Sciences
TNMA	Tarkwa-Nsuaem Municipal Assembly
UMAT	University of Mines and Technology
UNCTAD	United Nations Commission on Trade and Development
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
USA	United States of America
WBG	World Bank Group

WACAM Wassa Association of Communities Affected by Mining

CHAPTER ONE
BEYOND GOLD BOOM IN THE PLANNING AND DEVELOPMENT OF MINING REGIONS IN GHANA - BACKGROUND AND KEY ISSUES

1.1 Introduction

Gold is fundamentally a unique precious metal as is the mining industry it is found. Gold precipitated ancient civilisations and was an important commodity in the Trans-Saharan Trade among ancient kings, kingdoms, Europeans and merchants (Hilson, 2002). In the twenty-first century, gold is craved not only for its industrial and decorative purposes, but more notably as a safe and lucrative form of investment where it is used as a hedge against risks that might cause rapid inflation (Kutschinksky, 2011; Weavind, 2013). The distinctiveness of mining activity is founded on the mine "life" and also on the fact that mining is a footprint industry. The "life" of a mine is tied to the mining region and spans from exploration and development, expansion and maturity, production, decline to exhaustion (Spooner, 1981). Mining activity is also associated with "boom and bust" economic cycles: these being alternating periods of steady growth with periods of slow growth (Cleveland & Morris, 2008:58). The boom is associated with mining-led urbanisation and massive capital and infrastructure investment often during the early stages of the mine cycle. The bust is associated with negative externalities when there is contraction in mining at the later stages. These impacts which could be positive or negative affect livelihoods and alter the socio-economic rhythms of communities and spatial functions of mining settlements and regions. The extent to which benefits or problems from mining will persist depends to some extent on planning and mining legislative frameworks and management, and characteristics of the mining region in question.

Ghana is a country immensely endowed with a diversity of mineral resources. This ranges from gold, bauxite, manganese, diamond, iron ore, and in recent times, the discovery of oil in commercial quantities in 2007 and subsequent exportation in 2011. Ghana's range of mineral wealth notwithstanding, the most important mineral yet in its development trajectory is gold. Before Ghana's independence from British colonial rule in 1957, it was called the "Gold Coast" due to the country's wealth in gold deposits. Gold's exploitation during the colonial times was vital to the development of infrastructure, contributed largely to the growth of mining towns like Obuasi, Tarkwa, and Prestea (Dickson, 1969) to more recent times where gold mining still influences the growth of settlements. According to the Mining Journal Special Publication Report (2011:9-10), Ghana's mining sector has contributed an average

of 5.5 percent to Gross Domestic Product (GDP) from 2000-2008 and accounts for about 5 percent of formal employment. In terms of commodity exports, minerals alone accounted about 20 percent in the mid-1980s, through to 35 percent in 1991 and heights of 45 percent in 2008. Gold alone accounted for about 95 percent of this total minerals contribution (ibid: 9-10).

These benefits notwithstanding, the mining sector has generally been accused of not making significant contributions to the overall development of the country, and especially in towns and regions that host these mining activities (Akabzaa & Darmani, 2001; Akabzaa, 2009; Ababio & Boon, 2009). This is partly blamed on lax mining regulations and mineral sector reforms which allow for high fiscal incentives and high foreign exchange earnings that mining companies are allowed to keep in their off-shore accounts (Akabzaa & Darmani, 2001). Some authors, for example, Hilson (2004) suggest that reforms of some of Ghana's mineral policies is one of the ways of addressing the negative impacts of mining sector's beneficiation of mining communities. Mining companies contend that the general lack of sustainable development of mining towns cannot be exclusively blamed on their operations but is as result of the prevalent nature of poverty in many parts of Ghana (Ababio & Boon, 2009).

Van Dijk (2006:3) laments that urban development and management functions in developing countries is limited to checking of building permits, indication of the location of roads, ensuring minimum standards of buildings and restrictive legal frameworks and local conditions. The aforementioned observation paints a vivid image of urban development in Ghana and thus the planning functions required. The urban development agenda of Ghana's towns has been bereft of an enabling national urban development policy for the past twenty years. Urban development projects implemented in the past were limited to improving infrastructure and service delivery in urban areas (GoG, 2010a). These limited interventions were taken outside a more comprehensive social-economic development policy, especially for resource-based settlements and regions – thus the benefits were marginal. Key frameworks of urban development are largely inadequate and incongruous with the dynamics of a mining region resulting in ineffective responses to development management. All of the above reasons notwithstanding, mining operations have considerably altered lives and livelihood patterns in mining communities leaving them vulnerable to socio-economic and environmental shocks.

Against a backdrop of these key issues, a two-pronged approach was adopted for this research.

Firstly, the challenge of effective settlement growth management for mining-led urbanisation hinges on frameworks for urban development as well as mining. The study argues that mining regions by their nature are unique and therefore they present a different set of challenges in terms of impacts on livelihoods and settlement management. These sets of impacts are explored in detail as well as delving into the development thinking and exemplars around which effective settlement management should be pursued in mining regions. Arising from this is the need for effective frameworks to meet this challenge. By frameworks, the researcher means regulatory and policy mechanisms of mining and urban development that should guide mining-led growth. There was therefore an exploration of theory and concepts through literature around frameworks of mining and urban and regional growth. Attention was focused on key frameworks in the substantive research context of Ghana.

With the literature review creating the foundation of an understanding of mining and urban development with emphasis on development planning in a broader Ghanaian context, the second part of the research explores in detail the impacts of mining on the livelihoods of households and the coping strategies they adopt to deal with these impacts. The research also explores spin-offs on business enterprises development. The later part of the research relates to praxis and explores existing urban development frameworks in terms of development planning in dealing with the impacts that mining-led urbanisation presents. The research concludes and draws implications for effective settlement management in a mining region. The substantive research context for the second part of the research is Tarkwa in the Western Region of Ghana.

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1.2 Tarkwa Contextualised

Geographically, the research was undertaken in Tarkwa. Tarkwa is located in the Western Region of Ghana and is the municipal capital of the Tarkwa-Nsuaem Municipal Assembly. The location of Tarkwa in the national and regional Context is shown in Figure 1.1. The 2000 Population and Housing Census put the population of the Tarkwa-Nsuaem Municipality at 107,712 comprising 49 percent female and 51 percent male. The municipality has 20 core settlements with Tarkwa being the most urbanised and spatially dominant in population concentration. For example, Tarkwa had 30,631 people in 2000 made up of 15,233 males and 15,398 females and an average household size of 4.2. It also performs the highest number (32) of functions in the municipality with the next settlement in the hierarchy being Tamso performing 19 functions (TNMA Development Plan, 2012). Even though 68 percent of the population in the Tarkwa-Nsuaem Municipality is engaged in agriculture, about 32

percent are engaged in commerce, hospitality industry and the informal sector - all of which are largely dominant in Tarkwa (GoG- MoFEP, 2012:7-12).

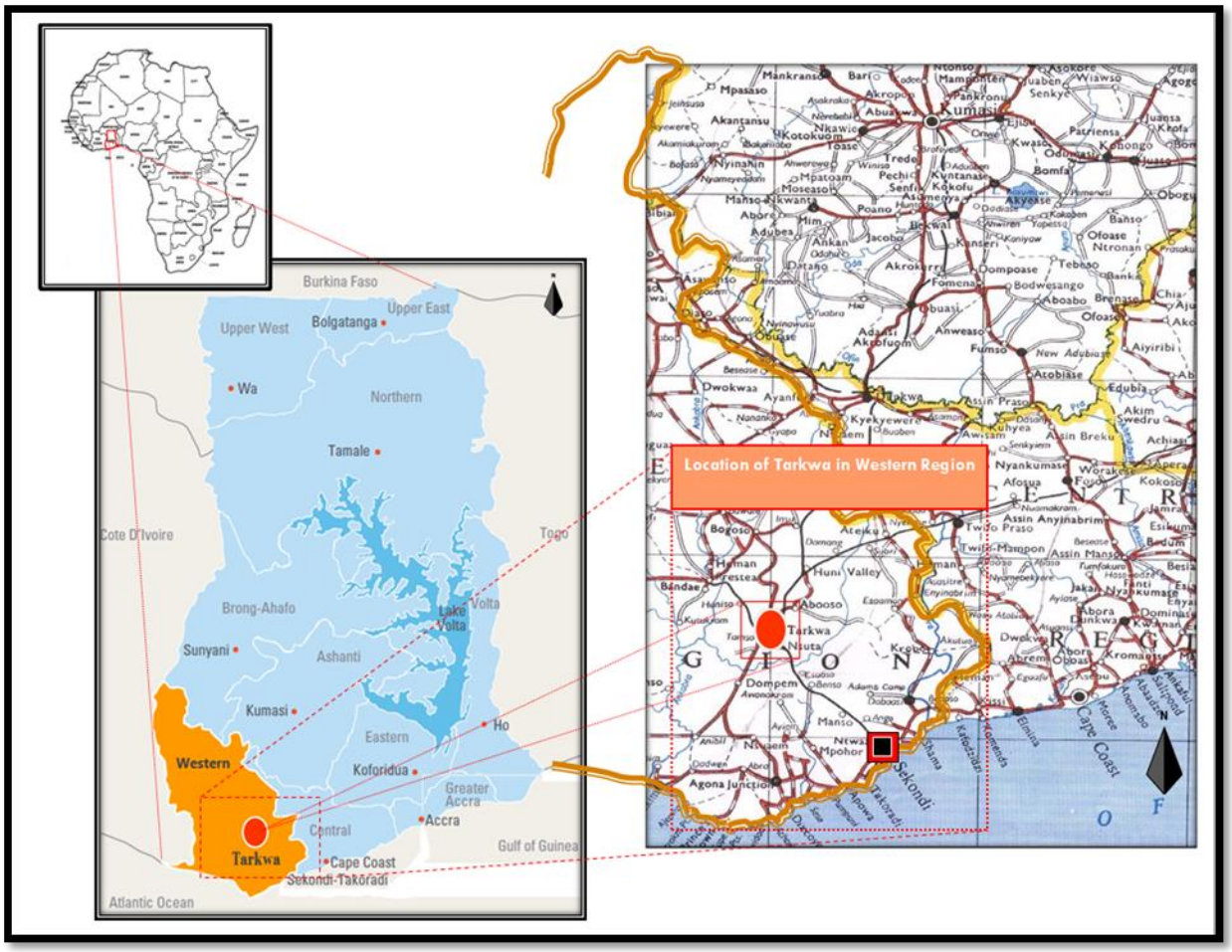

Figure 1. 1: Tarkwa in a Locational Context

Source: Adapted from Survey and Mapping Division, Accra

1.3 Background to Problem

Ghana's mineral wealth is not in doubt but the extent of mining's contribution to national development and its impacts on the sustainability of mining towns and livelihoods that has come into question. The apprehension surrounding the impacts of mining in Ghana which is dominated by multinational companies was succinctly put this way by Akabzaa (2009:53):

> *Mining companies and governmental agencies are trying hard to convince Ghanaians that the companies are contributing significantly to the development of local communities in their operational areas (Ghana Chamber of Mines 2005). According to them [Ghana chamber of Mines] various mining communities are carrying out community development projects in mining communities that are delivering measurable results. However there is increasing evidence to suggest the contrary. Positive economic impacts on communities affected by mining activities are not particularly visible.*

The general unsustainable state of development in mining towns in Ghana was summed up by Akabzaa *et al.* (2007:12) as follows:

> *The mining towns of Obuasi, Tarkwa, Prestea, Konongo, and Bibiani among others provide a classic picture of the typical mining towns in Ghana. These towns are far from affluent, an aberration of what communities endowed with mineral resources, are or should look like. The towns are very much unlike other gold mining towns such as Johannesburg in South Africa; Noranda City in Ontario, Canada; Reno in the USA or Perth in Australia; where the scars of mining are sealed by the beauty and riches of these cities, built out of mining.*

The predisposition to judge these regions by their urban-scapes anchors on the issue of spatial planning as much as it has to do with the economic functions of the town. However, it is a combination of a lot of factors ranging from policy and regulatory instruments, lack of enforcement of regulations bordering on the protection of the environment, financial and other tax benefits offered to multinational companies, land disputes relating to resettlement and artisanal mining (Akabzaa & Darmani, 2001; Hilson & Bachiringah, 2007; Owusu-Koranteng, 2008; Akabzaa, 2009; Temeng & Abew, 2009) and lack of effective planning.

The mining sector is beset with a set of legislations (Appendix A) which are largely silent on measures that might be required to effectively deliver benefits to local communities directly impacted by mining, to protect the physical environment and the rights of vulnerable groups of the population (Akabzaa, 2009:54). There are no clear-cut linkages between the mining sector and mining communities to create long term benefits, during and after mine closures (Akabzaa, 2009). This raises impacts and sustainability concerns of mining regions as the existence of mining companies hinge on the availability of finite mineral resources. According to the Economic Commission for Africa (2005 as cited in Akabzaa, 2009:30), “Ghana like many other mineral-endowed African countries, lacks any set of cogent programmes on a medium to long-term basis for the utilisation and integrated development of mineral resources”. The Ghanaian National Mineral Policy is still in the making and under major revision, and is a necessary framework which should define the role of the sector in the overall national development trajectory. The result is that apart from partially meeting the foreign exchange objective, the contribution of mining to national economic development and more importantly the development of mining towns and sustenance of livelihoods is uncertain (Akabzaa, 2009:30).

Over the past three decades, the pursuance of urban development in Ghana has been under the framework of fragmented and piece-meal development plans (GoG, 2010a:4) and thus the character of development planning that has emerged over the years. Urban development in Ghana, has mainly concentrated on the areas of decentralisation, privatisation and participation (Post, 2001), with interactions between these three interrelated areas directly or

indirectly affecting the quality of lives in cities and towns in Ghana (Post, 2001).Currently, the planning and development elements of Ghanaian settlements fall under the broad framework of decentralisation. Development planning frameworks (relating to policy and regulations) are however generally lacking in spatial focus and inadequate to respond to mining-driven urbanisation and related impacts in mining towns. This is because these frameworks are either non-existent, outmoded or have gaps which render development planning non-responsive. The impacts and sustainability concerns mining presents are further heightened as the mining sector of Ghana is hardly integrated with development planning frameworks (Akabzaa, 2009:53). Some of the likely planning and development issues and impacts that emerge as a result in mining towns and regions are illustrated in Figure 1.2.

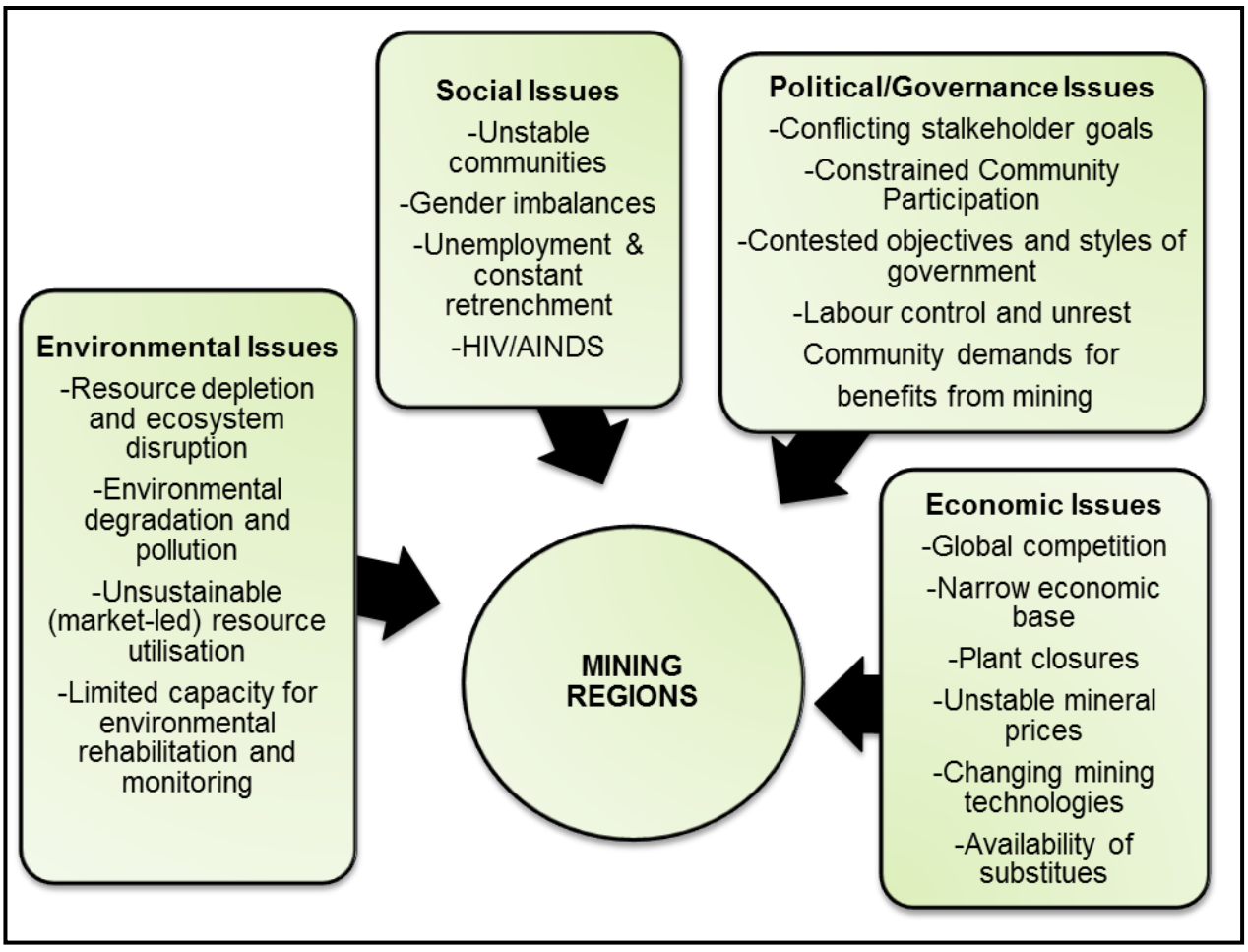

Figure 1. 2: Planning and Developmental Problems Associated With Mining Regions

Source: Adapted from Tapela, 2008

Figure 1.3 gives the interaction between the key stakeholders in the mining industry of Ghana and some of the key questions emerging.

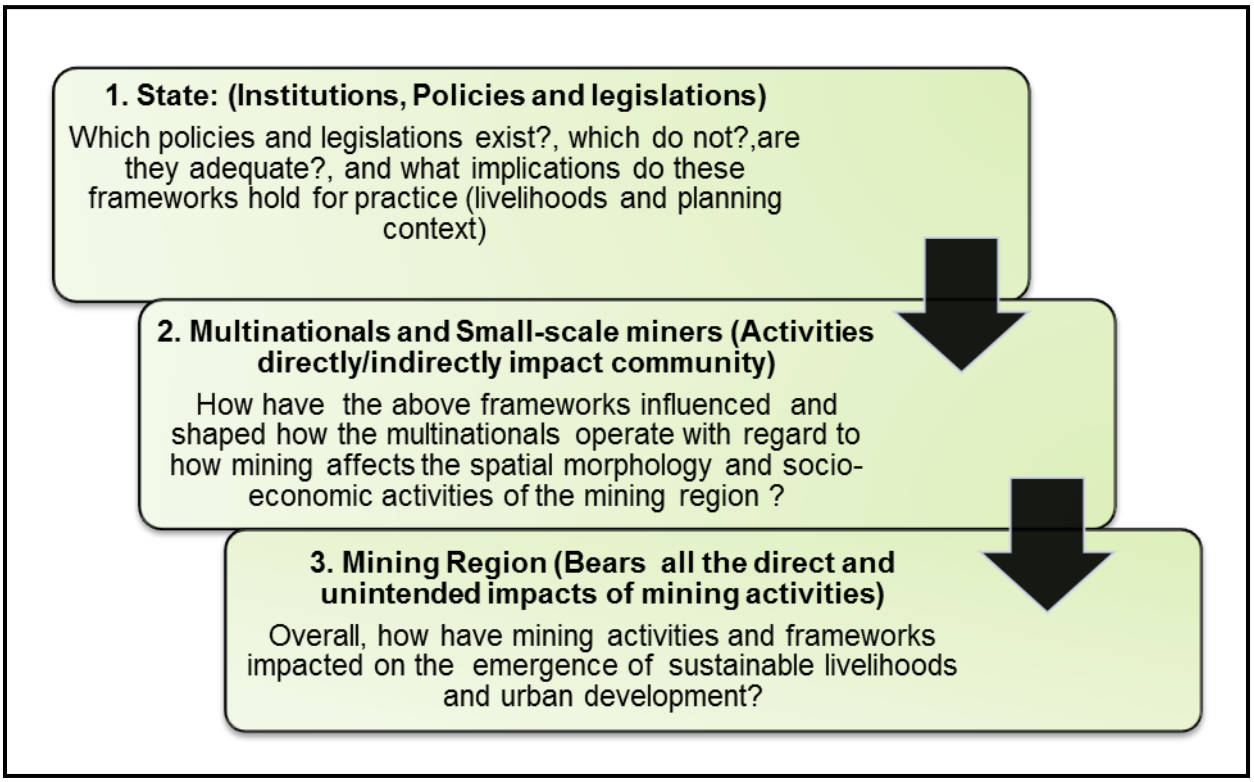

Figure 1. 3: Key Questions Emerging from Interactions Among Mining Stakeholders

Source: Author Construct, 2013

It is against this background of inadequacy of appropriate legislations, gaps in mining and related urban development policy that this research attempts to explore the extent to which these act as impediments to the sustainable development of mining towns and the associated development dynamics in the mining region of Tarkwa.

1.4 Statement of Problem

The inadequacy of an urban development and planning policy instrument/framework and gaps in mining legislation and practices thereof seem to adversely affect the emergence of sustainable spatial and socio-economic development of Ghanaian mining regions like Tarkwa.

1.5 Research Questions

Broadly, the research answers the question: How have mining impacted on the sustainable development of Tarkwa spatially and socio-economically within the context of current (or lack of) mining, planning frameworks and practices thereof within the Tarkwa mining region?
Specifically, the research questions included the following:

i. What gaps in mining and development planning regulatory framework exists and how have these impacted on the efficacy of management practices in responding to consequences of mining-led development?
ii. What have been the perceived impacts of mining on urban livelihoods and community business enterprises and how have households responded in terms of coping strategies and mechanisms?
iii. What are the planning and development implications of these emerging planning and development frameworks for sustainable development of mining towns in Ghana?

1.6 Research Objectives

The broad research aim was to understand the extent to which mining and related urban development policies as translated into practice, have impacted on the spatial and socio-economic development on mining towns in Ghana using a case study of the Tarkwa region

Specifically, the research aimed:

i. To identify the key mining and planning regulations existing, gaps present and how these have impacted on the efficacy of management practices in responding to consequences of mining-led development.
ii. To analyse the urban household's perceptions of mining impacts on livelihoods, business enterprises and livelihood coping strategies and mechanisms.
iii. To assess the implications of these emerging planning and development frameworks and trends for the effective planning and development of mining towns in Ghana.

1.7 Research Assumptions

In line with the research, the following assumptions were made:

i. Mining induced urbanisation is a specific type of urbanisation which affects the planning and development outlook of mining towns and regions.
ii. The growth and development or otherwise of mining towns is tied to mining activity.
iii. Policy and legislations on mining and urban development has an overarching role in development of mining towns.

1.8 Delimitation of Research

Contextually, the research was concentrated in these key areas:

i. Key mining legislation and how they relate to community livelihoods, environmentally and socio-economically.
ii. Key planning legislations that border on settlement management and how this relates to development of mining settlements in Ghana.
iii. Key Institutions in the practice of development planning and mining at Tarkwa-Nsuaem Municipal Assembly and at the national level.
iv. Role of Foreign Direct Investment (FDI) and spatial-defined impacts of mining from a global perspective and within the context of urban livelihoods in Tarkwa.
v. Spin-offs of mining and effect on growth of business enterprises in Tarkwa
vi. Problems, challenges and prospects in urban development practice

1.9 Significance of Study

A lot of studies have been done on mining in Ghana and in the Western region. However, this study is different in that, it looks at the planning dimension of settlement development in mining regions and the focus was on urban households. The research is thus significant on three broad levels:

i. The identification of key gaps in Ghana's Minerals and Mining Act of 2006 and praxis of urban development in a mining region are a useful input to the on-going reforms that are taking place around urban development in the Western Region of Ghana as well as mining sector reforms. Furthermore, it contributes to the constant debates in Ghana about how to make mining legislations more responsive and proactive to mining communities and livelihoods.
ii. The study to a large extent addresses the operational dynamics of mining regions. This is significant information to the Tarkwa-Nsuaem Municipal Assembly; planners and development practitioners, in the face of resource booms not only in gold mining but in the burgeoning oil industry in Ghana.
iii. The final research output which is a thesis is a useful source of information to students of not only Town and Regional Planning but students with a leaning towards research as it can be a useful source of knowledge in terms of transferability of research methods for a case study.

1.10 Limitations of Study

The challenges of this study were based on data collection in the field from December 2011 to early March 2012. One of the challenges of this study was that illiteracy was rife in many parts of Tarkwa and therefore questionnaire administration took longer than anticipated. Before questionnaire administration, respondents had to be educated on the rationale of the research and that it was for academic purposes and not one that would directly be a response to some of their needs.

Another challenge related to the release of aerial and topo-cadastral mapping which mining companies were unwilling to provide. This largely affected the output of the research as the researcher could not relate spatial changes on the ground to some of the findings in other sources of data. Also, the lack of access to a comprehensive database on business enterprises in Tarkwa made questionnaire administration largely restrictive to business enterprises that could be “seen” in Tarkwa. The author also had to contend with the use of population figures from 2000 due to the fact that results of the 2010 Population and Housing Census were not out as at the time the research was conducted. Furthermore, only preliminary results of the census were subsequently released. This covered the general outlook of population and housing for the regional capitals of Ghana and not details of Municipal/District Assemblies as would have been required by this research.

Lastly, it was challenging to conduct interviews not because respondents were not willing to be part of the interviews but interviewees kept on rescheduling interview days and times. Also some interviewees were located in Accra (national capital) which meant travelling any time an interview was reschedule. That was not only exhausting for the researcher but also expensive in terms of cost and time spent on the field.

1.11 Organisaton of Study

The research is organised into nine chapters:

Chapter 1 gives a snapshot of the whole research by outlining the statement of the core problem, objectives on which the research is premised, the significance of the study and scope of the study.

Chapters 2 and 3 comprise of the literature review. Three types of literature relating to policy, theory and research (Wallace & Wray, 2011:96-97) is reviewed for this study.

Chapter 2 examines the unique growth dynamics of mining regions and explores the theoretical, conceptual and definitional issues around development and sustainability in resource regions. Chapter 3 of the literature looks at policy and regulatory frameworks around mining and development planning. The mining regulations of Chile and Botswana are examined as they are regarded by the World Bank as having some of the most effective mining policies and regulations in the developing world. The case of Ghana is also analysed with regard to gaps in key frameworks for mining and development planning. In that regard, the identification of regulatory weaknesses and gaps foregrounded the impact and implications on livelihoods and development of mining settlements. Furthermore, a review of the Minerals and Mining Act of 2006 as part of the literature review is a first step in achieving one of the objectives of this study. Both sets of review however provide a firm grounding for the conceptual framework of the study.

Chapter 4 outlines the research design and delves into the methodology adopted for field work, analysis and synthesis of data from the field.

Chapters 5, 6, 7 and 8 look at the analysis and interpretation of data. Chapter 5 focuses on the urban households of Tarkwa and their perceptions of mining impacts. Chapter 6 centers on the nature of community enterprises and impacts mining spin-offs have had on their growth. Chapter 7 assesses the coping strategies adapted by households to deal with perceived negative mining impacts, while Chapter 8 provides an analysis of the planning and development response to mining-led urbanisation

Finally, Chapter 9 is a synthesis of the study and concludes by casting the meanings of the findings to the broader problem of mining-driven urbanisation and making recommendations in relation to development planning theory, policy, practice and research. The organisaton of the study is summarised in Figure 1. 4.

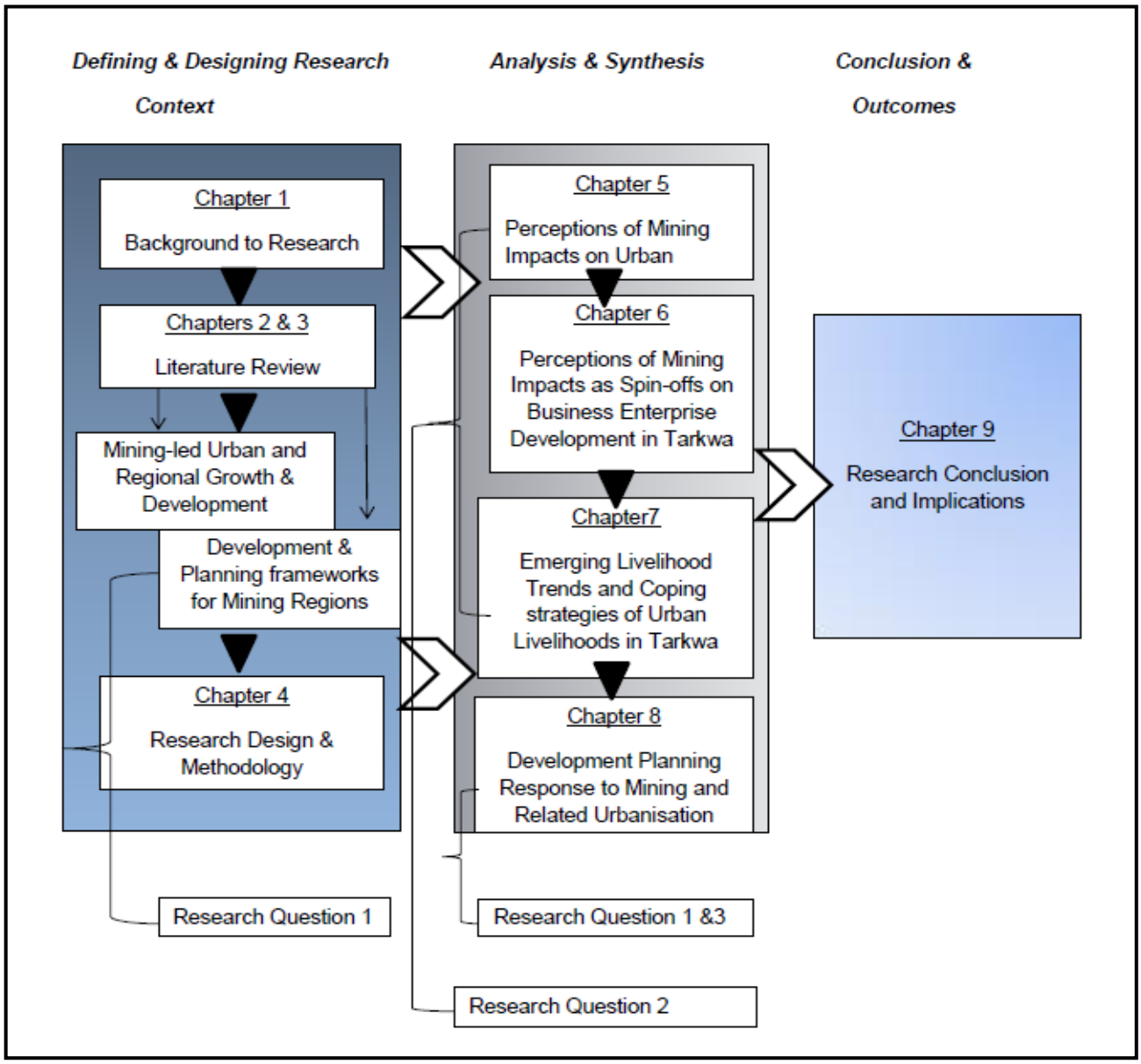

Figure 1. 4: Overview of Thesis Structure

Source: Author Construct, 2013

CHAPTER TWO:
MINING-LED URBAN AND REGIONAL GROWTH AND DEVELOPMENT

2.1 Introduction

Mining is essentially a triad of people and the mining settlements they live in; MNCs who control and dominate mining; and national governments of mineral-endowed countries that enact and implement mining policies and regulations through institutions. A medley of issues crop up in relation to the aforementioned actors. These include mining impacts; livelihoods and coping mechanisms; mining investments; planning policy regulations and implementing institutions. These fundamental issues largely converge on development and sustainability of mining regions which have implications for urban development management.

Development is a normative concept defined differently by scholars, for example (Escobar, 1996; Todaro, 1997) within economic, social, cultural and technological contexts. Sumner and Tribe (2008:11) advance three different definitions of development namely:

- Development as a long term process of structural and societal transformation or change and is historical.
- Development viewed as a short to medium term outcome of set targets; and
- Development from a post-modernist view based on the “dominant discourse of Western modernity”.

Though development is often viewed in a positive manner, which is in terms of progressive change, the historical perspective of development recognises that development may not necessarily be positive/good change but involve regression, decline, stagnation or other challenging situations within the broad perspective of socio-economic change (Spooner, 1981; Sumner & Tribe, 2008:12).

In mining regions, a primary concern is not only when development shall take place and in what forms should growth be pursued, but also specifically:

i. How mining-led urbanisation and related growth impacts on urban livelihoods and the coping strategies urban households employ.
ii. How spin-offs from mining affect the growth of community based business enterprises.
iii. How existing policy and regulatory, frameworks impact on development trajectories, towns and regions.

These questions are fundamental to mining regions because their development path is linked with mining activity which involves the exploitation of an exhaustible mineral resource. Therefore mining-led growth and the attendant settlement functions present spatial and socio-economic impacts which affect not only livelihoods at the community level but also on the overall development trajectory of that particular region. Mining-led growth is therefore a specific kind of growth which in this chapter is explored in theory, research and practice.

2.2 Mining-led Growth and Impacts within a Global and African Context:

2.2.1 Mining-led Growth and Macro-level Impact through Foreign Direct Investment (FDI)

Urbanisation and globalisation are the main trends propelling the growth and development of cities and towns in the 21st century. Globalisation has increasingly made possible borderless sharing of ideas through increased connectivity, access to global financial and capital markets (Friedman, 2007). Globalisation is touted as even increasing "the desire and capacity of people to move to other places" (Annan, 2006:963). According to a World Bank Report (2002:1), there were about 3.9 billion people living in about 56 countries mostly in developing and transition economies. The United Nations Population Fund projections (UNPFA, 2007) indicated that an urbanisation milestone would consequently be achieved in 2008 with 3.3 billion people (which is more than half of the world's people) now living in cities. However, much of the unprecedented rates of urbanisation in the world are taking place in the developing world - Asia and Africa. By 2050, Asia will host 63 percent of the global urban population, or 3.3 billion people; Africa will have an urban population of 1.2 billion, or nearly a quarter of the world's urban population (UN-HABITAT, 2008/2009).

Much of the growth (about two thirds) that Africa will be experiencing is to be absorbed in its secondary and tertiary cities (settlements with less than 500, 000 inhabitants) rather than in large cities (UN-HABITAT, 2008). Potts (2013: 20-29) emphasize that most of these projections are overhyped and that the real issues should be the driving factors behind these increased populations and *where* these populations are migrating to. A view supported by McGranahan (2012) who cautions that "the route a country takes to urbanisation will have a big impact on economic growth, social equity and environmental sustainability". To this end, Potts (2013:29) notes oil is one main driver of urbanisation especially in Africa and mining whose impact on settlements has always been mixed.

Hence globalisation and urbanisation coupled with the increased discovery of mineral resources in many parts of Africa suggests the populations of mining regions can grow.

The growth in Asia has consequently sparked a new trend in global and capital markets – where primary commodity prices have hiked, increasing competitive labour, intensive manufacturing and the increased potency of Asia as a direct source of investments (Thurlow & Breisinger, 2008:1).With an increasing shift in the world's economic center of gravity towards Asia (Mckinsey Global Insitute,2010), China and India have emerged as the key resource dynamos consuming more than 60 percent of global gold according to World Gold Council East-Asia managing director, Albert Cheng (Creamer, 2013). This has thus driven new mining-led growth and increased foreign direct investment in the mining sector in Africa (Thurlow & Breisinger, 2008:1). For the African continent, George Fang, Standard Bank's Head of Mining and Metals China observes:

> *The race for Africa's mineral resources continues to gather momentum. Continued growth in consumption resources is being driven by growth in China and the rest of Asia. Chinese companies are increasingly acquiring assets, as are Indian companies, prompting other global miners into a race to secure mineral assets of their own. This movement for resources can be to the benefit of the African continent* (Harding, 2011).

However, the bigger question could be the extent to which the aforementioned statements can be regarded as merely rhetorical given that several MNCs now dominate and dictate mining. Alternatively, what effects thereof does mining-led urbanisation/growth have on mining regions, livelihoods and the development of mining towns? The above rhetorical questions are fundamental to the arguments that have dominated mining literature about the benefits or otherwise of mining through the course of history.

Insofar as mining is concerned, MNCs seem to largely deliver at the macro level in terms of mining benefits through FDI. FDI by several multinational mining companies is by far the biggest contributor to the economies of mining countries through growth in GDP. According to the World Bank (2007), Sub-Sahara Africa grew at 2.4 percent between the periods 1990-2002, this rate however doubled to 4.8 percent from 2002- 2005. Half of the additional growth was attributed to mining and construction, whose annual growth rate increased from 1.8 percent to 8.1 percent. Robbins (2012) observes that even though Africa's share of FDI is relatively low at 2.8 percent in 2011, GDP has increased significantly across the African continent from rates below the 4 percent average for the 1994–2003 periods through to 5.1 percent in 2011 after a peak of 7.1 percent in 2007. Growth in GDP in African economies through large FDI of MNCs is regarded as one of the ways to deliver development to African economies and through reduction of poverty. For example, Davis (1995), Ding and Field (2005) and the World Bank (2006) support the positive correlation of resource exports to GDP and poverty alleviation. The World Bank Group's (WBG) continued support for the

extractive industry is premised on the belief that poverty can be alleviated and economic growth achieved through the generation and prudent management and allocation of revenues from resources in mineral-rich countries (World Bank, 2003: 12). Some scholars (Collier, 2007; Goldstein *et al.,* 2006) see it as the opportunity for regions such as Africa to bridge the gap in terms of development with the developed world.

Sachs and Warner (1999, 2001) are of the view that a high resource export to GDP ratio is lower for these resource regions. Arguments against mining-led growth result from notions of "resource curse" or "Dutch disease" associated with resource booms. In fact, mining has been central to the evolution of the idea that resources can be a curse with regard to the "lack of development, internal tension, human rights abuses and conflicts at the national level" (Ballard & Banks, 2003:295). This, according to Humphrey *et al.* (2007), results from the shifting of the economy towards the extractive needs of the mining sector, thus limiting any form of structural diversification, technology accumulation and generates rent seeking and corruption which undermines the effective spending of windfall gains made (Gelb & Associates, 1988; Auty, 1990; Ross, 1999). This "good-bad" paradox of mining is explored subsequently in this chapter.

Potts (2012:21) observes that *where* GDP is produced is of more significance, not just the amounts and should be the focus of debates around African economies. She thus points out that, when the focus is on specific locations where production is taking place, then there is a shift in debate to where value is added - is it mineral sites and what multiplier effects occur through growth in enterprises, jobs, consumption linkages amongst others?. This leads to question of spatially defined impacts of mining-led growth which is discussed below.

2.2.2. Mining-led Growth and Spatially Defined Impacts on Settlements and Livelihoods

Mining-led growth was instrumental in urban development in the past and will influence the path of development in several mining regions for some time in the foreseeable future. The process, patterns, growth and development of settlements continue to be linked very much to the discovery and exploitation of mineral resources. Robbins (2012:159) reckons that there are basically three types of settlements that develop around mining:

- Those located around large-scale and artisanal mining sites.
- That of large scale regional service towns (cities) that are located in regions of concentrated mining activity, and lastly;
- Those that develop in national mining hubs or regions.

The macro-economic level impacts of mining notwithstanding, of more relevance to this research are the spatially defined impacts of mining which have far-reaching implications on settlements and households. These impacts can broadly be categorised into the socio-economic and environmental.

2.2.2.1 Socio-Economic Impacts

The economic impacts of mining on livelihoods largely relates to employment and income from direct or indirect wage employment. In terms of formal mining, the impacts relating to employment has varied from around the nineteenth century where mining employed less technology, lesser degree of specialisation and used more of labour through to the twenty-first century where advances in technology have resulted in use of less labour. For example, mining was central to the evolution of labour markets in Europe in fifteenth and sixteenth century where people who worked in mines were among the first wage earners (Braudel; 1992 as cited by Graulau: 2008). Also, the coalfields exploitation in nineteenth century Britain tremendously increased populations of these British towns, drew huge labour force and also had locational pull on other industries as well as the development of transport infrastructure within and outside the coal field towns (Spooner, 1981:23). Commenting on the role of coal in the development of Britain in the nineteenth century Brown 1972 (as cited by Spooner, 1981:22) argued that coal was not only dominant as a source of energy but

> … *coal was a big enough activity in itself for its distribution to have significant effect. Its direct effect on regional income, output and employment were considerable, and it drew a huge labour force to the coalfields, while at the same time it exercised a powerful locational pull on industries.*

Similarly, before the discovery of mineral resources in South Africa in the 1870s, the rate and levels of urbanisation were low (Dewar *et al.,* 1986:179-189). The discovery of gold in 1886 was a crucial factor in the transformation of Johannesburg from a mining camp to a city of about 150,000 people (Warren, 1973 as cited in Spooner 1981:24-25). Potts (2013:22) however observes that Johannesburg's development was an exception due to the extensive mineral wealth of that region. The discovery of mineral resources in the form of diamonds, gold, copper and coal precipitated urbanisation and transformed the spatial configuration of several Southern African regions namely Kimberly, Witwatersrand, Katanga, the Zambian copper belt and Whangee in Zimbabwe (Tapela, 2002).

Counterpoised to nineteenth century, in the 20th and 21st century however, technology in mining is one of the key determinants shaping formal mine employment by ; helping mining companies cut back on labour/employment cost or resort to use of contracting; and the avoidance of creation of new settlements through fly-in-fly out policies. Carrington *et al.*

(2011:337) in their explorative study of post-industrial mining booms, regimes changes and criminology impacts in Australia observed that:

> *… organisation of production and employment in the mining industry has been recast over the last two decades…In a short time the mining sector has gone from being one of the most highly unionized and regulated in Australia to one now heavily reliant on sub-contractors, precarious employment practices and industry self-regulation … post-industrial mining regimes maximize resource extraction through continuous production processes organised around block roster shifts relying increasingly on non-resident, contract labour accommodated in work camps. By 1991 more than 40 mining operations employing a total of about 5,000 workers used predominantly non-residential workforces, known as fly-in, fly-outs or drive-in, drive-outs (FIFOs/DIDOs*).

Potts (2013:11) also notes that when copper prices fell in the 1980s and 1990s, the copper belt of Zambia largely lost its population and bounced back after 2003 due to increased copper prices. She however points out initial census data for 2010 indicated most towns in the copper belt were still losing their populations as "employment practices and new technologies mean the mines have become more labour efficient".

Following from the foregoing arguments, it seems reasonable to say that the impact of mining in terms of formal mining employment is increasingly limited by advances in technology. The need for newer technologies that has fostered specialisation in formal mining also implies the increasing need for persons who are highly educated and skilled to operate or use such technologies. Conversely, over 20 million people worldwide depend on mineral extraction in artisanal/ informal sector for their source of livelihood compared to direct formal employment (ILO, 2002). Gold-panning for example does not generally create settlements but is an income-earning opportunity to support livelihoods (Potts, 2013:13). This is aside the general consensus in the mining industry that the artisanal sector mining is poverty driven (Hilson, 2003).

Stokes *et al.* (2010:75) observe that, in developing economies the migration of labour into extractive sectors like mining, oil and gas often result in an over-supply of labour. This in turn, they note "feeds subsistence entrepreneurship in regional locations as opportunities are created to make a living through self-employment". These developments and business start-ups are stimulated by incomes earned or opportunities to earn a living or create value that are rather subtle and usually in relation to spillovers or spin-offs relating to skills and businesses resulting from mining (Robbins, 2012; Potts, 2013). Artisanal miners in some of Ghana's mining towns invest in property, commerce and transport (Ofei-Aboagye, *et al.,*2004) and some of the economic spin-offs in artisanal mining can have urbanising impacts in small towns as in the case of Tanzania (Potts: 2013). Economic spill-overs can also benefit other settlements that act as large service or commercial centers (Robbins, 2012: Potts, 2013). Examples of such spillovers to other areas arising from concentration

and agglomeration effects of mining activity in the Tarkwa mining region of the Western region of Ghana include food and human resources transfers, supplies and transportation flows from Takoradi, Kumasi, Accra and Tema.

A World Bank Report (2009) observes that, socio-economic effects of mining impacts men and women differently in both formal and informal mining. The report argue that in terms of employment for example, men usually have an upper hand because they are generally more educated; physically stronger; the extractive industry is considered a man's domain and culturally sensitive to women participating. In small-scale and artisanal mining, women are also paid less. This observation is supported by a study of livelihoods of small-scale and artisanal miners (in Tarkwa/Prestea and Bolgatanga mining regions in Ghana), by Ofei-Aboagye *et al.*(2004) who observed that, there was a hierarchy in earnings with women earning the least and sponsors[1] (usually men) earning the highest. They also observed that the income earned by the women hinged on the amounts earned by those crushing the ore which added to widespread sexual exploitation of female workers.

Another direct impact that mining has on livelihoods in mining settlement is the loss of land, especially farmlands due to the conversion of land for mineral extraction or other support infrastructure (World Bank, 2009). The increased adoption of surface mining through advances in technology in certain parts of the world tends to compound the problem of land scarcity. In their study of the impact of surface gold mining in the Western region of Ghana using Landsat images, Schueler *et al.* (2010) found that, surface mining had resulted in 58 percent deforestation, 45 percent of farm losses within mine concessions with spillover effects of farmlands moving into forest areas. Akabzaa and Darmani (2001) in their study of affected mining communities in the Tarkwa after Structural Adjustment Programmes reckon that, mining investments in the area displaced about 30 000 people between 1990 and 1998. Some of these displaced people either moved to other areas in search of farmlands or moved to immediate and more urbanised mining towns like Tarkwa. A phenomenon Belem (2009:122) suggest often result in price inflations, worsen income disparities in the mining settlements and increased cost of living.

Following from the above observations, it is indicative that landlessness affects livelihoods in terms of food security, jobs and increase demand on existing lands and facilities in adjoining settlements. Ofei-Aboagye *et al.* (2004) noted that one of the implications of landlessness on the part of small-scale mining communities in Ghana is that they resort to financial

[1] They own or finance mining activities

contractual agreements with sponsors often at very high cost. The result is that artisanal miners default in their payments and this is treated as criminal. They further observed that for some mining towns like Tarkwa it has become well-known and hence the use of the term *Tarkwa fraud*[2]*.* Bush (2008:59) questions how communities that have been stripped of their assets (mainly land and landed property) to make way for corporate expansion as in the case of youth and women being denied access to livelihoods in small-scale mining and clearing of concessions of galamsey in Ghanaian mining communities can prove beneficial to development in the country. These are experiences which Bush (2008:59) describe as:

"*abjection - which is an active process of being expelled and thrust out from economic and political processes that policy makers declare are intended to further integrate, and thus 'develop' local communities".*

Potts (2013:22) argue that issues of corporate expansion can limit the extent to which small-scale mining will have multiplier effects in any mining region. On the other hand, it is however worth recognising that, galamsey activities in Ghana often cause environmental damages, child labour and encroachment on concessions of large scale mines (Obara & Jenkins, 2006:6-20). The misunderstanding between the unlicensed artisanal miners and large scale mining companies thereof is one leading cause of tensions and conflicts in mining towns in Ghana.

The impact of mining is also manifested in social vices such as prostitution and the spread of sexually transmitted diseases, trade in liquor, school dropout rate and crime. Some authors (Van Onselen, 1982; World Bank*,* 2009:14) have argued that the inherent characteristic of mining being male dominated, has meant that most mine workers living in mining settlements without their families and the accommodation of workers close to production points play a role in festering vices like prostitution and liquor trade. Prostitution for instance was a necessary evil in some places like the Rand in Johannesburg at the end of the 1800s and early 1900s. Van Onselen (1982) observes that by 1896, prostitution in Johannesburg was no longer a localised trade but consisted of "continental women" from other parts of the world and prostitution's prominence was a contributory factor to the sustenance of mining in Johannesburg at the time. As Charles van Onselen (1982:16-17) observed:

> *… the presence of prostitutes in such large numbers helped to make life on the Rand a little more bearable for single miners and, to the extent that it assisted in attracting and stabilising the industry's semi-skilled and skilled workers, it met with the tacit approval of the mine owners. Neither the mine owners nor any of their newspapers - neither of which were otherwise characterised by their reluctance to raise private or public questions about the moral well-being of sections of the working class - brought the issue of prostitution and its effects to the attention of the government, or embarked on any campaign to deal with organised vice in the mining town*.

[2] A term used to describe the widespread default in payment of loans by artisanal miners with respect to financing of artisanal and small- scale mining in the Tarkwa mining region as cited by Ofei-Aboagye *et al* (2004) in their study report of livelihoods in small-scale and artisanal mining in Ghana.

2.2.2.2 Environmental Impacts

Aryee (2003) reveals that environmental damage resulting from mining could be either on the lithosphere (land), hydrosphere (water) or in the atmosphere (air). An array of environmental damages occurring range from but not limited to: land and soil degradation, destruction of farms and animal habitats, air pollution (dust and toxic vapours), noise pollution, cyanide leach or spillage (Akabzaa & Darmani, 2001; Ofei-Aboagye *et al.*, 2004; Hilson &Yakovleva, 2007). Some of these environmental impacts can result in health related problems such as upper respiratory tract infections, skin infections and vector-borne diseases such as malaria and onchocerciasis (Akabzaa & Darmani, 2001).

There is also a case of "orphaned mines" which can pose environmental and health risk to mining regions where they are located, with Canada being a case in point (Belem, 2009:121). South Africa for example, after several centuries of mining has had to contend with a legacy of Acid Mine Drainage (AMD).This is especially in the Witwatersrand Basins which have management responsibilities and financial implications for the treatment and supply of quality of water which largely impacts manufacturing and agricultural industries (Kolver, 2013). The effects of Acid Mine Drainage notwithstanding, effects of sulphur from coal mining have affected hitherto productive agricultural lands in Mpumalanga and quality of water in Limpopo mining regions (Kolver, 2013).

From the foregoing review of literature, it can be said that the activity of mining has evolved over centuries due to influencing factors of urbanisation, globalisation, labour and advancing technology. Even though literature shows that mining's impact have unquestionably remained, the type, scale and extent of impacts on livelihoods, mining economies, overall settlement development and function are to some extent influenced by the aforementioned factors (urbanisation, globalisation, labour and advancing technology). Mining impacts will thus differ from region to region. Within the context of this research, such observations relating to mining impacts provided a foundation for seeking the opinions of urban households about some of the impacts of mining on their livelihoods and how they cope in terms of livelihoods strategies. Also, livelihoods may also come in the form of economic spill-overs or spin-offs relating to mining which is relatively unexplored in literature and this research sought to investigate how mining has affected community enterprises in terms of their growth and sustainability. Livelihood strategies are explored in the next section of this chapter.

2. 3 Coping Strategies of Urban Livelihoods

According to De Satge *et al.* (2002:4), a livelihoods framework can be explained as "a way of understanding how households derive their livelihoods by drawing on capabilities and assets to develop livelihood strategies composed of a range of activities". A livelihood framework also considers elements within the external environment that may affect livelihood security and derives from an analytical approach to development that:

> … *draws on a conceptual framework which can be used as a basis for analysing, understanding and managing the complexity of livelihoods, enabling complementarities and providing a basis for trade-offs … providing a basis for identifying policy objectives and interventions (Carney:1998).*

There are generally two broad approaches to looking at livelihoods: a narrower economic point of view (production, employment and household income) and a more holistic view comprising concepts of economic development, reduced vulnerability and environmental sustainability of the rural poor (Shackleton *et al.*, 2000). Even though livelihood frameworks were premised on a rural development context, latter frameworks looked beyond the rural dimension of livelihoods. Different concepts of livelihoods emphasise different issues within different contexts developed by agencies like DFID, CARE International, UNDP and Oxfam. For example Oxfam put emphasis on a right to sustainable livelihoods and UNDP focuses on the impact of technology and intervenes at a level of "adaptive strategies" (Rakodi & Lloyd-Jones, 2002). Also, earlier concepts of livelihoods (and subsequently modified by the DFID) as first put forth by Chambers and Conway in the 1990s were based on participatory research ideas and practices. They explained the concept of livelihoods as comprising:

> … *the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain and enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation …* (Chambers & Conway, 1992:7–8)

Other definitions are less concerned with terminology and more emphasis is put on people, issues of ownership, access and decision making (De Satge *et al.,* 2002:4). They however note that, the bottom line of the different livelihood frameworks is to achieve the following:

- Identify (and value) what people are already doing to cope with risk and uncertainty.
- Make the connections between factors that constrain or enhance their livelihoods on the one hand, and policies and institutions in the wider environment.
- Identify measures that can strengthen assets, enhance capabilities and reduce vulnerability.

Based on the aforementioned common denominator on all livelihood frameworks and within the context of this research, the emphasis was not adopting a specific framework but looking at some of the core elements in a livelihood framework that served as a methodological

guide for analysing livelihood coping strategies within the context of an urban mining region. In this regard, core components of the DFIDs livelihood framework (Appendix F) were adapted. This is because the DFID framework also made provision for application of the framework in an urban context, and not particularly adapted to a mining region. Also, all livelihood frameworks essentially have a focus on poverty and development. However, the focus of the study is not necessarily geared on interventions related to poverty.

2.3.1 Vulnerability Context

The issue of risk and uncertainty of livelihoods raised by De Satge *et al.* (2002) hinges on vulnerability. Vulnerability is explained as the susceptibility of households, individuals or communities to shocks or longer term stress that is imposed by varying economic, environmental and social contexts (Rakodi, 2002). For mining regions, this vulnerability context is underscored by mining regions' growth and function tied to the *life* of the mine which has associated booms and bust cycles. Additionally, the narrow economic base of mining regions is often focused on the extraction of a non-renewable mineral whose stability is limited by the volatility of commodity markets, changing political climates influenced by global scrambles for minerals and local community contestations over benefits from resource extraction. As earlier discussed, this results in impacts which significantly affect the way households earn and construct their livelihoods.

2.3.2 Capabilities/Assets

Rakodi (2002:8) maintains that available assets form the basis on which livelihoods are built and are influenced by the context; and the substantive context for this research is mining. Assets therefore refer "[to] a stock of capital (augments income but not necessarily consumed in use) that individuals or households draw on to construct their livelihoods" (Rakodi, 2002:10). This capital can thus be stored, accumulated exchanged, depleted or used to generate a flow of income or other benefits. In many developing countries it is uncommon for households to support their livelihoods on a single business activity or full-time wage employment (Rakodi, 2002:7). They thus usually employ a range of capitals (natural, physical, financial, social and human). Meikle (2002) pointed out that within the urban context some capitals such as financial and human capital could be more important than others like natural capital. Based on DFID's sustainable livelihoods framework (Appendix F) therefore, five forms of capitals were derived for this study and they are explained below:

i. **Human Capital:** Head of Households ability to work and generate income.

ii. **Natural Capital**: Direct dependence on land or land resources for livelihood.
iii. **Financial Capital**: Land and Housing property as an asset, savings, loans and pension.
iv. **Social Capital:** Social resources in the form of family, friends, member associations, networks that heads of households can draw on for financial and moral support.
v. **Community Interventions**: refers to access to political/traditional authority at the local community level and through which grievances and efforts can be channeled and addressed and has significantly impacted on households. It is important to note here that, this is separated from social capital because it has both political/governance and social connotations.
vi. **Tarkwa-Nsuaem Municipal Assembly** (**TNMA) –** [Local Authority] **Interventions**: Access and use of facilities, services and infrastructure that has been provided by the Assembly which directly impacted on household in one way or the other.

The methodological and practical implications of the livelihood approaches provided a critical conceptual and organisational backdrop for the framing of the study's livelihoods coping strategies as will emerge in Chapter 7.

2.3.3 Policies and Institutions

Meikle (2002) point out that policies and regulations are a product of context- the substantive research context is mining. Therefore, as part of a review of key mining legislations in chapter three, this research examined the Minerals and Mining Act of Ghana (Act 703) which highlighted how some of the weakness of the legislation has generally influenced and have implications for the community livelihoods The research in chapters three and four also review how regulatory frameworks are shaping mining in developing countries like Chile and Botswana as well how urban policies relating to growth pole concept can be adapted to a mining region to promote growth and development in the long term.

2.4 The Conundrum of Mining and Development: An Exploration of the Theoretical Founding of Mining in Development and Practice.

The relationship of mining to sustained development can be termed as a necessary evil. In some spheres it is touted as "good" and in other circles regarded as "bad" for development. Mining is constantly oscillating between this "good" and bad" paradox. Graulau (2008, 129-130) observes that this "problematic relationship" is due to three main reasons;

i. Mining was seen to be independent of economic development in times past.
ii. Mining was naturally rooted in world empires.
iii. The lack of a consistent view among development theorists in the twenty-first century about the role of mining in development.

Humphrey *et al.* (2007) point to the nature of natural resources as they can only be exploited and not produced. Therefore exploitation and mining can be done irrespective of political (governments can go into resource development without the consent of their citizenry) or economic (natural resource development can still go on without been linked to local industry) process. Secondly, minerals are non-renewable in the sense that their extraction is finite and therefore from an economic point of view they can be seen as an asset or natural capital (Barbier, 2006:25) than as a source of income. Literature on mining suggests that pursuing sustained development from mineral extraction could thus be a contradiction of terms or outcomes. This part of the literature review is not so much to conclude on whether mining is good or bad in terms of contribution to development but rather seeks to point out that mining impacts over the years have been intrinsically related to the theoretical development orientation dominant at a particular period. This in turn influenced practice by dictating mining policy agenda and action of multinational and transnational corporations in their approach to dealing with mining regions.

To this end, the review adopts Graulau's (2008) approach in her research on the review of the intellectual question of mining in the development field; in which she refers to mining as a swinging pendulum between "good" and "bad" in the context of development. Graulau's (2008) approach categorises this paradox into three main approaches:

a. The classical political economy which supports capitalism and views mining as good for development; and theories include: structuralism, dependency, neo-dependency, world dependency, feminist and discourse.
b. Theories opposing capitalism and views of mining as bad for development.
c. The third explanation being the *normative history* of the place of mining in development with grounding from theories of the capitalist order and those opposed to it.

These three approaches are given further meaning with regard to their influence in how mining regions grow, and the mining and policy discourses which impact mining regions.

2.4.1 Mining is Good for Development: Earlier Mainstream Development Theory

Graulau (2008) suggest that all theories relating to idea of mining being good for development are rooted in capitalism spanning from around the seventeenth century to the early twentieth century. The subject of mining and minerals was first indirectly addressed in mainstream development theory by Ricardo (1817) who developed the theory of comparative advantage (Graulau, 2008: 136). This theory suggested that every country had the ability to produce a particular good or service at relative lower cost to other goods (Screpanti & Zamangi, 2005). His theory would affect and influence how nations at the time viewed production of goods and services in terms of wages, supply of labour, role of technology, cost, among others (Graulau, 2008). Furtado (1982) asserts that the idea of comparative advantage was used to "justify the specialisation of European colonial territories in mining and extractive products" (Furtado, 1982 as cited by Graulau, 2008:135). Graulau suggest that before World War I and II, mining of minerals propelled international commodities trade for European countries essential to develop their economies which gave them advantage over their competitors and other regions. The impact on mineral regions did not matter.

The theory of comparative advantage had a further influence on different theories of location which can explain how mining regions grow. For example, Gunnar Myrdal's (1957) theory of cumulative causation sort to explain imbalances in growth has a foundation in comparative advantage. He explains that the forces that make a place attractive for development will continue to attract more development and this will disproportionately affect other regions (backwash effects) as it gains a comparative advantage. Mining regions have traditionally relied on their resource endowments to propel their growth, given that resource extraction gives them an initial locational advantage over other areas. Mining regions thus assume some form of comparative advantage over other surrounding regions as they attract skilled labour and investments from industries through forward linkages. Growth will thus take place cumulatively as the effects trickle to benefit other areas. A case in point being coal fields in nineteenth century Europe which acted as the stimulus for urban growth in coal-mining regions, and therefore the locus of that continent's urban industrial development. According to Wrigley (1969), as cited in Spooner (1981:23) the growth of London had much to do with coal mining expansion and the effect was reciprocal:

> *London stimulated coal expansion, access to coal for domestic and industrial consumption helped to sustain London's growth* (ibid, 23).

Hirschman (1958) however, observed that backwash effects may occur. A twenty-first century example is Mount Isa. Mount Isa is a mining town in the state of Queensland in Australia which consistently lost its population and employment even though it has been the

hub for knowledge intensity for the Australian mining industry. There has been only little transfer of knowledge and technology from the mining site into the city that it operates (Fernandez & Wu, 2008:35). The theory of location therefore was very much relevant in times past but advances in technology and telecommunications have changed the way in which mining companies and industries locate. A case in point being the fly -in- fly out of mining operations in Australia which has influenced regional economic growth patterns benefiting coastal regions rather remote areas (Hogan & Berry, 2000:648).This thus highlight an important point in how mining regions cannot exclusively rely on the locational advantage of their resources to grow sustainably.

Graulau (2008) asserts that Word War I and II changed the field of development theory as theories (example Hirschman, 1971; Firestine, 1972) all began to emphasize on a *balanced view of growth* and *disguised employment*. Such scholarly thinking prepared the context of policies of the World Bank in their approach to dealing with mineral economies. This approach was achieved through market and private enterprise where mining was to be viewed as a source of financial capital. Thus Rostow (1962:22) observed that:

> *Mining is a sector capable of attracting international finance (investments and loans). This presupposes opening the mining sector to foreign capital. Only in this way could traditional societies transform their natural productive resources into comparative advantage.*

This view of mining which was upheld by Bretton Woods institutions would be the foundation of several of its policies concerning mining economies of the world. For example, before 1983, Ghana experienced economic crises which was characterised by lax financial management, high inflation rates, and government largely involved in the economy (International Monetary Fund, 1998). Economic recovery from 1983 onwards was to be driven by a market oriented approach premised largely on privatisation, liberalisation and redefining the role of the state (Owusu, 2005:54). The economic recovery programmes resulted in a revamp of the mining sector as this saw the influx of MNCs, policy reform and minimal state ownership of mineral resources. A major policy reform was the introduction of the Minerals and Mining law of 1986, with subsequent amendments into creating the Minerals and Mining Act of 2006 (Akabzaa & Ayamdoo, 2009:15). These regulations had flexible financial incentives to attract MNCs. The liberalisation of the economy and the ensuing influx of MNCs saw the increase in mineral production. This would subsequently result in several hectares of land move to the hands of multinational mining corporations; resettlement and migration of people in affected mining communities; loss of livelihoods in farming among others.

2.4.2 Mining is bad for Development: Critical Development Economics

2.4.2.1 Structuralism and Dependency Theories:

The subject of mining being bad for development gained a lot of prominence because of South American *structuralism* and *dependency* theorists and was triggered by the Great Depression and World War II (Graulau, 2008:140; Davis, 1994).This was championed by scholars like Raul Prebisch who first coined the term *periphery* in his argument of unfair trade and growth between countries in Latin America that exported raw materials and the advanced industrialised capitalist societies. He contested the principle of comparative advantage and argued that

> … *international division of labour, based on comparative advantages, operated to the detriment of the countries specialising in the production of agricultural and mineral commodities because of an inherent tendency towards diminishing terms of trade for raw material export* (Prebisch 1994 as cited by Graulau, 2008:140).

Furtado (1982) further developed on this concept of "center" (concentrated on the production of industrialised goods) compared to the periphery that produced raw materials which only perpetuated underdevelopment of the periphery. In relation to mining, dependency theorists were generally of the view that … "peripheral mining areas will remain isolated; minerals mined only as a response to industrial demands of the capitalist west or monopolistic multinationals; importation of technology resulted in fewer labour employed" (Baran, 1957; Furtado 1970).

2.4.2.2 Growth Center theory.

Other dependency theorists like Francis Perroux (1955) developed the growth pole[3] theory. This would later be given a more geographic expression from its initial "economic" conception by relating the economic definition to a geographic space - thus the emergence of a growth center concept (Darwent, 1969). As Conyers (2000 as cited in Manyanhaire *et al*., 2011) points out, the relevance of this reformulation by "physical" planners and policy makers was seen in its potential as a regional planning tool and a development strategy to solve inequality between the *center* and *periphery*. Boudeville (1966:11) is among those credited with the translation of such an economic concept into space with the concept of a polarised region defined as "a heterogeneous, continuous area localized in geographical space, whose different parts are interdependent through mutual complementary relations

[3] a large group of industries strongly related through input-output linkages around a leading industry (propulsive industry)as cited by Richardson & Richardson, 1975:163

centered around a regional center of gravity". Another definition sees a growth center as: "an urban core (and its surrounding area) which is capable of either spontaneous population or economic growth or of potential growth which could if required be stimulated by government intervention" (EFTA, 1968:30, as cited in Cloke, 1979:31).

Richardson and Richardson (1975:163) were of the view that such definitions are more useful in terms of policy perspective due to:

a. Linking location theories and central place theories to regional growth thus relevant to planners in development planning.
b. Focuses on spatial concentration and agglomeration of population and economic as the most significant in organizing resources in space.
c. Offers several opportunities for integrating diverse policies (intra regional economic planning, physical planning and industrial policy).
d. Analysis of both the size, distribution and the spatial distribution of cities in the national urban hierarchy and finally for creating economic or industrial agglomerations in order to stimulate growth.

Spooner (1981) for example, considered investment in mining regions as an opportunity for the development of a new growth pole based on the ability of minerals development to regenerate depressed areas or underdeveloped regions and combat lack of growth in underdeveloped areas. The successful application of the growth center theory in practice has however generally been mixed (Darkoh, 1977). Two case studies are used to review and evaluate the application of growth center theory and concepts in mining regions.

Case 1: *Growth Center as an Avenue of Growth in a Mining Region: Ciudad-Guyana Experience*

Cuidad Guyana is located in the Orinoco region of Venezuela in South America. This region is endowed with an array of minerals including nickel, iron ore, manganese gold, bauxite, oil and gas. The Cuidad case was an attempt to use mineral wealth to stimulate growth in the remote and underdeveloped eastern region and simultaneously acting as a counterpoise to concentrated development in Caracas (Spooner, 1981:26). In the early 1960s, the Corporacion Venezolana de Guyana (CVG) was the public corporation that was tasked to transform this region which initially started as a physical planning exercise to develop a new city. This involved the design of land use patterns and transportation links, integrating of existing settlements and industrial locations in a single community sharing one city and the building of a hydroelectric dam (UN-HABITAT, 1997:115). The was positive in the

transformation of Guyana's role from that of just a new town to an economic hub with "as an export-oriented industrial base able to provide an alternative, complementary form of economic growth to that of oil exports which the country depended on since the 1920s"(Spooner,1981:126).

The impact of the strategy has been widely criticised even though others regard it as successful. Friedmann (1966) hails the impact of the project on the region and the national economy as a whole as Ciudad Guyana emerged as Venezuela's industrial hub for steel and a heavy exporter of intermediate goods as forward linkages were developed as presupposed by the growth center theory. However in subsequent writings (Friedmann & Weaver 1979:172) described the project as producing "simply another bit of the old Venezuela" and felt it was misleading to think that the primary purpose of such growth centers is spreading growth impulses as the growth doctrine literature will have people believe (ibid: 180).

A huge amount of oil revenue was committed to this agenda and was calculated to be around 10 percent of all public investments between 1965 and 1975. The population of Guyana founded in 1961 reached about 130 000 by 1975 (Spooner, 1981:26) and by the mid 1980's it had a population of about 400 000 (UN-HABITAT, 1997:115). Stohr (1975) believes that the multiplier effects were only modest compared to the scale of investment, and that the center was controlled from Caracas despite all the comprehensive planning. Gilbert (1992, as cited in UN-HABITAT, 1997:115) concedes that on the whole, the Guyana growth center played an important role in the spatial re-configuration of the Venezuelan economy.

Case 2: *Growth Center Policy in a Depressed Mining Region: The case of Appalachia*

The Appalachia region[4] is a case in point where the growth center approach was attempted to revive a depressed mining region. Mining had done a great deal of harm in Appalachia since it had 26 percent of all land in the united States that was disturbed by surface mining and over 4000 miles of rivers polluted by acid drainage (Spooner,1981:38). This was a case where "mining and other resource-based activities failed to sustain self- enforcing growth" (Spooner,1981:38).

The region was so vast and given the limited budget at the time, there was need to concentrate investments in areas that had the greatest potential for growth in the future.

[4] Defined in Appalachia Regional Commision's authorising legislation as a 205,000-square-mile region that stretches from the spine of the Appalachian Mountains from southern New York to northern Mississippi. It also covers all of West Virginia and parts of 12 other states: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia (http://www.arc.gov/).

Adopting the growth center approach was partly political and also due to the composition of the Committee that drafted the regional policy for the growth of the region around 1963 and 1964 was dominated by economists and regional planners. The growth pole concept was ingrained into Appalachia Regional Commission (ARC) management code and subsequent development strategies (Eller, 2008: 180). In its application, investments were to be concentrated in a few leading regions with the potential for growth and thus they would reach a critical size and would achieve self- sustaining growth as well as spill overs to other smaller growth points. This proved to be a danger for some smaller sized towns which consisted of 'thousands of tiny mining camps [and], communities which were marginalised when the regional effort aimed at reviving all these communities was done through "a haphazard distribution of the federal largesse" (Eller, 2008). However, according to Sweeney, an ARC member, the strategy had to concentrate budgetary funds on areas that had the greatest potential for growth and:

> *… ignore the pockets of poverty and unemployment scattered in inaccessible hollows all over the area… and build a network of roads so that the poor and unemployed can get out of their inaccessible hollows, can commute to new jobs in or near the city* (Eller, 2008:181).

Spooner (1981:39), reports that 75 percent of the initial funds were used in highway construction as this was meant to open up the periphery and create greater access to facilities and jobs. This apparently resulted in criticism and opposition in the first year of operation especially from rural Appalachia (Spooner, 1981:39; Eller, 2008:181). Efforts were made to further address concerns and make the concept more workable in smaller sized communities. With a shift in policy emphasis from largely highway development to first focus on human resources development, health, education, among others (Spooner, 1981:39). Secondly, there was also a focus on enterprise development that foregrounded investment and more support for private enterprise - access roads, water, industrial sites. These efforts were aimed at incrementally removing barriers to growth-isolation, poor human resource and lack of economic overhead capital (Spooner, 1981). Last was a move towards the development of a three tier urban hierarchy model which allowed resources to flow to middle-sized cities and towns that lay along the development axes between metropolitan areas and rural areas. In Appalachia this enabled development to "trickle down" and allowed for the integration of smaller settlements with larger ones. Thus Eller (2008:182) reflected that:

> *… in central Appalachia, these growth areas included clusters of smaller cities organised with surrounding rural counties into sixty local or area development districts. When connected to larger urban centers by good highways and transportation facilities, these second tier cities could provide employment and services for the remote hinterland populations within a fifty-mile radius, thus creating an integrated regional development plan within a larger national development system.*

It is important to note from the above case of Appalachia that it was not necessarily the idea of the growth center concept but it was how the concept was used in an evolving manner to meet the changing needs of a depressed mining region. Often criticised for its top-down approach, the growth center as applied in Appalachia made room for concerns from the bottom of the hierarchy and this may have been one reason why this concept made for some form of growth in Appalachia and other reasons included:

i. First of all, it was realised that there could be possible backwash effects with concentrating investments in bigger cities thus, there was the need to connect at the same time smaller size cities and towns to bigger ones and with the necessary funding they could determine areas of potential growth within their own towns.
ii. Secondly, ARC also wanted to move away from depending totally on infrastructure development to stimulate growth thus the shift to development of human resource capacity which is a process emphasized in order to achieve local economic growth for especially mining regions.
iii. Lastly, it was critical that the growth of these mining towns should be integrated into a national system of regional development policy for growth of larger towns and cities. This is crucial for any urban development policy to be able to link mining towns (in their early, middle and latter stages) to larger urban centers and how these fundamentally affect the spatial and socio-economic development of broader regions.

From both the Cuidad Guyana and Appalachia cases, it is evident that the use of growth center-type concepts to stimulate any form of growth in mining regions requires huge investments in financial resources, infrastructure and a sophisticated contextual grasp of the development dynamics and resource milieu of regions they are located.

2.4.3 Other Development Theories: Mining is Bad for Development

Other development orientations that also adopted an anti-development view in mining included neo-structuralism and feminist discourses in mining. Neo-structuralism focuses on the analysis of institutions and structures, dynamics of international trade that seem to deepen the gap between developed and developing countries (Graulau, 2008). Leading theorist (Gligo, 1980) of neo-structuralism as it relates to mining contests that:

> … *mining operations have historically encouraged patterns of severe deforestation and erosion of soils The need to clean and break large stretches of land, the need to produce the wood and energy required by foundries, and the maintenance of the system of animal traction that provided transportation are the structural requirements of mining operations. For example, historically mules, donkeys and horses have been used to transport minerals to the ports; these were domesticated and grazed in vast stretches of land that became overgrazed. Land was reorganized according to the empire's interest in populating regions that had greater prospects for mining operations. Native cultures were forced to work in agricultural and mining enclaves.*

Moreover, agricultural production was oriented initially to serve mining purposes, and new agricultural and livestock products were incorporated based on the needs of mining extraction (Gligo, 1980 as cited by Graulau, 2008:147).

2.4.3.1 The Resource Curse and Sustainability: The Paradox of Resource Endowment

The resource curse hypothesis is one of the theory fragments from structuralism theories that attempts to explain the development failure or why most mineral endowed regions are worse off in terms of development in comparison to regions with little or no natural resource. Development economists have adopted several approaches to explaining the resource curse thesis and they include economic approaches (often using regression models) explained by the so-called "Dutch Disease" and rent seeking behavior; and non-economic approach which focuses on policy failure, particularly ineffective institutions to productively reinvest proceeds of resource depletion (Atkinson & Hamilton, 2003).

a. The Dutch Disease.

The concept of the Dutch Disease contends that a sudden increase in mineral prices raises the exchange rate and therefore shifts growth to the natural resource sector at the expense of other sectors such as manufacturing. Davis (1995:1768) puts it simply as "the coexistence of a booming and lagging sectors in an economy due to a temporary or sustained increase in export earnings". There is a "resource pull effect" as labour and other services increasingly shift to natural resource sector at the expense of other sectors due to increasing cost (Humphrey *et al.,* 2007). In developing countries it is usually the case of the agricultural sector and Davis (1995:1768) describes this as a medium term "deindustrialisation" since the natural resource sector grows and other sectors, like the manufacturing sector's decline or shrink.

The name arose from the difficulty the Netherlands faced in the 1970s when its tradables sector (manufacturing) shrank after gas mining in Groningen fields increased (Davis, 1995:1768). The long term consequences of this is that when the natural resource sector eventually returns to normal, then the other sectors may never recover. Growth in the non - tradables sector is supposed to be able to counter any negative lower rates in other sectors such as manufacturing but as Bulte *et al.* (2005:2) explains manufacturing is usually assumed to be the main engine of growth because "it either generates positive externalities or is subject to increasing returns to scale at the level of the sector". Davis (1995) however has a contrasting view of the Dutch Disease saying it was only coined to describe the causes of the structural effects of a sudden boom in mineral prices and the resulting changes in the economy. Mineral boom cannot therefore preclude growth as this is the

exception rather than the rule in comparing the indicators of economic development for mineral and non-mineral exporting countries. Auty's (2001) overview on the case study of different developed and developing resource countries showed a mixed result in both cases.

Another point worth noting about natural resources which may give rise to the Dutch Disease and consequently affect economic growth is the volatility of natural resources prices and demand especially oil and gas. This volatility according to Humphrey *et al.* (2007) comes from the quantity of oil money and the timing of earnings especially when earnings are viewed as a source of income. This volatility of income comes from among others: the variation over time in rates of extraction, variability in timing of payments by corporations to states, and fluctuations in the prices of natural resource produced. This characteristic of the natural resource extraction is what causes the boom and bust cycles. The booms in the good years become transient and the problems generated during the bad years endure. This has been the bane of many mineral resource countries as the enduring nature of bad times affects the sustainable development of the mining regions due to environment degradation, loss of livelihoods, inadequate infrastructure development and provision. A very good example has been the copper boom in Zambia. Zambia's economy dwindled and so did populations of its Copper belt mining towns after low copper prices in the 1980s and 1990s (Potts, 2013). Critical to how boom and bust cycles will affect mining regions is the key role of the quality of institutions and governance and polices set in place. This is further discussed below.

b. Rent Seeking

The second economic explanation for the resource curse is the potential of rent seeking due to windfalls from mineral booms. Rent seeking can be explained as an attempt to get economic gain or rents by manipulating the social and political environment in which economic activities occur without giving back to society through wealth creation (Mehlum *et al.,* 2006).This results from the tendency of governments to incur large expenditures in unproductive public ventures which are motivated by politics than by productivity, profit or for the public good. Since rents are concentrated, appropriable and easily obtained (Weinthal & Jones Luong, 2006:37; Torvik, 2002). This thus breeds corruption, leads to distortions in public policy spending which negatively affect economic growth. Competition over rents between governments, individuals and multinationals result in a "feeding frenzy" and tends to sidetrack national governments in achieving long term development goals (Weinthal & Jones Luong, 2006). A case in point has been Indonesia's state oil mining in Pertamina in the late 1960s and late 1970s where large windfalls generated huge rent-seeking opportunities for several actors who were closely linked to the state and then mineral rents became hugely

patronized by the Indonesian military (Weinthal & Jones Luong, 2006). The long term effects of this became manifest in the lack of investment in new energy projects over the past decade and oddly enough becoming the first OPEC member to import oil (Basher, 2005 cited in Weinthal & Jones Luong, 2006).

c. Institutional Quality.

The third category of explanation for the resource curse relates to the quality of institutions that ensure that resource rents can be adequately invested in other forms of wealth or easily dissipated by governments or political regimes. Atkinson and Hamilton (2003:1804) suggest that what contributes to the resource curse in policy terms is the correlation between savings and sustainability in the link between savings and investments. Their research revealed a strong relationship between resource abundant countries that spent their proceeds, are those that have on average experienced a significant amount of resource curse. This was found for the relationship between resource depletion, government consumption in general (particularly wages and salaries). Broadly savings and growth and the resource curse were positive for countries that had low or negative savings. Atkinson and Hamilton (2003:1804) have attributed the existence of quality institutions to make efficient/sound economic decisions to the success of countries that have escaped the resource curse. Mehlum *et al.* (2005:3) suggest that "institutions may be decisive for how natural resources affect economic growth even if resource abundance has no effect on institutions".

Consistent with these findings are an array of examples. Botswana's experience from the mining of diamonds has had the world's highest GDP since 1965 and this is attributed to the good performance of its institutions (Mehlum *et al.,* 2005). Botswana among all African countries is said to have the best score on the Groningen Corruption Perception index, and is in the same category as Norway which was one of poorest European countries in the 1900s but now one of the richest (due to natural resource wealth like timber, oil and gas). They are also among the least corrupt countries in the world (Mehlum *et al.,* 2005). Several studies (Lane & Tornell, 1999 ; Acemoglu & Robinson, 2002) confirm this hypothesis of good or quality institutions in resource abundant countries linked with economic growth and inferior/dysfunctional institutions linked with slow growth due to rent seeking effect and weak governments which allows for windfalls to be easily squandered among competing groups be it political governments or multinationals.

From the above review, it is evident that the resource curse hypothesis is debatable since its verification involves a lot of cross country regressions which are subject to bias and one which is still undergoing a lot of research especially in the areas of institutions and resource

abundance and the resource curse. It is also clear that no single country was born resource cursed but the common denominator between the three explanations for the resource curse lie in the choices made by individual national governments in their political structures, governance regimes and institutions. Policies therefore have an indirect link to the resource curse hypothesis since institutions and governance determine the kind of policies in place and whether these policies will affect how economic rents are used (high public spending or private consumption, the kind and levels of investments that take place). This is key to the present study since it looked at how mining and urban development frameworks (in terms of policy and regulation) have together fostered an environment in Tarkwa which will allow for sustainable spatial and socio-economic impacts of mining.

2.4.4 Pendulum Swings in Mining's Favour- Recent Trends in Development Discourse

Twenty-first century debates on mining and sustainable development all converge on the idea of competitive advantage and a shift away from comparative advantage. This approach emphasizes human resource development, adaption of technology, economies of scale among others (WBG, 2002: Graulau 2008). Graulau (2008) observes that all debates are part of a broader paradigm and policy that take their roots from neoclassical theories[5].

For example, the World Bank Group (2002:3) points to three factors that make mining "good" and this include:

i. *Origin of cluster of growth and "Staples theory*": Ability of mining and mineral commodities to encourage local industrial activity through forward and backward linkages. If pre-conditions such as transportation and power are met, mining can contribute to the creation of clusters of industrial growth.
ii. *Hub of knowledge, technology and innovation*: This is based on the argument that mining is a technology and innovation oriented initiative. It could therefore lead to the emergence of the innovative capacities of countries and a knowledge economy.
iii. With *economic management systems* in place, institutional capital, governance systems can transform flows from such FDI into long term sustainable wealth.

Graulau (2008:150-152), observes that the shift to competitive advantage also promotes mining in developing countries based on transnational capital intervention and for the last three decades has been championed by Bretton Woods Institutions. These included:

[5] Refers to the application of neoclassic theories to economic development and other aspects of economic affairs

- The first phase consisting of Structural Adjustment Programme Loans (SAPLs) started by the IMF to developing countries. In the area of mining, this involved flexible mining regimes involving fiscal and legal incentives and transfer of mineral rights and tenures to multinational corporations.
- The second phase was in response to deepening SAPLs and the interventions included involved: fiscal discipline, reordering public expenditure priorities, tax reform, liberalisation of trade, interest rates and inward foreign direct investment, privatisation, deregulation and property rights. The World Bank in this regard even put forth a paper that set out countries that were exemplary in that regard and lessons that could be learnt by other countries. The countries included Chile, Indonesia, Botswana, Ghana and Papua New Guinea (WBG/IFC, 1992).
- The third phase is represented by the Extractive Industries Review which puts "emphasis on corporatist mining as a way of achieving poverty alleviation and sustainable development … and includes normative stances about environmental impacts of mining, human rights and rights of indigenous peoples" (Graulau, 2008:151-152).

In light of this, the next chapter of the study reviewed regulatory frameworks around some of these countries cited by the World Bank which included Ghana. Owusu and Bloch (2008:25-32) are of the view that the benefits of Ghana's gold mining industry in regional development terms significantly rest on three linkages and these include:

i. *Fiscal Linkages*: This is largely through government revenues of tax on income, royalties and corporate taxes. A Mineral Development Fund which has been set up by government where 20 percent of the proportion of revenues is set aside to support institutions of mining at the national level and District Assemblies and traditional authorities at the local level.

ii. *Consumption Linkages*: The linkages are derived from incomes and profits that arise from the production of gold. Though difficult to quantify, Bloch and Owusu (2008) admit that this has stimulated several mining regions and outside of it. They noted that:

> *Western Ghana's mining towns feature a range of informal and business activities- cultivation, animal husbandry, food and beverages, trading and retailing, hospitality and recreation most prominent amongst them- which appear to have been stimulated by mining incomes* (Bloch and Owusu: 29).

iii *Backward Linkages*: These are linkages arising from the supply of inputs to the production of gold. This linkage is considered key to development and Ghana's industrialisation drive as there is largely the intensification of Ghanaian ownership or participation in the gold mining industry through backward linkages.

Geographically however, Bloch and Owusu (2008) contend that the higher order supply services are located outside of mining towns and largely concentrated in capital (Accra) and its adjoining industrial area of Tema. This can be attributed to the fact that Tema is an industrial satellite town with a seaport facility to transport and manufacture goods while Accra has the location for most of the head offices of mining companies, a network of state licensing departments, alongside Ghana's only international Airport. Lower tier services in the form of construction, catering, landscaping, haulage, security among others tend to be concentrated in mining towns themselves (ibid: 24).

Acknowledging the existence of resources alone does not make for local or regional development. Blakely and Bradshaw (2002) reflect that, it is a regions capacity (economic, social, technological and political) to transform these resources that is important. So the quest for development is finding the balance between resources and capacity. This is summarised in Table 2.1 which compares the old concept of comparative advantage and the new concept of competitive advantage based on human resource development, clusters of growth and collaboration for development.

Table 2. 1: Reformulation of Components of Local Economic Development

Component	Old Concept	New Concept
Locality	Physical location (near natural resources, transportation, markets) enhances economic options	A quality environment and strong community capacity multiply natural advantages for economic growth.
Business and Economic Base	Export based industries and firms create jobs and stimulate increased local businesses.	Clusters of competitive advantage industries linked in a regional network of all types of firms create new growth and income
Employment Resources	More firms create more jobs, even if many are minimum wage.	Comprehensive skills development and technological innovation lead to quality jobs and higher wages
Community Resources	Single purpose organisaton can enhance economic opportunities in the community.	Collaborative partnerships of many community groups are needed to establish a broad foundation for competitive industries.

Source: Blakely and Bradshaw, 2002

Other approaches (Jourdan, 2011; Wright & Czelusta, 2002) for sustainable local economic development in mining regions emphasize a resource-based industrialisation and stress the movement from a comparative advantage (premised on only natural resources) approach to a competitive advantage based on skills and knowledge. Having looked at the theories and their practical application in the growth, impact and development of mining towns, mining's role in regional development can be summarised into three different phases over time as depicted in Figure 2.1.

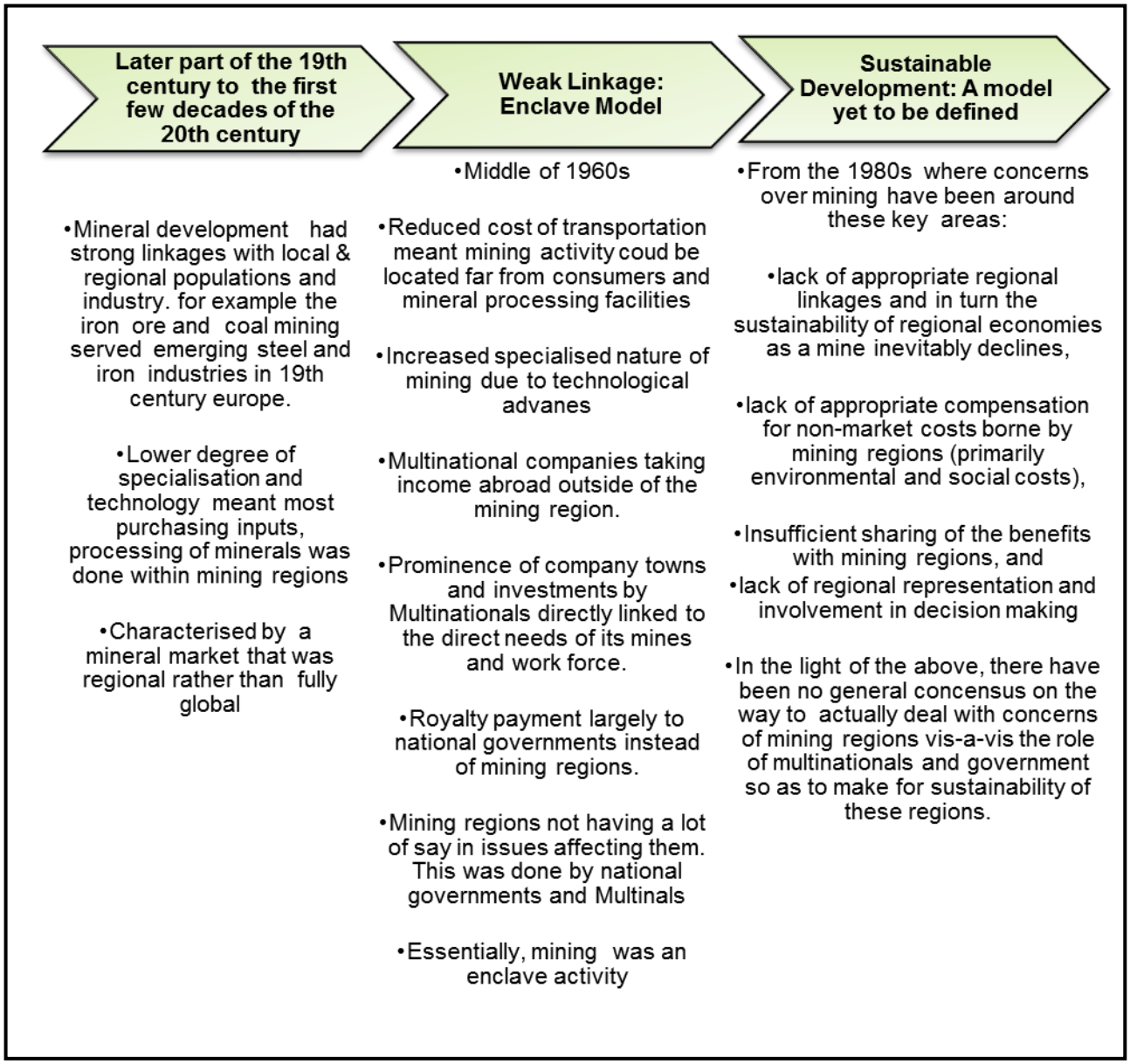

Figure 2. 1: Mining and Regional Development: Phases Over Time

Source: Adapted from Mining, Minerals and Sustainable Development Report, 2001

2.5 Chapter Summary

The point of departure for this chapter of literature was defining the unique growth context and dynamics of the mining region as underscored by theory and practice. This was put forward at the outset by laying bare the driving factors of twenty-first century mining activity - globalisation and urbanisation which affect and shape global capital markets and investments in mining regions; thus volatility of the commodities market and the associated booms and busts. Booms and busts often result in socio-economic and environmental impacts which could be positive – foreign direct investment at the macro level and spatially defined positive impacts like employment in the informal mining sector, spill overs in the form of business enterprises development among others. The negative impacts could also include: environmental damages, landlessness, and social vices. Capital market imperfections and the resulting boom and bust cycles (and thus impacts) on households of mining regions presents a vulnerability context and therefore a range of livelihoods assets would have to be employed in order to cope and construct their livelihoods.

The subject of mining impacts also raised the question of mining's role in regional development which is varied, has evolved over the course of changing development theory and a changing world economic order. From both theory and practice, the dominant thinking that has increasingly been recognised as a prerequisite for sustainable mining settlements and regions is the need for mining regions to evolve beyond their mineral endowments. Thus the current development discourse on mining's role in regional development put emphasis on a competitive advantage instead of comparative advantage. This is because mineral resources are exhaustible and technology is increasingly changing the way in which mining is conducted and thus the type and extent of impacts on mining regions thereafter.

The shift in development thinking around mining regions all underscore the need for a framework in place in terms of policy or regulation to guide and affect the actions of governments or institutions to drive the urban development agenda of mining regions. The next chapter explores some key regulatory frameworks of mining and urban development that should set out and guide development in mining regions.

CHAPTER THREE:
DEVELOPMENT AND PLANNING FRAMEWORKS FOR MINING TOWNS AND REGIONS

3.1 Introduction: Mining and Development Frameworks for Mining Regions

In Chapter 2 the researcher reviewed some theoretical and conceptual bases for resource-driven urban development. This review foregrounded, among others, the critical and evolving role of mining and development management frameworks in shaping sustainable development outcomes in mining towns and regions. By frameworks the author refers to the policy and the regulatory environment for both mineral extraction and urban development. Increasingly several commentators have reinforced the need for frameworks that maximize mineral resource extraction and beneficiation for mining towns and regions and this sentiment was recently articulated by the authoritative/influential joint report by the United Nations Economic Commission for Africa and African Union's International Study Group on Africa's Mineral Regimes entitled "Minerals and Africa's Development" (2011) which made an important observation:

> *… however, since the beginning of the mineral commodity price boom the sense that African countries have not been obtaining commensurate compensation from the exploitation of their mineral resources has intensified and become more widespread across the continent … the quality of minerals sector governance is an issue which runs through the Report – the quality and role of institutions; the capture, management and sharing of mineral revenue; policy coherence within countries and coordination among countries are some examples. Others are negotiating capacities, the management of and support for artisanal and small-scale mining and the management of impacts. The importance of the quality of institutions and of the requisite governance is underlined by the report…* p 3

The transformation of natural capital in the form of extractive minerals into wealth that can sustain the development of mining communities in regions and economies hinges to a large extent on regulatory framework and the quality of institutions in existence to manage them. Within mining circles, there is that growing consensus on the need for development of policy frameworks that capture mineral wealth to ensure that mining communities and the broader population receive the long term benefits of mining and also investments turns into opportunity for sustainable development (MMSD, 2001). A good regulatory framework should set out the extent and limits within which actors within the mining sector will operate with regard to:

I. methods for management of revenue that accrue;
II. who benefits and how benefits are used for the greater good than for a select few;
III. who bears the cost of mining and how are these costs are mitigated and;

IV. how all of the above also take place within the sustainable development framework of the mining region in question.

Institutions are therefore needed to see the implementation of some of these policies. The critical policy concern therefore is not only the question of what to do but more importantly how to do it (World Bank, 2002:3). The what and how questions were vital to the approach of this research because the research first tackles the what of mining frameworks - that is, what regulatory frameworks exist in terms of policy and regulation that hinges on mining-led growth; and to what extent these frameworks make for planning and sustainable growth of mining regions. Secondly the how question relates to practice - how is this affecting the way institutions respond to mining-led urbanisation and the impacts, are the communities experiencing the benefits of mining at the local level?. Countries that have been hailed as having effective frameworks for the extractive sector in the developing world include Chile, Botswana, Namibia and Ghana (World Bank, 2003).

Mining regulatory frameworks role in the development of mining regions and mining countries has evolved over time as the mining industry itself has changed over the years. According to the World Bank (2010:5), many countries in a bid to transform their mineral abundance into mineral wealth have undergone an evolution in policy reform which involved a move from increasing investments to promoting sustainable development as exemplified by their extractive industries value chain and this include:

- Mineral legislation- including the award of contracts and licenses and tax regimes which is sufficient enough to attract and induce investments in the sector:
- A mining regulatory framework which is clear and comprehensive and with the adequacy capacity of monitoring and enforcement of environmental, technical and social performance.
- Collection of taxes and royalties is done in a transparent and efficient manner once production is underway with government receiving its ‘fair share’.
- Management and allocation of the fiscal revenues efficiently and equitably by governments and to sub national levels. The mineral sector is contributing to the sustainable development of the country.

The mining sectors contribution to long term sustainable development could be through the sector acting as an engine of growth through direct job creation in the mines, job creation and new firms indirectly through the purchase of goods and services, or by building infrastructure through government participation that can be used by other industries (World Bank, 2010). On the other hand, it could also include the proper deployment and

management of the countries fiscal revenues to ensure sustained development (World Bank, 2010). A huge step towards the latter for ensuring sustainable development is through the adoption of responsive and progressive legislations that will create the enabling environment for private investors to come into the extractive industry to propel growth in the face of globalisation, liberalization and market based economies in the allocation of resources. This has been the reason behind most legal and regulatory frameworks reform in extractive countries from the 1980's (Bosson &Varon, 1977; Otto, 1997:1-7). For developing countries, Strongman (1992:9) notes that mineral growth has been primarily achieved through the private sector. Case studies of some developing countries with respect to their regulatory frameworks are examined to see how and what frameworks are key for ensuring growth in mining regions.

3.2 The Case of Chile

In terms of policy and regulatory framework for translating mineral resource abundance into mineral wealth, Chile is one of the most cited examples (Havro & Santiro, 2008; World Bank,2010). Mining has been critical to the development of Chile for several centuries and is still the mainstay of the Chilean economy. For example, between the period 1986-1998, Chile had an average growth rate of 7.6 percent which was on the same level with the Asian Tigers - Taiwan, Singapore, Hong Kong and Korea (Havro & Santiro, 2008:12). Chile is endowed with minerals such as copper; gold, nitrate, silver and coal. However Chile is a copper nation, with copper being referred to as the *el sueldo de Chile* (wage of Chile) or *oro rojo* (red gold) due to the contribution of copper to GDP and exports (Nem Singh, 2010: 61). According to the Chilean Copper Commission (COCHILCO, 2009), shared private and public sector production of copper accounted for about 35 percent of world supply in terms of output and 8 percent of GDP in Chile 2008.

3.2.1 Regulatory Reform for Development

Chile's performance has been attributed to its regulatory and institutional reform especially in the copper mining sector. It was one of the first countries within the Latin American region whose model of reforms inspired other natural resource countries within the Latin American region to follow suit (World Bank, 2002:11; Bastida, 2004:578). The government created a framework for private companies to operate through an evolving legislative framework (Aroca, 2001:128).Mining in Chile according to Lagos (1997:51) has undergone three main phases:

i. The first being from 1971-1973 when there was nationalisation of the mines during President Allende Salvador's socialist reign.
ii. The second from 1974 was a military government which took over from Salvador and ended in 1990 with the return to democracy.
iii. The third periods from 1990-1994 of President Aylwin and President Frei from 1994-2000 which witnessed major changes in development policy. Lagos (1997:51) also observes that a common feature of the three phases was the state intervention and investment in mining through the state owned company COLDECO(Corporacion del Cobre de Chile)

There are three key areas for emphasis when it comes to how Chile's mining regulatory reform (especially with copper) has aided in the development of Chile: these are mining regulatory framework reform; institutional reform and strengthening; and complementary policies and fiscal discipline in spending.

3.2.2 Mining regulatory framework: Law Reforms

The Chilean mining regulatory reform started with the Foreign Investment Statute Decree Law 600(DL600) of 1974 which is based on three principles:

- Non-discriminatory treatment of foreign investors as compared to National investors except for obtaining credit from a national entity.
- Free access to all aspects of the economy and.
- Minimum intervention by the government in investor activities (Lagos, 1997).

The law was modified several times since 1974 to make it efficient and attractive to investors and the following rights granted to foreigners under the DL600:

- Repatriation of profits with no time limit, except that this cannot be done one year after the money had entered the country.
- The investor can decide the terms and currency to be bought for repatriation.
- The investor has an invariable tax regime with a 42 percent effective rate for 10 years and up to 20 years for large investments projects (Lagos, 1997:56).
- There were also exemptions on value added tax for large equipment and machinery imported from outside of Chile and listed by the Ministry of Economics (Lagos, 1997: 56).

Alongside the DL600, Chile underwent several changes and amendments to its mining laws and codes until the adoption of the Mining Law of 1982. The two main reasons for the mining law were; in the short term to increase mining investments in order to have foreign currency

to finance external debt and in the long term increase export capacity of Chile which was necessary for future economic growth (Lagos, 1997). To this end, the Chilean Mining Code aimed to provide a strong market for minerals by providing clear, non-discretionary norms and procedures that were transparent (World Bank, 2003:24). Its major features included:

- Exploration and exploitation concessions are real property rights;
- Concessions are freely transferable, mortgageable, and inheritable, with no requirement of government approval;
- Concessions are awarded to the first eligible person who requests an available area, on a first come -first served basis; restrictions on eligibility are minimal;
- Only the holder of an exploration concession can apply for an exploitation concession and is not required to demonstrate a discovery to do so;
- Concessionaires can exploit all concessional minerals within the property;
- Exploitation concessions continue in effect for as long as the holder continues paying his concession fee; no minimum work or investment requirement applies"(World Bank, 2003:24)

According to Lagos (1997: 55-62) since 1990, the two democratic governments have applied the Mining Law of 1982 and the DL600 successfully from the point of view of attracting mining investments where Chile more than doubled its share of copper production in the world. This was against the backdrop of socialist and military rule prior to democratic government in the 1990s where copper production was generally low and investments in mining were considered not promising (Lagos, 1997:60).

3.2.3 Complementary Policies and Fiscal Discipline

Subsequent legislations that were developed included the Law 19137 by the Aylwin government which allowed for collaboration between the National Copper Corporation of Chile (COLDECO) and private companies in the prospecting and exploitation of new mines. Later environmental concerns due to pollution led to the promulgation of laws on Atmospheric and Water Contamination and creation of institutions to oversee and enforce these laws (Aroca, 2001:129). There was also provision for the implementation of a modern mining cadastre to provide accurate and available information on the status of all areas strictly applied "the first come -first served principle" for prospecting; and strictly applied the full transferability of the titles (World Bank, 2003:24).

Chile also diversified its economy through an industrial policy which allowed for support to natural resources related industries, development of infrastructure and human capital made

possible through collaborations between private companies and public institutions or government. For example, the Fundacion de Chile which has been crucial to Chile's economic diversification was a non-private organisation started in 1976 by the Chilean government in collaboration with US based Institute of Technology Transfer to ensure the transfer of technological skills and management (OECD, as cited in Havro & Santiro, 2008:15). This was to be achieved through research and development, adapting foreign technology and research aid in the diffusion of technology. The fruits of the organisation include successful wine production and fruits exports (Ibid: 15). COLDECO also supported the development of local content with regard to support for local smaller mining-related companies in the development of human capital and mining projects (Havro & Santiro,2008:15).

Strong government policies on employment generation and long term investment in human development such as training and skills development has been some factors attributed to falling poverty levels both nationally and regionally (Mcphail, 2009: 66). For example through public-private "mining clusters" government and mining companies are able to invest in education and International Standards Organisations (ISO) certification for related mining industries and companies to make them competitive for the export markets (Macphail, 2009:70). "Mining clusters" have reportedly led to a general growth of small enterprises (Mcphail, 2009:72). Through such redistributive policies, Chile is gaining significant benefits at both the national and local levels. For example in Chile's Region II which has the highest concentration of mining activities, it is reported to have had higher economic growth across the whole of Chile: GDP per capita reached $US 11,996 in 2003 which was double the national average (Mcphail, 2009:66). In 2000, Region II had the lowest poverty rate as a proportion of the total population of Chile and also recorded the highest educational and literacy levels in Chile (Ibid: 66).

In terms of mining revenues, Chile's fiscal discipline in spending its copper revenues has been achieved through a stabilisation fund "which helps to smooth out the cyclical rise and fall of copper prices" (Slack, 2009:77). Two funds namely, Economic and Social Stabilisation Fund and the Pension fund replaced the former copper stabilisation fund with the coming into effect of the Fiscal Responsibility Law which further strengthened an already cautious fiscal policy under previous military and democratic governments (Havro & Santiro, 2008:14). Such funds are invested by the Central Bank either nationally or internationally (Havro & Santiro, 2008:14). Added to this, the government is striving to widen its tax base in order to guard against volatility of world copper prices and improve tax efficiency. Apart from

copper revenues, income tax is reported to have contributed and an average of 72 percent between 1994 and 2006 of total government revenue (Havro & Santiro, 2008:14).

3.2.4 Institutional Reform and Strengthening

Through its changing political and ideological landscapes of dictatorship from democracy, socialism to neo-liberalism respectively, Chile has had strong and independent institutions both public and private that have helped its copper industry to succeed over the years. The state institutions that regulate mining directly include: Ministry of Mining, the Chilean Copper Commission (COCHILCO), National Agency for Mining and Geology, the Central Bank, Center for Mining and Metallurgical Research, COLDECO, Chilean National Mining Corporation (ENAMI) and the Institute for Mining Engineers. On the key role played by Chile's institutions to ensure a successful mining economy Havro and Santiro (2008:19) observes:

> *The strength of Chile's institutions can also be seen in the independence of some important institutions and the checks and balances they provide. On the one hand Chile has a strong presidency. This has allowed a tighter control of the budget, as the Minister of Finance together with the budget director, on behalf of the president, are in charge of setting spending limits and leading budget preparatory negotiations. On the other hand, the independence and political insulation of the judiciary, the constitutional tribunal and the Comptroller General, are seen as important checks on presidential power. The Ministry of Mining and Energy is responsible for the copper mining sector, including the support of initiatives to stimulate growth. The Chilean Copper Commission (COCHILCO), on the other hand, is responsible for regulation and legal compliance, and acts as an advisory body to state companies concerning development strategies. The National Service for Geology and Mining advises on technical, geological and mining-related matters, while CORFO, the Chilean Economic Development Agency established in 1939, aims to promote economic development also in the mining sector.*

A stable economic climate, a thriving democracy and partnerships with mining companies has allowed continuity of reforms, policies and projects which have continued to make Chile an effective example of mining-led development especially for developing countries. The above successes notwithstanding, Chile still have challenges. On policy, the Chilean environmental laws which have undergone reform over time and have helped improve environmental concerns are still devoid of mechanisms for community participation in environmental decisions and mining companies' policies and practices which seem to be ahead of environmental legislation and institutional system (Lagos & Velasco,1999). Furthermore, Chiles's inequality though reported to have been falling over the years is still regarded as one of the highest in the world. It is reported that the richest 10 percent of the population of Chile control 50 percent of the country's wealth and the poorest 10 percent control just 1.2 percent (Slack, 2009:77). Apparently Chile's gini coefficient (measures inequality) has remained unchanged for the past fifteen years, a period characterised by high economic performance, with the former Chilean President Michelle Bachelet stating that

the inequality in Chile is the main obstacle to the country attaining the status of a developed country (ibid:77). The case study of Chile shows that at the national level, in terms of delivering foreign direct investments and revenues, the mining industry seem to be making significant positive strides. However, the critical benefits and impacts at the community level seem not to be as highly evident since there appear to be a disconnect on how the legislations and policies offer strategies and mechanisms for translation into practice, to meet the real needs of people. It also raises the question of whether the local economic development agenda of mining areas fit into an overall national agenda and development framework or whether it is a case where the national agenda is pursued irrespective of the critical needs of the mining region in question.

3.3 The Case of Botswana

Botswana's economic growth has been premised principally on the discovery of large diamond deposits and to a lesser extent on nickel and soda ash. Botswana can be regarded as one of the prime examples of effective management of mineral boom for growth in the extractive industry and reforms to enhance growth in the African Continent. A World Bank study argues that Botswana is among the "best class" of mineral performing countries in terms of economic growth, management of mineral wealth and reform (World Bank, 2002:9). This is against the backdrop of growth in per capita GDP averaging over 9 percent from 1966 to 1999, the highest in the world for that period of time (Leith, 2005:4-5) considering the fact that Botswana had been among the twenty five poorest countries in the world at independence in 1966 (Saraf & Jiwanji, 2001).

Diamond mining is the biggest contributor to Botswana's economy in terms of government revenue and this enables government to invest in human resources, infrastructure and foreign reserves (Modise, 2000:8). Jefferis (2009:72) observes that:

> *From zero in the 1960s, minerals grew to a peak contribution of around 60 percent of total government revenues, although this has now declined to around 40 percent. Total government revenues have grown from under 30 percent of GDP to average around 40 percent, enabling a major increase in government spending while still permitting a budget surplus in most years. Most of the mineral revenues paid to the Government are from diamond mining.*

The impact of mining on mining towns and regions in Botswana has largely been indirect with most mining towns in Botswana owing their existence to mining or related activity. Jefferies (2009:73) again observes that:

> *… Several towns in Botswana (Selebi-Phikwe, Orapa, Jwaneng, Letlhakane, Sowa) owe their existence exclusively or mainly to nearby mining activities. These towns account for around 10 percent of Botswana's urban population. Wages paid to mining employees, and purchases by mining companies, provide the basis for secondary economic activities in these locations. The*

mining sector has also provided the impetus for the development of water and power supplies, and of road and rail infrastructure.

Parallel to this growth in mining activity was reforms that took place in terms of policy and institutions within the period (1966-1999) to enhance such growth. In terms of policies or regulatory frameworks existing to enhance mining-led development in Botswana, they were all geared to creating investor friendly climate environment for transnational corporations. These related to sound fiscal and economic policy, reform of appropriate mining regulations and institutions. At the heart of the above mentioned areas is the Mines and Minerals Act of 1999 which sought to make Botswana's mineral industry more investor friendly and also reflect "mineral development and dispositions in Botswana" (Matshediso, 2005:4) and replacing the old Mining and Minerals Act of 1976. Some of the key cornerstones of the new Act according to Matshediso (2005:4) which make for a more comprehensive investor friendly minerals development and investor climate include;

i. A taxation regime which was revised and automatically applies low tax rate to marginal mining projects and higher rates to profitable projects. There is also a reduction in royalties from 5 percent to 3 percent for all minerals except precious stones and metals. A 100 percent capital write off in the year of investment and with allowance for unlimited carry forward of losses.
ii. Addition of environmental policies which were nonexistent.
iii. Casting aside of ministerial discretion in favour of more transparent procedures for acquiring and transferring mining properties.
iv. Ease of transition from a prospecting license to a mining license, dependent on meeting necessary work schedule.
v. Introduction of a retention license which allows prospecting license holders retaining rights for up to six years after expiration when immediate mining development cannot take place due to economic or technical practicalities.

Additionally, the country also has a functioning institutional framework headed by the Ministry of Minerals, Energy and Water Resources which has overall responsibility for "developing and implementing the fiscal, legal and policy framework for mineral exploration and exploitation" (Matshediso, 2005:4).

Botswana has in place National Development Plans which act as a spine of all development and macro-economic policy decisions. National Development Plans are essentially plans for public spending and human resource use, and annual budgets are used as instruments for converting a development plan into a programme for action, on the basis of the projections underlying the Botswana macro-economic model (Jefferis, 1998 cited in Maipose, 2003).

Thus development planning is linked with the annual budgetary process helping to effectively manage mineral rents and foreign aid (Maipose, 2003). Policies are implemented at the sub-regional level through District and Urban Development Plans within a decentralised development and planning framework. Mosha (2007) observes for example that, the National Development Plan 8 emphasizes economic diversification for the development of Botswana beyond mining. This is applicable for all districts and towns in Botswana including mining towns. Planned and developed mining towns like Sowa in their urban development regions are thus looking beyond the single economic lifeline (Soda Ash mining) to other development opportunities in tourism, abattoir for the cattle industry among others (Sowa Urban Development Plan II).

The synchronization of the urban and district plans and National Planning framework, despite other challenges, is helpful in terms of bottom up planning to involve community priorities, participation, implementation and evaluation of policies, plans and programmes (Mosha, 2007:4).Furthermore, the well-structured nature of sub-regional planning (physical & economic plans) coupled with a National Settlement Policy makes for effective planning and development of Botswana's population from the national through to the village level. For example, regional master plans divide the country into Planning regions, each region comprising of several administrative districts (Mosha, 2007:8) as well as the regional master plans which seek to do the following:

> *… provide an overall framework for all district settlements and local plans setting general directions for district and settlement development, infrastructure and social services provision, economic/financial requirements and appropriate land utilisation. They also provide policies and strategies for utilising regional natural resources. Their objective is, therefore, to provide a framework for the spatial distribution of resources and to facilitate the creation of incentives for increased production through investment by the private and public sectors* (Mosha, 2007:8).

Mohohlo (2008) observes that National Development Plans were in place even before independence and therefore the prerequisites for sound policies were even in place before the discovery of diamonds. Furthermore, their constant revision to reflect the ideals of the Batswana people is due to a stable democratic government in place. Mohohlo (2008) further observes that such "policies were shaped by leaders who had their origins in, and were conditioned by, traditional society. Their leadership style reflected the broader interests of the democratic nature of Botswana society".

In summary, Botswana's success story for economic growth according to Mohohlo (2008) can be related to the following interrelated factors:

- Adherence to democracy and good governance.
- Disciplined and prudent macroeconomic management,

- Commitment to achieving priority development, goals, discovery and exploitation of mineral wealth and international goodwill.

Beyond local economic management, striving democracy, mining policy and regulatory reform the benefits however are minimal as Hillbom (2008:192) observes:

> *While commendable advances have been achieved during the last four decades, these need to be complemented with technological innovations, significant productivity increase, change in economic and political structures, a significant rise in living standards for the poor, and a more equal distribution of resources, incomes and opportunities for there to be long-run sustainable opulence with substance. Botswana's significant political and economic advances make up a clear case of growth without development. It is necessary to distinguish between growth and development as long as such change has not taken place.*

Mosha (2007:11) while recognising the poverty and unemployment levels in Botswana has acknowledged the role that sub regional plans such as master plans have played in reducing poverty levels and reducing rural urban migration through long term planning and channeling of resources into right areas for infrastructure development, rural development programmes and projects. An important focus seems to be around interventions in the minerals (especially diamond) industry value chain and thinking beyond diversification that includes inter-industry linkage and development (Morris *et al*., 2012).

From the foregoing discussion, it can be observed that mining has not always contributed to the direct development of mining towns and regions but rather more favourably on overall development for the people of Botswana. Botswana is therefore a work in progress in terms of attaining sustainable development. However giant strides have been made in terms of recognising the mineral wealth of the country and putting in place plans from the national to the village level to enable the country effectively plan its regions in the face of depleting non-renewable extractive resources like diamonds. It also strives to use its development plans to create opportunities for investment, development and community participation so that the benefits of mining can benefit their communities. Simply, Botswana's mining sector as spearheaded by the diamond industry is "driven by government policy rather than by market forces" (Morris *et al*., 2012).

The lessons from Botswana therefore can be put broadly into 2:

- At the macro level where government has a clear vision of development through the mining sector which is being achieved through the creation of an enabling environment for investment through adopting good fiscal and economic policies to manage its mineral wealth as well National Urban Development Plans, National Settlement Policies and Mineral development policies among others.

- Secondly, at the micro level, the government is striving to make the people benefit from mineral rents through its sub regional development and planning frameworks.

3.4 The Ghanaian Experience

3.4.1 Development Planning and Mining Regulatory Frameworks of Ghana's Mining Towns: An overview

Mining in Ghana is not creating any new settlements but taking place in already existing settlements. Settlements that are contiguous to mining may be resettled with other major towns growing due to population influx as a result of mining and related business activities. Ghana's traditional mining towns include: Obuasi, Tarkwa, Nsuta, Prestea, Konongo, Awaso and Bibiani. Mining towns in Ghana have generally been treated at like any "normal" town. This is because governments' response and interventions over the years to urbanisation and urban growth of mining and non-mining towns have been principally the same, pursued within the framework of a number of fragmented development plans (GoG, 2010a:4) and the policies (National Urban Policy, Decentralisation: Privatization, Participation) which directly or indirectly affect development and quality of life are the same for all cities and towns in Ghana (Post, 2004). This is despite the fact that mining towns have their own development trajectory and their growth over time spans from exploitation, construction, transition, maturity and closure (Spooner, 1981:6). This implies that any form of framework and practice which seeks to look at mining towns within the context of a "normal" urban system will fail if the dynamics of such a mineral resource economy is not properly understood and acknowledged.

Currently, most Ghanaian towns and cities are already reeling under pressure of urban waste management, traffic congestion, poor infrastructure and services which is hampering their ability to contribute significantly to national development. This according to Halfani (1997 as cited in Post, 2001) is due to two major structural problems:

i. Their inability to employ and accommodate a rapidly urbanising population. This is in part caused by development strategies which have caused major inequalities in the urban system resulting in migration to the country's core regions and major cities (Post, 2001). Thus, the challenge is not necessarily in the rapid urbanisation per se but its growth and distribution within the urban system as reiterated by the Vision 2020 (Post, 2001). This view of skewed distribution of urban population is buttressed by McNulty (1969). He observes that part of the reason for the poor spatial integration and uneven development of Ghanaian towns and cities is because

population is largely concentrated in the forest and coastal regions where mineral wealth and forest resources abound (McNulty, 1969:60).

ii. Global economic transformation processes which have drastically transformed international division of labour and the country's competitive advantage (cheap labour and agricultural raw materials) continue to characterise Ghana's spatial development.

The above structural problems notwithstanding, a key underlying problem that partly accounts for the character of Ghanaian settlements and its mining towns for that matter is the policy and regulatory framework. From the pre-colonial era through to the present, these regulatory frameworks have evolved and are reviewed in the ensuing parts of this chapter. The review focused on the key mining legislation (Minerals and Mining Act of 2006) on one hand and on the other hand development planning and regulatory framework for Ghanaian urban areas - thus a review of the draft National Urban Policy and the Local Government Act of 1993.

3.5 Periodising Development Planning and Mining Regulatory Frameworks and Impact in Ghanaian Mining Settlements

3.5.1 Spatial Footprints of Mining: Pre-colonial Era – Colonialism (before 1957)

Formal development planning in Ghana is essentially linked with a history of mining in Ghana. Ghana's mining history dates as far back to the Trans-Saharan Trade where gold was an important commodity in trade among merchants, ancient's kings and their kingdoms and to colonialist from Europe. Hilson (2002: 14) succinctly describes it this way:

> … *The gold derived from both the Tarkwaian and Birimian Belts precipitated the development of many successful ancient West African civilizations, and later attracted merchants from both the Arab World and Western Europe. In fact, for over 1000 years, the Ancient Kingdom of Ghana, the former Gold Coast Colony, and present day Ghana, have produced a substantial portion of the world's gold*

The advent of colonialism linked to productive commodities like gold therefore changed the development landscape of so many settlements and so did regulations over time.

Ghana has had three main gold rushes referred to as the *jungle booms* mainly because of the advent of imperialist capital and investment euphoria into the then Gold Coast precipitating increased production of gold (Tsamanyi *et al.*, n.d. ; Encyclopedia of African History, 2005:1005). The first jungle boom, associated with industrial mining in places like Obuasi, Konongo and Tarkwa, occurred between 1892 and 1897. Resistance to the British

according to Owusu-Koranteng (2008) disrupted the first boom in 1901. The second jungle boom, began from 1925 and measures were put forth to redress the economic crisis associated with World War 1. This was subsequently disrupted by World War Two as men who worked in the mines were sent to war fronts to fight for the colonial government as well as the preference of Ghanaians to work in their own small-scale mines (Akabzaa & Darmani, 2001:9).The unwillingness of Ghanaians to work for European mines at the time led to the promulgation of laws like Mercury Ordinance Act of 1932 (Hilson, 2002:22) which made small-scale mining a criminal offence. Figure 3.1 shows in general mineral production in Ghana from 1925-1957 with fluctuating gold production shown in blue.

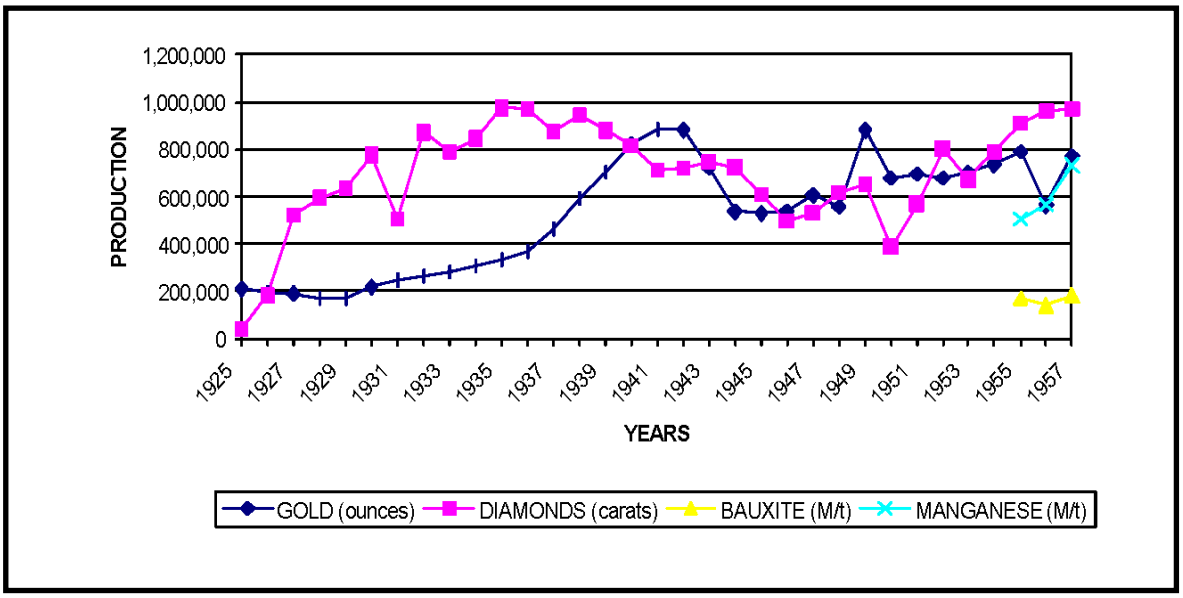

Figure 3. 1: Mineral Productions from 1925-1957

Source: Adapted from Akabzaa and Darmani (2001)

Pre-colonial mining policy was focused on establishing legal and administrative frameworks for the smooth operation of colonial mining companies and limiting the growing influence of native mining through: securing security of tenure for guarantees of mineral rights, and managing problems that arose from mining activities (Tsikata, 1997:9). It is important to note that before the advent of colonial rule, native Ghanaians in the Gold coast who had strong cultural ties with land were engaged in their own forms of mining involving low levels of technology - a characteristic Hilson (2002:16) suggests mirror present day galamsey operations in Ghana.

In terms of development policy and planning, the colonial period saw the onset of planning around settlements in Ghana. Part of the colonial mining policy which related to the

development of the sector saw the first ten year plan (1920-1930) put in place by Sir Gordon Guggisberg and thus set forth planning procedures for development at settlement level. This became Ghana's first long term development plan and it made provision for the spatial aspects of development as well. This was also to be achieved through the adoption of the Mining Health Area Ordinance of 1925 and later, the Town Planning Ordinance of 1945. The Mining Health Areas Ordinance Act was essentially to give more protection and secure safety of mine workers in Mining Areas through planning and proper sanitation of environments. Even though it was a Health Ordinance, it did make provision for the planning of mining areas as required by a legislative instrument under section 2(1a) of the Ordinance which provided for:

> *… the planning, re-planning, laying-out, and relaying-out of towns and villages in a mining health area, and the construction and maintenance of streets and lanes, the construction and structural repair or alteration of houses, markets, drains, latrines, incinerators, wells, and tanks in the area.*

This was applicable to a specific mining area and all mining areas in general. The Town Planning Ordinance of 1945 also put forward planning of settlements in Ghana through the preparation and adoption of town planning schemes and six such schemes were produced for Accra, Kumasi, Cape coast, Sekondi Takoradi and Tarkwa (Akuffo, 2008). Tarkwa was rapidly urbanising and growing in importance as a mining town hence its inclusion in the preparing of schemes for some major settlements in Ghana at the time.

As intimated before one of the structural problems of Ghanaian towns has been the skewed manner in which rapid population is distributed. The tone for such a pattern of population distribution and the impacts on mining towns was set by the colonial government. The colonial government concentrated development efforts in the mineral resource regions of Western, Eastern and Ashanti regions of Ghana. Dickson (1972 as cited by Aryeetey & Owusu, 2009:17) suggests that, some southern towns owe their existence and transformation from rural areas into urban centers due to mining activity. Notable among towns that owe their growth to mining include the traditional mining towns of Obuasi, Tarkwa, Prestea, Bibiani, and Awaso. Figure 3.2 below shows the location of mining activity which was concentrated in the three regions of Western, Ashanti and Eastern where some notable towns emerged.

Figure 3. 2: Key Notable Mining Towns in Ghana in the Colonial Period

Source: Adapted from Survey and Mapping Division of Ghana, 2012

3.5.2 Mining Regulatory frameworks in Post-colonial Period (cf.1957) and Economic Recovery (cf.1984) Periods

At independence in 1957, the new government introduced its own reforms. One major reform was the introduction of the Minerals and Mining Law of 1962 which vested the ownership of all minerals into the hands of the State president who held this in trust for the people of Ghana (Tsikata, 1997). In 1960, before the decline in mineral production, mining was still spatially concentrated in the regions of Ashanti, Western and Eastern Regions; even though there was subsequent decline in the Eastern region due to state intervention among other reasons (Owusu, 2005). It is reported that over 96 percent of mining employment was located in the Ashanti and Western Regions of Ghana in 1960 and was 94 percent by 1970 (UNCTAD, 1995:99). The Western region still has the highest concentration of mining activity with about fourteen multi-national companies and about 100 registered small-scale miners (Akabzaa & Darmani, 2001).

The third jungle boom, started in the mid-1980s in an effort to deal with economic decline (as depicted by Figure 3.3 below) associated with the 1970s. In the 1960s to mid-1980s, Ghana experienced economic crises which was a time characterised by “lax financial management, inflation rates well over 100 percent, and extensive government involvement in the economy” (International Monetary Fund, 1998). Within that period to date, mining policies and legislation in Ghana were subsequently changed to suit the turbulent times of the past and the changing world order.

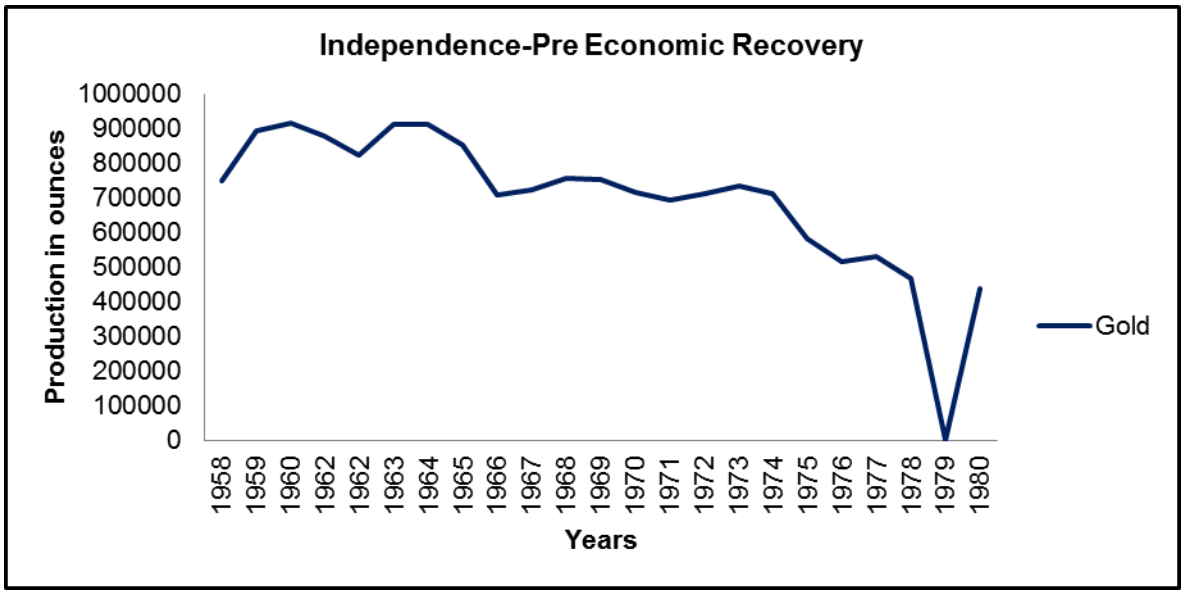

Figure 3. 3: Gold Production from 1958-1980

Source: Figures from Akabzaa and Darmani (2001)

Economic recovery from 1983 onwards was to be spearheaded through a market oriented approach premised largely on privatisation, liberalisation and redefining the role of the state (Owusu, 2005:54). The Economic Recovery Programmes that emerged resulted in a revamp of the mining sector as this saw the influx of MNCs, policy reform and minimal state ownership of mineral resources.

A major reform therefore was the introduction of the Minerals and Mining law of 1986 which vested all Mineral rights in president of the country to hold in trust for the people. In addition to the Minerals and Mining Act was Mineral (Royalties) Regulations LI 1349 and Additional Profit Tax Law (PNDCL 122) in 1987 and 1982 respectively (Awudi, 2002).There was also Small-scale Mining Law of 1989 which sought to legalise small-scale artisanal mining. Other key legislations are summarised in Appendix A.

The Minerals and Mining Act was again subsequently amended (Act 703) in 2006 and into the current Mining Code governing all mining activities. The ensuing statutory framework especially the Mineral and Mining Act 2006 which were flexible in terms of financial benefits were a huge incentive to Foreign Direct Investment inflows through the attraction of many mining companies (Akabzaa & Ayamdoo, 2009:15). The liberalisation of the economy and the subsequent influx of MNCs saw the increase in mineral production from the late 1980s and that for gold increased consistently as depicted by Figure 3.4.

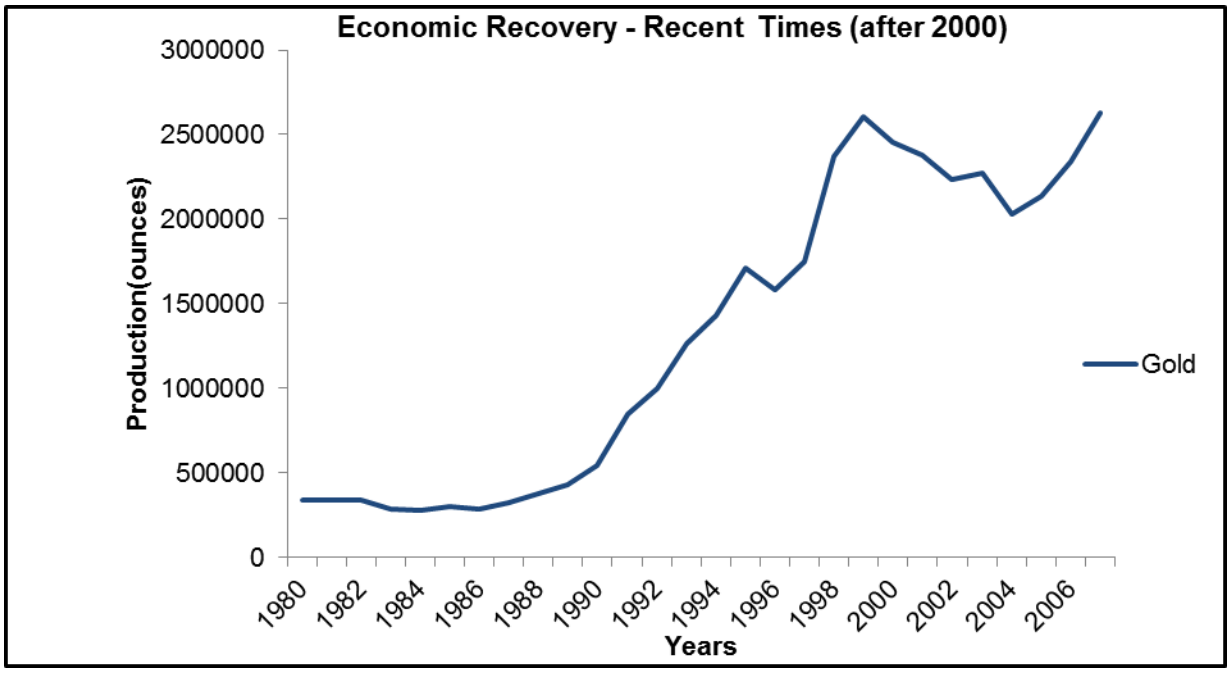

Figure 3. 4: Gold Production of Ghana from 1980 – 2007

Source: Figures from Akabzaa & Ayamdoo (2009)

Owusu (2005:59) further suggests that economic recovery programmes resulted in the emergence of centers in hitherto redundant mining regions like Dunkwa and a trend of illegal mining activities which continue to lure people to such mining regions to sustain their livelihoods within local economies. This marked an era which into the new millennium (2000) that shaped and influenced the mining economy of Ghana and the development of the towns which host mining companies. Livelihoods of communities were thus boosted and so were the kinds of business enterprises cropping up in response to the new mining environment. It is important therefore that both from a planning and urban development point of view that, an assessment be made of the impact mining has had from the point of view of urban households who live in a mining region (Tarkwa) that has developed over decades from around large and small-scale mining - hence, one premise for this research.

The Minerals and Mining Act (Act 703)[6] of 2006 which is the key mining legislation is however bedeviled with some inherent weaknesses and gaps. Some scholars (Akabzaa & Darmani, 2001; Owusu-Koranteng, 2008; Akabzaa, 2009) allude to the fact that mining activity does not always benefit mining regions and Ghana as a whole. In that regard, some weakness and gaps associated with the Act are identified and their implications for mining livelihoods and mining regions discussed below:

a. Flexible Fiscal Incentives:

One of the major ways mining communities benefit from activities of mining is through taxes collected by government. However, flexibility in mineral tax regimes can reduce the amount that accrues to government and subsequent benefits to mining communities. The 1989 Act and subsequent reviews and amendments gives more relevance to a competitive framework based on fiscal incentives (Appendix B –Table 2) as compared to the benefits communities stand to gain. This seems to be the premise of most Mining Codes in the post-independence period which have contributed to the liberalisation of the economy. The subsequent influx of mining companies marked an era which has shaped and influenced the mining economy of Ghana and the development of the towns which host mining companies. Akabzaa and Darmani (2001:20) for example note some of fiscal incentives as including:

> *… corporate income tax stood at 50-55 percent in 1975, was reduced to 45 percent in 1986 and scaled down to 35 percent in 1994. Initial capital allowance…was increased from 20 percent in the first year of production and 15 percent for subsequent annual allowances in 1975 to 75 percent in first year of operation and 50 percent for subsequent annual allowances in 1986. The royalty rate, which stood at 6 percent of the total value of minerals in 1975, was reduced to 3 percent in 1987. Other duties-mineral duty (5 percent), import duty (5-35 percent) and foreign exchange tax (33-75*

[6] See Appendix B for key features of the Act

percent) that prevailed and contributed significantly to government revenue from the sector until the reforms were all scrapped.

With a new Minerals and Mining Act (Act 703) in 2006, the fiscal incentives (Appendix B – Table 2) were not much different. Corporate tax was reduced to a further 25 percent previously at 35 percent, royalty rates is at 3 to 6 percent, import duty exemptions, free transferability of currency that is convertible, tax free remittances for expatriates, gross foreign exchange earnings from mineral sales can be stored in offshore accounts (Akabzaa & Darmani, 2001). Companies under the Act can also go into negotiations with government regarding stability arrangements for a period up to 15 years so their operations are protected from new legislations and enactments (GoG, 2006). Companies with investments worth over $US500 million can also enter development negotiations with government, for specific rates and quotas for royalty payments, schedule of payments among others (GoG, 2006). For instance Akabzaa (2009:41) notes that Newmont Mining Company has such an investment agreement with government where the company has negotiated and

… is required to pay a royalty at the minimum rate of 3 per cent on the total value of gold won, and in the case of mining in forest reserves, a royalty rate of 3.6 per cent. The company is exempted from payment of value added tax (VAT) on all items it imports, and for all foreign and locally purchased services and supplies to the extent that they are used in connection with operations.

Furthermore, Akabzaa (2009) point out that, apart from providing direct fiscal incentives to investments for transnational corporations to enjoy, the Act also gives implicit financial benefits to companies who stand to gain depending on negotiations. It is important to note that Ghana has no laws on corporate social responsibility and local content[7] and therefore the responsibility that Mining Companies have to their communities are largely negotiated under their stability agreements. This is aside compensations they are liable to pay for loss of property and livelihoods.

The only actor that can possibly lose from wrong negotiation especially on the part of government body is the mining region and its inhabitants. For instance, the Public Accounts Committee of Parliament "expressed shock" at the revelation that an average of 80 percent of mining receipts were retained by mining companies under binding agreements signed by Parliament in 2003 and demanded investigations into circumstances surrounding approval of such contracts (Graphic online, 2013).The posture of parliamentarians which suggest that they are oblivious to some of the fiscal incentives in contracts and stability agreements that were approved is rather ironic as such fiscal incentives which are negotiated by companies are approved by parliament.

[7] Guidelines for corporate social responsibility were only released in February 2012 and steps are been taken for that on a local content law.

It is however worth mentioning that since 2012 Ghana has reviewed some of these financial incentives and corporate tax has been increased from 25 percent to 35 percent, royalties from a 3-6 percent rate to a flat rate of 5 percent and proposed windfall tax of 10 percent (Adu Domfeh, 2012a). The Government of Ghana has also sought to re-negotiate stability agreements with mining companies in order to derive maximum benefits. According to the Finance Minister Dr. Kwabena Duffuor, it is a necessary step

> *… to maximize the flow of economic and social value from our natural resources to the country on a sustainable basis… given that the country's mining sector consists mostly of gold mines; one would have expected that the government will receive a higher fiscal take* (Phillips-Addo, 2012).

The Ghana Chamber of Mines however believes that imposition of these fiscal measures is not good for business and that government should look to maximize revenue from the mining value chain by ensuring participation of local enterprises (Adu Domfeh, 2012a).

b. Non-transparent appeal procedures for Compensation on Mining Issues:

Another case for which the Mining law does not adequately protect community rights is with regards to jurisdiction of mining complaints. The 1992 Constitution allows for citizens to go directly to the courts with regards matters of compensation, mining grievances are however have to be firstly reported to the minister in charge of Mining and not directly with the courts (Owusu-Koranteng, 2008:468).This bureaucracy increases the length of time within which locals will have to contend with in matters directly affecting their livelihoods. Depending on the length of time the Minister takes to respond, local communities could either give up in pursuance of their rights or remained aggrieved communities which will potentially not augur well for any local planning or development efforts.

c. Unfettered state control over minerals

The Minerals and Mining Act 703 as well as the 1992 Constitution of the Republic of Ghana vests absolute ownership of all minerals in the hands of the State to be held in trust for the people of Ghana and states:

> *Every mineral in its natural state in, under or upon land in Ghana, rivers, streams, water-courses throughout the country, the exclusive economic zone and an area covered by the territorial sea or continental shelf is the property of the Republic and is vested in the President in trust for the people of Ghana* (GoG, 2006:n.p).

Additionally, the state also exercises the right of eminent domain which allows it to acquire any private property with compensation, acquire and authorize use of mineral resources (Larbi, 2008; GoG, 2006 Section 2 of Act 703). This absolute control of the

state over natural resources though commendable in terms of ensuring that rents of mineral resources are equitably distributed throughout the country also presents challenges in terms of land ownership[8] and mineral rights. Nyame and Blocher (2010:47) reckon that not only are mining communities not adequately educated on these laws but also a division is created between mining rights and land ownership. Mining rights are skewed towards state participation (with large scale mining companies largely having mining rights) without due process and considerations to most customary land ownership and practices, a phenomenon which is an imprint of post-colonial mining regimes (Nyame & Blocher, 2010:47-53).Communities have a spiritual attachment to land and mining communities have mining rights through their concessions. This dichotomy (land rights versus mineral rights) thus presents significant challenges to the administration of mining activities (Nyame & Blocher, 2010:47) in relation to and livelihoods support and planning for sustainable urban development For example, compensation, resettlements, encroachment and landlessness are always among issues of concern and conflict between companies and mining communities and regions in Ghana. The institutional capacity of the state to manage these land use conflicts is underdeveloped and politically tedious.

d. Environmental Standards and Processes

The environmental impact assessment process is one which is bereft of essential community input and legally binding standards. Akabzaa and Darmani (2001:27) note that the process requires the proponent to place notice and advertise their proposal in a national press for the public to comment or raise related concerns. The draft report upon being received by the Environmental Protection Agency is published for expression of concern or interest by people at large within 21 days of publication. However these documents are presented in technical language, published in the national press and displayed at District Assembly offices which are often not very accessible; apart from the fact that most community members may not be literate to understand such technical language. Audit report recommendations are also not legally binding and mining companies are not obliged to accept or implement them except those that are practicable and fit into a mining company's operation (Akabzaa & Darmani, 2001:37). Furthermore, mining communities are not obliged under the law to publish or make public their Environmental Audit Reports. This is because of confidentiality clauses in section 20 of the 1992 constitution which states … "*records,*

[8] Land in Ghana is either owned by the stool (chiefs in the south) or skins (chiefs in the North) in trust for the people. Lands in predominant mining areas in the south of Ghana are stool lands. There are also state, family and vested lands.

*documents and information furnished or attained should be treated as confidential and shall not be divulged without the written consent of the holde*r[the one holding mining lease] (GoG, 1992).

Owusu-Koranteng (2008:468) also notes that, there are no legally binding environmental standards. The Environmental Protection Agency agrees that for instance, there are no laws on cyanide spillage despite cyanide being critical but dangerous substance in the purification and processing of gold, Ghana's premier mineral. With such weak regulations, mining companies will most of the time get away with environmental violations against host mining communities.

3.5.3 Development Planning Regulatory frameworks in Post-colonial (1957) to Post Economic Recovery (1984) Periods

With regard to the nature of development planning upon the attainment of independence, the colonial government's long term development plan was neither continued nor adapted probably in a bid to do away with all things colonial. However, some old regulations especially with regards to spatial planning still endured into the 21st century. For example the Town and Country Planning Ordinance (CAP 84) of 1945 is still in use even though steps are been taken to repeal and adopt new regulations. Consequently, a multiplicity of regulations emerged relating to land use and planning as a stop-gap response to the obsolete Town and country Planning Ordinance. Ofosu-Dorte (2008) observes that for land use alone, there are about 17 laws that directly impact land use, 20 laws indirectly impacting land use, about 9 policies are relevant to land use and 133 land laws and legislative instruments that affect land use.

The early post-colonial period saw a system of planning that was premised on a centralized system of planning and some rural planning which witnessed some massive industrialisation and infrastructure development like the construction of the Akosombo Dam between 1962-1966 and tomato factory in 1968 in the Upper East Region of Ghana (Gocking, 2005:119). Most of the post-independence plans and policies were rather short lived due to regime changes(mainly through military coup d'états), biased towards economic planning and development, flamboyant and 'shopping-list style' planning and budgeting (Gocking, 2005:119), that was uncoordinated and lacked long term planning and development and had little or no regard for spatial development. Urban growth of most settlements and mining regions alike became spontaneous and organic, a phenomenon that continues to plague several Ghanaian cities and towns today.

This biased approach towards economic aspects of development planning was to be corrected with new regulations associated with the adoption of a new decentralised system of planning under the new local governance structure of Ghana (see Appendix E).The decentralised system of planning is the current system from which all forms of planning radiate. Figure 3.5 summarises mining-driven urbanisation and development planning from the pre-colonial era through to the beginning of 21st century.

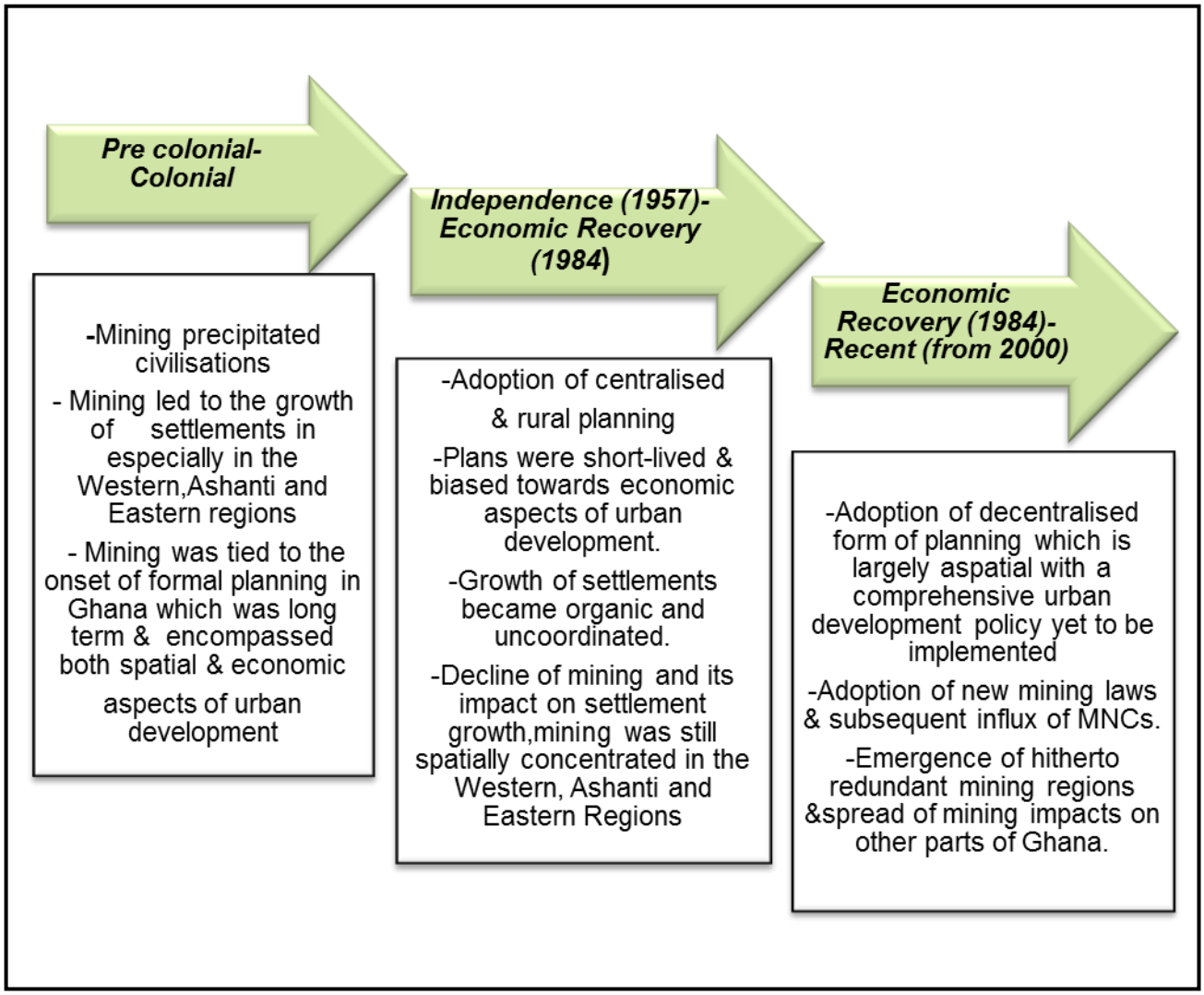

Figure 3. 5: Periodising Mining-Driven Urbanisation and Development Planning in Ghana

Source: Author Construct, 2013

In Ghana the mandate for overall planning and development within the District (local level) rest with the District Assemblies who have this authority through the Local Government Act of 1993 (Act 462). The mandate of spatial or physical aspects of development planning rest with the Town and Country Planning Department which is a decentralised institution under the District Assembly. This Local Government Act of 1993 (Act 462) is supported by the

National Development Planning Commission Act and the Civil Service Law led to the transfer of authority, functions and resources to lower levels of government.

The main features of the Act include;

The establishment of the District Assembly as the authority for planning- preparation of district development plans and budgeting for plans, execution of plans and strategies for mobilization of revenue.

i. Responsibility for the development, improvement and management of human settlements and the environment in the district
ii. Granting permission to carry out physical development must gain prior approval of the District Planning Authority.
iii. The NDPC prescribes the format of all District Development plans as well as approval of all proposed district development plans submitted through the Regional Coordinating Councils.
iv. The District Assembly has authority to level a development charge in respect of permits granted and charges shall be used for the provision of infrastructure and services.
v. Development charges are also rated and payable to the District Planning Authority.
vi. Power to approve development, execute and enforce development is the prerogative of the District Assembly. In the determination of an application for development the planning authority should consult local communities and public agencies concerned.
vii. The District Planning Authority may also make bye-laws to guide all matters relating to building within its area but these bye-laws should be within the scope of the national building regulations.

The Local Government Act of 1993 (Act 462) was defective in two areas in the manner in which to incorporates spatial planning issues and impact on development as elaborated below;

I. The Act is silent on schedules and regulations for physical development which has led to the persistent use of the Town and Country Planning Ordinance (CAP 84) which is obsolete and unadapted for urban development of urban areas and mining regions alike.
II. The Town and Country Planning Department seem to perform dual functions as its planning role with respect to other Institutions in the planning process is not clearly defined by the Act. On one hand it is a decentralized institution of the District Assembly that helps in establishing its development goals and on the other hand, the Town and Country Department has to effectuate development control programs put

in place by the assembly. Such a phenomenon can be negative to the settlement management process in the absence of proper co-operation and co-ordination between the institutions involved (Gyogluu, 2009).

It is in this light of the non-responsive nature of major development planning regulations like the Act 462 and obsolete laws like the Town and Country Planning Ordinance (CAP 84) that urban development policy and practice in Ghana has generally failed in towns and cities alike and particularly its impacts and effects more poignant in resource regions such as Tarkwa. In a bid to redress the failing functions of towns and cities and properly define an agenda for Ghanaian cities and towns, a National Urban Policy was drafted in 2010.

A review of the draft National Urban policy of Ghana identified the following key features:

i. The key guiding principles of the policy was to see the

> … *promoting urban centers as engines of growth, promoting socio-economic development through an integrated settlement system, facilitating socio-economic development of lagging and rural regions and, enhancing participatory and accountable urban governance* (GoG, 2010a:3).

ii. The broad goal of the policy is to:

> *"Promote a sustainable, spatially integrated and orderly development of urban settlements with adequate housing and services, efficient institutions, sound living and working environment for all people to support rapid socio-economic development of Ghana"* (GoG,2010a:4)

Some of the key policy initiatives that will help in achieving the overall goal of the National Urban Policy include:

a. Local Economic Development

- Promoting urban economic development by through policy initiatives directed at Local economic Development (LED).
- Assemblies should determine the comparative advantage of their Districts and should be supported to add value to these resources, market and brand them.
- The need for a policy on enterprises within the informal sector to be incorporated within the urban planning system in both the physical and economic sense. Also there was the need to mitigate negative impacts of the informal economy.

b. Urban and Regional Development

- Creating new growth points as counter-magnets to fast growing cities such as Accra and Kumasi.
- Promoting integrated urban development with respect to the three pillars of sustainable development – society, economy and the environment, now and in the future.

- Promoting accelerated growth of small and medium-sized towns (including district and regional capitals).

- Developing new and reviewing existing structure plans for settlements as mechanism for guiding the development of settlements.

c. Improving Legislations and Standards

- Improving and enforcing legislations and standards on urban development and management.
- Ensuring that existing and newly created centers adhere to best environmental and land management practices.
- Improving land development, land use control mechanisms and reviewing planning standards.

Overall, the policy broadly covers all aspects of urban development in Ghana namely: balancing settlement growth, distribution and local economic development, improvement of legislations and standards, functional land markets and land use, urban governance and finance, and strengthening of research in urban and regional development. That notwithstanding, the document does not give guidelines specific to resource regions like mining towns, its planning and urban development in general. However, within the context of the literature review done in Chapter two with respect to mining-led urban growth and development, there were pointers within the Urban Policy framework which could prove relevant for mining resource regions in Ghana.

Firstly, the Policy aims to accelerate growth of small and medium-sized towns in an attempt to redistribute population growth and development concentration away from Ghana's main urban areas of Accra and Kumasi. The majorities of mining towns in Ghana fall within the category of small-medium sized towns and therefore can act as a counterpoise to concentrated urban growth and development in Accra and Kumasi. The literature review in chapter two suggested that mining regions can act as growth points in the case of Cuidad Guyana in Venezuela where some level of success was chalked.

Secondly, the review of literature on growth and development of mining regions suggest a shift from comparative advantage to competitive advantage with underlying emphasis on clusters/regional network of firms or industries and businesses, collaborative partnerships and a competitive environment. The Policy review did not particularly lean to a competitive approach but tacitly implied District Assemblies in the various urban areas have to identify a niche area in terms of comparative advantage, proactively pursue it and use it as a

propelling factor for their development. The Policy also suggests agglomerations based on transportation corridors, agro-based growth points and decentralised developement. These agglomerations should however be premised on the vision of the government, research, long term planning frameworks among others. In terms of local economic development, the Policy stressed the promotion and support of small, micro and medium enterprises as well as the need for an urban planning framework that seeks to promote and cater for the large informal sector in spatial and economic terms.

Lastly, in terms of governance, the policy suggest that Local authorities have to engage all stakeholders in their respective jurisdictions in order to secure funding for urban development projects and their implementation as traditional sources of funding are inadequate.

Thus the Urban Policy broadly does not specifically consider the unique growth cycles of urban mining regions but generally assumes that their development path can tag along the rest of the urban centers in Ghana. The policy itself did not make specific reference to mining areas as an active focal area of pursuit as part of a broad urban development agenda. Thus the policy sought to act as a guideline for all urban areas irrespective of natural resource endowment to frame the urban development actions of various local authorities as well giving local authorities the leeway to be innovative in their urban management functions. Simply, the National Urban Policy can be described as being relevant and having important implications for mining resource regions but not necessarily targeted at them (Morris *et al.,* 2012).

3.6 Chapter Summary

In summary, the review did indicate that policy, regulatory and institutional reform in mining regions has succeeded on a wide scale in attracting FDI but often has not delivered sustained development benefits to the mining regions in question. Where (Botswana and Chile) great strides have been made in terms of growth, policy decisions regarding long term planning, fiscal spending, collaborative partnerships between governments and private sector, local based participation and strong institutions have been key. In Ghana, critical mining regulatory frameworks are in place but key to these frameworks (like the Mining and minerals Act of 2006) is how they are incrementally reformed to reflect a balance of impact on livelihoods and development in general. In terms of development planning for mining resource regions in Ghana, the challenge seems to be the lack of regard of an urban focus

with no synchronisation between spatial and economic aspects of policies and interventions in development planning. It remains to be seen whether the National Urban Policy will help in that regard with mining resource regions adapting the Policy to frame their urban development actions.

Based on the two chapters of literature a framework of key issues that guided the rest of the study is summarised in Figure 3.6 and explained by three main points:

- *Drivers and Influencers*:

The policy and regulatory environment can both influence and drive the kind and levels of interactions of key stakeholders (MNCs, implementing institutions and people) within the mining environment through framing their actions and inactions through the decisions they make. Globalisation and urbanisation also have an influence on the kinds of policies that are put in place on one hand and on the other hand they directly affect the mining region irrespective of policy and regulatory framework through market-related forces that affect commodities in the mining region

- *Context of Mining*

The drivers and influencers (1) affect the nature and extent of vulnerability of livelihoods in the mining region. By nature and extent the author means the types of impacts, how much the impacts will affect households and how they are able to recover.

- *Implications and Outcomes*

The interactions in 1 and 2 all have implications for the settlement management and overall sustainable development of the mining region.

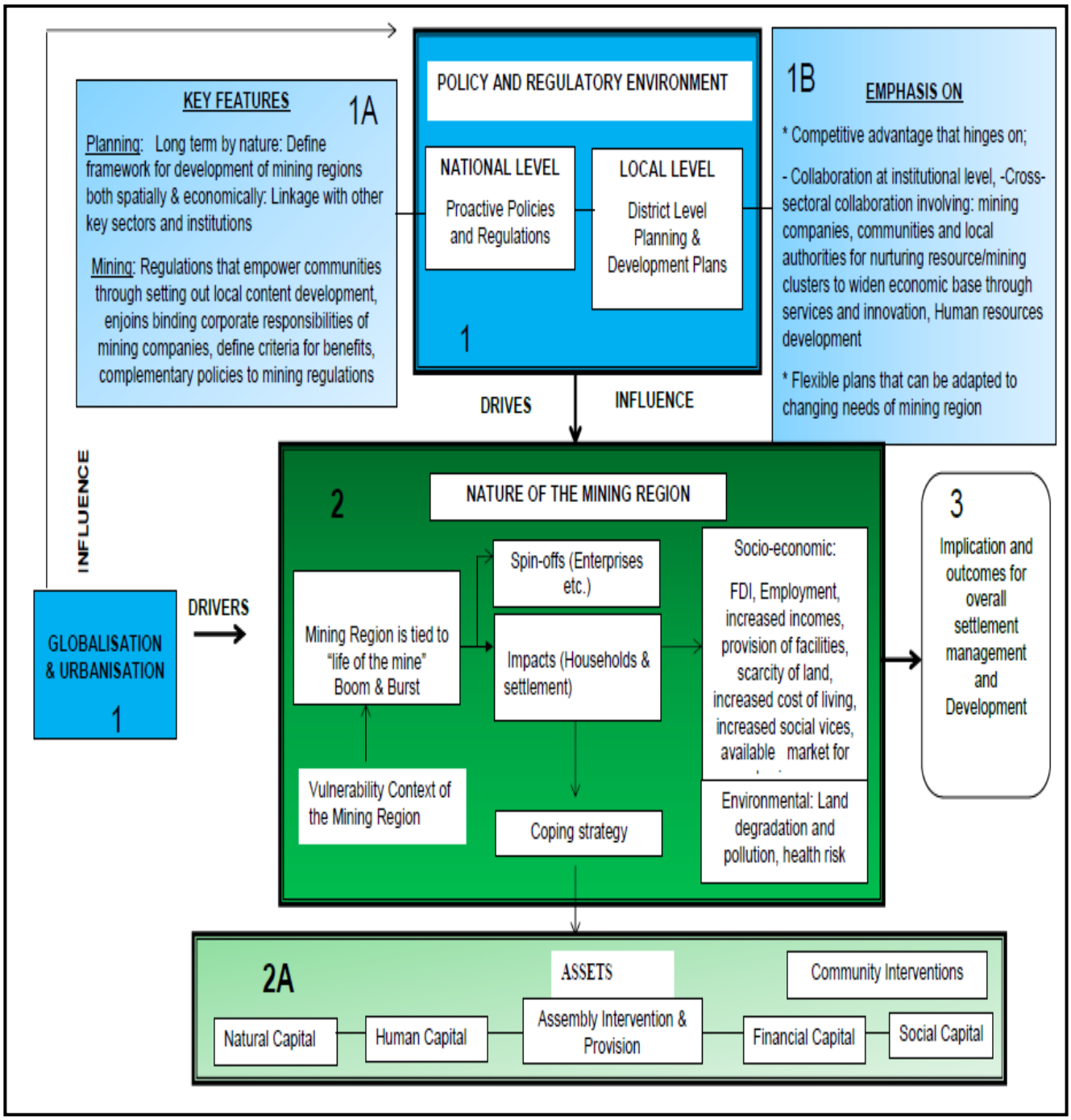

Figure 3. 6: A Framework of Interactions and Dynamics in a Mining Region Within a Development and Planning Context

Source: Author Construct, 2012

CHAPTER FOUR
RESEARCH DESIGN, METHODOLOGY AND STUDY AREA

4.1 Introduction

This chapter focuses on how the research was carried out. It narrates the sequences of activities and steps that were followed; the type of data collected, its sources, methods of data collection, analysis, sampling and sampling methods as well as challenges the researcher encountered while conducting research in the field. The research questions and objectives outlined for the study framed the research design as well as the methodology employed for the entire research. Broadly, the research was thus framed with the context of trying to find how the mining had impacted on the sustainable development of Tarkwa spatially and socio-economically within a context of mining and planning frameworks and the practices.

4.2 Research Approach/Strategy

A case study approach which derives from exploratory and explanatory orientation was adopted for the purposes of this research. Yin (2003:13) defines the case study as “an empirical enquiry that investigates a contemporary phenomenon within its real-life context especially when the boundaries between phenomenon and context are not clearly evident”. The case study strategy was adopted by the researcher for several reasons:

Firstly, the case study approach allowed for the researcher to create a context for the research by defining a geographical boundary and adopting a mining context. This allowed for an in-depth study which provided for the objectives of the research to be achieved. Thus the study area (Tarkwa) was explored with respect to mining impacts on urban livelihoods and businesses as well as how relevant authorities are responding to mining-led urbanisation. It also allowed for the author to be able to assess how frameworks on planning and mining affected and have been applied in a mining context. Fox and Bayat (2007:69) note that the case study approach should be typical or atypical of the phenomena been studied. The choice of Tarkwa was appropriate as it is an archetype of a mining town in Ghana where past, present and future growth dynamics are tied to mining activity. Additionally the Tarkwa mining region has the largest concentration of mining activity in Ghana with eight of about the sixteen large mining companies located in the Tarkwa area (Akabzaa & Darmani, 2001:32).

Secondly, the case study strategy also allowed for the use of multiple modes for data collection beyond literature. This allowed for a chain of evidence to be developed and triangulated from different sources to come out with a reliable research evidential foundation. The research made use of modes like focus group discussions, questionnaires, interviews, observation, in addition to secondary data sources like census data, official reports and maps which made the case study approach advantageous in that regard.

Lastly the research anchors on an exploratory and explanatory approach to finding answers to research questions in the study which revolve around the *how* and *what*: the how seeks for explanation while the what explores possible reasons, explanations and trends. For example, the third objective of the study is to understand how key institutions of development planning have responded to influence of mining and related urbanisation processes in Tarkwa. This objective is both to seek an understanding and explanation of how issues of planning in mining have been dealt with over time. How has planning practice responded to mining related urbanisation over the years through both existing and emerging policies and regulatory frameworks? The focus is to discern recurring and developing patterns through both exploratory and explanatory ways. The case study strategy was most appropriate as recognised by Yin (2003:6) when the key research questions relate to *how* and *why*.

4.3 Tarkwa in Context: Profile of Study Area

4.3.1 Physical Characteristics

Tarkwa falls within the forest dissected plateaus region of Ghana which have Pre-cambrain rocks of Birimian and Tarkwaian formations. The land rises from about 240 meters to about 300 meters above sea level. The land form is generally undulating with few scarps ranging between 150 meters to 300 meters above sea level. Tarkwa is extensively drained by several rivers such as the Bonsa River and its tributaries such as Essumang, Buri, Anoni, Sumin, Ayiasu thus giving this basin a dendritic pattern in most parts. This drainage pattern is part of an extensive Ankobra basin. The Tarkwaian and Birimian Belt in Ghana is endowed with minerals such as gold. The rivers and tributaries draining Tarkwa are used by small-scale and illegal miners for their mining activities. The vegetation is that of the tropical rain forest endowed with undergrowth and varying types of timber. However, open pit mining activities have vastly reduced the vegetation and mountain areas that used to characterise this mining area.

4.3.2. Urban Structure of Tarkwa

The Tarkwa settlement structure is one that can be described as linear with development concentrated at the core area of the settlement and projecting outside along the major arterial road (Bogoso-Tarkwa-Takoradi) into outlying settlements. This structure is shown in Figure 4.1 below.

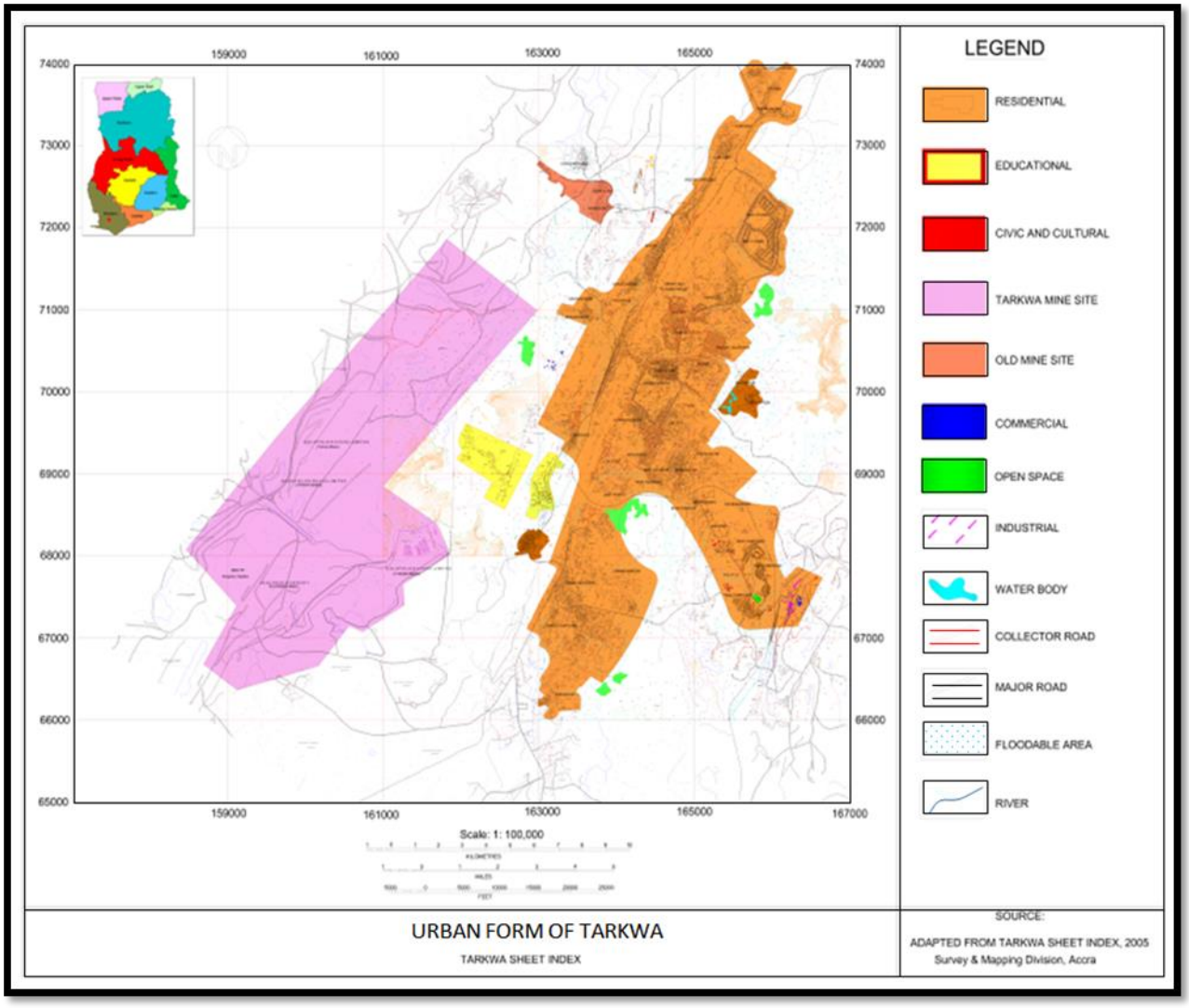

Figure 4. 1: Urban Form/Structure of Tarkwa

Source*:* Adapted from Survey & Mapping Division Maps, Accra 2012

The factors that have accounted for such a pattern are both natural and human. Tarkwa is drained by the Ankobra River and several of its tributaries and therefore development cannot proceed in all directions as Figure 4.1 indicates. Mining, particularly the mining sites to the north western and south western parts of the town restrict development towards these directions. The settlement itself is interspersed with several small-scale and illegal mining activities which largely restrict development in such areas. The Ankobra and Bonsa River

basins are known for alluvial gold mining by indigenous people both in the past and at present (Hilson 2002). Dickson (1969:250), in his account of the growth of mining towns noted that by the last two decades of the nineteenth century before formal colonial mining had begun, Tarkwa had been described as a “considerable” town whose development was associated with alluvial gold mining by the indigenous people.

Tarkwa’s development into a major mining town was largely due to colonial influences and also assumed the function of a nodal town thereafter. Tarkwa’s gold deposits were central to the idea of the development of rail as a form of transportation in Ghana (Dickson, 1969: 229) around 1901 and were an added advantage to Tarkwa which already had become a nodal town thus increased its urbanisation and growth (ibid: 252). While the railway function is now defunct, Tarkwa’s growth as a nodal town has emerged through the convergence of a major arterial road network including the Bogoso-Tarkwa-Takoradi trunk road and related collector roads. This has enhanced its role as a municipal capital with several trading activities, financial and educational functions. Tarkwa was among one of the six towns that first had a planning scheme in 1945 as part of Sir Gordon Guggisberg’s development plan during the colonial era (Akuffo, 2008). A series of changes in planning approaches, policies and in government from independence till the later part of 2000 saw growth in Tarkwa assume an organic and uncoordinated pattern.

4.3.3 Tarkwa and Gold Mining

Tarkwa was chosen for this research because that region of mining has experienced over a century of gold mining and also has the highest concentration of mining companies in Ghana and the West African sub region as well (Akabzaa & Darmani, 2001:32). Out of the 16 large scale mining companies in Ghana the Tarkwa region alone hosts about eight of these and it has over 100 registered and small-scale gold and diamond miners (ibid: 32). It is therefore an embodiment of mining activity, mining-induced urbanisation, and the application of relevant policies/frameworks and practices over a period of time. For the purposes of this research which concentrated on Tarkwa as an urban area, two large scale mining companies AngloGold Ashanti-Iduapriem and Goldfields Ghana-Tarkwa were considered as their scale of operations are not only close to Tarkwa but their activities have direct and indirect impacts on Tarkwa and its residents.

4.3.3.1 The Mining Companies - AngloGold Ashanti-Iduapriem

The AngloGold Ashanti Iduapriem operation is located in the Western region of Ghana, 85km North West of Takoradi (regional Capital) and 10 km south west of Tarkwa. Operations commenced in 1992 previously owned by Ghana Australia Goldfields/Ashanti Goldfields Corporation. AngloGold Ashanti took over in 2004 and has been operating Iduapriem operations to date. The Tarkwa mine comprises two adjacent properties namely Iduapriem and Teberebie. AngloGold Ashanti has an 80 percent stake in Iduapriem (the remaining 20 percent is owned by the International Finance Corporation) and a 90 percent holding in the Teberebie mine (the government of Ghana holds the remaining 10 percent interest) according to an AngloGold Ashanti Report, 2012.The combined AngloGold Ashanti stake is 85 percent (AngloGold Ashanti, 2012). Both operations operate an open pit mine with convention Carbon Pulp treatment Plant, produced about 190 000 ounces in 2009 and contributed 4 percent of global AngloGold Ashanti Production in 2009, 33 percent of AngloGold Ashanti Ghana production (Community Affairs Unit, AngloGold Ashanti-Iduapriem, 2012). The current life of the mine is over 10 years and its operations directly affect eleven surrounding communities

4.3.4.2 The Mining Companies - Goldfields Ghana-Tarkwa

Gold Fields Ghana Limited (GFGL) was incorporated in Ghana in 1993 as the legal entity holding the Tarkwa concession mining rights. Gold Fields Ghana Holdings Limited holds 90 percent of the issued shares of Gold Fields Ghana Limited after acquiring the indirect 18.9 percent of the issued shares belonging to IAMGold and its affiliates (Goldfields, 2012:1).The Government of Ghana holds a ten percent free carried interest, as required under the Mining law of Ghana (Goldfields,2012:1). The Tarkwa Gold Mine operates under seven mining leases covering a total area of approximately 20,825 hectares. The Tarkwa Gold Mine is located 300 kilometers by road from Accra, the capital of Ghana and about 4km South from the Tarkwa town itself. The mine was commissioned to operate open pit surface operations in 1997. Mining is currently taking place from six pits, Pepe, Atuabo, Mantraim, Teberebie, Akontansi and Kottraverchy. The life of the mine extends to 2024 (Goldfields-Tarkwa Gold Mine, 2012:1).

4.5 Methodology

Research design is a plan that comprises the “arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with

economy in procedure" (Sellitz *et al.*, 1965:50). The research design therefore looks at the broad framework or picture of how the research was achieved; through from the type of study to the type of appropriateness of data that will answer the research questions and objectives The methodology on the other hand comprises of the processes, steps and sequences of activities that were followed from the research. These include data collection methods and techniques, sampling and sample size.

4. 5.1 Overview of Data Collection Methods, Tools and Technique

For the purposes of answering questions relating to the research, information gathered fell within four different types of information categories namely: theoretical, contextual, demographic and perceptual.

a. *Theoretical Information*: This was information related to literature review. Primarily this data helped put some of author's findings in perspective by helping the author not only to relate her findings to literature but also key to provide support for recommendations. Theoretical information from literature related to urban and regional planning growth theory and policy frameworks in planning and mining. Some of the theories studied related to growth and sustainable development of mining regions and included the growth center concept and "resource curse" hypothesis. This helped to provide a basis within which the researcher was able to understand how mining-led growth could impact the development of Tarkwa.

b. *Contextual Information:* The information collected here related to the milieu within which respondents live and work and the kind of activities that take place there. This was important because the mining environment influences or impacts on respondents' behaviour and daily choices. Contextual information about Tarkwa was collated from reviews of relevant documents and maps on Tarkwa regarding its structure and growth over the years. Additionally, a review of documents as well as interviews with the Community Affairs Unit of AngloGold Ashanti and Goldfields Ghana provided background information on their scale of operations and development efforts. The same was done for institutions like the Lands Commission, Minerals Commission and the District Assembly through interviews and relevant department documents.

c. *Demographic Data*: Demographic data describes the profiles of the respondents in the study area: their gender, age, employment status, housing conditions, ethnicity, length of

stay in Tarkwa, et cetera. Such information is important as these characteristics have the ability to influence a respondent's perception of mining and mining's impact and development as a whole. Thus demographic data as a stand-alone set of information may was not be very helpful but has helped in correlation analyses by assisting in explaining findings in this study. For example, there is the domination of male headed households in the study which underscores a very theoretical concept of mining regions been traditionally dominated by men as a result of mining been more of a physical job and migration of men to mining regions. Demographic data from sample was also compared with official census and other surveys of socio-economic data from secondary sources as part of triangulation and verification of data.

d. *Perceptual Information***:** This information that relates to the households' own understanding, explanation and experiences of mining, its impacts and how they are coping or dealing with it. It was important to collect such information because planning and development take place essentially to improve the everyday lives of people. However, the phenomenon of development and planning is taking place within a peculiar context of mining which permeates everything that people in Tarkwa do. Thus the need to establish and understand what people experience and think of their context and the role mining activity plays. It should be noted that perceptual information is not fact, they are what people perceive as facts (Bloomberg & Volpe, 2008:71). It was however important to note that triangulation from different data sources of this research helped to confirm and ground these perceptions or otherwise.

Based on the different types of information, the exploratory nature of the research tried to make sense and derive meaning on the nature of mining-led urbanisation, development and planning practices emerging as well as coping strategies of households to respond to boom and bust cycles typical to mining regions.

4.5.2 Data Collection Tools and Methods

For primary data collection, the duration was for a period of 3 and half months; from early December 2011 to early March 2012. The tools and methods employed were both structured and unstructured questionnaires and interviews, focused group discussions and observation. These are described in detail below:

a. *Interview schedules/Questionnaires [see appendices I-L]:* Questionnaires were used primarily for household and business enterprise surveys. A total of three hundred and

four (304) questionnaires were administered in both surveys. The questionnaires were used because it allowed for different kinds of information about a sample comprising households and businesses to be captured in a structured manner. The questionnaires featured both closed and open ended questions. Closed ended questions were used for basically background information on households' and Businesses. The open-ended questionnaires were largely employed in sections of the questionnaires where the researcher wanted respondents to give detail answers and explain their understanding or experience of the questions posed. For example, open ended questions requiring details of respondents coping strategies were used in the household's survey. In addition, two institutions (office of the vice chancellor for the University of Mines and Technology and the National Director at the Land Administration/Land use Management Project both answered questionnaires because their busy schedules made interviews difficult. The questionnaires were administered with the help of field research assistants who lived in Tarkwa, were familiar with the area and were fluent in both English and local language of Tarkwa (Wassa). Field assistants were taken through an orientation of the study by the researcher before administration of questionnaires started.

b. *Interviews:* Interviews were largely used for the institutions that the author visited and for galamsey and small-scale artisanal miners. The interviews were captured with the help of a digital voice recorder. Interviews were used because it was essential to capture the depth and insight of these organisations, their operations and activities as well as the stories of galamsey and small-scale miners. Interviews conducted normally lasted about 20-30 minutes and it was difficult for the author to capture all in writing thus the recording was helpful. Twenty one (21) interviews were conducted in all comprising: four respondents from the Tarkwa Nsuaem Municipal Assembly (Municipal Coordinating Director, Development Planner, Assembly man and Unit Committee member), one interview from the Town and Country Planning Department, an interview with the Lands Commission, chief of the Fiaseman Traditional Area, Head of Policy at the Minerals Commission, Marketing officer at the Precious Minerals and Marketing Company (PMMC), interview with a research and development officer at Third World Network (NGO), interviews with the Community Affairs Managers of AngloGold Ashanti-Iduapriem and Goldfields Ghana respectively, Crime officer at the Criminal Investigations Department of the Tarkwa Police Station, Rent officer of the Rent Department, Field officer of the Rural Environment Care Agency, Secretary of the Small Scale Miners' Association, two

separate groups of Galamsey operations and two small scale-scale mining operations

For the interview process, the researcher personally sent out introductory letters already approved by her supervisor to various institutions and organisations concerned introducing herself, purpose of the study and soliciting assistance with regard to relevant data. Dates were then scheduled for interviews to be conducted. Aside from this formal medium of introduction, the researcher found it more productive in terms of time and willingness to agree to an interview using known contacts in Tarkwa to formally introduce her to interviewees in person or make telephone calls with respect to that. That by far was the most useful technique in conducting interviews. For all interview sessions involving galamsey and small-scale miners, the researcher was assisted by a worker at Wassa Association of Communities affected by Mining (WACAM) and a field assistant who were both familiar with the location and activities of small-scale miners. Such interviews were conducted when miners were at work or during their lunch time.

c. *Focus Group Discussion*: Focus group discussions did not feature much in this research largely because of the difficulty in getting respondents together in one place. However, two focused group discussion was conducted for women engaged in small-scale mining and a group of men engaged in galamsey at Nkamponaase. The group comprised of 6 six women with ages ranging from twenty one to fifty four. The "galamsayers" was made up of two young men in their early twentieths. This data collection method was highly interactive with different respondents giving varying responses to questions that were posed. The discussion therefore provided a lot of information at one sitting. Information was gathered with the help of a recorder and camera to take pictures.

d. *Observation:* The author was also keen to capture events, observations or issues within the research that environment could be directly and indirectly relevant to the research in terms of findings and interpretation of data or support for recommendations to be made. These included respondents' homes and the type and spread of businesses, operations of small-scale mining activities, transport networks and related services. This was mostly done with the aid of a digital camera to capture these relevant data in the form of pictures. The various instruments used presented different advantages and disadvantages and this is summarised in Table 4.1 below. Table 4.2 presents data collection methods, tools, types of information collected and the unit of analysis.

e. *Secondary Data:* Secondary data was mostly from literature, company reports and profiles of mining companies (internet), a map of Tarkwa, population census data for the year 2000 and the Municipal Assembly Development Plan. The challenge with secondary data was the absence of a comprehensive economic data on Tarkwa and aerial maps. An additional shortcoming was the unavailability of 2010 population and Housing Census data results as at the time of the field work and writing and would have proved insightful for comparative demographic trend analysis of the 2000-2010 inter-censal period.

Table 4. 1: Strengths and Weaknesses of Instruments/Method Used in Research

Type of Instrument/Method	**Strengths**	**Weaknesses**
Questionnaires	-Quite interactive -Allowed for different types of questions to be asked and was not too much time consuming as compared to interviews -Allowed for observation of some respondents at work and conditions under Which they live. -Allowed for the opportunity to enlighten some respondents about the survey and its rationale.	-Illiteracy of some respondents made questionnaire administration difficult. -Some respondents were mostly busy or tired from work.
Interviews	Highly interactive and offered flexibility in asking interviewees questions. -Allowed for follow up questions -Networking and opportunities to attend related government programmes on request by interviewees which was further enlightening for the research.	-Time consuming -Constant rescheduling of interviews. -To and fro movement from study site to Accra to conduct interviews which was tiring and expensive.
Focus Group Discussion	-Interactive and presented opportunity for respondents to display their knowledge of issues as well as offer differing opinions.	-Difficulty in getting all who matter in one place

Source: Author field Survey, 2012

Table 4. 2: A Précis of Data Collection Methods and Tools

Research Question	Type of Information Required	Data/Information collected	Unit of Analysis	Tools/Methods Employed
1. What have been the perceived impacts of mining on urban livelihoods and community business enterprises and how have households responded in terms of coping strategies and mechanisms?	Perceptual Information	Respondents understanding and explanation of mining's impact and explanations of how they live with these impacts everyday	-Household	-Questionnaires -Observation
	Demographic information	Descriptive information of respondents age gender, ethnicity, educational background, employment status et cetera	-Household	-Questionnaires
	Contextual Information	Background demographic and Economic data on Tarkwa's population, Map of Tarkwa. Background Information on AngloGold Ashanti and Goldfields Ghana	-Household -Urban Tarkwa -Institutions (Rent Control Board, RECA), AngloGold Ashanti and Goldfields Ghana.	-Review of Census data and Development Plan of Tarkwa -Review of related documents on Tarkwa. -Interviews
	Perceptual Information	Respondents understanding of Mining's impact on the growth of their businesses	Community Businesses	Questionnaires Observation
	Contextual Information	Type of businesses that contribute to taxes through licenses and rates		Review of Assembly's document on sources of funding
2 What gaps in mining and development planning regulatory framework exists and how have these impacted on the efficacy of management practices in responding to consequences of mining in the development of Tarkwa? 3. What are the planning and development implications of these emerging planning and development frameworks for sustainable development of Tarkwa and mining towns in Ghana?	Contextual Information	- Assembly's development efforts over the years in the face of mining. - Planning in face of mining related urbanisation and trajectory of mining. - Mining Companies(AngloGold Ashanti and Goldfield Ghana) development efforts in Tarkwa, - Land related institutions(Fiaseman traditional Council and Lands Commission) role in Planning, - WACAM's role in advocating for development for indigenes in Tarkwa. -Minerals Commission Development agenda, role and efforts at mining legislations and development from mining activities.	<u>Institutions</u> -Tarkwa Nsuaem Municipal Assembly -Gold Fields Ghana -AngloGold Ashanti -Town and Country Planning Department. -Galamsey and Small-scale Artisanal Miners -WACAM -Minerals Commission	-Interviews -Focus group Discussions -Questionnaire
	Perceptual Information	Small and Illegal Miners' understanding of mining and what it holds for them in terms of development	Galamsey Small-scale Artisanal Miners	
	Theoretical information	State and kinds of policies available for planning and problems with regard to the implementation of policies. Policy gaps in planning and this has affected urban development.		Review of government policies on planning and urban development over the years

Source: Author Field survey, 2012

4.5.3 Sampling Method and Sampling Frame

Purposive sampling method was used to gather information from interviews. This sampling method was appropriate because it allowed the researcher to go to respondents or interviewees who had knowledge of the planning, mining and related development and were willing to give responses.

Two different sets of questionnaires were administered for heads of households and owners of business enterprises.

Household Questionnaire: The household questionnaires were administered using a combination of cluster sampling, simple random sampling and convenience sampling as they were the most feasible sampling methods. This was in terms of size of study area, resources and since the sampling frame considered all households. Firstly, Tarkwa was divided into three clusters based on the author's observation of settlement structure and upon advice of the Town Planning Officer. These clusters comprised central Tarkwa, resettled area and the outskirts all comprising thirty (31) major suburbs. Central Tarkwa or *"Tarkwa proper"* is densely populated and comprised most of the central business district and older central suburbs in Tarkwa. The outskirts are outlying areas where growth is fast taking place and the resettled area is New Atuabo which primarily began as a resettled area of Goldfields Ghana but is now not exclusively inhabited by resettled community members. It is important to note that these demarcations were done by the author to ensure a balance between even representativeness and spatial spread in getting responses.

A simple random sampling was conducted to choose suburbs from each cluster. For Central Tarkwa which has the highest concentration of suburbs and people, a total of 5 suburbs namely Railway quarters, Tarkwa Junction, Nkamponaase, Cynide and Zongo were selected. For the outskirts Tamso and New Abonteakoon were selected. The demarcated area for the research had a sampling frame of 8612 households. A questionnaire was administered for one head of household in every other house. Questionnaire administration was for a single head of household per house even for houses which had more than one household. The decision to administer a questionnaire to a particular head of household instead of another was discretionary as well as willingness of the respondent to be part of the survey. A total of 154 questionnaires were administered for 154 heads of households. The demarcation for research and questionnaire administration is shown in Figure 4.2.

Business Enterprise Questionnaire: For business enterprises in the community, there were no official records on their number. The sample size and demarcation for the administration of household questionnaires served as a basis for the administration of those questionnaires. This is because Community businesses are scattered around the different neighbourhoods of Tarkwa even though there is a greater concentration in Tarkwa Central where the Central Business District is located. Every other business owner was considered in the administration of questionnaire. This was however subject to the availability of the owner or manager of the business.

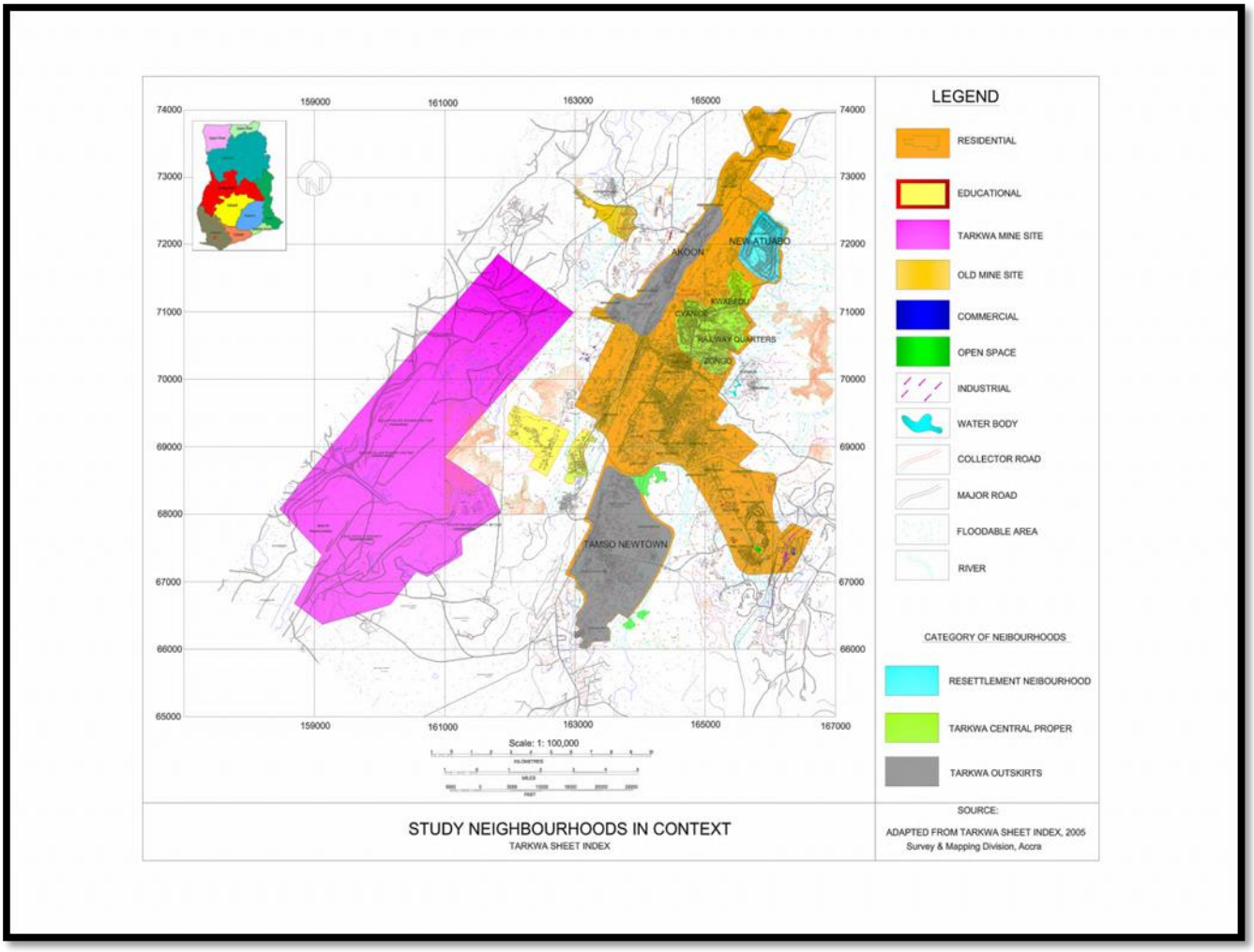

Figure 4.: Demarcations Used for Questionnaire Administration

Source: Adapted from Survey & Mapping Division, Accra 2012

4.5.4 Calculation of Sample Size for Households

Yamane's (1967:886) method for the calculation of sample sizes was used for the calculation of household sample size. A sample frame of 8612 households was used for a total sample size of 154 representing a confidence level of 92 percent was used. The statistical method used to come out with this sample size is stated below.

$n = N/ (1+ N (e)^2)$. Where N =sample frame, n = sample size, e = error margin or level of precision

$n= 8612/ (1+ 8612) (0.08)^2$

n= 8612/56.117 ; n= 153.5 and rounded to n=154

4.5.5 Data Analysis and Synthesis

Data analysis splits data into different parts whiles synthesis is the process of pulling everything together (Bloomberg & Volpe, 2008:76). This part of the research looks into how data obtained was organised, managed and analysed to come up with findings. Both qualitative and quantitative data collected on the field required different approaches to organising and analysing such data.

4.5.5.1Quantitative Data

a. *Coding, Defining Variables and Data Entry*: Quantitative data was analysed with the aid of computer-based software, Statistical Package for Social Sciences (SPSS) which helped the researcher to organise the data collected through coding and entering of data and later allowed for statistical analysis. Coding allowed for the data collected through questionnaires to be transformed into numerical format. This is because SPSS does not understand the data in variable form. For example, data was collected on the background characteristics of respondents included: gender, age, employment status among others. Gender which is either "male" or "female" is in the form of a variable and SPSS cannot read in that format. "Male" and "female" are separate variables that are therefore assigned codes "1" and "2" respectively. When entering data therefore, all "male" and female variables are assigned the codes "1" and "2" respectively for every single questionnaire. This is done manually for all sets of data. It is however important to note that the variables obtained come in different forms of measurement (nominal, ordinal, interval and ratio) and different types of statistical techniques are applied depending on the form of measurement. For example, income of respondents come in

numbers and this differs from the gender of respondents which is “male” or female, which is also different for a rating scale (“agree”, “strongly agree”, neutral, “disagree” “strongly disagree”) for the impact of mining on individual households. Data was manually entered into the SPSS variable and data view windows for all questionnaires after which data cleaning was done to cross check for errors which occur by wrongfully entering some variables of codes. SPSS commands like “summary” helps to display all data in table formats. Codes that are wrongly entered are edited and re-entered.

b. *Data Analysis*: Two main forms of analysis were done with data on SPSS namely descriptive and inferential data analysis. The descriptive analysis basically helped the researcher to organise ad present data in such a manner that was easily understood. This mainly involved the use of frequency distribution tables and graphs. Inferential analysis was used to try to connect or establish the relationship between two or more variables. In this respect, correlational analysis, chi square test, cross tabulation were mainly used.

4.5.5.2. Qualitative Data Analysis

Qualitative analysis was done for all interviews, focused group discussion and all open ended questions from the questionnaires that entailed detailed description of livelihood coping strategies in dealing with mining impacts. Manual transcription was done for all interviews and focus group discussion. This had the advantage of refreshing the researchers understanding of interviews and responses from questionnaires. This also facilitated in “theming out” categories that were already emerging from data and as well as trying to make linkages with the different data sets. For qualitative data analysis, a computer software programme called the Qualitative Data Content Analyser[9] was used. The Content Analyser basically helped the researcher reduce the large volumes of data and make meaning of data through the identification of patterns, frequency counts and pair wise comparisons, and the generation of reports per interview and by categories (themes). Categories[10] (themes) were deduced from initial transcribing process and related to the research question and conceptual framework. These categories were assigned codes and are derived from several data *chunks*[11] and *constructs*[12].

[9] In-house software developed by a CPUT. Professor Andy Bytheway. http://www.nem.co.za/QCA/

[10] Units of meaning that were themed out from interviews and guided by conceptual framework. They are also second order constructs.

[11] Portions of text from a text and usually larger than a construct and category

Pair wise comparisons allowed for two different sets of data categories to be weighed up against each other depending on frequency count of coded responses. Figure 4.3 indicates an interface of the Qualitative Data Content Analyser showing the natural progression from chunks, construct and then categories for a given interview and a pair wise comparison of different categories based on frequency count.

In synthesising data from both qualitative and quantitative data sources, the researcher used triangulation by methods of data collection. Triangulation allows for data from multiple sources to be corroborated and verified to enhance an in-depth understanding and knowledge of the phenomenon been studied (Atkinson *et al*., 2003). Towards this end, the use of triangulation by different data sources namely interviews, quantitative data, secondary data helped put impacts of mining on households in perspective and reinforced the need for a better approach to planning and development. For example, about 78 percent of households “strongly agreed” to the notion that mining had made access to land for farming and other businesses scarce from questionnaires administered. This was corroborated from literature where farming and land for other activities had given way to surface mining pits over the years. This was further evidenced from in-depth interviews where access to land was very difficult in terms of not only affordability but also availability. Based on analysis and synthesis of data, the researcher developed practical recommendations and conclusions that would further enhance knowledge and application of planning and development in mining regions like Tarkwa.

[12] Derived or themed out from chunks

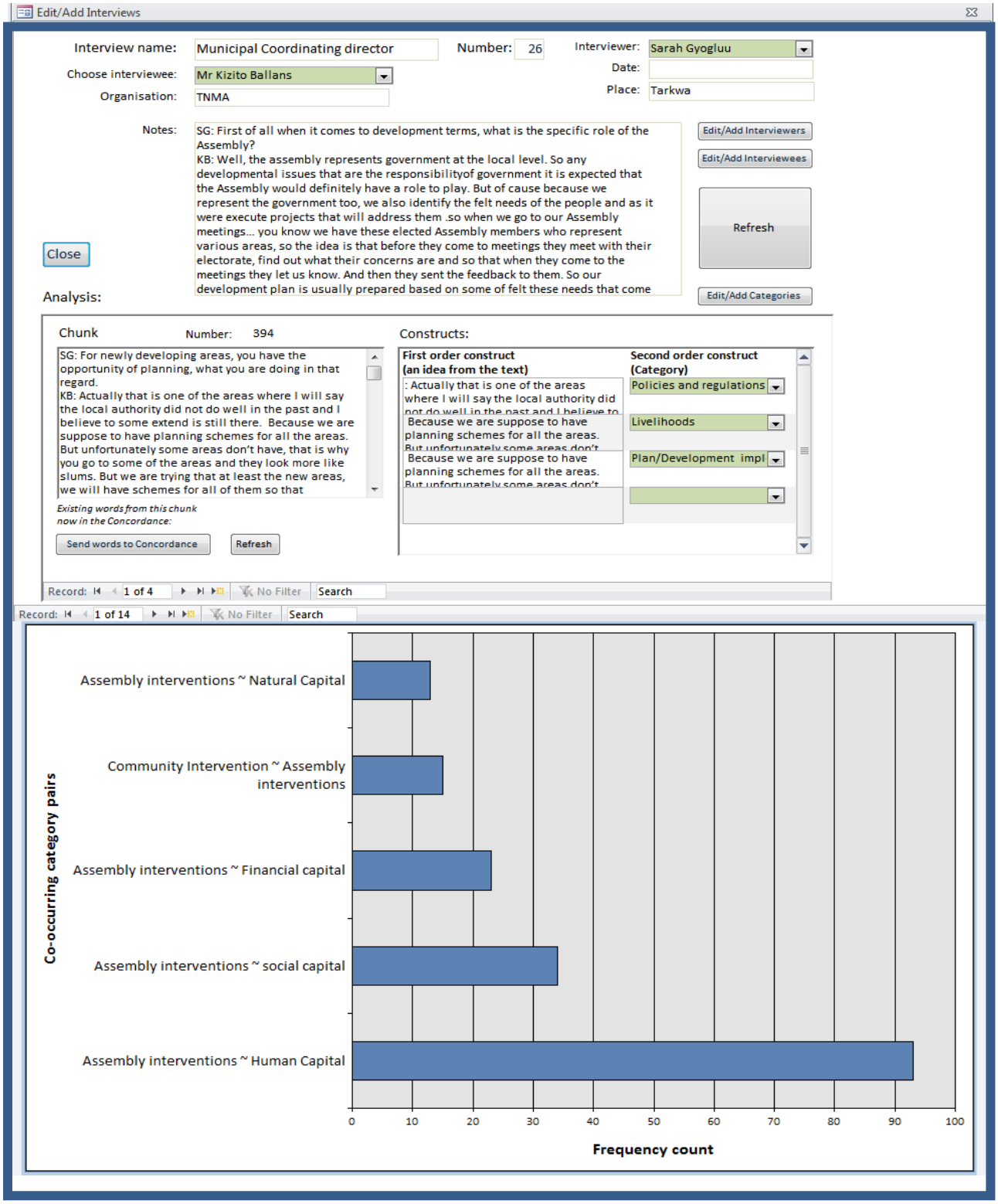

Figure 4. 2: Qualitative Data Analyser Interface Showing Input of Interviews and Output of a Pairwise Comparison

Source: Author field Survey, 2012

4.5.6 Data Validity and Reliability

Data validity and reliability relate to quantitative data collected. Construct validity can be defined as “establishing correct operational measures for the concepts been studied” (Yin, 2008:34) was ensured in two ways. Firstly was the use of multiple sources of evidence namely interviews, questionnaires, documents, focus group discussion and literature review. This allowed for the convergence of findings through triangulation where findings were cross-corroborated and verified from the different sources of data. Secondly, a chain of evidence was maintained for all data used in analysis of data. Interviews and focus group discussion were largely recorded, transcribed and fed into a qualitative data analyser where reports and summaries can easily be generated. All literature and documents used for the study were adequately referenced and can always be referred to. There are pictures to indicate some of the observations made by the researcher and questionnaires administered are in SPSS which can always be rechecked against data or results. Not only does the chain of evidence ensure validity but it also enhances reliability of information used in carrying out the study. Reliability hinges on arriving at the same findings and conclusions if the same procedures were followed. Statistically, the findings of the household survey are generalizable for the urban area of Tarkwa because the sample size from which population was drawn was representative of Tarkwa geographically and questionnaires were administered in a non-biased manner. Thus ensuring external validity in the data collected.

4.5.7 Issues of Trustworthiness: Transferability, Credibility and Dependability

For qualitative research, trustworthiness is the quantitative version of validity and reliability (Bloomberg & Volpe, 2008:78). Issues of trustworthiness comprise credibility, transferability and dependability of the research. While quantitative research require representativeness of the sample, qualitative research aims to ensure that findings are transferable - they help to understand other contexts or groups similar to those studied (Durrheim, 2006:49). To this end, the researcher undertook very in-depth interviews which provided rich and informed explanations as to how mining affects livelihoods and coping strategies, planning and development implications of mining-led urbanisation. This amount of detail helped the researcher paint a vivid picture of the context of a mining town which does not only educate the reader but can be used to reflect on other mining contexts especially in the West African sub region, as well as comparative research elsewhere. Dependability is analogous to reliability. Dependability of qualitative data was ensured by recording almost all interviews and focused group discussions. These were transcribed and together with open ended detailed responses

were entered into a Qualitative data analyser. Reports and summaries are easily generated on this software. Comparable to validity of quantitative procedure, credibility of this study was ensured through triangulation of data collection methods where qualitative data was corroborated with other sources of information. Furthermore, all respondents were willing participants of the interview process after letters of introduction and “informal” introductions of the researcher was made to interviewees.

4.5.8 Ethics, Limitations of Research Design and Methodology

Before the research was carried out in the field, the author had ethical clearance from the Faculty of Informatics and Design as part of the author’s responsibility to follow good research and ethical practice. In the conduct of this research the confidentiality of galamsayers and small-scale miners was protected by changing their names. The researcher also strived for consistency and objectivity in data presented by drawing conclusions based on evidence of the data presented. Additionally, all interviews and documents were appropriately referenced. Attached to this thesis is an addendum which contains some summary of some of the interviews conducted as generated by the Qualitative Content Analyser.

One of the huge limitations of conducting research in a mining environment was the difficulty with corporate sources (mining companies) and state institutions with regard to release of information especially with regards to maps. There was a fear on the part of mining companies that maps of the study area will be used to their detriment as they may depict extent of environmental degradation among other things.

Another challenge was the lack of comprehensive socio-economic data for Tarkwa which made sampling hectic in the researchers attempt to ensure representativeness in data collection.

CHAPTER FIVE

LIVING IN A MINING ENVIRONMENT: HOUSEHOLDS' SOCIO-ECONOMIC CHARACTERISTICS AND THEIR PERCEPTIONS OF IMPACTS OF MINING

5.1 Introduction

This chapter looks at the household as the unit of analysis. This includes the demographic and socio-economic characteristics of the households and the sampled respondents' perception of the impacts on their households within Tarkwa's dominant context of mining. This chapter is also foregrounded against a backdrop of MNCs trying so "hard" to convince Ghanaians that mining's impact has been positive and visible in communities (Akabzaa, 2009) as captured in chapter one (background to research problem). The activity of mining has the peculiar characteristics of a life-cycle (stage 1 of Figure 5.1) that is associated with boom and bust economic conditions (stage 2 of Figure 5.1) experienced by the individual mines that in turn impacts on households and community livelihoods. The boom times is associated with periods of expansion and often positive, while the bust conditions corresponds with contraction in mining activity and resultant negative impacts on community livelihoods, local and urban economy. Figure 5.1 summarises the mining milieu as explained above with the point of departure for this chapter's analysis; impacts on households shown in stage 3 of Figure 5.1. Furthermore spin-offs resulting from mining as indicated by stage 3 in Figure 5.1 are explored in chapter six.

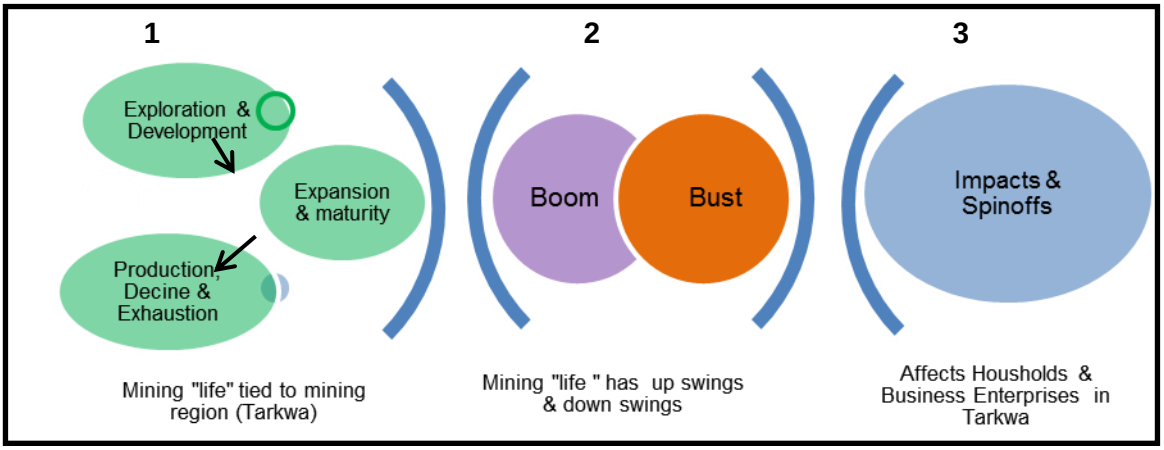

Figure 5. 1: Background to Chapter Analysis

Source: Author Construct, 2012

For this research therefore, the urban household provided the lens through which issues of mining are analysed. How do households perceive the impacts of mining?, What are the outcomes and what meaning does this hold for developing responses and interventions in Tarkwa?. The information for this chapter was gathered from a sample of 154 urban heads of households from January-March 2012 spread across the central, outskirts and resettled area of Tarkwa. To synthesize data from different sources, triangulation by data sources was the approach adopted for this chapter. This allowed for data and findings to be corroborated or verified within different data sets and across different sources - literature, secondary sources and field survey (questionnaires and interviews) of households and business owners.

5.2 Socio-Economic and Demographic Characteristics of Respondents

5.2.1 Formal Employment Trends in Mining

Several decades of gold mining dominance in Tarkwa have served as a source of employment both directly in the formal economy and through informal mining and other related activities such as galamsey, gold buying, trading in mining equipment among others. The survey of one hundred and fifty-four (154) households showed that, for the different categories of employment, 11.03 percent work in formal mining related activities as compared to 51.94 percent involved in informal non-mining related activities. This can partly be attributed to the specialised, highly skilled nature of formal mining and advances in technology which makes more use of machines and less of human power. The shift to open cast mining is cheaper and has favoured more the use of technology as opposed to underground mining which makes use of more human power. For example, Goldfields Ghana Tarkwa started using the open pit form of mining from 1997 (Goldfields, 2011) and AngloGold Ashanti from 2007 (AngloGold Ashanti, 2011).

The employment trends for the two gold mining companies studied (AngloGold Ashanti-Iduapriem and Goldfields Ghana) in Tarkwa have not significantly increased (over a hundred additional employees) from 2008 to 2011 (Figure 5.2). Parallel to this argument, all 13 new mining companies that started operating in Ghana after 1986 resorted to open cast form of mining (Akabzaa & Darmani, 2001:21) as opposed to underground mining. National formal sector labour absorption trends in the mining sector has plummeted from over 20 000 since 1994 to about 15,000 in 2004.

Figures 5.2 and 5.3 indicate formal employment trends for AngloGold Ashanti (Iduapriem) and Goldfields Ghana and that of all mining companies in Ghana respectively.

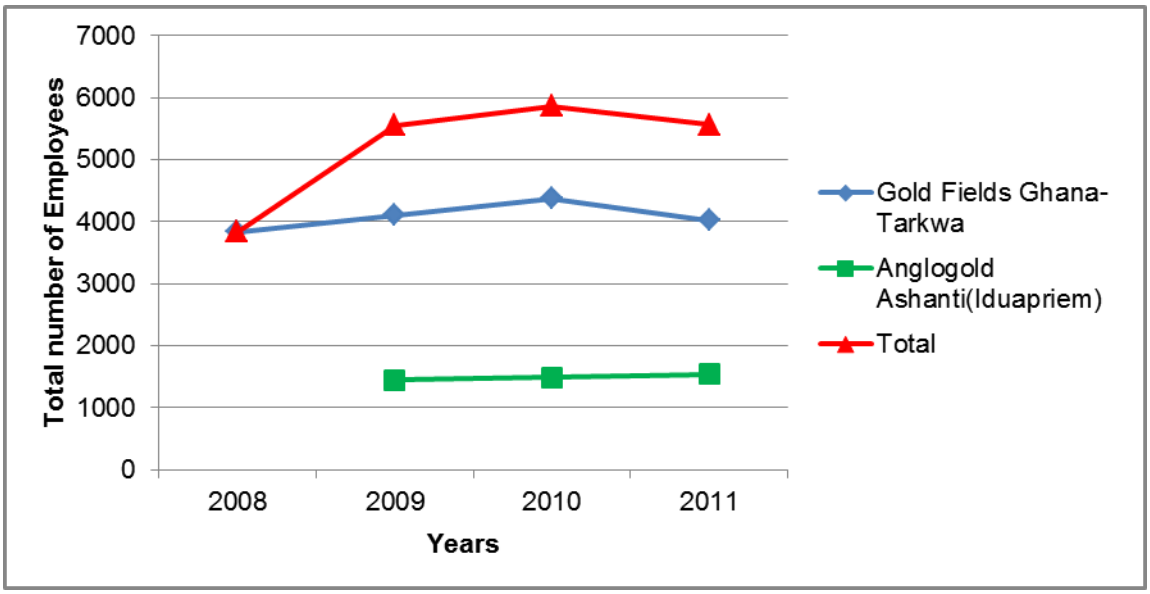

Figure 5. 2: Employment Trends for AngloGold Ashanti and Goldfields Ghana (Tarkwa) 2008-2011

Source: AngloGold Ashanti, 2011 and Goldfields, 2011

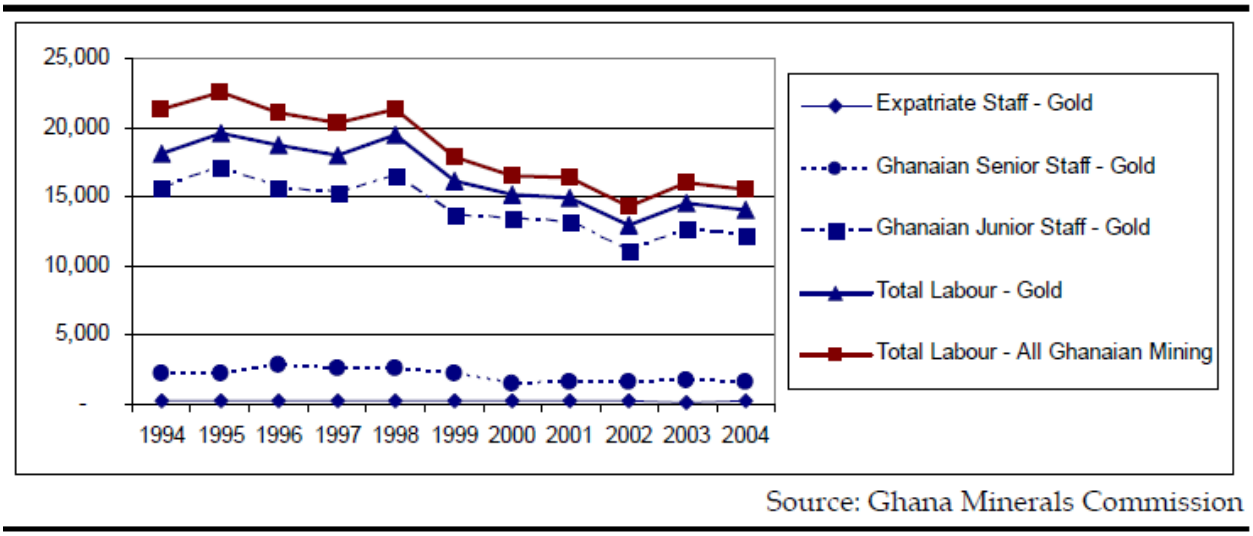

Figure 5. 3: Formal Employment Trends for Mining 1994-2004

Source: Adapted from Roe and Samuel, 2007

The above scenarios notwithstanding, mining inherently has a life cycle with each stage of this cycle presenting different advantages and disadvantages. AngloGold Ashanti-Iduapriem mine

has a life of over 10 years and Goldfields Ghana's mine life extends to 2024 (Goldfields, 2011). Both mines are at their mature-stagnation phase when there is limited growth and expansion, consequently less absorption of labour. Nyame *et al.* (2009:9) observe that at mature-stagnation stage of the mine's life it is characteristic of companies to downsize and restructure in order to reduce cost and stay competitive. Following from the above line of reasoning, the implication is that formal mining absorption of labour can continue to drop in the long term in Tarkwa.

5.2.2 Gender and Employment

The survey of sampled households revealed that 61.7 percent of households are headed by males and 38.3 percent headed by females. This is consistent with regional trends of 72 percent male headed households and 23 percent female headed households from the 2000 Population and housing Census (GSS, 2002). Male dominated households in a mining area like Tarkwa and in the Western Region (which has the highest concentration of large scale mining activities and countless number of small-scale mining activities (Akabzaa & Darmani, 2001) is not unusual as mining has traditionally been a male-dominated industry which is physically demanding. A Word Bank Report (2009:9) lends credence to the rarity of women in formal employment in the extractive sector around the world and puts the number at not more than 10 percent. This the World Bank Report attributes to a number of reasons including the point that mining jobs require a level of physical strength, stereotyping (mining been "men's work") and social and cultural taboos (ibid: 9-10). Aside the male dominated mining industry explanation, male dominated households is perhaps also reflective of the traditional Ghanaian family structure. This consists of a man, wife and kids and other external family members, with the man as head of household even though gender roles are gradually changing (Brown 1994: 2-3). Nonetheless, the head of household is the one identified by family members as head and not necessarily the one who maintains the household (GoG, n.d.).

The sampled survey however showed a dominance of women in informal non-mining related employment (74.57 percent) in stark contrast to informal mining-related employment which had only a female respondent. Figure 5.4 summarises gender and employment relationships for respondents of the survey.

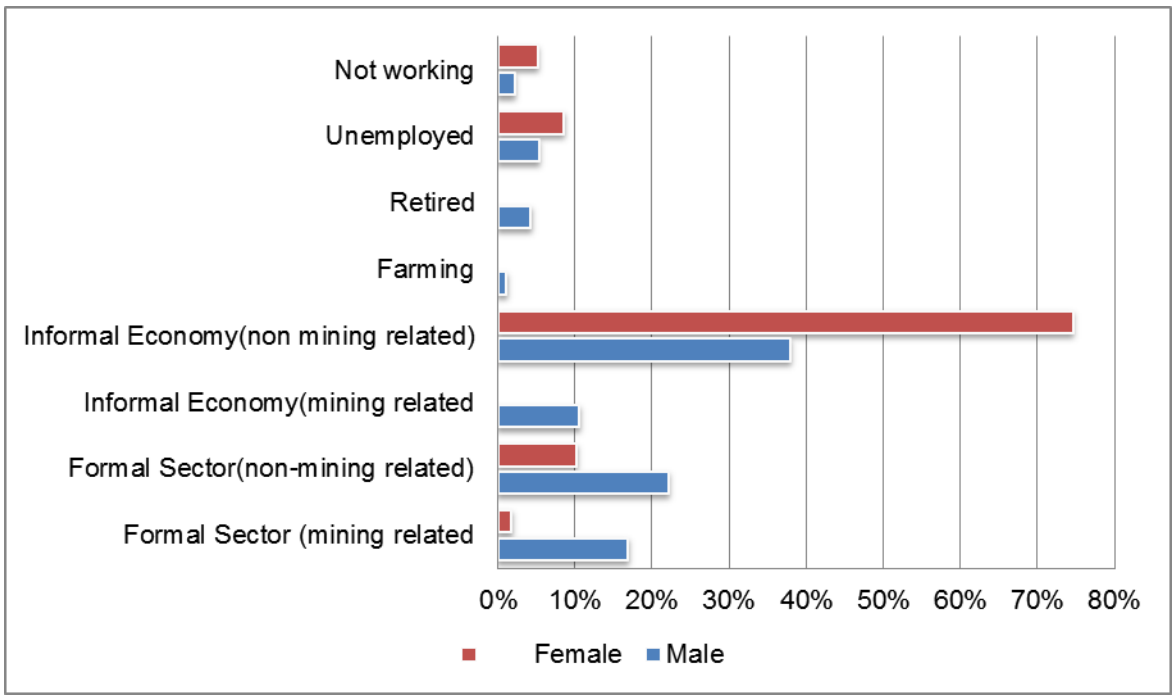

Figure 5. 4: Employment Category and Gender of Respondents

Source: Author's Field survey, 2012

The low numbers of female workers in informal mining-related employment than in informal non-mining related employment can be partly attributed to the former been much more labour intensive and physically demanding. Similarly, apart from informal mining providing mostly temporal jobs for women, an income stream from informal mining activity is either not regular or not enough to take care of the needs of some of these women. This was evidenced from a focus group discussion of women engaged in carrying ore from mine pits to processing sites in informal mining at Nkamponaase. One of the women commenting on the inconsistency of income streams observed that "when the miners get to grind the ore and get the gold, then we get paid. If this has not been done, we don't get paid". (Focus Group Discussion, 2012).

Another woman also reckoned the temporal nature of the job saying:

> *When the men don't get ore from underground, we don't get to carry the ore, so we have no work. Like the work that we've done today, it can take another week before there is work again for us to do. So the money we make today is supposed to able to take care of us till the next available work* (Focus Group Discussion, 2012).

Commenting on the fact that mining-related informal jobs pay more than others, one of the women still considers the erratic nature of incomes as a source of insecurity and observed that: … *It's only enough to buy food and nothing else and sometimes paying school fees.* (Focus Group Discussion, 2012). Figure 5.5 shows the researcher having a focused group discussion with women in small-scale mining after their day's work of carrying ore.

Figure 5.5 Author in a Focused Group Discussion with Women Working in Small-Scale Mining

Source:Author Field Survey,2012

The aforementioned narratives reinforce studies such as that by Yakovleva (2007:31-39), Dinye and Erdiaw-Kwasie (2012:293-295) who in their studies of women in small-scale mining in Ghana, showed that women's role in informal mining is peripheral as they are mainly not full time employees, are paid less, were less educated and thus had limited opportunities in other business ventures.

5.2.2 Levels of Education Households

The highest level of education obtained by the majority of respondents was secondary education (37.7 percent) comprising senior high school, vocational and technical school graduates, closely followed by basic education (Primary and Junior High school graduates) representing 35.7 percent for Tertiary education (university/polytechnics) graduates and those respondents who never went to school accounted for 20.8 percent and 5.8 percent respectively. This compares well with the Ghana Living Standards Survey 5 (GLSS 5) findings which estimates that about 19 percent of the Ghanaian adult population has secondary level education or higher with about 39 percent having the Basic Education Certificate Examination certificates or Middle School Leavers Certificates (GSS, 2008:11). The GLSS 5 also estimated that about 31 percent of the adult population has never been to school. It is important to note that the GLSS 5 figures are slightly higher because they cover both rural and urban adult populations. Nonetheless, the figures from both the field survey and at the national level indicate that not many people attained very high levels of education and therefore literacy and skills levels nationally are still low.

In this gold mining area, the lure of galamsey and small-scale mining activities cannot be overlooked as one of the consequence the low education levels. From survey interviews with respondents in galamsey and small-scale mining sectors, the reasons for their engagement in small-scale mining activities varied from poverty, lack of opportunities in employment, quick returns in money and also as a means to an end - establishing one's own business or for financing further education or training. When asked about his reason for not continuing his education to the senior high school level, one of the illegal miners responded that "If poverty sends you, what can you do, you have to go" (Focused Group Discussion, 2012). The phenomenon of informal mining been partly driven by poverty was expressed and recognised at a World Bank roundtable discussion on artisanal mining where informal mining was acknowledged to be largely driven by poverty (Bachiringah, 2007:165).

Another small-scale miner at Borborbor indicated his engagement in small-scale mining as follows:

we do it because that is the only available work here. Tarkwa here you know things are very costly … Tarkwa here you can go to school and finish. I, myself I finish polytechnic (sic). (Abeiku, Field Interview, January 2012).

A look at enrolment levels for the Municipality shows for private and public schools enrolment at the primary school levels is high. For example, enrolment numbers rose for public primary schools from over 17 000 for the 2009-2010 academic years to about 19 000 for the 2011-2012 academic years (Ghana Education Service, 2012:455). In contrast, that for junior high schools in public schools enrolment dropped from 7,062 to 6575 for the 2011-2012 for the respective academic years. This is depicted in Figure 5.6.

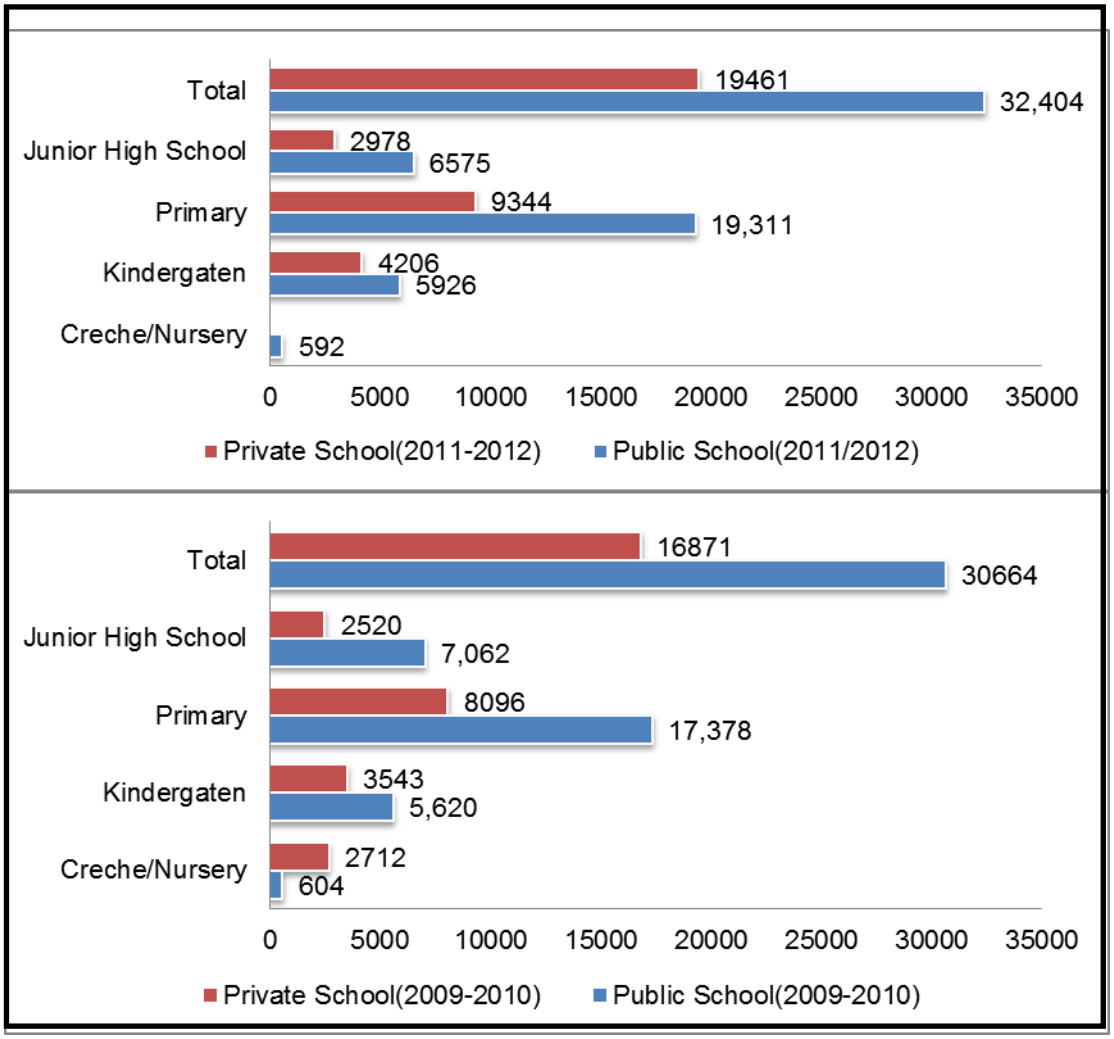

Figure 5. 6: Enrolment Levels for Basic Education for Tarkwa-Nsuaem Municipality 2009-2012

Source : Figures from Ghana Education Service (2012)

It is important to note however that primary school enrolment is heavily subsidised by government and programmes such as School Feeding Programme, free books and uniforms for primary schools as compared to Junior High School education, which are some factors that

account for large numbers in the primary school level. Nonetheless as figure 5.5 shows, the sharp drop in numbers at the Junior high school can be explained by other factors such as the lure of small and illegal mining. The dropout rate for the 2004/2005 academic year for example for rural areas was 1.1 percent and for urban areas of the Municipality was 1.4 percent (Tarkwa-Nsuaem municipal Assembly, 2006). The Assembly reckons the presence of illegal mining activities scattered all over the Municipality is an enticement for adolescents who want to make money and thus a reason for such a dropout rate

The level of education of respondents' has implications for the kind of employment and opportunities in jobs that respondents have or would hope to have as well as the level of income they might earn. A high level of education is generally associated with highly skilled jobs in the formal sector either in mining or non-mining related areas. As earlier discussed, the field survey revealed that, labour employment levels in the formal mining sector is low, at 11.03 percent for formal mining sector as compared to 51.94 percent for informal non - mining related activities. Part of the explanation is the level of education of respondents which limits their opportunities in terms of any formal sector employment, be it in a mining or non-mining field. In Figure 5.7, formal sector employment for non-mining related jobs is 5.45 percent for basic education, 13.79 percent for secondary education and 46.88 percent for tertiary levels respectively. In contrast, for levels of education in the informal non-mining related sector- it is 78.18 percent for basic education, 53.45 percent for secondary education and 9.38 percent for tertiary levels respectively.

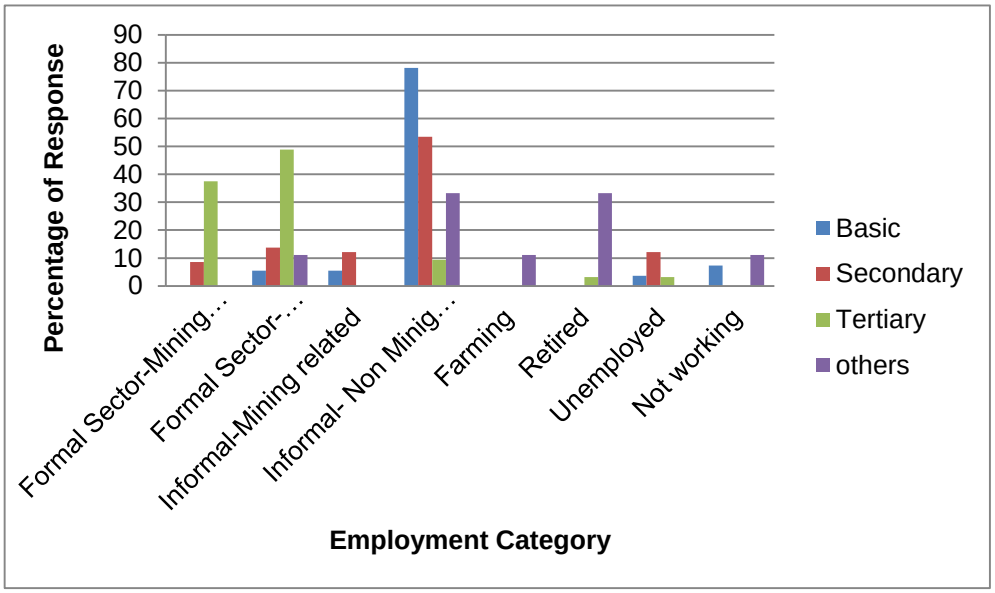

Figure 5. 7: Cross Tabulation of Employment Categories and Level of Education of Respondents

Source: Author Field Survey, 2012

The level of education also has a bearing on how urban households in Tarkwa understand approach and relate to policies, implementation of community projects and how they deal with issues resulting from mining. A recurrent concern among institutions the author visited was institutions having to daily deal with the lack of understanding and exposure of people concerning land, mining and related matters thus making their work difficult. The Lands commissioner reflected this view about his line of work;

> *… but this place the illiteracy rate is so high here. So high! People here don't understand. It's difficult to get somebody who is level in his thinking like you, then, the person really understands* (sic*)* (Aboagye –Larbi, 2012).

In an interview with Owusu-Koranteng (2012), the Director of the Wassa Association of Communities Affected by Mining (WACAM), he was of the view that the generally poor education levels of communities among other factors has always caused an imbalance of power between multinational mining companies and host communities thus their inability to adequately push and lobby for policies and programmes that safeguard their rights and livelihoods. This was even reflected in how residents of Tarkwa view gold as a natural resource. Some locals in Tarkwa are generally of the belief that gold will never finish but that it keeps on vanishing from one area or place to another. The thought of this small-scale miner when asked about what he

will do when gold in Tarkwa is completely exhausted clearly puts the perception of some locals about gold and mineral resources in perspective. Speaking in Pidgin English he reflected:

> *... Ever since you born before you heard natural thing finish before? Never! Unless government stop you. But natural thing never ever finishes. Gold will never finish, unless you work up to the level that you don't have its machine to get the gold. That's when you'll stop it. But if not, gold will never finish. Ever since you heard manganese, you hear it finish before? Maybe unless the company collapses before they won't get manganese but if the company is still working, manganese will always come* [13] (Bonsu, 2012).

This sheer panache of indigenous understanding of mineral resources run contrary to all scientific knowledge but is loaded with deep-seated distrust, perhaps even resentment for the industrial and global mining industry that presents a challenge to managing mineral-driven economies and managing expectations of local communities.

5.2.3 Previous Place of Stay

The survey showed that 75.3 percent of the respondents stayed or lived somewhere in Tarkwa, while 24.7 percent have always lived in Tarkwa. Of the 116 respondents (75.3 percent) who moved to Tarkwa from other parts of Ghana, 53.45 moved because of job search and employment related opportunities, 26.72 percent because of family related reasons, 6.90 percent were transferred and 12.93 percent were resettled. This is in contrast to the GLSS 5 (GSS, 2008:53) findings at the national level where migrants (36 percent) moved for other family reasons aside marriage and accompanying a spouse as compared to 12.3 percent movement for job search. A 53.45 percent response to movement to live in Tarkwa due to job search or business related ventures is a clear indication that the mining town of Tarkwa continues to attract people due to the opportunities in mining and related activities. The Ghana Statistical Service (2002) reports that the mining towns of Obuasi, Tarkwa and Prestea were second net receivers of migrant populations aside Ghana's largest cities of Accra and Kumasi. This attraction pull of mining regions also hints at the possibility of people and businesses leaving when the gold resources of Tarkwa are exhausted, as no other incentive will exist for them to stay. This has implications for the kind of development planning interventions that need to be undertaken in Tarkwa to enable such people to still have reasons to continue to live in Tarkwa or remain after mineral exhaustion. Nyame *et al.* (2009:9) note that the outflow of people and

[13] He was of the view that things that are naturally existing, especially mineral resources can never get exhausted. For him it is government that stops a company from continually mining or when a mining company does not have the technology to reach mineral resources. All of his life he has never heard of natural occurring things that get exhausted and his tone of expression was that of disbelief at the researcher's response that natural resources like minerals do get exhausted.

businesses outside of a mining town during the closure stages is inevitable and subsequently results in the decline in the economic fortunes of such regions. They cite specific examples in Ghana being Konongo, Ayamfuri, Obuom, Hiawa and Dunkwa.

5.2.4 Age, Previous Place of Stay and Length of Stay in Tarkwa

When the author cross-tabulated previous places of stay with different age cohorts, it was revealed that 16.38 percent of households who stayed elsewhere prior to moving into Tarkwa were within the age groups 21-30 compared with 0 percent for households who had not live elsewhere prior to living in Tarkwa. Also, 23.28 percent and 25 percent of sample households who had lived somewhere prior to Tarkwa were within the age cohorts of 31-40 and 41-50 respectively. These relationships are summarised in Figure 5.8 and generally indicate that those who moved into Tarkwa are within the economically active age.

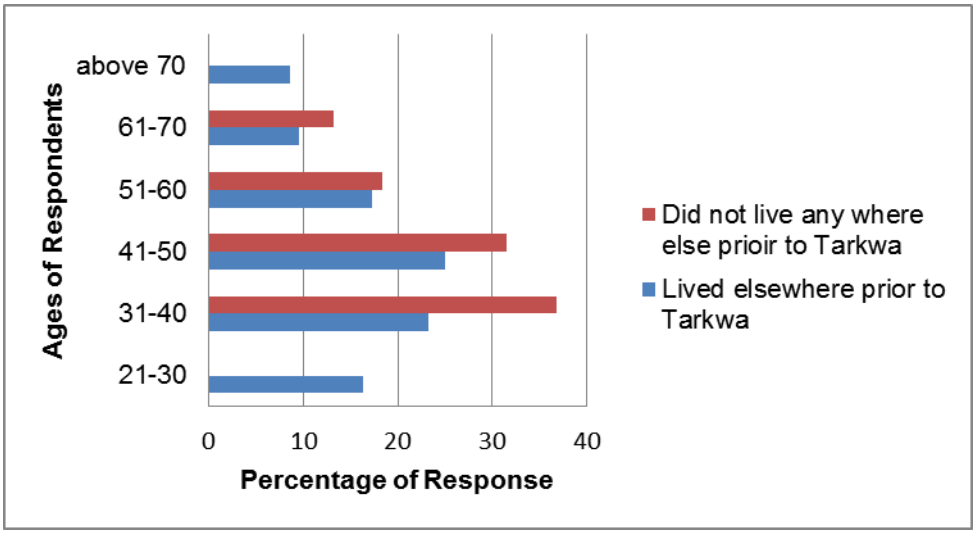

Figure 5. 8: Ages of Respondents and Previous Place of Stay Prior to Tarkwa

Source: Author Field Survey, 2012

The data from the sampled survey is reflective and consistent with the national estimations. The GLSS 5 estimate that seven out of every ten adults aged between 15-64 is economically active (GSS, 2008:34) and also point out mobility was highest (10.7 percent) among 25-29 year cohorts and gradually decreases with increasing age (GSS, 2008:51).

The dominance of participation of economically active age suggests the constant quest for jobs and employment opportunities in Tarkwa or someplace else in the future. Taken together with

the educational levels of respondents, 37.7 percent of whom have only obtained their highest education at secondary school level, this presents vital implications for the quality and quantity of human resource available to the Municipal Assembly needs to explore in terms of competitive advantage for planning and development. A chi square test[14] was computed to see whether there is significant relationship or association between the age and respondents previous place of stay or otherwise informed a significant association between the two variables.

As observed in the preceding paragraph, it is predominantly the economically active age cohort (21-50) that is highly mobile and moved into Tarkwa. A Pearson correlation[15] computed to determine whether the age of a respondent has an association with the length of time the respondent is likely to stay in Tarkwa and a +.426 indicated a relationship between age and length of stay in Tarkwa is which is significant at 0.01 confidence level. This means that age provides a reasonable guide that partly explains the length of stay in Tarkwa as it predicts around 18 percent of likelihood of the length of stay of a respondent in Tarkwa. The remainder of the unexplained variance may involve, inter alia, the type of job/nature of employment and opportunities for growth, and marital status.

5.2.5 Length of Stay, Type of Employment and Marital Status

While the age of the respondent alone can partially explain the reason for which sampled respondents will stay in Tarkwa for a certain length of time- part of the unexplained variance in the length of stay of respondents in Tarkwa could be explained by their marital status and the employment type. A chi square test[16] was computed to determine whether there is a significant association between the length of stay of a respondent and their marital status. A significant association was present suggesting that marital status is a significant determinant in how long a respondent might stay in Tarkwa. For example, 62.71 percent of those who have stayed in Tarkwa for over 15 years are married as compared to 3.39 percent of single respondents who have lived in Tarkwa for over 15 years. Figure 5.9 summarises the association of sampled respondents' length of stay alongside their marital status.

[14] A significant association was present with chi-square =137.339. df=5, p=0.03

[15] In a Pearson correlation test, the strength of relationship is represented by how the absolute size of the coefficient, i.e. how close to +1.00 or -1.00.Example 0.90-1.00 (very high correlation/very strong relationship). 0.70-0.90 (High correlation/substantial relationship). 0.40-0.70 (moderate correlation/moderate relationship. 0.20 - 0.40 (low correlation/weak relationship). (Burns &Burns, 2008:346)

[16] A Chi square value of 16.541, df = 9, p=0.056

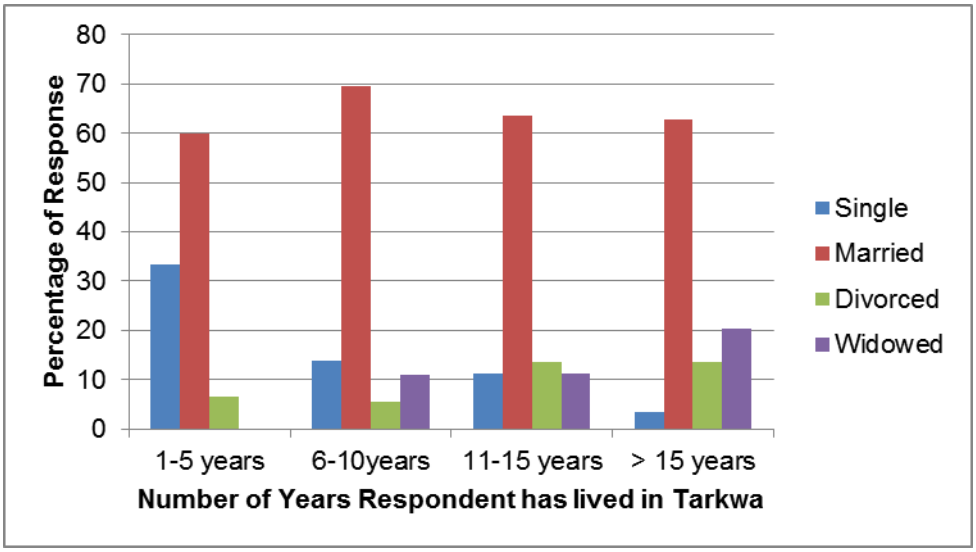

Figure 5. 9: Length of Stay in Tarkwa and Marital Status of Respondents

Source: Author Field Survey, 2012

The argument as put forth from foregoing analysis that respondents are more likely to stay longer in Tarkwa if they are married suggests that the planning ethic for Tarkwa should engender more of a family and children oriented infrastructure and service provision. This could include but not limited to parks and recreation, opportunities in housing, good educational institutions and facilities. The latter seem not to be the problem as Tarkwa abounds with education facilities from the basic level through to senior high school, a university a midwifery training school and a library. For the 2009/2010 academic year, the municipality had a total of 56 public kindergartens, 59 primary schools and 42 junior high schools, 3 public senior high schools, 1 vocational School and 1 public university. Private schools in the municipality are made up of 36 Kindergartens, 34 primary schools and 21 junior High Schools, 1 senior high school and 1 private vocational School (GoG-MoFEP, 2012:9). Most of these educational facilities are concentrated within the urban area of Tarkwa compared to other parts of the municipality principally because it has the population to sustain those levels of services and also been the municipal capital.

The same cannot be said for family oriented outdoor facilities. The author's observations in Tarkwa revealed that apart from mining companies that have golf courses and recreational parks for its staff, there are no proper outdoor recreational services that most families have access to. Private entrepreneurs rather prefer to enter into the business of night clubs and pubs mainly to attract the youth. Parks and especially public outdoor recreation are most likely to remain the preserve of the Municipal Assembly - and perhaps because of the scarcity of land in

Tarkwa, the Assembly seems to concentrate on development projects focused on infrastructure and the idea of family-oriented parks and recreational areas has become a “luxury” that can wait.

With regard to the relationship between employment and length of stay in Tarkwa, the survey suggests that those who were self-employed are the most likely to stay longest in Tarkwa. Of the 59 respondents who stayed for over 15 years in Tarkwa, 57.63 percent,15.25 percent and 8.4 percent were in the self-employment, in private and government categories respectively. With respect to a length of stay ranging from 6-10 years and 11-15 years, respondents who were self-employed were most likely to stay the longest accounting for 47.22 percent and 61.36 respectively. A chi square test[17] computed to determine the nature of the association between length of stay and employment revealed a significant relationship between the length of time people stay in Tarkwa and their employment type. This is summarised in figure 5.10.

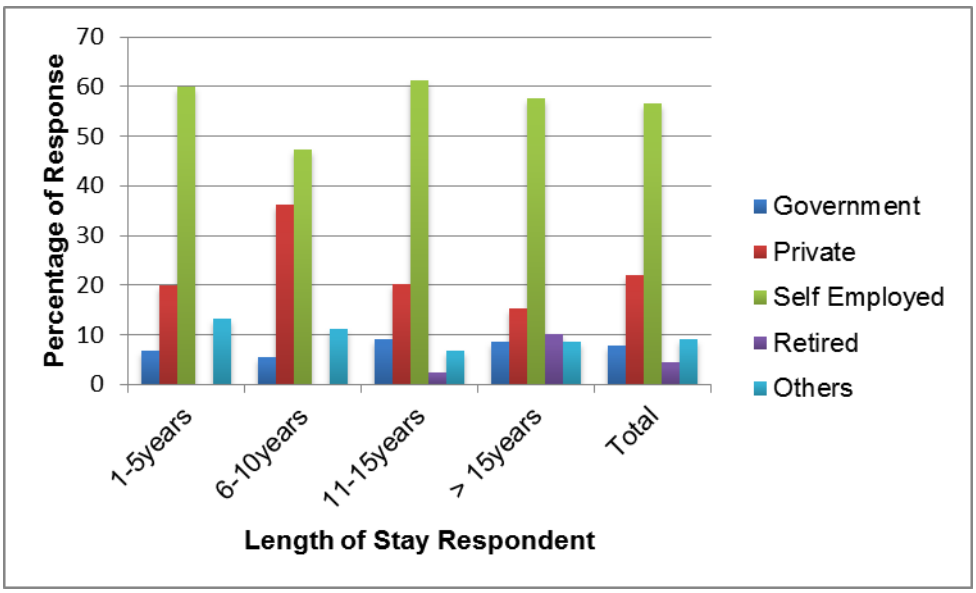

Figure 5.10: Lengths of Stay and Employment Categories of Respondents

Source: Author Field Survey, 2012

Together, these relationships between length of stay, marital status and employment category suggest that, work and family are of importance in determining length of stay for respondents in Tarkwa. A relationship between length of stay and employment category especially with those who are self-employed (over 50 percent in the informal economy as earlier posited) intimates the mining economy as an avenue of market opportunity for business start-ups or venture of

[17] A chi square value of 13.359, df=12 and a p value of 0.344

some kind. People will continue to stay insofar as they have been able to grow their business and making profits. Such business enterprises (formal or informal sector therefore holds the potential for diversification of the economy beyond mining. The Assembly acknowledges that the informal economy is emerging and attracting a large labour force thus the need to better maximize its benefits (GoG-MoFEP, 2012:8).

The Municipal Assembly in partnership with development oriented institutes/bodies could therefore support individuals and businesses within that sector to grow by creating the enabling environment through easy access to loans, availability of space requirements for businesses to expand spatially and incubator programmes for existing large businesses to nurture and mentor upcoming local businesses. Additionally the Assembly stands to benefit as business enterprises expand and grow in number. The typology of such business enterprises is varied and include but not limited to chop bar operators, sawmills, susu operators, bakers, carpenters, market stalls et cetera (GoG-MoFEP, 2012: 20-28) that contribute substantially to internally generated funds of the Assembly through licenses, rates and tax on goods and services (GoG-MoFEP, 2012:13) Figure 5.11 gives the sources of internal revenue for Tarkwa for 2004 and 2005 with rates and licenses which are usually taxes on business enterprises an integral part of internal revenue in Tarkwa.

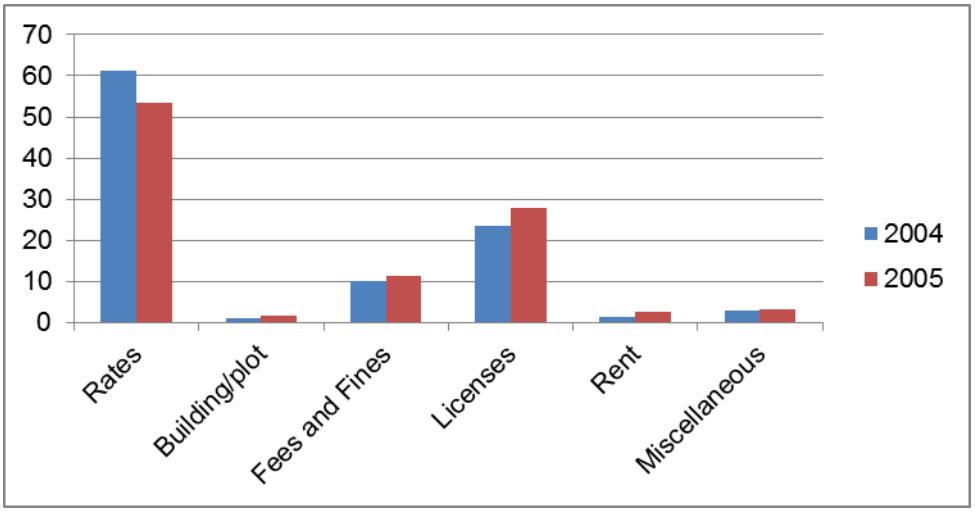

Figure 5. 11: Internal Sources of Revenue for TNMA for 2004 and 2005

Source: Figures from Tarkwa-Nsuaem Municipal Assembly, 2006.

5.3 Urban Households' Perceptions of Mining Impacts

Mining brings along with it some economic, social, environmental and governance consequences and impacts. These could be positive or negative. Some of the wide-ranging positive impacts include: job and employment opportunities, growth in businesses, provision of basic infrastructure et cetera. The negative impacts relate to increased cost of living, increase in social vices, and deterioration/damage to environment, physical change and scarcity of land among others (refer to Figure 1.2). However, such impacts cannot be blanketed over all mining regions because of varying household experiences. This implies that the perceptions of mining's impact from the viewpoint of households vary in intensity and magnitude depending on the regions' geographic, regulatory and economic characteristics as well as community/household experiences.

Therefore for the purposes of this research, the households were presented with a list of mining impacts that may affect their households and community directly. Respondents were queried on their perception of mining's impact on their household and that of the larger community. Rating scales were used to help to determine the households' perception of mining's impact since perception is a construct that cannot be measured in accurate numbers. It must be noted that mining impacts here relate to both large and small-scale mining within Tarkwa. However, during the survey, it was realised that when households referred to "mining", it was that of large scale mining companies as that form of mining is the most palpable and dominating force largely permeating and influencing the way of life of households. Simply put, households largely equated multinational mining companies and their activities to mining.

5.3.1 Perception of Positive Impacts of Mining on Individual Households

This section explored the impacts of mining from the viewpoint of individual heads of households.

5.3.1.1 Employment/Job Opportunities

One of the positive impacts that mining presents is employment or job opportunities. The nature of opportunities presented however may vary from one mining resource region to another. For Tarkwa, about 45.5 percent of households disputed the perception that mining offered greater employment opportunities or jobs. About 22.1 percent however believed that mining presented a lot of opportunities for jobs or businesses. This is summarised in Figure 5.12.

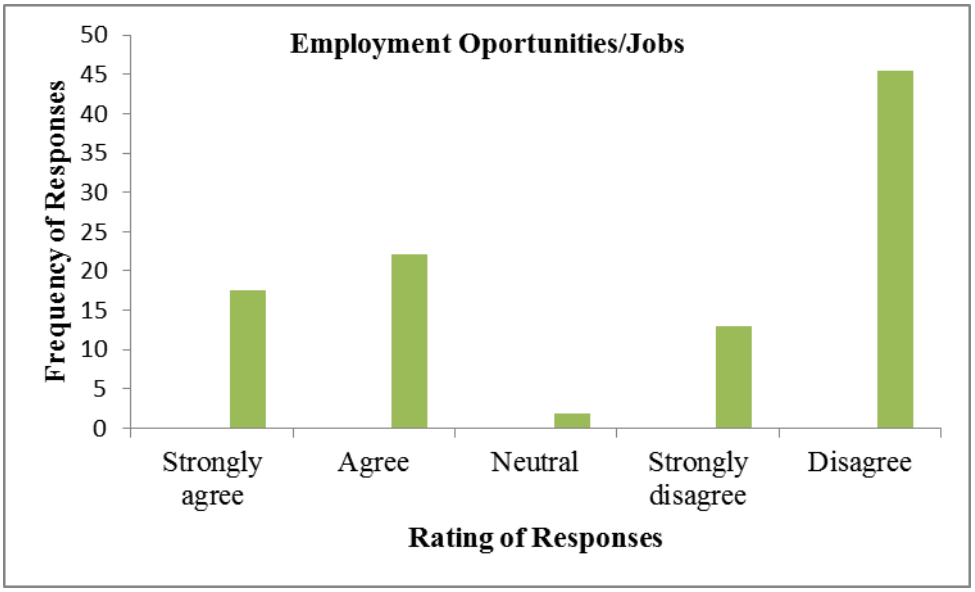

Figure 5. 12: Households Perception of Employment/Job Opportunities in Tarkwa

Source: Author Field survey, 2012

Overall, 58.5 percent of the sample had negative perceptions and 39.6 percent were positive which is suggestive that households are generally not satisfied with the employment expectation from mining and most of them seemed disillusioned. It must however be borne in mind that about 53.45 percent of sample moved into Tarkwa to seek for opportunities in business and employment. This negative perception should also be seen within the context of only 11.03 percent of surveyed households employed in formal mining and overall formal labour absorption in mining plummeting from over 20 000 since 1994 to about 15,000 in 2004 (see Figures 5.1 & 5.2).

Secondly, many employment opportunities created in the formal mining are largely specialised and thus the limited level of education (secondary level) of most respondents (37.7 percent) make them unlikely to meet the limited employment opportunities that normally become absorbed within the pool of labour for employment in large scale mining companies and hence have to look for alternate areas in employment. Yankson (2010:356) supports this view as he notes most of those on the active register of the Labour Department at Tarkwa are unskilled and even when skilled cannot read and write and hence cannot secure a job in formal employment.

Besides, households have to live with the reality that formal sector mining employment is very limited. Additionally, indigenous citizens of Tarkwa have grown up most of their lives in a town of gold where large scale mining companies have mostly been in charge of what resources they

perceive as naturally belonging to them. Like most mining economies where influence of mining companies is pervasive, communities simply look up to them for employment. In Tarkwa, children in school grow up with the notion of getting jobs in the mines in future and some people currently working in other areas usually have one eye focused on employment with a mining company. As part of survey for 150 business enterprise owners in Tarkwa, 5.3 percent of the respondents cited the movement of labour into other opportunities in mining as one of the negative impacts of operating a business enterprise in Tarkwa. It has therefore become a case of familiarity breeding contempt and perhaps explains some reasons behind some of the perceived negative responses.

5.3.1.2 Growth in Incomes

Another positive impact of mining regions from literature is the likelihood of high incomes people earn from mining activities. From the survey of urban households of Tarkwa, about 35.1 percent had positive perceptions of a growth in their incomes, with 38.3 percent disapproving with that perception as summarised in Figure 5.13.

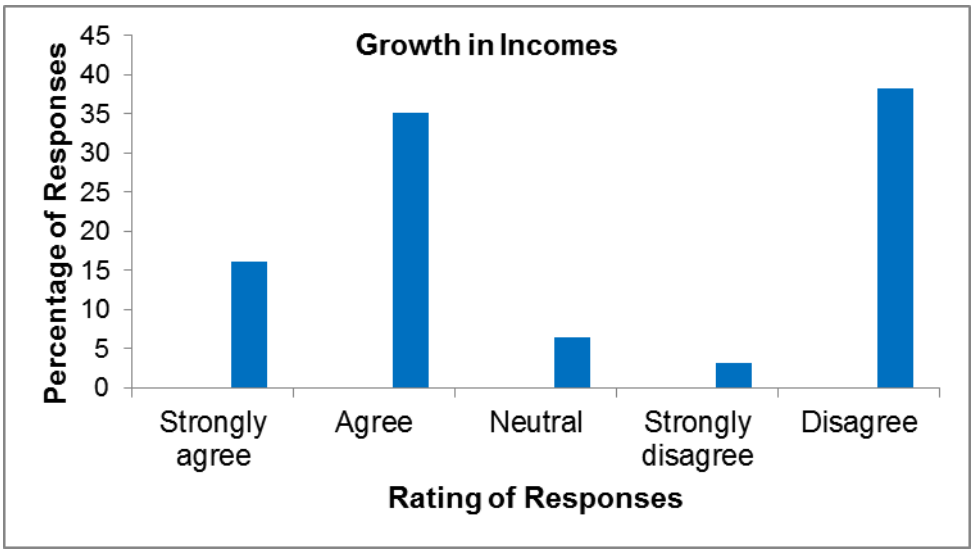

Figure 5. 13: Households Perception of Growth in Incomes in Tarkwa

Source: Author Field Survey, 2012

While the perception on employment was generally negative (58.5 percent), households seem to be generally positive about the growth in their incomes with an overall positive response of 51.3 percent as compared to a negative response of 41.5 percent for the latter. This suggests that even though households did not generally consent to job or employment opportunities, they

seem to be mostly positive about growth in incomes in their employment categories. While some respondents recognised a significant growth in their incomes over time, it is however worth noting that some were quick to point to the high cost of living in Tarkwa and therefore while one might make the money, it is quickly spent on some other needs or wants. Some respondents thus intimated that, one has to be *savoir-faire* when it comes to spending and conditions of living or "manage"[18] as is colloquially used in Ghanaian parlance. Other respondents seem to be content with the fact it comes with living in a mining town - where one makes the money but has to spend so much as well.

A look at the expenditure pattern of respondents showed that over 70 percent spend their incomes on food as the top of their frequency list of expenditure items (see Figure 5.14). While this is slightly higher than national estimates where expenditure on food accounts for 40.4 percent of estimated total annual expenditure (GSS, 2008:64), it is still proportionally consistent given that cost of living in mining towns is generally expensive as alluded to by Belem (2009) in the discussion of literature in chapter two.

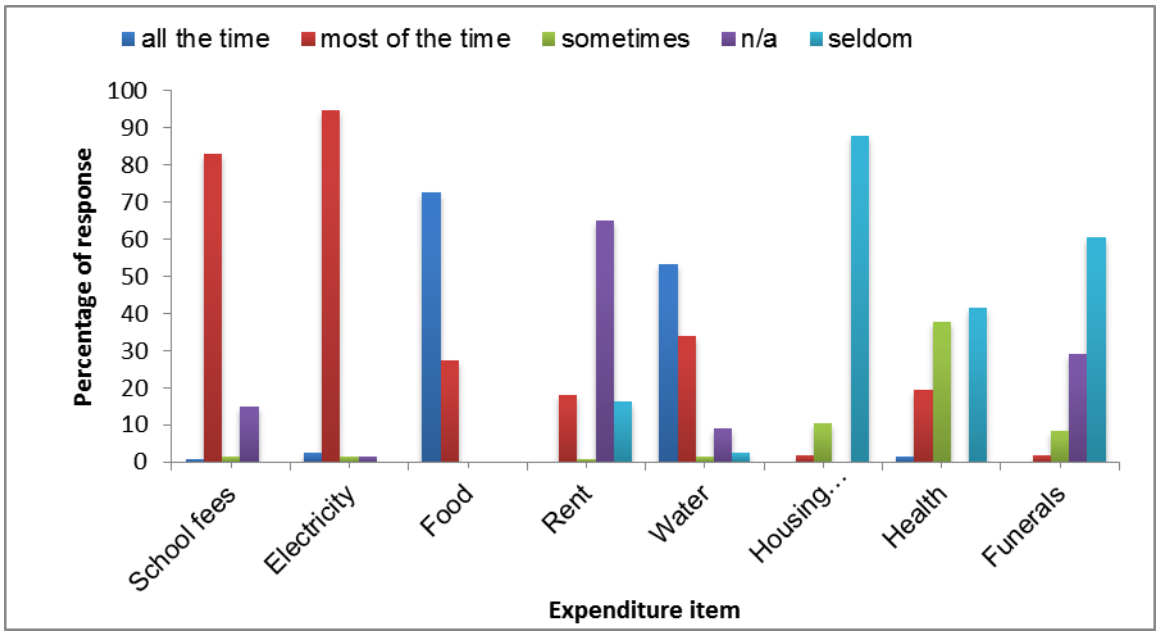

Figure 5. 14: Frequencies of Household Expenditure Items

Source: Author Field Survey, 2012

[18] The word "manage" in West African (pidgin) parlance is a loaded one with several nuances. On the one hand it suggests 'just surviving' or 'man must live' as you are on your own and cannot rely on government and/or mining companies; on the other there is also the latent power in the use of the word in that it is an acute awareness of needing to break away from dependency and invokes latent energies to survive that perhaps belies the sheer personal and social capitals which harnesses the entrepreneurship and the long tradition of the informal sector (Hart, 1973)

For Tarkwa however, this is significant on two levels. The first relates to the loss of farms in adjoining rural areas due to mining, resulting in Tarkwa's propensity to depend on other areas/ regions for their security of food increases. Secondly, the quality and availability of transportation (infrastructure and services) linking Tarkwa from and to these areas has direct implications for the prices and frequency of supply of food. Moreover, some businesses in Tarkwa mostly depend on other cities like Accra, Tema, Kumasi and Takoradi for the supply of manufactured/processed goods and raw materials. For example, of the 150 business respondents surveyed, about 23.3 percent of them get their goods or raw materials outside of Tarkwa, primarily from Accra, Takoradi, Tema and Kumasi. This is further exacerbated by the fact that the overall conditions of roads in the municipality are poor. Of the 308 kilometers of roads existing in the Tarkwa-Nsuaem Municipality, the only asphalted surface road is the Tarkwa-Takoradi road. Secondly, of the 80 kilometers of trunk roads, 60 kilometers need rehabilitation and 20 kilometers desperately needed pot- hole patching. Additionally, 15 kilometers of town roads need reshaping, 1.5 kilometers need pot-hole patching while 54.1 kilometers of feeder roads need reshaping as well (GoG-MoFEP, 2012:9).This then belies the context of high food prices and expenditures.

5.3.2 Perception of Positive Impacts on Larger Community

For this part of the analysis, it focused on the perceived impacts heads of households thought mining had on the larger community of Tarkwa.

5.3.2.1 Provision of Facilities

From the survey, about 64 percent of urban households in Tarkwa strongly agreed that mining companies have played an essential role in the provision of facilities like boreholes, markets, Kumasi ventilated improved pits (kVIPs) among others. Another 30 percent also agreed to mining's role in provision of infrastructure and social facilities and only a marginal percentage of 4 percent and 1 percent disagreed and strongly disagreed respectively. This is summaried in Figure 5.15, with Figure 5.16 showing some of the investments made by Goldfields in the Tarkwa urban area.

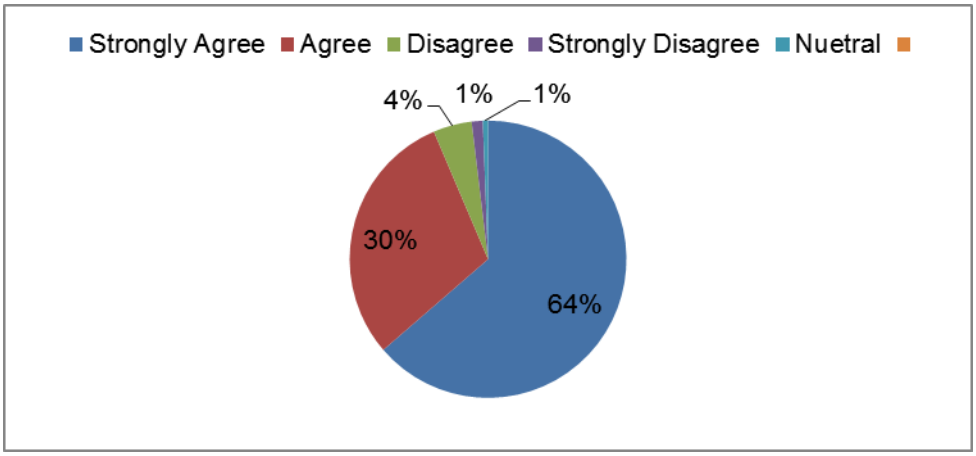

Figure 5. 15 : Perception of Mining's Impact Through Provision of Facilities

Source*:* Author Field Survey, 2012.

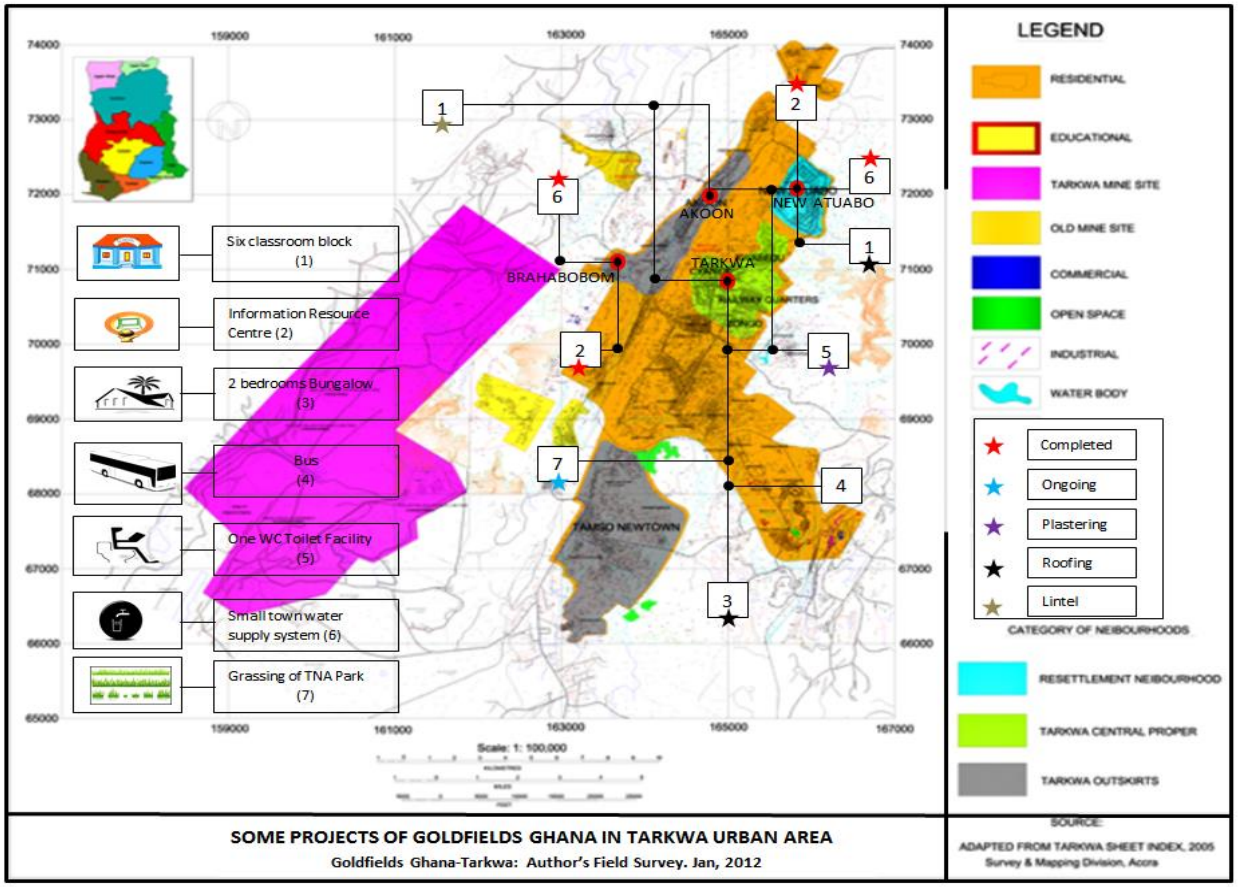

Figure 5. 16: Some Social Investment Projects of Goldfields Ghana

Source: List of Projects from Community Affairs Department of Goldfields-Tarkwa, 2012

The Tarkwa Municipal Coordinating Director alludes to the development efforts of the two mining companies (AngloGold-Ashanti and Goldfields Ghana) not only in the form of taxes but as collaborators in the development agenda of the Assembly through social responsibility projects. Commenting on such collaborations he said

> *… I remember there was a time when they were opening the new midwifery school, we had to appeal to them at such a meeting and they renovated accommodation for the school. They have also helped the hospital, maternity unit and a number of projects* (Ballans, 2012).

The above tone of the Municipal official suggests that the collaborative role of the Municipal Assembly with mining companies does not give any obligation on the latter, nor are any strategic development instruments in place to ensure mining company compliance. This is within the context of the primary role for any form of development in Tarkwa resting with the Municipal Assembly as pointed out by the Local Government Act of 1993 (Act 462) and pointed out through literature review. Some of the Assembly's core functions include physical infrastructure and services provision, creating the conducive environment that supports the flouring of livelihoods and investments. This corporate social responsibility (CSR) role seems to permeate the Municipal Assembly's perceived key developmental role. A view shared by Mr.Alhassan Atta-Quayson of the Third World Network who feels that the line between governments/Assembly's roles vis-a-vis its expectations of the Mining Industry has grown murkier thus comprising the role of the former in its commitment to pursuing development goals that improves mining communities. He cautions that "you should be able to draw the line between what industry wants and what government does" (Atta-Quayson, 2012).

Even though this priority of development does not necessarily lie with the two mining companies AngloGold Ashanti-Iduapriem and Goldfields Ghana-Tarkwa being the proxy in this research, they have a responsibility to the people that live in Tarkwa to contribute their bit to the development process by virtue of the fact they operate within Tarkwa mining region. This is done through corporate social responsibility programmes of mining companies which as pointed out in literature are not binding under the mining laws of Ghana for communities impacted by mining. From the mining company's perspective it buys them a social license to operate (Baidoo, 2012) in the face of future prospecting and also projects a positive image of mining companies from a public relations point of view.This view of a mining company's image was supported by Mr. Owusu-Koranteng, president of WACAM, who reflected that:

> *… there is a naming and shaming award called Public Eye Award, where they give awards to irresponsible companies. Last year (2011) we nominated AngloGold Ashanti and they won, in 2009*

we nominated Newmont[19] and they won. It's a shaming award. We provide a profile of the bad things the company has done. The awards are two: the people's awards and the global awards. The people's award is by internet voting. A number of companies will be shortlisted and put on the internet so that people will vote. The global award is [given] by a committee of experts who will look at the shortlisted companies and see the consistency of the violation or the wrong thing that they are doing. So last year AngloGold Ashanti won the global award but in 2009 Newmont won the people's award and the global award (Owusu-Koranteng, 2012)

The above statement paints a picture of an attempt to force the hand of hegemonic powers in mining to be responsible. It also hints at the lack of regulatory enforcement with regard to the operations of MNCs such that they need a "public trial" to force their commitment to communities in which they operate.

The general perception of urban households in Tarkwa of the two mining companies is therefore of utmost importance in terms of the image they help project regarding acceptance of their mining operations. It is however important to point out that there has not been any policy or guidelines[20] on CSR. Mining Communities are only guided by stability agreements under their prospecting licenses. The Community Affairs manager of AngloGold Ashanti observed that:

… for instance [if] we take environment and you have clear environmental policies- there are dos and don'ts. You know what not to do. But at the moment no government institution can hold a mining company accountable. Corporate social responsibility is big. As to whether we really delivery on what we say we going to do or not, there isn't any policy that guides us. So there's more to do on that. But I think there is a framework. For instance, the stability agreement which spells out part of everything you intends doing. How do you also intend responding to community (Baidoo, 2012).

In that regard, mining communities cannot be faulted in their response to provision of facilities or services in mining communities as they have no benchmark aside their obligations as specified their under stability agreements.

5.3.2.2 Educational Materials and Scholarships

The sampled urban households' perception of mining impact through the provision of educational facilities and scholarships is generally very positive; with 92 percent of positive responses. Negative responses were low with 8 percent of sampled households disagreeing with mining's impact through provision of scholarships and schooling materials.

For Goldfields Ghana, their support of educational programmes is driven through its foundation and implemented through its Sustainable Economic Empowerment and Community

[19] Newmont is one of the gold mining companies operating in the Brong-Ahafo Region of Ghana
[20] The Minerals Commission only rolled out CSR guidelines as at the time of the author field survey in February 2012

Development Programme (SEED) programmes that invest in health and education in communities in and around Tarkwa and Damang (Interview with Community Affairs Manager, 2012). Projects on education (in Tarkwa and host communities) top Goldfields' list in terms of funding from 2002 to 2012 accounting for 31 percent of spending from 2002-2010 followed by Agriculture with 24 percent. AngloGold Ashanti mainly invest in host communities directly affected by mining but still make social investments in the Tarkwa urban area. About 36 percent of monies spent in social investments were for road rehabilitation followed by Agriculture with 26 percent. However, monies that were directly related to the Tarkwa urban area were in the area of Education, water and sanitation and public donations and accounted for 2.53 percent of total monies spent between 2011-2012.This is shown in figures 5.17 and 5.18 for Goldfields and AngloGold Ashanti respectively.

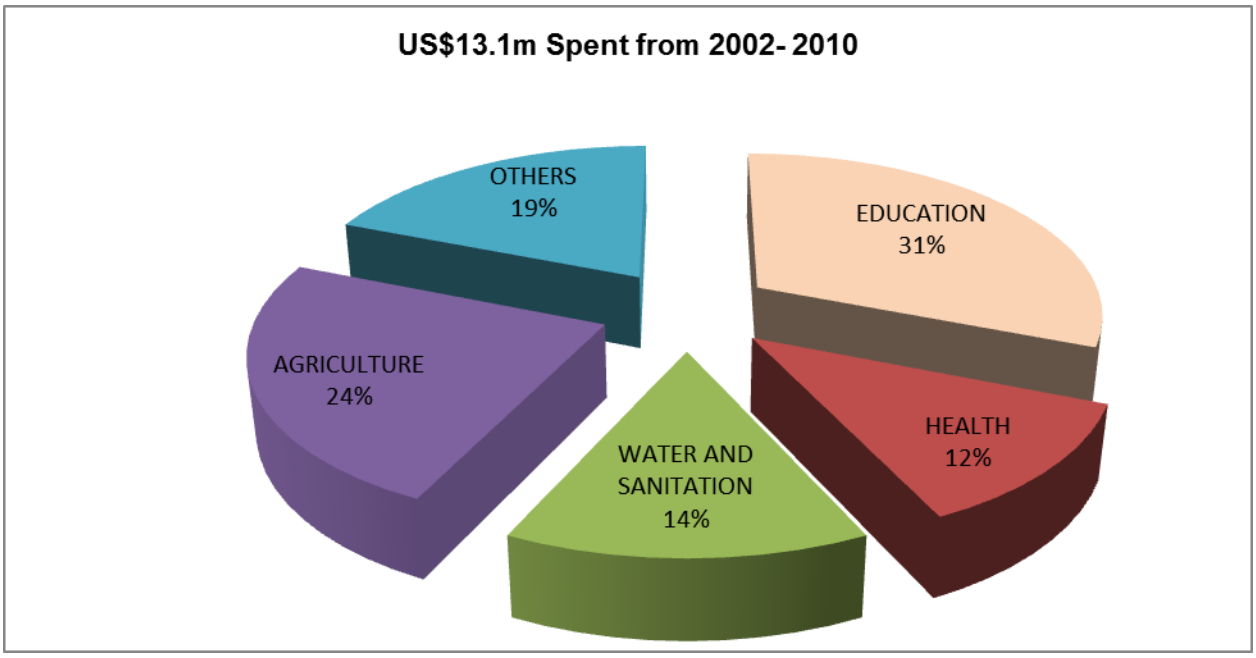

Figure 5. 17: Percentage of Sector Spending on CSR Projects by Goldfields Ghana 2000-2010

Source: Community Affairs Department, Goldfields Ghana, 2012

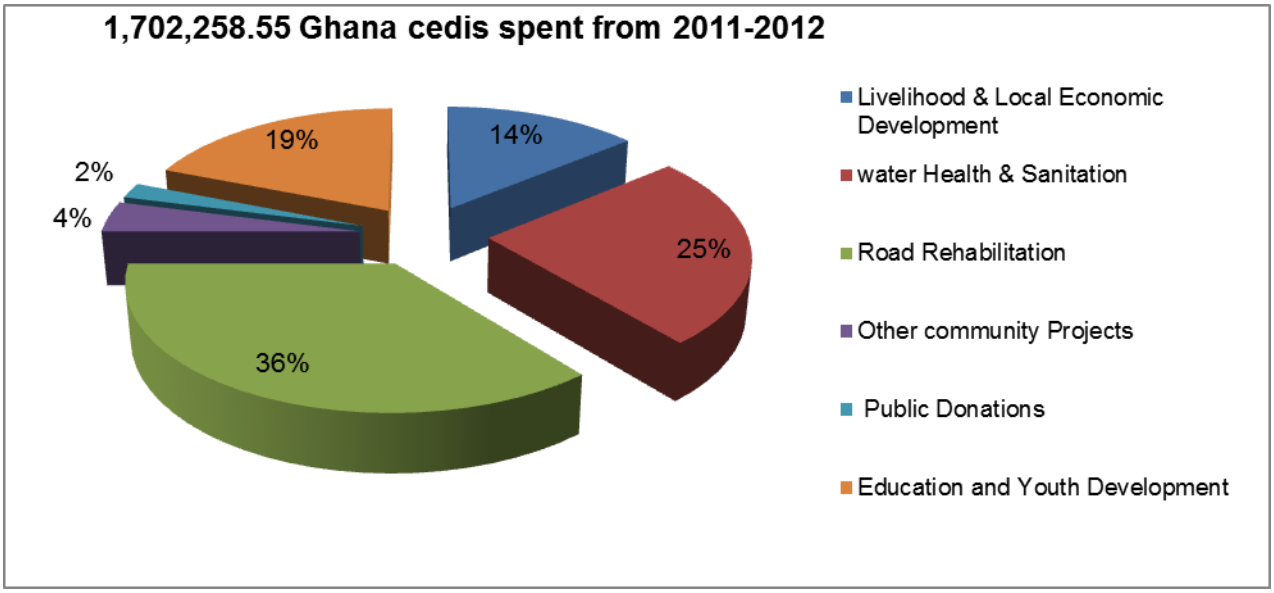

Figure 5. 18: Percentage of Sector Spending on Projects by AngloGold Ashanti 2011-2012

Source: Community Affairs Department, AngloGold Ashanti, 2012

*The average exchange range for the dollar to cedi for 2011-2012 range between 0.6 and 0.5 Ghana cedis to the US dollar for 2011 and 2012 respectively. Source: FreeCurrencyRates.com.

The office of the vice chancellor of the University of Mines and Technology acknowledges mining companies' contribution to the development of the university over the years through scholarships, training programmes for university students and donations in the form of laboratory equipment. Probably these projects and funding all have contributed to the general positive response of respondents in terms of facility provision and issues related to education in Tarkwa (Field Survey, 2012).

5.3.3 Perception of the Negative Impacts of Mining on Individual Households'

This section of the chapter looked at the negative impacts mining presents on individual households as perceived by the heads of household in this study.

5.3.3.1 Increased Cost of Living and Scarcity of Land for Building and Farming

A very high cost of living is one of the negative impacts of mining towns and Tarkwa is no exception. In the Tarkwa mining region, the shift away from underground mining to surface mining has meant the depletion of surface land area hitherto used for especially farming and

other livelihood activities. According to Akabzaa and Darmani (2001) resettlement in the District between 1990 and 1980 resulted in the displacement of about 14 communities numbering over 30 00 people. Most of those displaced migrated to urban centers like Tarkwa to look for scarce jobs and as a result put pressure on demand for land, existing housing and amenities. This contestation for land for housing, infrastructure projects and mining is also eating into hitherto farming lands. Less farm land means reduced produce and also increased farm and food prices. Additionally, traders have to travel to rural farm villages within and outside neighboring districts to bring in agricultural related produce. Commenting on the relationship between mining, increased cost of living and livelihoods Mr. Faustin (2012) a field officer at Rural Environmental Care Agency was of the view that:

> *There is a serious competition between mining and agriculture. Basically the people are farmers and in modern times mining is competing with farming for the same piece of land. And from available records mining alone take about 70 percent of the total land area in this District and the remaining 30 percent for agriculture and even with that 30 percent, there is competition from galamsey and other activities. These galamsey encroach probably on land that has not been leased out or land that is leased out and not been used or land that has been mined on. So land is one of the biggest challenges in the district and that one is further affecting the food security situation in the district. Because people do not have the land to farm and without the land agriculture cannot flourish very well. Once you have no farmland, you cannot produce more. That is why prices of foodstuffs are generally very high in Tarkwa. Generally cost of living is very high. That one has resulted in so many people depending on mining. Because you want to farm and you do not have the land to farm, so what do you do? Your source of livelihood as a farmer is the land and the land you don't have it. So people are looking up to mining companies for employment and they are not getting it … so that one is entrenching the poverty situation among the people* (Interview with Faustin, 2012).

Eighty-one percent and 15 percent of respondents strongly agreed and agreed respectively that mining has made land scarce for farming and building/development. A response of about 3 percent was in disagreement. From the sampled survey, there was no negative response with regard to perceived increased cost of living emphasizing how high urban households rank high the impact of increased cost of living. The increased cost of living can also be explained by the belief that mining companies have money and therefore anybody who works there makes so much money. Any other average urban household's income is benchmarked against the "pocket" of miners who constitute a very low percentage of those gainfully employed by mining companies or small-scale mining. Prices of goods and services are therefore raised by those who sell them in order to make maximum profit. All of the above factors tend to make Tarkwa an expensive place to live in. This is seemingly the reality that about 90 percent of sampled households' in Tarkwa agree with this perception and alluded to in chapter two of literature.

5.3.3.2 Environmental Impacts 1: (Structural Deterioration and Damage of Buildings)

One of the negative impacts of mining is blasting due to both operations of MNCs and that of some small-scale mining activities. This often creates cracks on buildings and weakens them over a period of time due to vibration. About 46.1 and 22 percent of respondents admitted to this perception, while 22.1 percent disputed the perception and 7.8 percent were indifferent about it as shown in Figure 5.19 below.

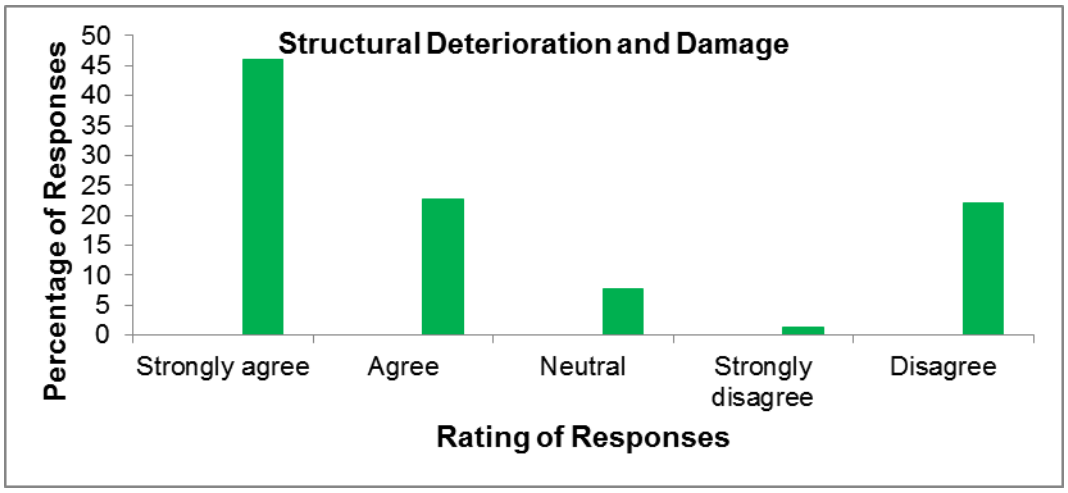

Figure 5.19: Perception of Mining Impact Through Structural Deterioration and Damage

Source: Author Field Survey, 2012

Although large scale mine shafts are located over 7 kilometers from the Tarkwa town itself, some parts of the town still feel the impacts especially localities that are at the outskirts. From the author's field experience the vibration in significant parts of Government Hill, illegal blasting activities of small-scale artisanal miners that are dotted around Tarkwa and its peri-urban areas are a huge contributory factor to vibration effects. Examples of such areas include small-scale miners around Dakoja and Nkamponaase whose activities take place close to settlements. The Secretary of the Small-Scale Miners Association reckons that when communities experience such discomfort, their grievances are channeled through their Assembly Member who in turn sits with small-scale miners as to see how to deal with such complains.

5.3.3.3 Environmental Impacts 2: Pollution (Air pollution, Dust particulate, water pollution)

The surveyed respondents generally admitted in terms of response to some form of environmental pollution resulting from mining. About 76 percent of respondents admitted to some form of environmental pollution and a marginal response of 1 percent strongly disagreed with this perception as summarised in Figure 5.20. High among household's concern was dust particulate due to movement of heavy mining equipment and vehicles. This led to the need for constant cleaning up their houses and shops especially the louver blades of their windows or window panels/netting and regular dusting of their goods. Respondents however did not think they had any health complications from dust.

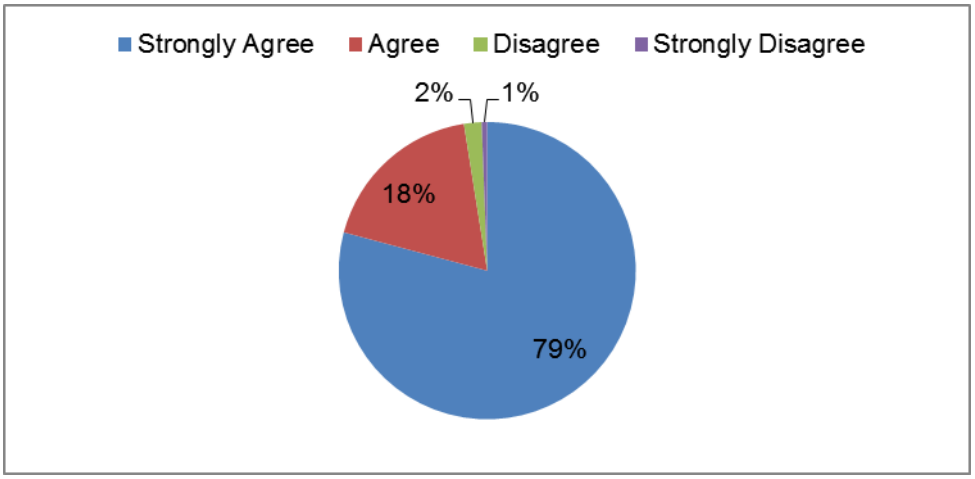

Figure 5. 20: Perception of Environmental Pollution on Tarkwa

Source: Author Field Survey, January, 2012

5.3.4 Perception of Negative Impacts on Wider Community

This section of perceptions looks at the views of heads of household on how they thought mining affected the wider community negatively

5.3.4.1 Scarcity of Land to Support Farming and Businesses

For the wider urban Tarkwa community, it is very difficult to access land to support business, undertake farming or build a home. One of the reasons has been that surface mining is rapidly taking over farmlands in neighbouring rural and peri urban areas around Tarkwa. This is supported through literature review in a study by Schueler, Kuemmerle and Schroder (2011) on land cover changes between 1986 and 2002 in Wassa Region which showed that in the Tarkwa region, 0.2 percent of mining pits were found in the Tarkwa concession area in 1986. Farmlands

however gave way to surface pits on a total of 2,097 hectares (representing 18.4 percent of concession) by 2002. The remainder of the unmined areas represent farmlands (22.3 percent or 2445 hectares).This has resulted in scarcity of land for farming and some of those who have lost farmlands and have been compensated and forced to look for opportunities in businesses in the urban area of Tarkwa. The search for highly contested spaces for settlement or setting up of business has resulted in congestion in the central part of Tarkwa and a host of street trading due to lack or inability to afford space for development. A highly frustrated head of household had this to say about their inability to farm:

> *This area [Tarkwa] we don't have farmlands … Unless Nsuta but that place is owned by the Manganese mine. The other place is Samanhu but the people also do farming on their lands which they own. Even Goldfields brought us oil palm seedlings but where are the farms?* (Kwame[21], Field survey, 2012).

The survey showed that about 78.6 percent of households strongly shared in the perception that mining made it difficult to access land for any form of settlement or housing activity as summarised in Table 5.1

Table 5. 1: Perception of Mining Impact to Support Farming and Businesses

Rating of Response	Frequency	Percent
Strongly Agree	121	78.6
Agree	28	18.2
Disagree	3	1.9
Strongly Disagree	1	0.6
Neutral	1	0.6
Total	154	100

Source: Author Field Survey, 2012

5.3.4.2 Social Vices and Increased School Drop out

One of the impacts of mining is increased social vices such as prostitution, drug abuse, robbery among other criminal activities. Figure 5.21 gives a summary of perceived responses of the impact mining has had on the prevalence of social vices in Tarkwa. The typology of annual crimes committed and reported to the Tarkwa Police station from 2009-2011 is summarised in Table 5.2.

[21] Name changed for purposes of anonymity

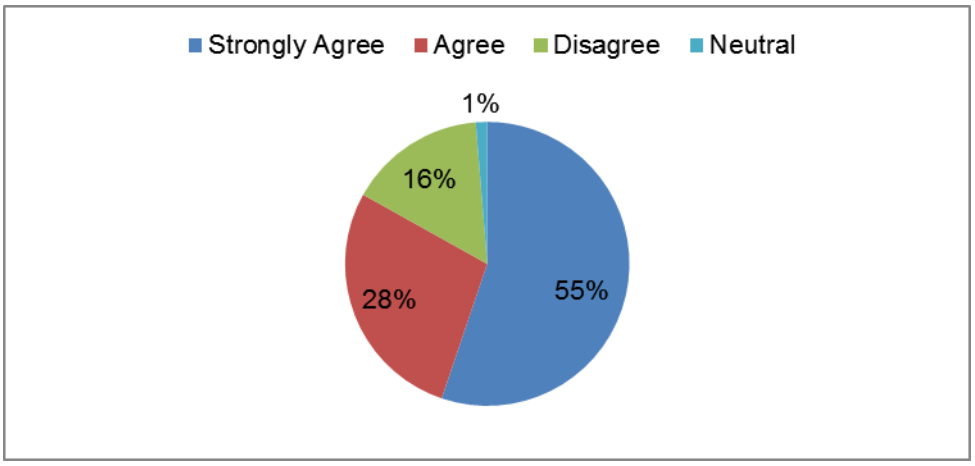

Figure 5. 21: Perceptions of Increased Social Vices in Tarkwa

Source: Author Field Survey, 2012

Table 5. 2: Annual Crime Report for Tarkwa 2009-2011

CRIME	Year		
	2009	**2010**	**2011**
Murder	3 (0.24%)	4 (0.24%)	1 (0.06)
Robbery	10 (0.79%)	2 (0.12)	20 (1.24)
Stealing	326 (25.83%)	530 (31.44%)	481(29.88%)
Rape	6 (0.48%)	3(0.18%)	0
Defilement	32 (2.54%)	6(0.36%)	29 (1.80%)
Abortion	3 (0.24%)	6(0.35%)	0
Assault	589 (46.67%)	657 (38.97%)	583 (36.21%)
Abduction	1 (0.08%)	2(0.12%)	1 (0.06%)
Fraud	106 (8.40%)	265 (15.72%)	245 (15.22%)
Illegal Mining	3 (0.24%)	23 (1.36%)	24 (1.49%)
Threatening	128(10.14%)	79 (4.69%)	149 (9.25%)
Causing Harm/Damage	52 (4.12%)	80 (4.74%)	51 (3.17%)
Illegal possession of fire arm	3 (0.24%)	23 (1.36%)	24 (1.49%)
Unlawful entry	0	6 (0.36%)	2 (0.12%)
Total	100%	100%	100%

Source: Adapted from Criminal Investigations Department, Tarkwa, 2012

*Ten police stations fall under the Tarkwa Division

From the table, it can be observed that armed robbery which is a more organised form of crime is generally low recording with 0.79 percent cases in 2010, 0.12 percent in 2011 and 1.24 in 2012.This compared to stealing which increased from 25.83 percent in 2010 to 29.88 in 2012. One of the reasons attributed to the low levels of crime in Tarkwa is the widespread nature of small-scale mining and galamsey activities which is a means of employment.

The Municipal Coordinating director commenting on illegality in mining in Tarkwa suggested that

> …. *On the flipside too, the crime rate in Tarkwa for instance is low. And we are attributing it to illegal mining. Because people have an avenue to make a living, they may be illegal but at least they work for a living. So the tendency to go into crime is not there. So you go to the police station and most of the reports are about petty theft, assault. You don't hear of armed robberies. When you hear of armed robberies, then the likelihood is that the people would have come from somewhere* (sic). (Ballans, 2012).

This is a view shared by the Criminal Investigation Officer of Tarkwa who also stressed that crime especially armed robbery was low and that any form of organised crime, robbery and stealing was mostly by outsiders in other parts of the Western Region like Takoradi or Sekondi

It is important to point out that fraud is generally high recording an increase of 8.40 percent in 2010 to 15.22 percent in 2012. Part of the reason can be attributed to default in payment of loans by small-scale miners to their sponsors known as "Tarkwa fraud". It is ironic that some small miners who try to earn their livelihoods "legally" may end up committing a crime because of a default in the payment of their loans, compare to illegal mining which is a crime by law but not widely reported. It therefore may be a disincentive to potential miners who might instead resort to illegal mining which does not require huge financial capital to operate and free of financial contractual obligations to sponsors.

The number of cases of illegal mining reported from 2009-2011 did not exceed two percent for any of the given years which is rather low given the widespread nature of illegal mining activities in Tarkwa. Perhaps such low numbers indicates that illegal mining has become largely integrated in the fabric of the community and a "crime" that some authorities and households alike can live with. The Paramount chief of the Wassa Traditional area concedes his hands are tied when it comes to dealing with illegal mining because it is the only avenue of employment and source of livelihood for some people. With respect to illegality in mining, crime and livelihoods, he admits that … "man must eat, man must work. There is no Firestone[22] in

[22] Firestone was a tyre company part of a joint venture established in 1967 to take over rubber plantations in the Wassa area. They opted out in 1981 with large parts of the rubber plantation abandoned (www.ide.go.jp).It used to be an important source of employment

operation. So I find it difficult stopping them (illegal mining). If you stop them too stealing will be on the increase" (Wassa Fiasemanhene, 2012). Commenting on the Assembly's efforts at dealing with illegal mining, the Municipal Coordinating Director, Mr. Ballans noted that it was such a difficult task because some illegal miners are migrants and move to different areas when chased away while others only wait to return after a period of time. He noted … "but I can assure you if you ask them [illegal miners] to leave, give them one month and they will be [back there] operating"(Ballans, 2012). He emphasized that there was need for a lot of political will from the national level to deal effectively with the illegality in mining.

Large scale mining companies only get concerned when their concessions are encroached on especially vacant concessions. The Minister of Lands and Natural resources at a meeting with the Ghana Chamber of Mines in March 2013 noted that, some large mining concession owners or small-scale companies awarded with prospecting and reconnaissance licenses do not work on mineralised lands awarded to them thereby leaving those lands prey for illegal miners (Adu Domfeh, 2013)

It is however important to state that the issue of illegality in mining is multi-faceted. It has underlying problems in the law (Act 703 as discussed in literature) where all mineral rights are vested in the state and largely controlled by MNCs through award of mining leases versus land ownership by the people through the chiefs. Thus a land tenure problem which is a

> *… result of the perpetuation of parallel systems - the formal state, descended from the original post-colonial land appropriations: and the customary land tenure system which for many miners and land owners remain the most accessible and familiar mechanism of land tenure* (Nyame & Blocher,2010:48)

and deficiency of the institutions around it to deal with the matters arising.

The imbalance therefore creates a huge contestation around mineralised and non-mineralised land. There is also the composition of illegal miners who are not always indigenes of the mining region but as pointed out by Mr. Ballans of the Municipal Assembly are migrants. In recent times, the problem has been compounded by the influx of Chinese into the industry (small-scale and illegal mining) and thus the problem has assumed an international dimension.

One of the ways miners spend their money is on commercial and casual sex. This is often obtained through multiple partners and prostitutes. Prostitution both from mobile sex workers (from other places like Takoradi, Cape Coast etc.) and resident sex workers mainly target male expatriate miners and galamsey operators in the Tarkwa mining region according to Akabzaa and Darmani (2001:44-45). The Technical Report of Goldfields Ghana and the Operational

Report of AngloGold Ashanti for 2012 both have a commitment to health and safety with special emphasis on HIV/AIDS prevention, counseling and education which is not only telling of the fact that miners are largely at risk from sex workers due to perception that miners have money but miners may also seek sex because it's a male dominated industry with expatriates whose families are most often left behind. As discussed in literature, Van Onselen (1982) reiterates prostitution is a necessary evil as it sustains the mining industry from a social dimension.

Furthermore, the author's discussion with two young male illegal miners at Nkamponaase attests to the fact that miners contribute to the festering of social vices. Preparing to go underground and engaging in their pre-underground routine of packing their equipment and smoking marijuana, one of the illegal miners remarked in Pidgin English when the author questioned him about how he spends his money. He said:

… *[I] save some, spend some. Me dea I get plenty girls for there and I get wife for house* [23]*(*Kofi[24] 2012) with the other responding *usually when I go to Takoradi[regional capital] then I mingle with the girls there* (Author Field survey,2012)*.*

Such a social vice is not only frowned upon because they erode social values but commercial and casual sex workers and their partners are mostly at risk of exposure to sexually transmitted diseases. For example, the Ghana Country AIDS Report for the 2010-2011 period indicated that the highest (80percent) mode of transmission for HIV was through sex, with the new modes of transmission being high among female sex workers, men who have sex with men, individuals involved in casual heterosexual sex with non-regular partners and partners of clients of sex workers (pp. 23-24[25]).

One of the effects of these social vices is an increase in school dropout rate. Mining is an attractive activity that is perceived to generate quick returns in money in Tarkwa. Businesses in mining towns also get to make profits through earnings from mining and increased prices for goods and services. The incentive to get into mining by the youth instead of continuing higher education tends to be high. Thus the youth tend to drop out to engage in income generating activities in mining or related activities. The survey indicated that about 56 percent of households strongly felt that mining had resulted in increased school drop-outs with 32 percent also in agreement with the perception. However about 11 percent disagreed with such a

[23] This translated he having so many girlfriends and still has a wife in the house
[24] Name changed for anonymity purposes
[25] Clients refer to persons engaged in sex with female or male sex workers. Partners of clients are the spouses of clients of female or male sex workers (Ghana Country AIDS Progress Report, 2012:24)

perception. Small and illegal mining in Tarkwa seem to partly account for this as there are few or no barriers to entry and also an avenue of employment for young students who sometimes cannot further their education through poverty. For example, in 2006 the Tarkwa-Nsuaem District had 30 percent of its population aged 16-19 in senior high schools and Vocational/Technical schools while the remaining 70 percent who are not enrolled in school and engaged in activities like galamsey (Tarkwa-Nsuaem Municipal Assembly, 2006). Speaking with one of the Junior High school drop-outs turned illegal miner at Nkamponaase, he engaged in illegal mining in order to earn an income and finance his education. He said: … "I want to go to National Vocational Technical Institute (NVTI). Even if I complete, I will have some money to start with" (Kofi[26], Field Survey, 2012).

5.3.5 Chapter Summary

Informal non-mining related employment is the most dominant form of employment accounting for 51.94 percent of sampled responses. This is despite over 50 percent of respondents moving into to Tarkwa to seek for opportunities in employment in mining. Formal sector employment in mining for two mining companies under study and at the national levels has not increased significantly due to adoption of surface mining as opposed to underground mining thus requiring less labour. The low levels of education of most respondents at 37.7 percent (which is the secondary level and then followed by basic level of education) explains why access to formal mining employment is limited as it is a highly specialised and skilled sector. The dominance of the informal sector may hold the potential to significantly transform the economy of Tarkwa beyond mining. This may require a shift in mindsets which perceives the informal economy as beneficial fundamentally in terms of taxes (licenses and rates) to more of a co-creator of wealth and development through entrepreneurship.

The survey also showed that respondents that moved into Tarkwa were within the economically active group and are more likely to stay longer in Tarkwa if they are married and working, with those who are self-employed the ones who stayed the longest. There is therefore the need to not only create an urban environment in Tarkwa that offers diversified economic opportunities but one that is family oriented with support services like affordable housing, good schools, and recreation facilities

[26] Name changed for purposes of anonymity

Respondents perception of the impact of mining has been varied both on the positive and negative side. The negative impacts that seem to stick out terms of overall response is the scarcity of land for the purposes of building, farming and housing. Additionally, social vices like prostitution and school dropout rates seem to be common with crime such as armed robbery however not being a pertinent problem. Illegal mining activity seems to be the enigma at the heart of vices like prostitution and increased school dropout rate and decreased armed robbery. On the one hand, they are both a consequence and an avenue for making money hence the youth drop out to get employed in this area as well as miners who act as targets for prostitutes. On the other hand, illegal mining create opportunities in employment and is an alternative to crime. The positive impacts of mining overall included a general significant (51.3 percent) growth in income and provision of educational materials and facilities by large scale mining companies.

CHAPTER SIX
PERCEIVED IMPACTS OF MINING SPIN-OFFS ON THE DEVELOPMENT OF BUSINESS ENTERPRISES IN TARKWA

6.1 Introduction

This chapter discusses the nature of business enterprise development in Tarkwa with emphasis on how spin-offs from mining have affected the growth or otherwise of these businesses from the perspective of business enterprise owners. Formal mining is a highly skilled and specialised activity and therefore does not employ large numbers of people. However an array of enterprises or livelihood activities crop up to take advantage of opportunities to support the primary mining function. It is against this backdrop role that community and business enterprise development in Tarkwa were looked at in terms of their characteristics, support for these businesses, prospects for their growth and planning implications for continued business enterprise development in a mining region.

Data for this chapter was based on 150 business enterprises in Tarkwa. Tarkwa does not have a comprehensive list of business enterprises and hence the household questionnaires sample of 154 served as a basis for which enterprises questionnaires were administered. Demarcations for these questionnaire administrations were based on the same method for households' questionnaire administration-Central Tarkwa, outskirts and resettled area. This is because community businesses are scattered around the different neighbourhoods of Tarkwa even though there is a greater concentration in Tarkwa Central where the Central Business District is located. Fifty Questionnaires were thus administered in the Central Business Area, 25 in resettled area (New Atuabo), another 75 in outskirts outside of the Central Business Area (Cyanide, Railway Quarters and Borborbor). Every other business owner was considered in the administration of questionnaires. The approach to identifying enterprises for questionnaire administration was restricted in that; it was dependent on the availability of the owner or manager of the business enterprise and was also largely limited to business enterprises that could be "seen" during questionnaire administration. In this chapter, data analysis involved both the use of SPSS for quantitative data triangulated with data from secondary sources and interviews. Hence a look at findings across the different primary data sets as well-households' questionnaires and business enterprise questionnaires to inform the analysis.

6.2 Business Enterprise Characteristics

6.2.1 Gender, Business Categories and Years in Business Enterprise

The sampled survey of 150 business enterprise owners showed 56 percent were males and 44 percent females. For the purposes of this research, business enterprises were broadly categorised into the following: formal sector manufacturing, formal sector services related businesses; formal sector commercial related businesses; informal trading; informal manufacturing and informal services related/non trade activities. Based on these broad enterprise categories (Appendix G & H), the survey showed that businesses were largely (82 percent) in the informal economy as opposed to formal sector businesses (18 percent).

This supported national level projections where formal sector employment accounts for only 8 percent of employment while the rest of employment is taking place within the informal economy (GoG-NDPC, 2010-2012:9). At the Municipal Assembly level, about 68 percent of the population is engaged in agriculture and the rest of 32 percent in informal, commerce and hospitality industries (GoG-MoFEP, 2012:8). It will seem that the 32 percent of the other sectors made up of the informal, commercial and industrial sectors as stated above largely takes place in the urban area of Tarkwa as agriculture is limited to the rural and semi-rural areas of the Municipality. Some of the informal, commerce and hospitality industries are directly or indirectly the spin-offs from mining activities.

The sampled survey also showed that informal trading was the dominant form of business activity within the informal economy with 42.67 percent of responses, followed by informal services sector and related businesses at 22 percent with formal sector enterprises representing just 0.67 percent. The dominance of informal sector businesses is consistent with findings of 154 sampled household survey where informal sector employment accounted for 51.94 percent of total employment. The large number of informal sector businesses can partly attributed to free entry and exit nature of the informal economy and the inability of the formal sector to create enough jobs (Osei-Boateng & Ampratwum, 2011:4). There two possible explanations for this in Tarkwa:

- The first is that Structural Adjustments Programs in the 1980s resulted in retrenchment of labour which accounted for migration of workers into the informal economy (Homeku, 1998).
- The second explanation is that after Structural Adjustment and later gold boom resulted in the migration of especially unskilled labour into the mining sector and mining regions

in excess of demand, with the informal economy becoming a necessary alternative (Stoke *et al.,* 2010).

Flexibility in entry is seemingly taking place in the informal trading enterprises of the informal economy. A cross tabulation of number of years of operation of a business enterprise and specific enterprise category revealed about 40.63 percent of informal trading businesses were less than a year old as compared to other businesses in the informal services sector (34.38 percent) and manufacturing categories (15.63 percent) This is summarised in Figure 6.1 below. A chi square test[27] was undertaken to see whether there is significant relationship or association between number of years in a business enterprise and specific business category, a significant association was confirmed.

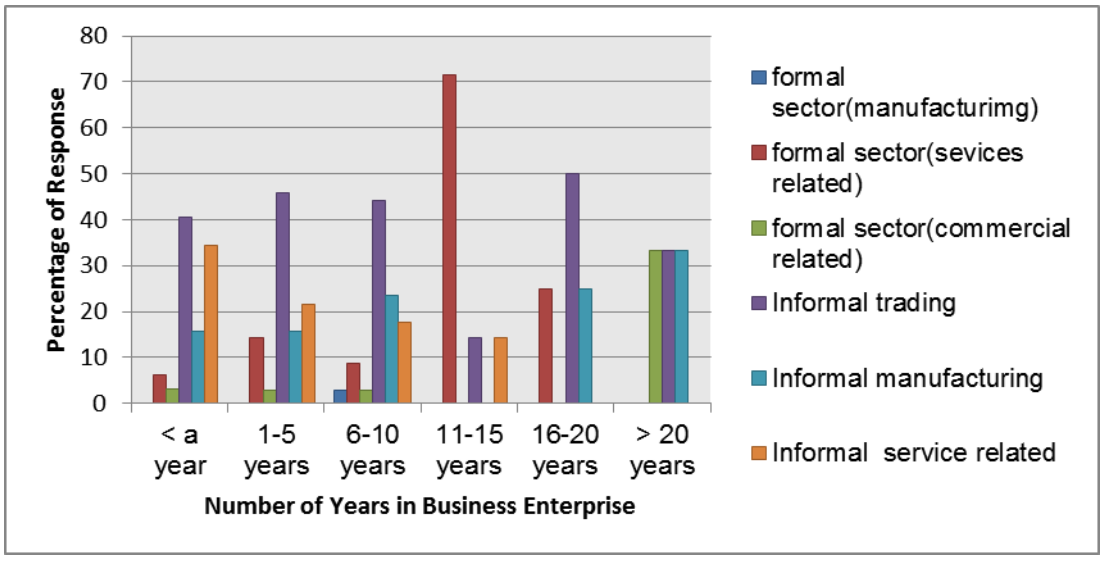

Figure 6. 1: Number of Years of Operation of Business Enterprise

Source: Author Field survey, January 2012

Moreover, informal trading does not necessarily require specific skills-set largely associated with manufacturing and services sectors. For people who reside in and around Tarkwa, the incentive to get into informal trading is greater because some respondents felt that Tarkwa is a busy town which has daily influx of people and available market for their goods and services. A businessman Kenneth Gyapong (Field Survey, 2012) put it in the following words:

Tarkwa here has money due to mining activities and the smallest thing you sell, you can easily make money.

[27] A significant association was present with chi square = 39.828, df = 25, p=0.030

This statement is profound in that it is one of the main reasons informal sector trading is popular for both male and female actors in terms of employment accounting for 40.48 percent and 45.4 percent respectively (Figure 6.2 below).

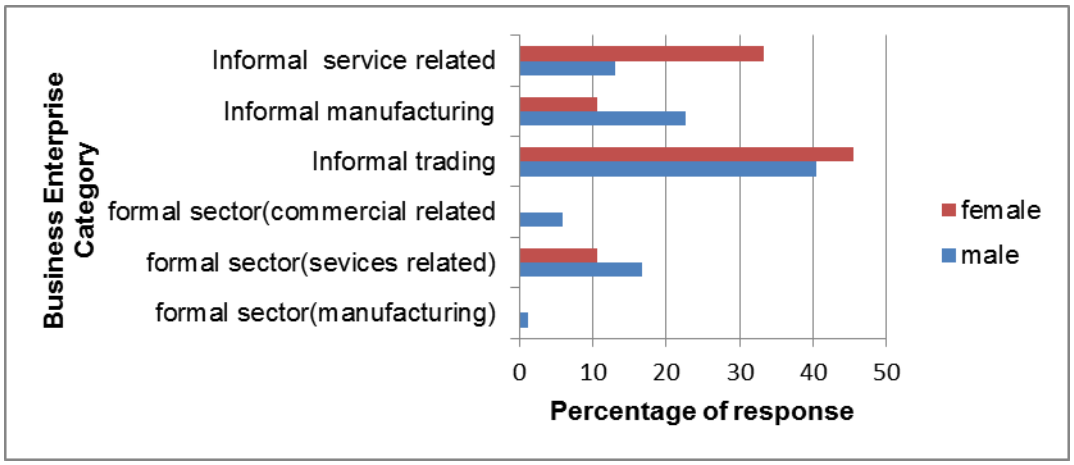

Figure 6. 2: Business Enterprise Categories and Gender Employment

Source: Author Field Survey, January 2012

6.2.1.1. Informal Trading

In terms of specific trading activities within the informal trading category, the research revealed that about 31.25 percent of responses to informal trading was attributed to trading in food and related products, 17.19 percent to building, electrical and mining equipment and 15.63 percent to gold buying alone- the latter was solely undertaken by men. This is summarised in Figure 6.3 below. The large trade in gold can be attributed to the consistently high price and demand for gold as well as the widespread nature of small-scale mining activity (illegal and legal). It is also a business venture that can guarantee quick returns in investments as compared to other trading activities. This is what a small-scale miner, Bonsu (2012) at Borborbor (speaking in Pidgin English) had to say about the dominance of gold related businesses in Tarkwa:

… that's why I say Tarkwa here, it is our major work, gold business. Like you go to Volta region, they will deal with fishing and all those things. Tarkwa here they deal with gold. Apart from gold there is no other tycoon business. Our tycoon business is gold (sic)[28].

[28] He meant gold mining was the major business in Tarkwa and one that was capable of making one rich. Every region in Ghana he says have an activity peculiar to them which they undertake to bring money. He reckons in Tarkwa, it is the business of gold.

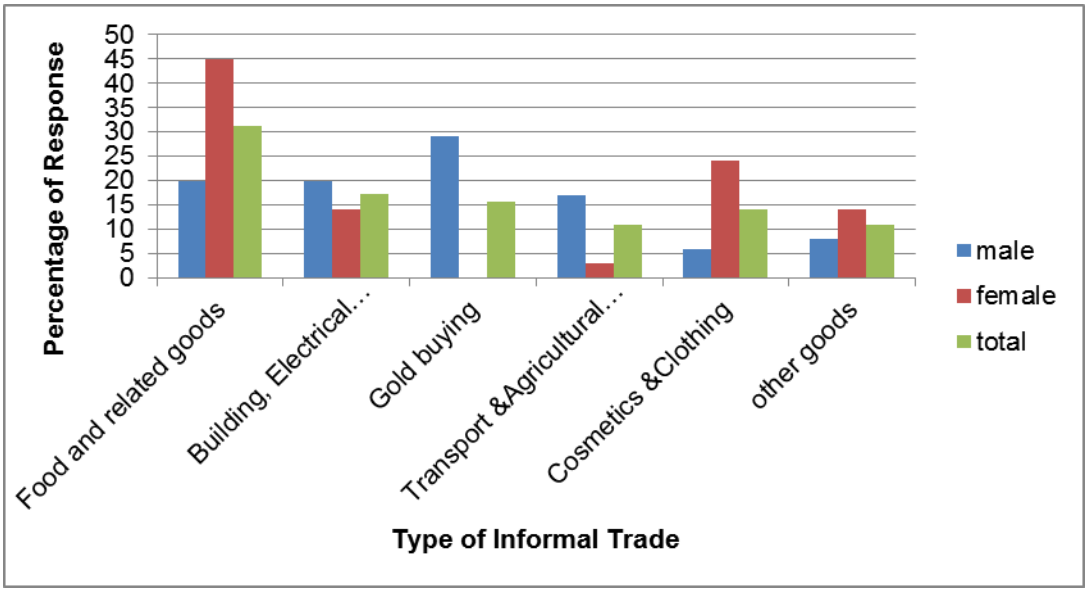

Figure 6. 3: Informal Sector Trading and Gender Employment

Source: Author Field Survey, January 2012

The growth in gold trade resulted in the formation of an Association of Gold Traders in Tarkwa in 2000 from a total of 15 members and had risen to 39 members by 2011 (Ghana News Agency, n.d.). It is worth noting that, this number represents just registered members as not all traders are registered with the association. This large trade in gold can be explained by the widespread small-scale artisanal mining and illegal (galamsey) mining activities taking place within Tarkwa and surrounding areas. It was also observed that the trade in gold is also a step up the pecking order of small-scale mining as some miners set up their own gold buying shops when they stop mining activities or have these shops alongside their mining activities. It is easier for former miners to set up gold buying shops as they are conversant with the gold trade and are connected to other gold miners and networks that bring in their gold after mining. The quick returns on investments in trading in gold does not only accrue to these miners and residents in Tarkwa but to sponsors[29] of such activities who cut across the various parts of Ghana and beyond. The availability of these sponsors for small-scale mining is also another factor fuelling small-scale mining and trading in gold. The small-scale miner Bonsu again noted that the people sponsoring and investing in such related businesses cuts across the length and breadth of Ghana as he noted they came from:

[29] Sponsors are the financiers of small-scale mining activities

... [they come from] *many, many places. Accra; Takoradi; Kumasi; Sunyani. Many, many places even Tarkwa here too. Me, myself I be sponsor now (sic).*

The trade in building materials and electrical goods which is the second highest on the list of trading activities gives an indication of the willingness of people to invest in property as a major asset or revenue creation stream. The Town and Country Planner, Mr. Sarpong (2012) stated that settlements spring up within days in Tarkwa and this gives credence to the point that residents are building structures and a building boom is observable in Tarkwa. Furthermore, taxes from land and other landed property in the form of rates and rent constitute an important revenue component for the Municipality as indicated in Figure 6.4 below. Importantly however, this is one of the ways high profits accruing from gold mining, processing and trade are re-invested in boosting more sustainable and responsive urban land and property markets.

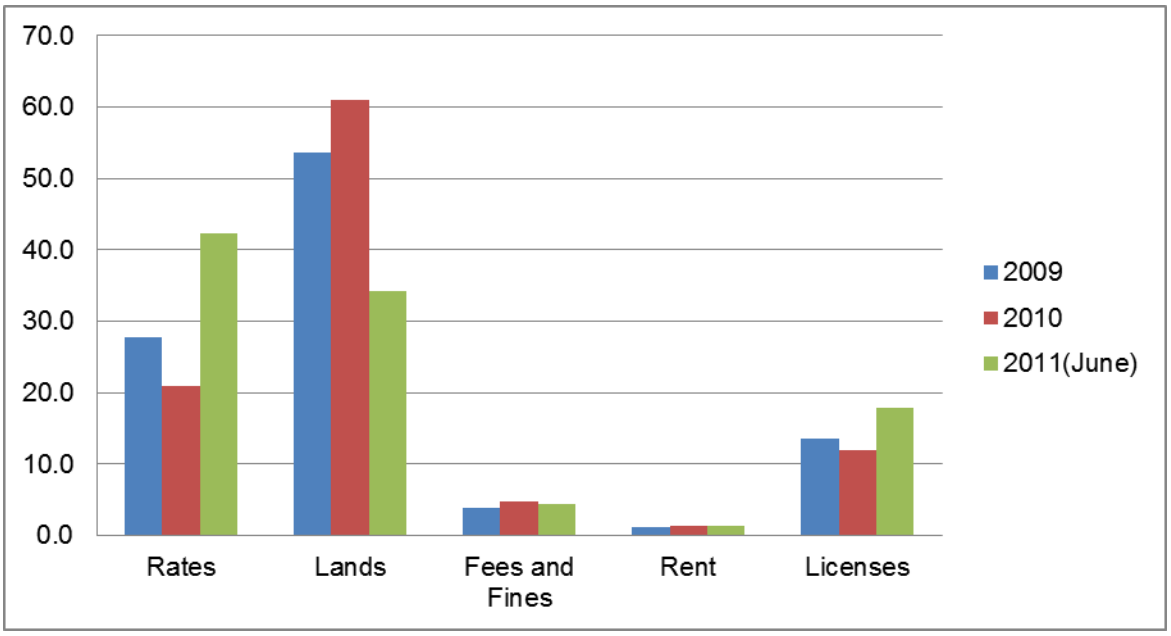

Figure 6. 4: Major Revenue Items of TNMA from 2009-2011

Source: GoG-MoFEP, 2012

Critically though, registration of plots of land by residents within the Municipality is generally low (Table 6.1) compared to the rate at which people develop housing as suggested by the Town planner.

Table 6. 1: Record of Land Registration for TNMA 2007-2012

Year	Number of Lands Registered
2007	35
2008	100
2009	100
2010	47
2011	94
(January)2012	15
Total	391

Source; Lands Commission, Tarkwa 2012

Regrettably, though an important source of revenue, the Municipal Lands Commissioner Mr. Aboagye-Larbi (2012) in an interview admits that part of their mandate is to collect revenue accruing from registration of lands and which was absent in the past but presently a challenge. He said:

… *aside that, we were also losing revenue. Because when somebody comes to register land, we take money from the person. There were a lot of state lands here and Lands Commission, one of our biggest mandates is to manage state lands on behalf of the government. And so by not reaching out to the people, we are losing revenue and people were taking state lands from government. We need to get money from the state lands. So we have to go and convince the other person to come so that we can regularise his title for him, then he pays. How do you convince other people to come? You don't have to charge them. Let them come to you, you do it for them [registration of land], even for free and after that, then you take your ground rent from them. But now that the person hasn't registered his land, on what capacity do you ask them to pay rent* (sic).

Registration of building/plots is also a probable indication of people's intention to build now or in the future hence people's interest in trading in building materials and electrical goods tends to grow as a way of generation of incomes.

6.2.2 Age, Specific Business Enterprise Category and Choice of starting Business in Tarkwa

The study of sampled business enterprises showed that those engaged in business activities are largely youthful, between the ages of 21 to 50 years. Most new business start-ups are largely taking place in the informal business enterprise category accounting for 82 percent of surveyed responses and dominated by 21-30 age groups. On the whole, the number of respondents in each business enterprise category decreased significantly with age, especially after the 51-60 age groups as summarised Figure 6.5. The survey findings were consistent with GLSS 5 estimates which showed that unemployment rates declined with age. For example unemployment rate is 4.1 percent for the 15-24 year cohorts as compared to 1.9 percent for 45-

64 year cohorts (GSS, 2008:42). The GLSS 5 also revealed that unemployment rates for urban areas of Ghana as of 2008 was at a high of 3.6 percent compared to the rural areas of Ghana at 1.6 percent. It is important to note there is largely a paucity of up-to-date official statistics of employment in Tarkwa and at the national level. A chi square[30] test was calculated to determine whether there is a significant association between the age of the respondent and the specific business category from the sample confirmed a significant positive association.

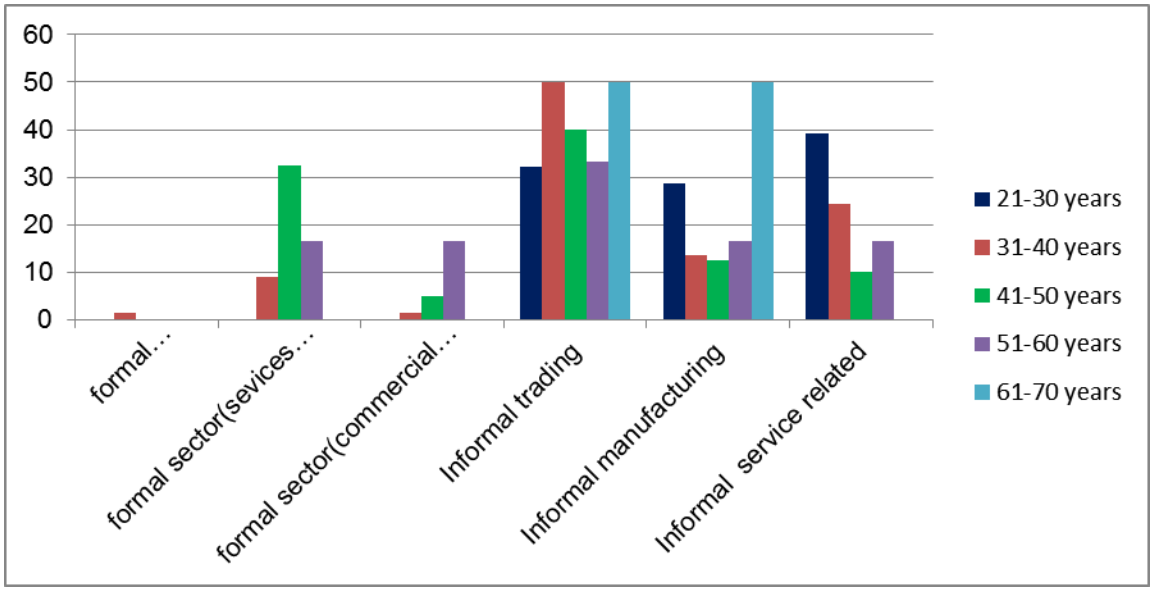

Figure 6. 5: Ages of Respondents and Business Enterprise Employment

Source: Author Field Survey, 2012

The general level of unemployment among younger age cohorts is perhaps one of the apparent explanations for the youthfulness of business enterprise ownership in the sense that informal business ownership seem to provide the most viable option in terms of self-employment due to ease of entry and exit and little or no startup capital required as compared to formal sector business enterprises. The sampled survey also showed that 23.25 percent of business owners between ages 21-30 were not in any previous job or business enterprise prior to their new business, compared to 44.19 percent for the 31-40 age groups. This represented 44.19 percent of responses, and it is therefore plausible that the youth enter into such business enterprises as an easily available means to get employed or incomes.

[30] A chi square of 40.276, df= 20 p-value = 0.005 showed that a significant association existed.

From the study, it was revealed the prime reason most business owners located in Tarkwa was for profit related reasons. About 50.7 percent of respondents decided to do business in Tarkwa for profit-related reasons stemming from an available or potential market, as well as on the belief in the high purchasing power of residents and the market in Tarkwa. 42 percent of business owners located their business in Tarkwa due to familiarity with the place or either due to length of stay there or were born and bred in Tarkwa and thus they felt they had sufficient knowledge of the existing market conditions.

Figure 6.5 below indicates that the youthful population between 21-50 years decided to start-up business enterprises in Tarkwa primarily for profit and related reasons. For example, respondents within the age groups of 21-30, represent a response percentage of 57.14 and respondents between the ages of 31-40, with a response percentage of 46.97 who decided to do business in Tarkwa for profit related reasons. This compared to 32.14 percent, 45.45 percent for age groups between 20-30,31-40,41-50 respectively who decided to start a business in Tarkwa for the simple reason of living there or been born there and familiar with the place.

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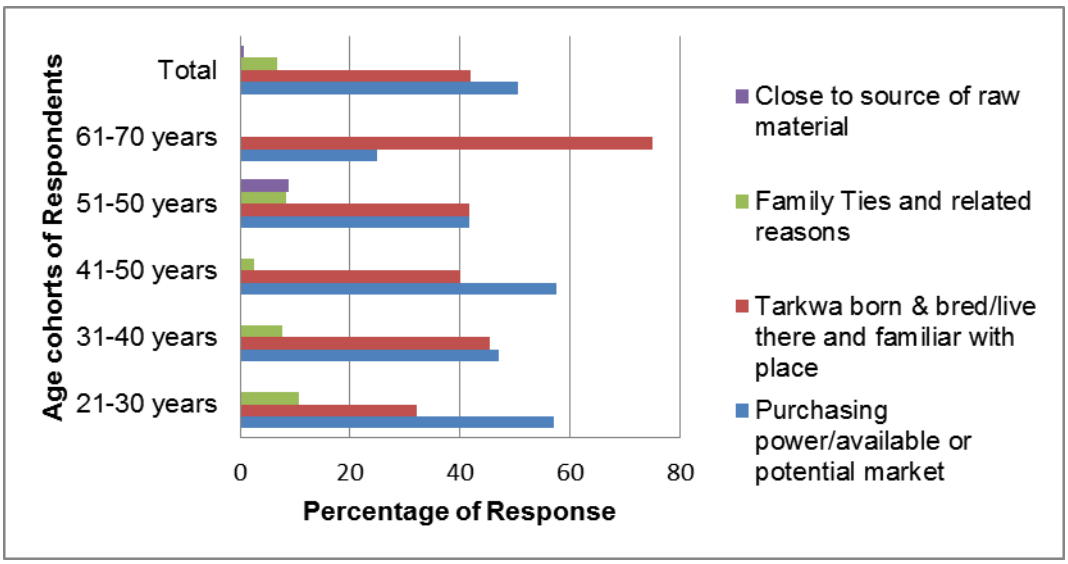

Figure 6. 6: Ages of Respondents and Reasons for Location of Business Enterprise in Tarkwa

Source: Author Field Survey, 2012

A large business ownership that is youthful suggests that enterprenuership is a potential area for attention and support by the TNMA to aid growth and expansion of businesses and therefore sustainable livelihood support. This also has implications for the TNMAs ability to take steps to

streamline the activities of informal businesses as well as support innovative and creative business enterprise ideas, nurture teething enterprises as well as expansion of existing ones.

6.3 Business Enterprise and Perception of Location

The location of a business enterprise is central to its survival as it tends to determine the range of people that it would be able to serve and thus their access to the business as well. The study revealed that 79.3 percent of respondents said their location as “good”, 13.3 percent were not happy with their location and thought it was “bad” and 7.3 percent could not really make up their minds about their current location. This is summarised in table 6.2 below.

Table 6. 2: Perception of Location of Present Business Enterprises

Perception of Current Location of Business	Frequency	Percent
Good	119	79.3
Indifferent	11	7.3
bad	20	13.3
Total	150	100

Source: Author Field survey, 2012

From the survey it was shown that, over 50 percent of businesses regard a location of their business as “good” when it is by the roadside. The road-side location is perceived to afford business operators an easier way to advertise their goods as passers-by can easily see their shops and wares on display. The lack of any proper address system in Tarkwa means that, businesses that are located by the roadside can easily be described and identified by customers. Some Businesses (those located outside of central Tarkwa) however felt indifference about locating by the roadside. This was especially so when the road was not tarred and dusty with the result that regular movement of vehicles often resulted in dust polluting their shops and goods. It may also be the reason why businesses that felt their location was “good” wanted a change of location. Another concern why businesses had for their “bad” location by the roadside was due to the congested streets due to a lack of parking for vehicles and clogged and smelly gutters. The lack of parking made it difficult for customers who wanted to park as well as for some informal traders who wanted to off-load their goods. Table 6.3 gives a summary of a cross tabulation of location of current business and perceived preference for a

different location. The reasons business enterprises did not want to move even though they felt their location was “good”, “bad” or “indifferent” was due to difficulty in finding the space/land and the fear of losing their customers.

Table 6. 3: Cross Tabulation of Perception of Current Business Location and Preference for a Different Location

Perception of Current Location for Business	Would you prefer a different location		Total
	Yes	No	
Good	9 (36%)	110 (88%)	119 (79.33%)
Bad	14 (56%)	6 (4.8%)	20 (13.33%)
Indifferent	2 (8%)	9 (7.2%)	11 (7.33%)
Total	25 (100%)	125 (100%)	150 (100%)

Source: Author Field survey, 2012

6.4 Perceived Impacts of Mining on Business Enterprises and their Sustainability

For the majority (96.69 percent) of businesses in Tarkwa covered in the survey, the most positively perceived factor about operating within a mining region has got to do with the purchasing power of people and the related available and potential market. Business owners recognise the ability of people to pay for goods and services promptly. In addition, some respondents pointed to the presence and ability of mining and related activities which have made Tarkwa such an enterprising place. Hence, the propensity to spend is high. About 46.67 percent of business enterprise owners felt that increased incomes resulted from mining activity and only 21 percent saw the presence of mining activity having led to expansion of their enterprises in terms of numbers and physical size of enterprise. Table 6.4 below is a summary of these perceptions.

Table 6. 4: Response to Perceived Impacts of Mining on Businesses Enterprises

Impact of Mining	Response		Total
	Yes	No	
Increase in Income	70(46.67%)	80(53.33%)	150(100%)
Increase in number of employees	36(14%)	114(76%)	150(100%)
Structural Expansion et cetera	10 7%	140 93%	150 100%

Source: Author Field survey, 2012

A most likely reason why most businesses have not expanded both in employee number and in terms of physical structures is possibly due to the fact that about 46.7 percent of businesses are still young(less than 5 years) and growing to make the needed turnover. Furthermore, this finding underscores some research about informal economic activities where some people engage in it to survive (Jennings, 1994:49) and not necessarily for the large profit margins.

In Tarkwa over 42.67 percent of businesses are engaged in informal trading which does not generally employ large numbers of people. Even though commercial/trading activities are the most dominant form of enterprise activity, a look at the employment in each of the business enterprise categories shows that, commercial/ trading enterprises is not the highest in terms of employment. The service sector has the highest number of employees with 52.73 percent as compared to the commercial/trading sector with 29.88 percent. This is summarised in Table 6.5. This suggests that the Assembly might consider supporting the services sector r where people require some form of training and where more employment opportunities will be created in this sector to bolster economic opportunities through employment.

Table 6. 5: Employee Numbers per Sector Category of Businesses

Business Enterprise Category	Gender		Total
	Male	Female	
Manufacturing	130 (19.26%)	13 (3.53%)	143 (13.71%)
Service	345 (51.11%)	205 (55.71%)	550 (52.73%)
Trading/Commercial	200 (29.63%)	150 (40.76%)	350 (33.56%)
Total	675 (100%)	368 (100%)	1043 (100%)

Source: Author Field survey, 2012

Responding on the challenges of operating a business in Tarkwa, about 26 percent of respondents felt that their biggest challenge was competition due to the proliferation of similar businesses especially in the informal trading and service sectors. Examples of such enterprises in the non-trading category include carpentry, dressmaking and hairdressing. It can be argued that the predominance of these other business enterprises can partly be explained by government development frameworks (GPRS 1& 2, 200-2008 & GSGDA, 2008-2013) over the years (GPRS 1 & 2 GSGDA) and TNMAs Development Plans that have prioritised training of people in employable skills and also learning a trade as a means of creating employment. For example, the 2010-2013 Composite Programme of Action for TNMA has some of the following key actions under objective four which aim to:

- To improve the level of employable skills by 20% by 2013.
- Encouraging more youth to learn a trade.
- Establishment of skills training centers.
- Extension of utilities to site of wood workers (TNMA 4 year medium Term Development Plan 2012-2013, Draft Report).

The aforementioned policy priorities notwithstanding, low levels of education (secondary education) among respondents and the “dominant logic” among some people in Tarkwa that “anything” that is sold in Tarkwa would always be purchased also explains the prominence of informal trading and service enterprises such as carpentry, hairdressing among others.

Even though competition is seen by some respondents as an impetus for the continuous sustenance of their businesses (see Figure 6.7 below), other respondents felt it was a challenge. This was attributed to the need to reduce prices of goods and services as a way not to lose customers to competitors and which could result in their eventual loss of profit margins. Rightly so, most respondents (83.3 percent) depended on their familiarity with Tarkwa or being well established in Tarkwa for the continuous sustenance of their business as compared to having to be innovative (22.7 percent) in their businesses to help sustain them in the long run (Figure 6.8).

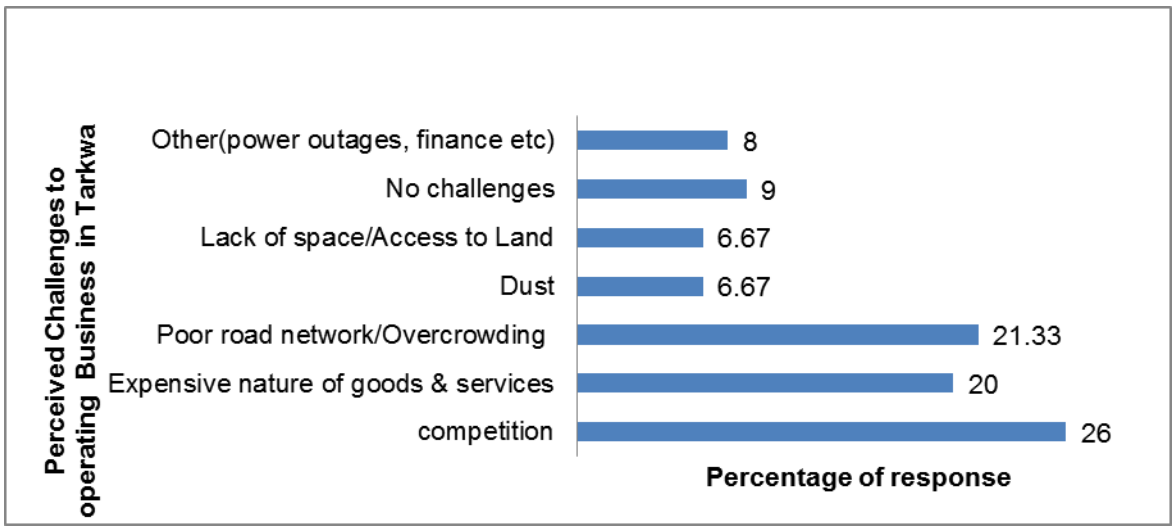

Figure 6. 7: Perceived Challenges to Operating Business Enterprises in Tarkwa

Source: Author Field Survey, 2012

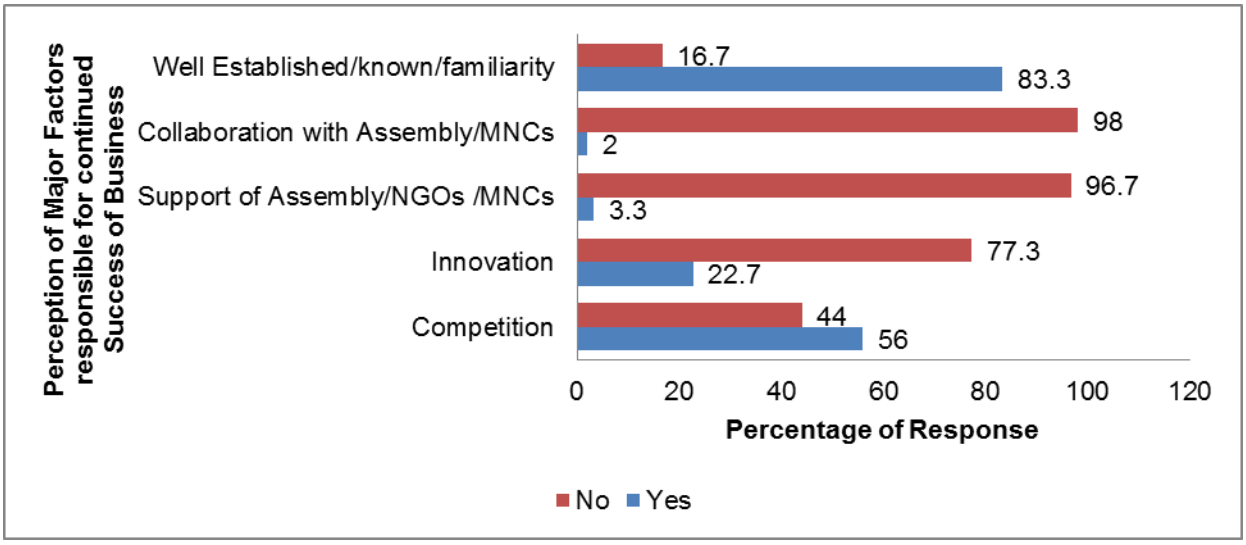

Figure 6. 8: Perceived Factors for Continued Sustenance of Businesses

Source: Author Field Survey, 2012

The second biggest challenge to most respondents had to do with road network which was either in bad condition, narrow or congested streets due to limited parking provisions. The combined condition of road network within and around Tarkwa and limited parking within the central areas of Tarkwa has resulted in problems with vehicles circulation and management including - illegal street parking, difficulties in the loading and off-loading of goods and parking for customers of businesses. For a town that is not as big as other major cities in Ghana, its

roads are congested and huge traffic jams within the city center occur in the mornings, afternoons and evenings every working day of the week. Furthermore about 15 percent of businesses also get their supplies of raw materials and goods from outside of Tarkwa - Takoradi, Accra, Kumasi and neighbouring peri urban and rural areas. Thus the reason transportation is a big concern as suggested in Figure 6.7 above.

Unsurprisingly, in the rating of factors that affect the growth and operation of business enterprises transportation is the most important factor accounting for 60 percent of responses. This could be in response to the huge challenge posed by poor road network and parking as discussed in the preceding paragraph. This was followed by governance with over 45 percent of respondents feeling that the Assembly and other institutions and had ample work to do in terms of making sure the environment for growth of businesses is suitable. This is in light of the fact that respondents deem collaboration and support from/with MNCs, Assembly and state institutions to be low and was not significantly affecting business enterprise development as shown previously in Figure 6.8 above. For a municipality that is looking to develop and diversify beyond mining, good governance and collaboration are supposed to be forerunners for interventions since collaboration allows for co-creation of ideas, mobilisation of the needed human, business and financial capital that will propel growth. In the absence of this, as is in the case of Tarkwa, responsibility for development has been lopsided and largely seen to be a bipolar domain of government (Assembly) and multinational companies.

Part of the reason collaboration and support has been limited is because it has traditionally been limited to financial assistance. About 75 percent of respondents believed that any form of collaboration that should take place should assume the nature of financial assistance to businesses. Business enterprises therefore tend to view the government and MNCs largely in terms of financial support they can give for their business. It is important that this concept of collaboration between business enterprises and companies moves beyond financial capital and also place emphasis on training and skills development not for new businesses but support old ones.

About 80 percent of respondents rated urban planning and interventions as least important to the growth of the business. This lack of regard for planning can be largely attributed to the inability of respondents to make a link between how a well-planned town has implications for its proper functioning and thus how they go about their businesses. Besides, one of the planning interventions is the removal/demolition of illegal structures is unpopular in Tarkwa. The Town

Planning Officer, Mr. Sarpong (2012) agreed saying that education on planning is his major challenge and lamented that … “People don’t know what to do. This is my biggest problem”.

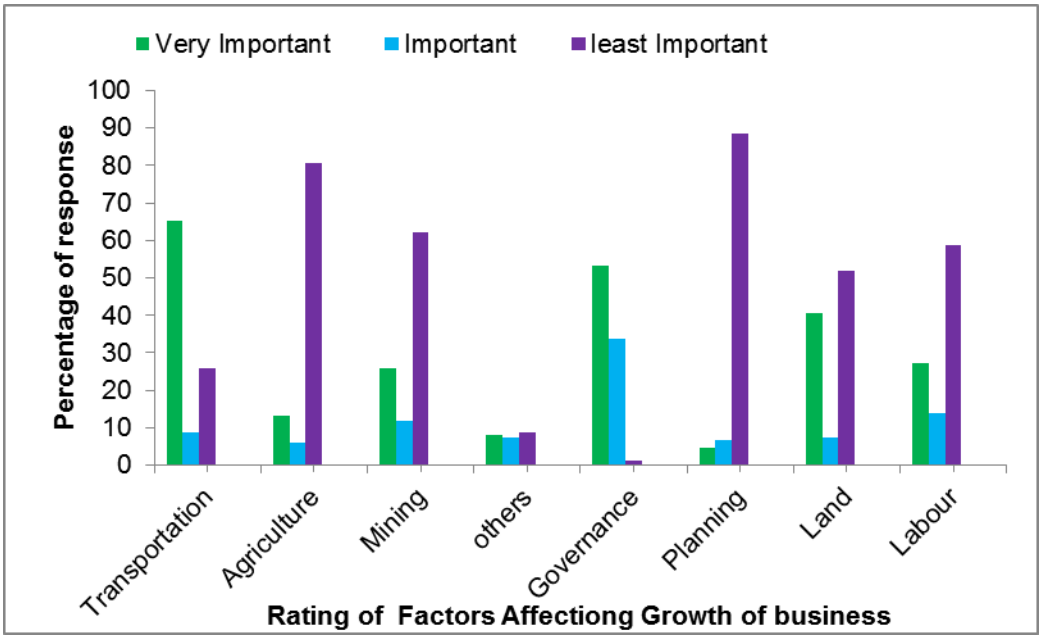

Figure 6. 9 : Rating of Perceived Factors Affecting Growth of Businesses in Tarkwa

Source*:* Author Field Survey, 2012

6.5 Chapter Summary

The informal economy is dominant in terms of business enterprises with informal trading being the most popular form of business enterprise activity in terms of the informal economy. This is been fuelled by people’s willingness to invest in property as an asset and an income earning opportunity and a proliferation of small-scale mining.

Most businesses in Tarkwa are young(less than 5years) and this implies that a lot of support is needed to help such businesses grow and expand and possibly serve as an avenue for cumulative employment creation. The services sector could be a viable area to support as it accounts for most of the employment in enterprises despite the popularity of informal trading. While perceived collaboration between enterprises and TNMA, MNCs and NGOs in terms of financial, material and human resource was perceived to be largely limited, there is greater potential in creation and incentivising partnerships in this area.

Competition seems to be the enigmatic factor spurring growth of some business by promoting efficiency and innovation and creating a challenge for others in terms of competitive pricing for their goods and services in order to keep customers. However the long term sustenance of most businesses will be underscored by good transportation system, improvements in infrastructure and services as well as good governance which the business community has confidence in and the Assembly's capacity in provision and maintenance of infrastructure and services.

CHAPTER 7
EMERGING LIVELIHOODS AND COPING STRATEGIES OF URBAN LIVELIHOODS IN TARKWA

7.1 Introduction

Coping strategies in this chapter refers to the mechanisms that households adapt to temporarily deal with the impacts of mining. Households in Tarkwa operate within a certain vulnerability context often as a response to boom and bust cycles of mining activity. Households adopt certain strategies based on the assets or capabilities or resources generally available to them. The DFID Livelihoods Framework (De Satge *et al.,* 2000) identifies a range of assets which were adapted and used for purposes of this research and is summarised in Table 7.1

Table 7. 1 Livelihood Capitals Adapted for Study

DFIDs Range of Livelihood Capitals & Definition	Adapted Livelihood Capitals & Definition
Human Capital: Skills, knowledge, ability to labour and good health important to the ability to pursue different livelihood strategies**.**	**Human Capital:** Head of Households ability to work and generate income
Natural Capital: The natural resource stocks from which resource flows useful for livelihoods are derived(e.g.land, water, wildlife, biodioversity, environmental resources)	**Natural Capital:** Direct dependence on land or land resources for livelihood
Financial Capital: the financial resources which are available to people(whether savings, supplies of credit or regular remittances or pensions) and which provide them with different livelihood options	**Financial Capital:** Land and Housing property as an asset, savings, loans and pension
Social Capital: the social resources which are available to people(networks, membership of groups, relationships of trust, access to wider institutions of society) upon which people draw and pursue their livelihoods	**Social Capital**: Social resources in the form of family, friends, member associations
Physical Capital: The basic infrastructure, (transport, shelter, water, energy and communications) and production equipment and means that enable people to pursue their livelihoods.	**Tarkwa-Nsuaem Municipal Assembly (TNMA) – [Local Authority] Interventions:** Access and use of facilities, services and infrastructure that has been provided by the Assembly which directly impacted on household in one way or the other
	Community Interventions: refers to access to political/traditional authority at the local community level and through which grievances and efforts can be channeled and addressed and has significantly impacted on households. It is important to note here that, this is separated from social capital because it has both political/governance and social connotations

Source: De Satge *et.al.* 2002 & Author Construct, 2012

The analysis for this chapter largely consisted of qualitative responses from open-ended questions administered through questionnaires to the 154 sampled households. Through these open ended questions, sampled respondents gave detailed description of their coping strategies. These responses were coded according to the list of livelihood capital adopted and analysed with the aid of the Qualitative Content Analyser[31]. The Analyser allowed for the generation of graphs based on the frequency of use of a particular livelihood capital. The Analyser also allowed for pair-wise comparison of different livelihood capitals based on the frequency of response. A pair-wise comparison within the context of this research is a comparison of two different livelihood coping strategies based on the frequency of response. Based on the different livelihood capitals and how sampled households used them, the author selected stories/testimonies of respondents that described in detail the usage of each livelihood capital or combinations thereof.

7.2 Coping Strategies and livelihood Capital Adapted

As stated in the literature, urban households in Tarkwa use a range of assets available to them to cope with mining's impact: financial, human, natural, social, TNMA and community interventions. Based on the frequency of responses, the survey showed that human capital (people's ability) to work and generate income was the most important asset available to households' with a frequency count of about 130 out of the 154 sample. This is followed by Assembly interventions, social capital, financial capital with natural capital being the least. Figure 7.1 graphically depicts the general trends of all individual livelihood assets. The income earned from work is what keeps most families coping as well as the development role of the Assembly in providing key infrastructure and services. The Assembly is therefore perceived to play an essential role in the lives of individual households through indirect provision of infrastructure and services. It is therefore important that the obligation of the Assembly expressed through its developmental role not only remain as a provider but also as a facilitator of development through a process whereby the urban household is able to take initiative, innovate and grow.

[31] See page of 83 of research design and methodology chapter

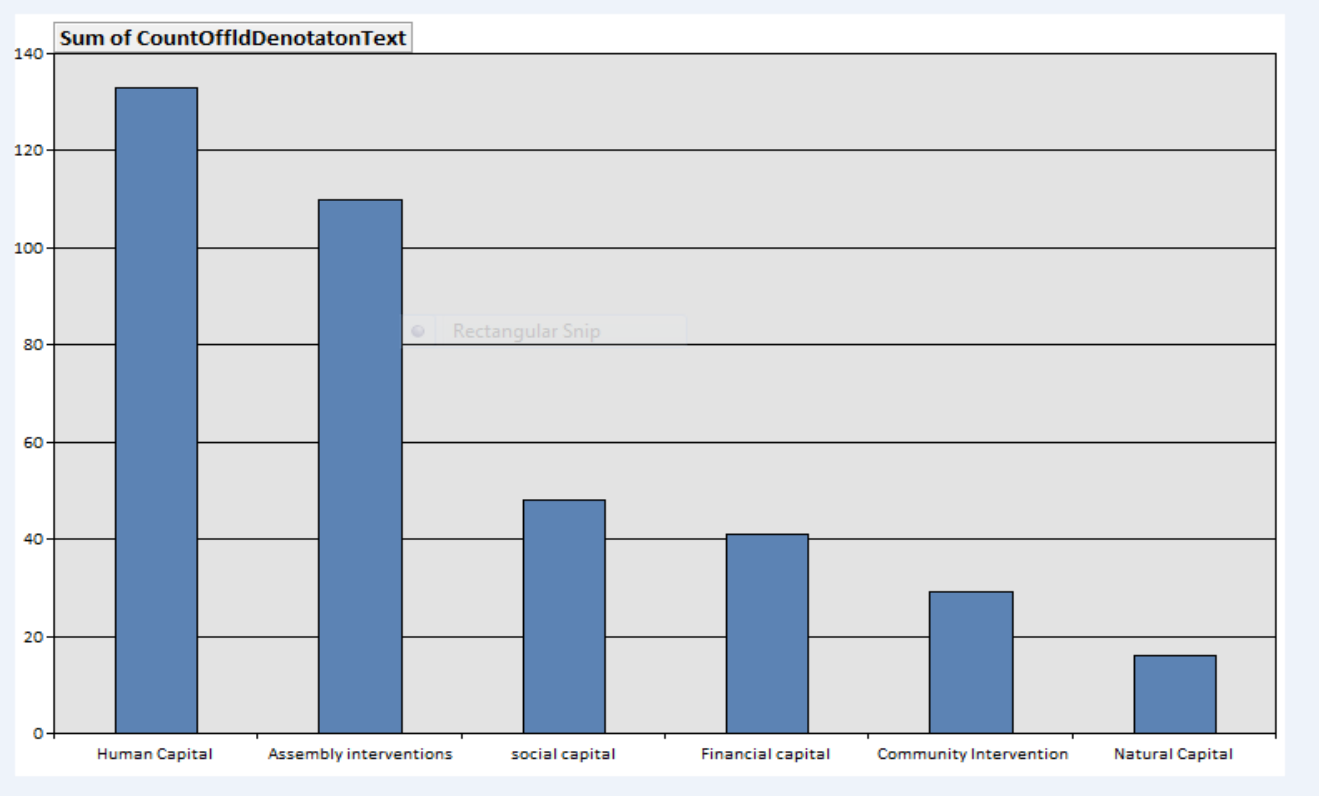

Figure 7. 1: Frequency Count of Livelihood Capitals Available to Urban Households in Tarkwa

Source: Author Field Survey, 2012.

Community interventions and natural capital were the least form of capital available and used by respondents as shown in Figure 7.1. With respect to natural capital, there is little acknowledged dependence directly on natural resources (especially gold) as a form of livelihood likely due to the fact that Tarkwa is an urban area, a fact that Meikle (2002) affirms. Direct dependence on natural resources is largely through small-scale or illegal mining activity which has quick returns on money but is physically demanding and dangerous. Thus households will rather take advantage of spin-offs that may result from especially small-scale mining rather than directly depend on gold mining for a source of livelihood. The other main source of direct dependence on natural resources is through farming. However, lands close to Tarkwa are generally unavailable to increase surface mining and urban sprawl.

Community interventions and response as a form of capital to help deal with mining's impacts was generally is low as depicted in Figure 7.1. Some respondents saw that any form of community action or capital did not go beyond the domain of the chief and local level

committees. While some preferred to use avenues like radio phone-in programmes to channel their concerns/complains, others felt there was a dispiritedness in community level response and interventions as people did not generally care and were busy. This compared to the individual households' capacity through social capital (as used in this research) by drawing on family, friends and other networks which showed a much higher frequency count of 40 as depicted in Figure 7.1 above. Box 7.1 gives a picture of why community interventions and response may not feature much in most of the urban households' coping strategy.

Box 7.1 Views of some selected Households on Community Capital

Zongo Community: Abudu Darmani. Aged: 68 Employment status: Not working

It [fornication and prostitution] is something that this community frowns upon. You are talked about when found out I think that is what we do with regard to most of these social vices. Though, unorganized, I think it works sometimes

Zongo Community: Memunatu Iddris Aged 45. Job: Caterer

Everyone within the community complains to the chief. It is now left unto the chief to handle the rest on our behalf. The chief here has done well for the community by getting more youth as much as possible into mining jobs so that they don't fall prey to these social vices.

Tamso Community: Dorothy Ansah Job: Hairdresser

A lot depends on the Assembly. You always phone into programmes on radio and complain, so the assembly has to respond to our complains

Akoon: Kwesi Twum. Age 35 Job: Carpenter

It's up to the chief, what much can we do. I think is everybody for himself, God for us all

Source: Author Field Survey, 2012

The general lack of community capital also point to ineffective institutions at the community level and could also explain the large (over 100) frequency count associated with Assembly interventions in this research. The author observed the Complaints Unit of TNMA is constantly "flooded" with issues and concerns which are to be dealt with at the community level. The overwhelming function that the Assembly has to play is succinctly put by a Unit Committee member of New Atuabo who remarked that "the assembly even has more problems than us

[Committees]". It is however important to note that some communities through their local level leaders and committees still manage to do things on their own. The Unit Committee member for New Atuabo on the challenge of community capital observes that … "we come together most of the time through communal labour. For example we are building our office and it is up to lintel level. When it comes to paying physical cash, that is when we have a problem with community members" (Author Field Survey, 2012)

It must be noted that households within Tarkwa use a combination of these assets to be able to deal with the impacts of mining. A pair-wise comparison of the different livelihood assets based on responses was computed to determine the combination of assets households uses to cope. Human capital (people's work and their ability to generate income) was the most widely used form of capital against other livelihoods assets. The survey revealed that over 90 percent of response was largely a combination of human capital and TNMAs interventions (see Figure 7.2).

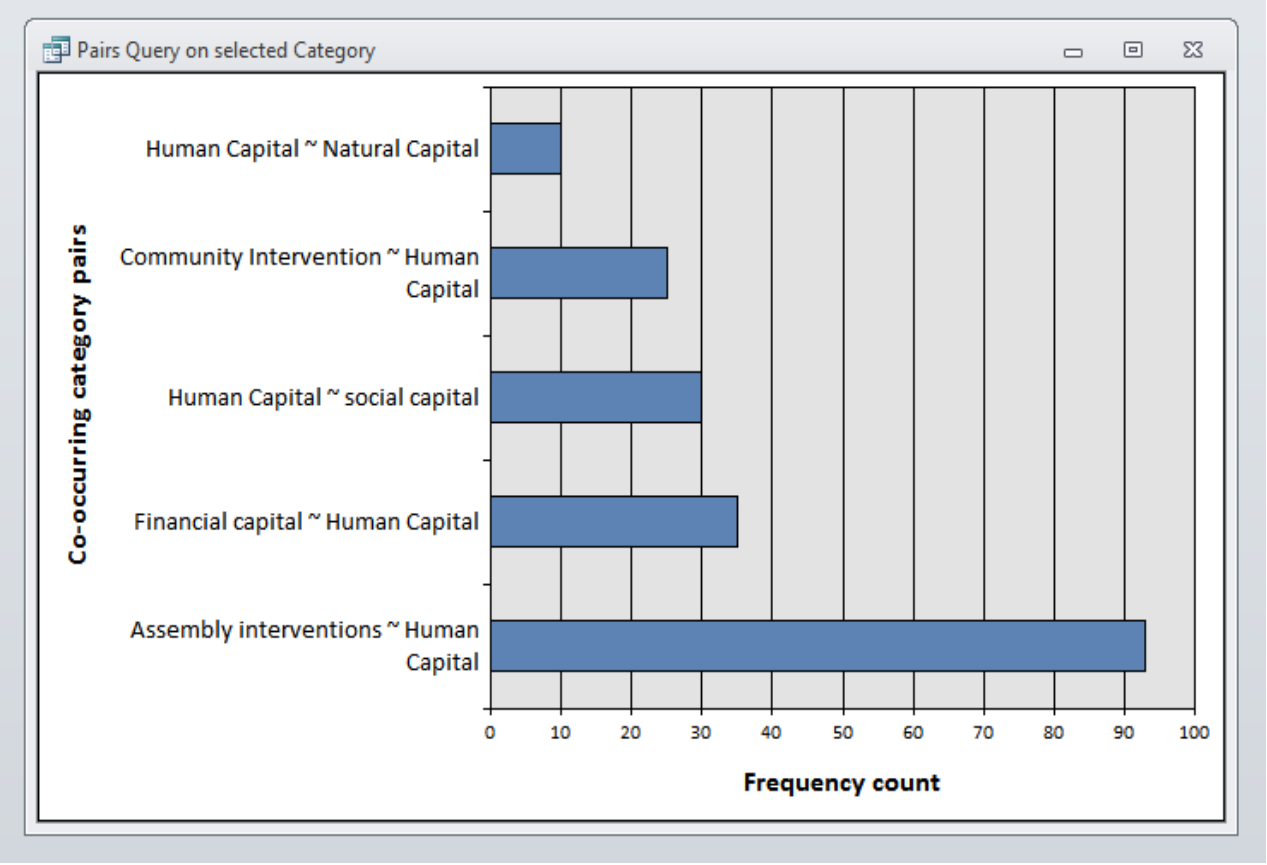

Figure 7. 2: Pairwise Comparison of Human Capital and other Livelihood Capitals

Source: Author Field Survey, February 2012

The various interventions and provision by Assembly that households' thought had contributed significantly to their livelihoods in one way or another included provision of potable water, street lights, toilets, gutters and culverts, refuse bins and collection services and community markets. This finding holds a lot of significance in that, people's work is arguably the most important means to surviving in Tarkwa coupled with the developmental role of the Assembly in Tarkwa. This suggests that the Assembly needs to consolidate the creation of that environment necessary for people to generate jobs and employ other people. It also implies that once people lose their jobs or cannot seem to find the opportunities for jobs in Tarkwa, they are mostly likely to leave for other places. For a mining town like Tarkwa, this is critical because mining is the hub of economic activity through and around which everything else revolves. Thus once mining no longer acts as a thread around which everything is woven; Tarkwa may crumble as a thriving town. Thus, the more reason why planning responses should be proactive and not merely focus on provision and maintenance of services and infrastructure provision but also to facilitate development. In an interview with the Municipal Coordinating Director of the TNMA (2012), he recognised with apprehension that it was the major challenge facing mining regions like Tarkwa. He spoke with apprehension that:

> *Tarkwa will be a ghost town in that everything, the economy is tied to the mine. So you see that we have a problem with sanitation because of the influx of people. You know with mining there are a lot of other smaller industries, businesses springing up related to mining. You have people flocking in hoping that they will make it. So definitely if the mines fold up, all these businesses are going to collapse. It will be a major problem.*

Box 7.2 illustrates some of the coping strategies from sampled interviews in Tarkwa in terms of the use of human capital to cope.

A proactive planning response could be rooted in opportunities around the informal economy as it accounts for 51.94 percent of employment non-related to mining. Box 7.2 sums up how some households manage to survive in Tarkwa through human capital in the informal economy. It shows that informal economy dependent households like Maame Kwatemaa are left vulnerable in that her existence in the trading in foodstuffs is subject to continued food production of surrounding villages whose farming land is vulnerable to take-overs by mining in the future. If traders like Maame Kwatemaa's supply of food stuffs are subject to a lot of uncertainty, then households who are at the end of the food chain may eventually face a future of food crises or increasing prices of the goods they buy. The example of Ali is a reminder of how transient

Tarkwa's population can be affected when mining ceases and the regional economy has not diversified beyond mineral extraction.

Box 7.2 Views of Coping strategies through use of Human Capital by some Households

Ali –Tailor (Railway Quarters):

Ali is 38 years of old male and works as a tailor. He lives and works at the Railway Quarters area. Ali has a wife and three children. Regarding this livelihood strategy living in a mining town he says:

On coping he says, I don't do anything particularly to cope. I try to work hard and make more money to be able to cope with the very high cost of living. Some good months like towards the Christmas time I can make over 500 Ghana cedis[32] and other months can be really tight. I also feel I am a stranger here because I don't come from here. I come from Sandema in the Upper East region. My daily survival is important to me, someday I will go back home. The street lights leading to this community have made it safer at night and the water provision very very important. I don't have to worry about that. So with that the Assembly has really helped even though they can still do more.

Maame Kwatememaa – Trader in foodstuffs (lives at Railway Quarters):

Maame Kwatemaa is elderly woman of 72 years who sells foodstuffs in the Tarkwa market but lives in Railway Quarters. Her testimony regarding her livelihood coping mechanism she says:

: … as the bread winner of my family it is tough but I am managing both at home and with the work I do. I am the one taking care of my 2 grandchildren. As you can see I am old but I usually travel to surrounding villages to go and buy foodstuff to sell and then come back home. It is relatively cheaper in those areas. Sometimes too I take these food items on credit basis and when I make the money, I go and pay back. Averagely I make over 300 Ghana cedis in a month. These are some of the things we do just to survive. So it is God taking care of us.

Source: Author Field Survey, February 2012

Another coping strategy is the use of financial capital. This asset was widely used alongside or in combination with household's human capital. A pairwise comparison of financial capital

[32] Cedi to Dollar rate as at February 1st 2012 was $1= Ghana cedis 0.5945

against human capital indicated that about 35 percent of households adopt combination this as a coping strategy. This is summarised in figure 7.3 below.

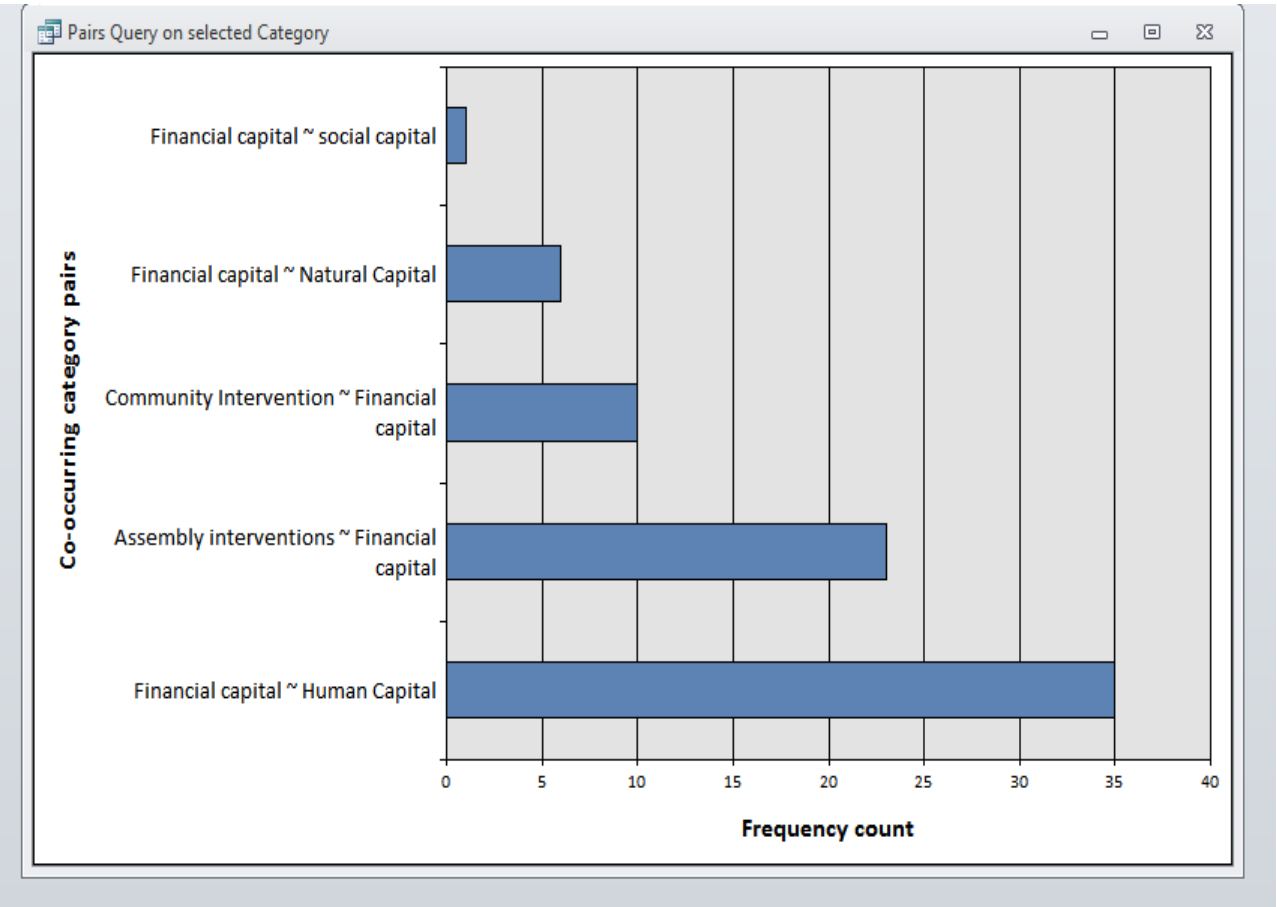

Figure 7. 3: Pairwise comparison of Financial Capital and other Livelihood Capitals

Source: Author Field Survey, February 2012.

The main financial assets are usually the ownership of the houses that households live in or rent out and pieces of land that they have acquired. Some households reserved their land for future development and other households primarily see their houses as an asset of pride upon which to build a home, pass it on to their children or other family members and also as a source of generating income through rent. Even though a house and a piece of land means a lot in terms of how it can help a household with additional income sources, access to land is a huge problem. It is either expensive or extremely difficult to find very suitable land for building a house. Box 7.3 below illustrates some views of how urban households through the use of financial capital available to them are able to cope. Typical cases from our survey are summarised in Box 7.3

Box 7.3 Views of some Households Coping strategies through Financial Capital

Mr. Kofi Ampah (AKOON): Mr. Kofi Ampah is a 41 year old male living in Akoon and works as a galamsey. He has 6 people depending on him. In his testimony he says:

… I managed to build a compound house from galamsey business and I have rented some rooms out. I want to build another flat and rent out the rest of the rooms so I get money. I am growing old and cannot continue with this galamsey forever. The galamsey business, there is a lot of money in it, just that it is tedious and when you are growing old you don't have the same strength.

Bro Kofi (Railway Quarters): Bro Kofi is a 54 year old male with 2 dependents and a teacher living in Railway Quarters. His strategy for coping, he reflects:

… I have managed to construct a house of my own by putting a lot of money before acquiring a land. Because how much is a teacher's salary? Now I am gradually recouping part of my money through rent. I have plans of expanding my house when I get money. So my land and house have really helped me with money to survive.

Christopher Ninkpeeyel (New Atuabo): Christopher is in his late thirties and has four dependents. He sees himself as an entrepreneur.

In this household for example, we have three men and right now I have three kids and the resettlement house originally given me cannot accommodate my family thus the need for extension. Even with that I am trying to build my own house. The pigs that they gave [in the] alternative livelihood programme, mine have really multiplied and I am getting some good income from [them] [In] this place land is not a problem, if only you have 3000 Ghana cedis. There is a Dagarti[33] saying that when a child is within funeral grounds, the child will get funeral food to eat. You can be here for 15 years and not get access to land or the lands you will get can be very far away from the main town. But I have helped people.

Mr. Egyir (Nkamponaase): Mr. Egyir is a 49 year old male with three dependents living at Nkamponaase. Mr. Egyir already has one house and is building another close to galamsey operations and a stream less than 100 meters away. *"Where are you going to get the land"*, he remarked. *This is the only land available to us and which the chiefs will sell to us because other lands available we cannot afford. Having a place to sleep at night is the most important thing. The rest you can always think about at night.*

Source: Author Field Survey, 2012

[33] Dagartis are a tribe from the upper west region of Ghana. By that saying he was implying that if you are connected to the right people in Tarkwa, one's access to land will be relatively easier.

Erections of buildings close to small-scale mining (indicated in red arrow) at Nkamponaase.

Lack of accessibility and affordability can result in the use of unsuitable spaces as a way of coping

Extension of existing buildings (as indicated by red arrows) at New Atuabo

Lack of accessibility can increase transaction cost for land and building; hence extension of existing houses to accommodate existing households or for renting out.

Figure 7. 4: Land and Housing as Important Financial Assets

Source: Author Field survey, 2012

Social capital is another form of capital available to households to enable them cope. It is the third highest (about 50 percent in terms of frequency count) among the other forms of capital (see Figure 7.1). Urban households in Tarkwa tend to use the support of family or friends to help with their children and related needs while they perform night related jobs or jobs that see them travel out of town frequently. Some of the views of respondents who use this coping strategy are illustrated in Box 7.3. Others through their social networks built on trust relationships are able to take goods on credit and pay back at a later date and for yet others it is either family ties that enables them to live in a family house for free or with the surety of getting money when in need. A pair-wise comparison of social capital against other forms of capital shows that social capital is mostly used alongside people's sense of appreciation for government interventions that helps in their daily lives (35 percent of frequency count).This was closely followed by social capital combined with human capital (30 percent of frequency count) as summarised in Figure 7.5 below.

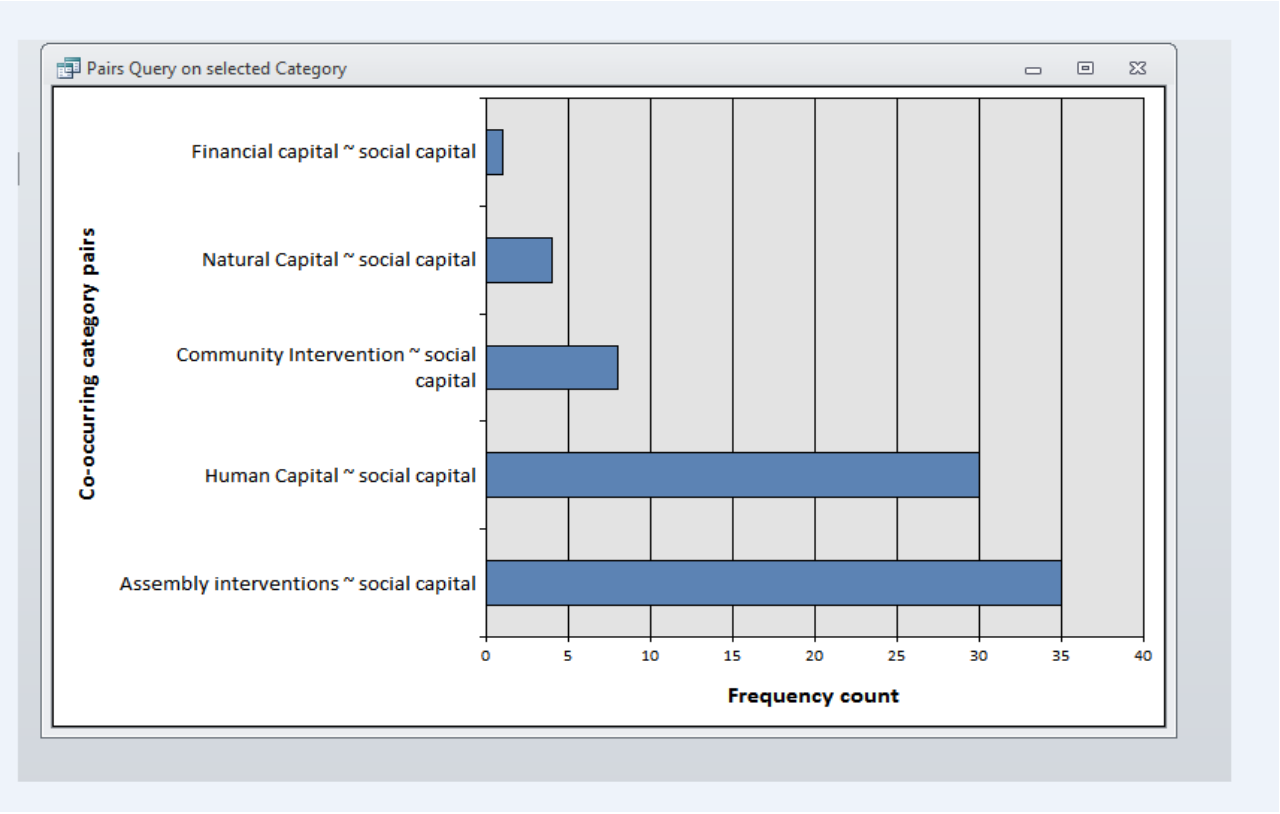

Figure 7. 5: Pairwise Comparison of Social Capital and other forms of Livelihood Capital

Source: Author Field survey, February 2012.

Box 7.4 illustrates some examples of the use of social capital as an asset to cope with living in a Tarkwa.

Madam Sophia Mensah: She is a 34 year old woman with two children who lives in Tamso She sells foodstuffs in the market for a living and says:

I am able to cope because my extended family members have been supportive of me because I am a single mother. They let us stay in the family house for free. They take care of my children when I travel to buy my goods. When I return from my journeys I buy goods that will rather be expensive here. So my family members have made things run smoothly for me. Without them I cannot cope

Yussif- Zongo: Yussif is 40 years old and a butcher. Averagely he makes over 300 Ghana cedis in a month and has three dependents. On coping, he comments that:

I think everybody here manages. When we travel home or someone is coming home, we ask them to bring us cereals and other stuff which is available over there You have to work of cause, if not how do you eat or take care of your wife and kids? I can tell you we eat twice in a day. It's all part of cost saving measures.

Source: Author Field Survey, 2012

7.3. Emerging Livelihood Strategies/Mechanisms

From the foregoing discussion on livelihoods, it is evident that households in general use of mix of capitals available to them. The following emerging livelihood strategies or mechanisms were generally employed by households living in Tarkwa:

- The economic activities that households engage in as defined by the use of human capital serves as a basis of all livelihood strategies.
- TNMAs provision of infrastructure and services is very vital to the economic activities of households. There is also over- reliance by households on TNMA because communal interventions and actions at the local level are largely ineffective and overly restricted to the efforts made by the local community chief or committee members and a general apathy towards community action .

- Ownership of land and a house are fundamental to household's survival either as a source of pride, rent or an asset. However accessibility to land is a problem because it is either overpriced or not available. Some households thus resort to unsuitable lands for building, extend existing houses or build incrementally.
- Households maintain ties with rural areas through which there is a two-way transfer of either food or money. Migration is also an option for some households if they are not able to make ends meet.

7.4 Chapter Summary

As a coping strategy to deal with the impacts of mining, respondents largely depended on their human capital - that is their work and ability to generate income. Assembly interventions and provision are also regarded as prime in coping with mining's impact implying the fundamental role the Assembly has to play in making people's life comfortable and in turn build a successful town. Respondents also saw their houses not only as a source of pride but as assets through which they can rent out to earn some income. Land access is however a hindrance for many who are priced out and would have to make do with locations that are entirely not conducive for building. Furthermore, accessing land seems to be about how "linked" or well networked one is which further pushes people to build in unsuitable locations. All of the above have implications for development planning and implementation in Tarkwa in terms of how the regulatory frameworks in place respond to mining-led urbanisation and the impacts as already discussed in preceding chapters and the sustainability of the mining region The next chapter explores this in detail.

CHAPTER EIGHT
DEVELOPMENT PLANNING RESPONSE TO MINING-DRIVEN URBANISATION

8.1 Introduction and Context

Development planning as an activity exists to drive development or as a purposive and strategic constructed response to development challenges, processes and outcomes through policies and plans and their implementation. The primary role of development and town planning within Tarkwa falls within the jurisdiction of the TNMA and that of the Town and Country Planning Department. By law the Municipal Assembly is responsible for the overall development of the Tarkwa Municipality and one way it achieves this is through the preparation of development plans and budgets. The Town and Country Planning Department is a decentralised institution of the Assembly and sees to the physical and spatial effects of development of Tarkwa as its principal functions. Essentially, the Assembly deals with planning and development issues through its Medium Term Development plans which have spatial components and manifestations. The Town and Country Planning Department through its physical development plans on the other hand tries to ensure that the spatial aspects of development contribute to overall achievement of the Development plan in ensuring that the spin-offs from mining-led investments and exploitation creates sustainable livelihoods and the human settlements at large. These two bodies together with other related institutions are meant to coordinate development interventions and ensure that planning and plans are implemented successfully. This relationship is conceptually summarised in figure 8.1

This development planning framework is the same for all Assemblies across Ghana; however the demographics, socio-economic and development dynamics of towns within these Assemblies differ from region to region. For Tarkwa, its urban idiosyncrasy lies in over several centuries of mining where urbanisation is largely premised on mining and related activities and land and spaces which is highly contested for by people for housing and livelihoods activities, multinational companies and small-scale mining for their mining-related development activities. This chapter starts by analysing how is planning in Tarkwa, has is it responded to these peculiar characteristics largely associated with mining? How have planning and development frameworks (legislations, policies and institutions) influenced this process of managing development adrift a sea of mining influence, its activities which have impacts and

consequences and finally explores and discusses the overall impact of these outcomes in relation to other objectives of this thesis.

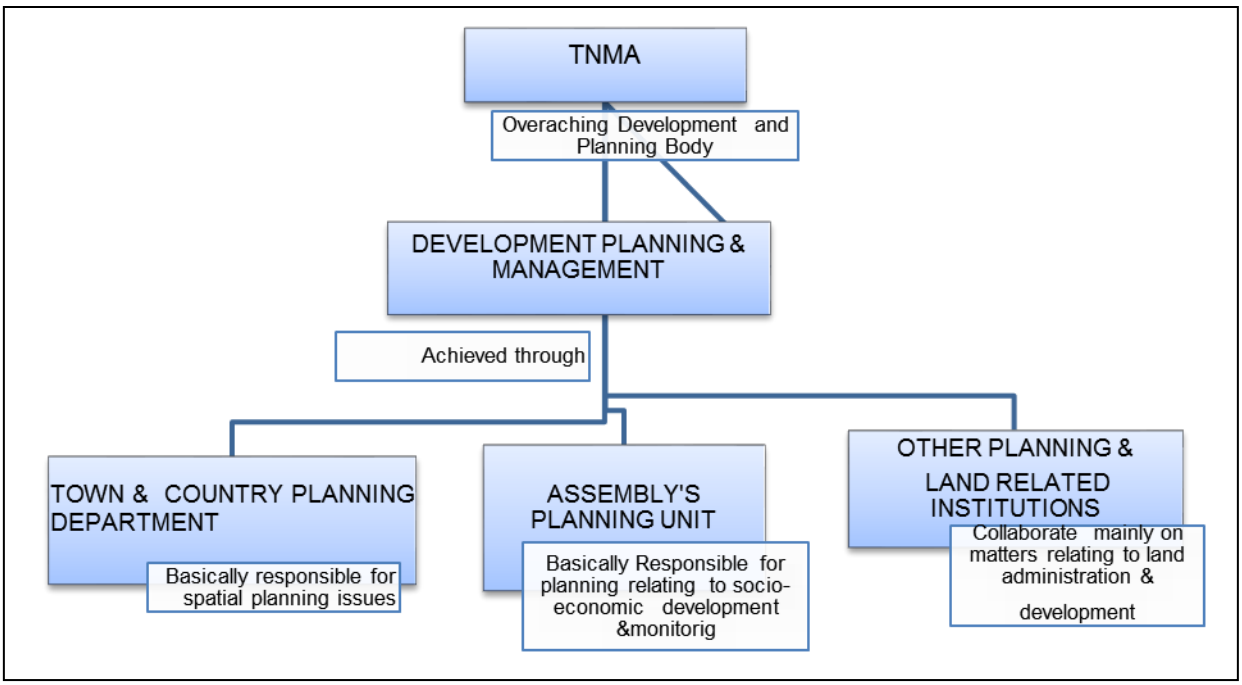

Figure 8. 1: Background Context to Planning in Tarkwa

Source: Author Construct, 2012

8.2 Current Planning framework in Tarkwa: Spatial and District Development Planning

8.2.1 How Planning legislation and Related Policy Failings is Magnifying Tarkwa's Urban Problems

In general, development planning takes expression in the medium term development process plans of the Municipal Assembly and their implementation achieved over a four year period. The spatial aspects of development planning ought to be achieved through a physical plan which in Tarkwa is made up of layouts plans whose implementation takes expression in State-Assembly driven infrastructure and services of appropriately zoned land and a development control process based on the issuance of a development permit. Even though the development planning framework (Medium Term District Development Plans) and spatial plans in Tarkwa are supposed to be synchronised and reinforcing each other, they often are not. This can be attributed partly to the technical guidelines and planning standard failings of planning policies.

While the National Development Planning Commission is mandated to provide guidelines for the preparation of Medium Term Development Plans and structure plans for settlements in Ghana; the focus of planning has in reality always been on the preparation of Medium Term District Development Plans which direct the socio- economic development aspirations of the Municipal Metropolitan District Assemblies (MMDAs), to the detriment of spatial plans, even where provided. For instance, the key focus areas of the Tarkwa-Nsuaem 2012 Composite Budget is made up of education, health, administration, revenue generation, roads, street lights rural electrification and agriculture; and clearly communicates which areas the development priority of the district lies (GoG-MoFEP, 2012:17). Development planning is therefore done devoid of an overall spatial planning framework. It is however ironic to note that though spatial planning seems not to be a priority for the Assembly, all these socio-economic focus areas take their expression in space and have explicit spatial manifestations and effects. This seems to be the underlying problems of especially all forms of spatial development in Tarkwa.

First of all, resources or funding to the Town and Country Department is very limited and thus financing and execution of schemes becomes problematic. Preparation of plans in Tarkwa and for the municipality as a whole takes place in a piece-meal fashion, limited to the making of layouts often for specific areas facing development pressure and without overall structure plans. The Department prepares base maps and layouts usually after liaising with chiefs who are the land owners and who partly meet the cost of plan preparation. A Planner with the Town and Country Planning Department, Mr. Sarpong (2012) notes that:

> … *right now what the department is probably taking up is to go to communities, try and then force some kind of partnership in appendage aside the department itself and the chiefs to come to a compromise as to what is to be done* (sic).

Planning therefore is left to the negotiation skills of a planner who has no spatial framework (structure plans) ,limited budgets and who is dependent on a traditional chief who may or may not prioritise more holistic and integrated approaches to the development of the broader municipal area.

Secondly development practice has always been geared for a short term and piece meal approach to planning and a development control system (permitting process) based on very limited long term strategic development frameworks. It is therefore no surprise that the primary role of spatial planning in Tarkwa is limited to the issuance of permit based on short term layouts and intervention based planning for areas that are highly developed. The Town and Country Planning Department lamented and confirmed that what they:

> … *usually do is what we term piecemeal kind of planning. You don't even get a whole area and then plan but as and when people probably approach the land owners for land, they come in with a surveyed portion of the land for us to plan* (Sarpong, 2012).

Furthermore, the planner who is supposed to be the center of development planning and management around which the planning function in the municipality revolves is rather left at the fringes and often not even involved at all. There is a general attitude that nobody actually needs planning and the piece-meal process that makes it an after-thought in the sequence of how development takes place in Tarkwa-highly influenced as it is by the whims and caprices of the developers, mining companies and chiefs. Again, the lack of long -term planning on the part of the Town Planning Department coupled with the competing contestation for land in Tarkwa, has made the implementation of planning schemes that get prepared sporadic and the reality that some existing town fall under the concessions and leases of MNCs. The Town Planning Department notes thus that:

> … *we have ample schemes that have been prepared, lying in the office and waiting for approval from companies to release land so that we can implement it. But when we were preparing it we didn't know it was within their concession* (Sarpong, 2012).

The planner therefore faces two challenges at different levels. The first is with the preparation of plans where they have to liaise with chiefs for the release of land and co-financing of schemes which only happen when a developer approaches the chief or Town planning officer and when the chief shows interest. At another level the challenge occurs when implementation fails because schemes get prepared and mining companies claim implementation is not possible because the land is part of their concession(s). This seems to be the art and process of "planning" that is currently taking place in Tarkwa and one is left wondering whether planning is needed and/or respected first of all and therefore whether its impact can be of any significance. The bottom line seems that the perception and impact of planning in facilitating development in Tarkwa remains low even with or without the existence of policy. This ultimately point to an absence of political will in cooperation and coordination of State institutions and critical stakeholders in a context of unequal power bases

8.3 How is Mining and Mining Related Urbanisation Affecting Planning?

8.3.1 Increased Pace of Development

One of the most evident things that has happened to Tarkwa as a result of mining is the increased pace of development due to the influx of people. The 2000 population and Housing Census put Tarkwa as one of the mining towns (the other being Obuasi and Prestea) that is highest net-receivers of population influx after the main urban areas of Accra and Kumasi. The influx of people means that people first of all need places to stay as well as places/spaces to do some form of business or work-related activity. This has both positive and negative aspects for Tarkwa. First of all, Tarkwa has assumed the status of municipal capital, an elevation above the status of District Capital. Tarkwa also has about seven commercial banks and about five non-banking institutions compared to Prestea-Huni-Valley which is another mining district which has two commercial banks and three rural banks. Additionally it hosts the District Hospital, Midwifery Training School and University of Mines and Technology (hitherto School of Mines). All of which can be attributed to a multiplicity of factors such as the long prevalence of mining and related business resulting in the high circulation of money in the urban area as well as population growth making Tarkwa merit higher order services.

There is therefore the high demand for housing and physical development and expansion is so fast and intense that the disjointed planning processes cannot respond effectively. The Town and Country Planning Department acknowledges the nature of the dilemma as:

> ... *because of mining activity there is money in the system and people over night put mansions and you wouldn't know because of enforcement and monitoring aspect is weak. By the time you get there a new settlement has been created* (Sarpong, 2012).

Most of the new developments are however taking place in settlements that are contiguous to Tarkwa itself and largely acting as a respite for the already congested Tarkwa. Some of these settlements include Tamso, Borborbor and Akoon which have gained population over the years due to people moving into the periphery. This is summarised in figure 8.2 below.

Due to the fact that new development is taking place in the periphery oblivious to any form of planning or planning regulations, these developments are encroaching on access roads and hinder effective provision of amenities such as water and electricity. The Town Planning Department agrees that one of their biggest problems is the encroachment on access roads that have not been worked upon and this tends to create problems when the settlement is highly developed and people need access to their homes.

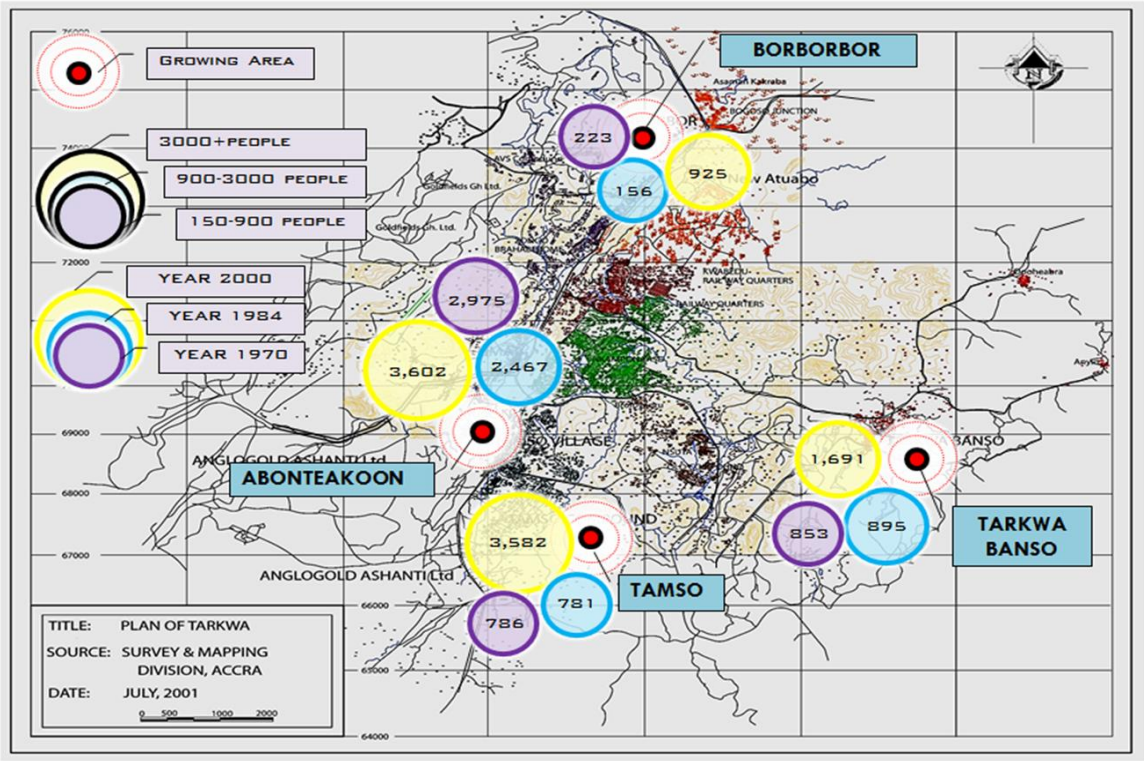

Figure 8. 2: Population Increase into Outlying Settlements of Tarkwa

*Abonte Akoon largely lost population between 1970 and 1980 partly due to closure of an underground mine shaft.

Source: Derived from Survey & Mapping Division and GSS 2000 Population and Housing Census

Commenting on the pace of development which has affected provision of services for example, Tarkwa's Chief Engineer with the Electricity Company of Ghana contends that new developments coming up every day without his attention being drawn to it has resulted in overloaded transformers and thus frequent power outages for some areas. The Engineer, Mr. Adji notes that:

> *Tarkwa for instance is expanding. A lot of people are building. It used not to be so, but now you go to an area and within a short time you find a whole lot of new buildings which have sprung up. So to be able to cater for them, sometimes the transformer becomes overloaded. There are a lot of places where we have frequent outages because of overloaded transformers. You can talk about New Atuabo, there is work ongoing. So we are currently doing something to inject two new transformers. Then we have Tamso Jerusalem, is another problematic area.*[34]

[34] It is important to note that at the time of the survey (January-March 2012), Ghana as a country was and is (2013) still experiencing power crisis which results in frequent power outages. That notwithstanding, the engineer was commenting based on localised power problems which had no bearing with the national power crisis

8.3.2 The Land Question

Probably the biggest impact mining (both small and large scale) has had on Tarkwa in terms of planning and development in general is the access to land for implementation of development schemes and projects. Land is the most important commodity or asset in Tarkwa from both the angle of institutions and households, but the most poorly managed in terms of access. The reason has been that the institutions dealing with land are very much uncoordinated with regard to inter-institutional flow of information and action in dealing with issues relating to land acquisitions and concessions of mining companies.

The paramount Chief of Wassa Fiaseman lamented that for a very long time, the government had granted concessions without the knowledge of the paramouncy. So some chiefs often end up selling or getting schemes prepared for land areas that are in mining concessions or lease areas. In the end compensation is paid to the chief and all others who had some form of claim on such land or property. Multinational companies also complain about speculative activities of people with regard to putting up farms and structures in order to be compensated later. The Town Planning officer also contends that information on the extent of concessions is not being readily made available to the Department for reasons only known to the big mining establishments. The District Lands Commissioner notes that as of 2012, some chiefs did not know the extent of their boundaries and the current system of deeds registration for land is not foolproof and therefore one cannot always be sure whether land registered in one's name technically belongs to them. From the interview of these stakeholders during the survey by the author in 2012, it became evident that the land management system is not only scattered and uncoordinated, but also intensely contested, leading not only to many forms of dysfunctional and conflicting ownership, tenure and use patterns, but to even more confusions in the planning and development management systems, frameworks and praxis

Planning for development has to be managed in such a way that it takes place outside of mining concessions and or in collaboration between institutions of planning and MNCs for the release of land. From the perspective of planning, it is difficult to know which areas of land is available to be planned for as the planning institutions attribute this to the large nature of concessions made available to the Multinational Mining Companies (Goldfields and AngloGold Ashanti) that authorities are not able to cope with management with changing land ownership, use and availability for development planning and infrastructure provision. Planning activity therefore

proceeds and “muddles through” still these hiccups and ends up proposing development schemes and projects that often fall fully or partly within jurisdiction and across land ownership especially mining concession areas: thus rendering them unimplementable. The role of planning will have to take a back seat and reactive as it is often subject to liaising for the release of land between the Assembly and the Multinational Company .So that most projects are left unfunded and not implemented. The Tarkwa Municipal Coordinating Director admits negotiations for release of land hardly yield any fruitful results because of mining prospecting and licensing. More to the point on the hiatus on implementation of development projects and planning schemes, the Municipal Town Planner notes that:

> … *our own industrial estate that we are trying to set up, other projects that the Assembly has discussed and want to implement becomes a challenge because there is no land available for such projects*(Author Interviews,2012).

8.4 Other Factors Militating Against Planning Effectiveness and Implementation

8.4.1 Institutions

As intimated in the foregoing discussion above the institutions of planning are so disjointed that each seems to be working on its own instead of together. The Municipal Assembly in Tarkwa acknowledges the need to re-write the wrongs of policy and administrative framework for spatial organisation in Tarkwa but is also doing little in terms of budgetary commitments in this regard. The cost of planning is one that neither the institutions of chieftaincy or Assembly is largely willing to take up. The institution of chieftaincy seem to be at the heart of planning problems in Tarkwa in one way or the other as they are the custodians of land. Some chiefs either through ignorance or through perceived loss or personal gain do not want to collaborate with others in terms of any form of planning because they tend to lose land in the creation of access roads, service provision lines etc. which would perhaps fetch them money when parcels of land are sold out to developers. The chieftaincy institution also contends that the cost involved in plan preparation is colossal having to employ “surveyors” and planners among other professionals. The paramount chief of Wassa Fiaseman contend that some of these chiefs tend to offset the cost involved by rewarding the “surveyors” and other related professionals with pieces of land. The Municipal Town Planner did point out that the municipality has no qualified surveyor, so the chiefs use their own quack surveyors to do their jobs (Sarpong, 2012).

Within a formal system of land administration and plan preparation, there is however a variety of informal ways one could easily adopt to escape formal planning procedures to acquire land and build a house or other development projects. Some organisations for example try to simplify processes by training as a field officer with the Rural Environmental Care Agency(RECA, an NGO that deals with natural resources, community empowerment and child labour issues) point outin this case with regard to the farmers they deal with:

> … *"So we try to simplify the process [land processing] for them. So instead of getting a professional surveyor to demarcate and pay such a person, we [RECA] give you the training so that you can do your own survey. So we have been training them [farmers], and [they can] can do simple demarcation. Some of them can naturally handle the Global Positioning System (GPS) and other things to do a demarcation. And then [they can] send that site plan to Nananom [chiefs]. We involve the Traditional council and Lands Commission people. So that when such people bring their papers to them, the charge that they[levy] people from outside is different from the farmers. So that will be an encouragement for more people to make sure they have their land registered and documented" (Faustin, 2012)*

Given that the foregoing discussion point to a disorganisation of institutions and processes of planning, the manifestations on the ground are only reflective of such mess. Tarkwa is thus sprawling and has practically merged with other towns such as Nsuta, in addition to a highly congested Central Business Area where on-street traders are competing with cars, taxis and heavy duty mining machinery for space and waste management problems which continue unabated. In that regard, the town planner admits, "the mess has been created and still being created" (Sarpong, 2012).

As pointed out in the literature review, dysfunctional institutions is one of the reasons that mineral endowed regions like Tarkwa get entrenched in underdevelopment despite their mineral wealth. This is because those who have the power to make choices through their decisions to make planning and development work are not proactive or concerned enough or have the necessary political will or backing to do so. The resultant conflicting agendas, power-bases and intersecting interests in the development dynamics of mining towns thus reflect the broader power plays at different spatial and organisational scales that the global mining industries exerts and reproduces

8.4.2 Illiteracy

Aside the mismanagement in access to land in Tarkwa that is a huge hindrance to planning, illiteracy is also a big factor to the efficacy of the plan implementation process. First of all, those informed about the planning process are unwilling to follow planning processes in order to carry

out development. A large majority are either ill-informed about planning, its importance or why they should even follow a formal process just because they want to put up building or shop. The Town and Country Planning Department admits that is their biggest challenge "… is basically about education. The lack of information in the public domain". In the final analysis, the Department is restricted to reactive intervention-based planning where they try to re-do the wrongs that have already been done through demolishing which is largely unpopular among residents and usually has political implications for sitting governments.

8.4 Chapter Summary

This Chapter revealed that in Tarkwa, development management generally, and spatial planning particularly, has been reduced to the issuance of permits and the preparation of short term land use layouts under conditions of highly contested land tenure and under-resourced budgeting. Other informal ways of going about development are preferred and largely being used by developers outside formal planning processes raising questions about the legitimacy and roles of development planning in terms of guiding general development. This dilemma is analysed within the backdrop of glaring development challenges and pressures that face mining towns and regions. This has seemingly made planning near impossible in the context of the lack of a proper land management system, "superiority" of some institutions in dealing with the Planning Department and Assembly, lack effective of collaboration within related institutions and lopsided and gaps in planning legislations. Thus there is rapid spatial growth in Tarkwa to accommodate businesses and people coming in, but this rapid growth does not seem to be facilitated by any coherent strategic and functioning planning framework, practices, coordinated and capacitated institutional systems to effectively channel the emerging spatial growth to influence long term sustainable development

CHAPTER NINE
CONCLUSIONS AND RECOMMENDATIONS

9.1 Introduction

This chapter discusses the findings of the study to identify trends, their universality, meaning and significance in the efficacy of planning as a tool for development management in mining towns and regions. Through this synthesis, conclusions and recommendation are made for the entire research. The latter recommendations will relate to development and planning theory, policy and practice in relation to mining towns and regions. The main research objective from the onset was to "understand the extent to which mining and related urban development policies as translated into practice have impacted on the spatial and socio-economic development on mining towns in Ghana using a case study of Tarkwa".

The research alluded to the unique nature of the mining region which is tied to the life cycle of mining activity. The 'boom and bust' cycles associated with mining activity and the industry and experienced in mining towns and regions define the character of these regions and creates a type of urbanisation that needs rethinking in terms of development and planning theory, policy and practice. This is posited as important as this type of urbanisation initiates and alters livelihoods and the attendant settlement function hence the type of coping strategies to deal with inherent vulnerabilities of those communities living in mining environments. However, the finite nature of mineral resources requires that growth drivers and dynamics of mining regions are pursued beyond mining and the need for frameworks that can ensure that livelihoods are safeguarded and the settlement function thereof is sustainable in the long run. The research findings above tend to support this trajectory sketched in the thesis and this chapter tries to make sense of and synthesize the meaning of these findings and then suggest their implications for planning policy and praxis as well as further research.

9.2 Mining and Development Planning Frameworks

The research confirmed that the Minerals and Mining Act of 2006 which is the key mining legislation in Ghana, was amended largely in response to making the mining sector attractive to international capital especially during Structural Adjustment Programmes of the 1980s. There were several fiscal incentives for foreign investors (Appendix B) and less attention given to impact of laws on community livelihoods especially with respect to their empowerment and

economic diversification of mining settlements given the attachment mining communities have with land. Most mining communities and Tarkwa for that matter are also largely ignorant of and tend to ignore the niceties of both mining and planning laws. Importantly, they do not distinguish between land ownership and mineral rights. With regard to mining legislations and policies however, government is increasingly trying to maximise benefits that may accrue to Ghana by reviewing stability agreements with mining companies and fiscal incentives mining companies were enjoying. The study confirmed that to maximise benefits from mining, there was need for complementary policies or regulations to the main mining law and even more significantly their implementation and enforcement. An international review of other "progressive" mining regimes like Chile and Botswana confirmed moves in this direction. In Ghana, even though the mining industry was bereft of a Minerals Policy and Corporate Social Responsibility law, steps have been taken in the right direction as a Minerals policy has been tabled before Parliament and Corporate Social Responsibility guidelines to streamline activities of MNCs was released in February 2012. Also, complementary to the Minerals and Mining Act is the New Local Content Law for MNCs, policies and guidelines on the use of mineral royalties by District/Municipal Assemblies are in the offing. Ghana's emerging responses to a regulatory mining framework is in line with international trends and particularly aligned to Africa's 2009 Mining Vision where a new mining regime is advocated whose aim is to support the harnessing and the development potential of Africa's minerals for a more balanced beneficiation of local source regions and national development agenda (UNECA, 2011).

Like mining, development planning in Tarkwa and Ghana for that matter has not been aligned with the associated responsive planning regulations and environment. There thus exist a lopsided view of planning focused on economic aspects as exemplified by TNMA budgets for 2012 and the Local government Act of 1993 (Act 462) which is silent on schedules for spatial planning, and the absence of a National Urban framework until 2010 when a National Urban Policy was drafted. A new three-tier planning framework has been set forth that will merge spatial and economic aspects of planning. In that regard, a Spatial Development Framework has been kick-started for the Western Region (under which Tarkwa falls).

9.3 Mining Impacts and Emerging Livelihood Strategies in a Mining Region

In Tarkwa, the research confirmed that impacts of mining on households have been varied and mixed. The positive impacts overall included a general significant (51.3 percent) perceived

growth in incomes and provision of educational materials and facilities by MNCs. Overall, on increased employment opportunities, about 58.5 percent of sample had negative responses and perceptions about mining's role in creating increased employment opportunities. This compared to 39.6 percent of positive responses which is suggestive that households are generally not impressed with the employment generated by mining companies. This is in light of the fact that about 53.45 percent of sampled households moved into to Tarkwa to seek for opportunities in business and employment. This negative perception should also be seen within the context of 11.03 percent of surveyed households employed in formal mining and overall formal labour absorption in mining plunging from over 20,000 since 1994 to about 15,000 in 2004, purportedly as a result of increased use of technology in mining.

The research also confirmed that one of the most pervasive impacts yet of mining on livelihoods is the scarcity of land either for the purposes of farming, business or building. Part of the root cause of the problem seems to be the Minerals and Mining Act and 1992 Constitution of the country that vested absolute rights of mineral resources in the state on behalf of the people. However, multinational mining companies usually have huge concessions through mining rights while the mining communities have a sentimental attachment to mineralised land through ownership by their chiefs. There is therefore a concurrent operation of two different tenure system dialectically opposed to each other - where MNCs have mining rights and many indigenes who have an inclination to land through both cultural and religious ties. This is compounded by often very ineffective institutions of land management to deal with the problems or issues that may arise. The imbalance of power with regard to access and use of land (mineralised or not) and the resulting landlessness has increased attractiveness of galamsey as a means of livelihood.

The issue of "galamsayers" is manifold and seen as a "necessary evil" in that it is largely accepted at community level as offering a decent means of livelihood and an alternative to crime. However, their activities often result in environmental degradation and highly risky in terms of conditions under which they operate. Hence government at the national level often cracks down on such activities as it is criminal. In recent times, there has also been an influx of Chinese into both small and illegal mining, further deepening the problem. The subject matter of galamsey seems intractable as it not only has political ramifications for national government, but often acceptable in Tarkwa as an alternative to crime On the other hand, galamsey is known for festering prostitution due to miners who act as easy targets for prostitutes, drug abuse, school drop-outs, encroachment and environmental degradation.

To cope with living in a mining environment, households adopted a combination of livelihood capitals and the livelihood strategies that emerged. They included:

i. The economic activities that households engaged in as defined by the use of human capital serves as a basis of all livelihood strategies.
ii. A reliance on TNMAs provision of infrastructure and services which was crucial to the economic activities of households. The over reliance by households on TNMA results in limited communal interventions and actions at the local level that are largely ineffective.
iii. Ownership of land and a house are fundamental to household's survival either as a source of pride, rent or an economic asset. However accessibility to land is a problem because it is either overpriced or not available. Some households thus resort to unsuitable lands for building, extend existing houses or build incrementally.
iv. Some households maintained ties with rural areas through which there was a two-way transfer of either food or money. Migration was also an option for some households if they were not able to make ends meet

These multiple coping strategies show a contradictory coexistence of entrepreneurial and innovative response by households and formation of thick webs of social capital development on the one hand, and survivalist strategies on the other; that intersect in the way communities in mining towns, especially the poor segments, eke out livelihoods across differing levels or scales

The research also confirmed that enterprenuership in Tarkwa is both a way of life and also as a means of survival as respondents were pursued opportunities that are created from mining with profit driven objectives and also just to earn a living. Over 96 percent of business enterprise owners perceived purchasing power of people and related available or potential market as the most positive spin-off from mining yet. The informal economy was dominant in terms of business enterprise ownership with informal trading as the most principal form of business enterprise. Informal trading was fuelled by people's willingness to invest in property as an asset and income earning opportunity and a proliferation of small-scale mining. Enterprise owners (about 26 percent) also perceived competition as their biggest challenge to operating in Tarkwa. This was due to the proliferation of similar businesses in the informal trading and service sectors.

Many businesses in Tarkwa are in the nascent stage (less than 5years) suggesting that a lot of support is needed to help such businesses grow and expand and possibility serve as subsequent avenues for cumulative employment. The services sector could thus be a viable

area to support as it accounts for most of the employment in enterprises despite the dominance of informal trading.

Perceived Collaboration between enterprises and TNMA, MNCs and NGOs in terms of financial, material and human resource development is largely limited as most businesses view the support of the Assembly and MNCs largely in terms of financial support only and not themselves as co-creators of wealth and development through job creation and opportunities for mentorship.

9.4 Development and Planning Practices and Response to Mining-led Urbanisation

Development planning response in Tarkwa concentrates on economic aspects, largely devoid of any spatial planning. This can be traced to policy failings alluded to early in this thesis. That notwithstanding, planning especially the spatial aspects in of Tarkwa are saddled with so many challenges that make planning near impossible, and thus ineffective.

Firstly, in the preparation of plans, the planner who is without adequate budgetary support of the TNMA has to liaise with chiefs for the release of land and co-financing of schemes which only happens when a developer approaches the chief or Town Planning Officer and then only if the chief is interested.

Secondly, implementation of schemes are not a certainty as the Town and Country Planning may have schemes that fall within mining concessions. This arises because there is no significant collaboration between MNCs, the Town Planning Department and other related institutions. This is worsened by ignorance of the formal planning process and/or the perceived importance of following specific laid down procedures - planning schemes may thus exist but they do not get implemented as set forth in the plan. The “educated” in this regard are also culpable as are people are generally reluctant to follow any form of required procedure. The bottom line is that planning’s impact has not been significant in enabling development and remains low even with the existence or absence of policy. This perhaps begs the question of whether “planning” as in the case of Tarkwa is a social construct not fully understood and its practice not properly aligned with the social reality of people it is meant to impact.

9.5 Recommendations: Towards a Different a Approach in Overall Planning and Development of Tarkwa and Mining Regions of Ghana

Firstly, notwithstanding the policies, programmes and legislations in both planning and mining that are in the offing, there is the need for synchronisation. More often than not programmes and projects are undertaken, and reforms developed may end up conflicting over legitimacy or power for implementation and duplication of institutional functions. The benefit of laws or policies are not in their multiplicity but their importance should be underscored by enforcement and implementation channeled through functioning institutions Thus the approach to dealing with planning, land and related development issues should be one of well thought out urban development plans whose implementation engenders the spatial and socio-economic wellbeing of the Tarkwa and citizenry of Ghana as a whole.

There is therefore a need for shift in planning mindsets that emphasize a regional planning approach that does not merely have a traditional town planning focus (forward and land use planning, regulation and control administration) or economic/budgeting development plans of individual Assemblies. For example, the development of a spatial Development Framework for the Western region due to the oil find is perhaps a more strategic approach and therefore commendable as it attempts to integrate spatial and economic aspects of development. However in looking at resource regions, one will have to plan for them beyond a spatial development framework- as it is a document that guides investment decisions and ensure that development activities are well coordinated. In other words any form of development framework should have an economic character from which flexible spatial forms are proposed and spatial initiatives can be negotiated.

Bloch and Owusu (2011) point out that a large number of mining clusters are located outside of Tarkwa and in Accra and Tema, with lower indirect services spatially located in Tarkwa. In that regard, Tarkwa can have a spatial development initiative that is based on corridors such as a Tema- Accra –Takoradi-Tarkwa development corridor depicted by the black bubble in Figure 9.1. This will essentially be to develop clusters on already mining based clusters of firms in Accra and Tema - reinforcing Tarkwa to be a hub of knowledge and innovation (centered on the University of Mines and Technology), and create new clusters based on the agro-based industry (oil palm and rubber) and take advantage of investments coming into Sekondi and Takoradi due to oil discovery.

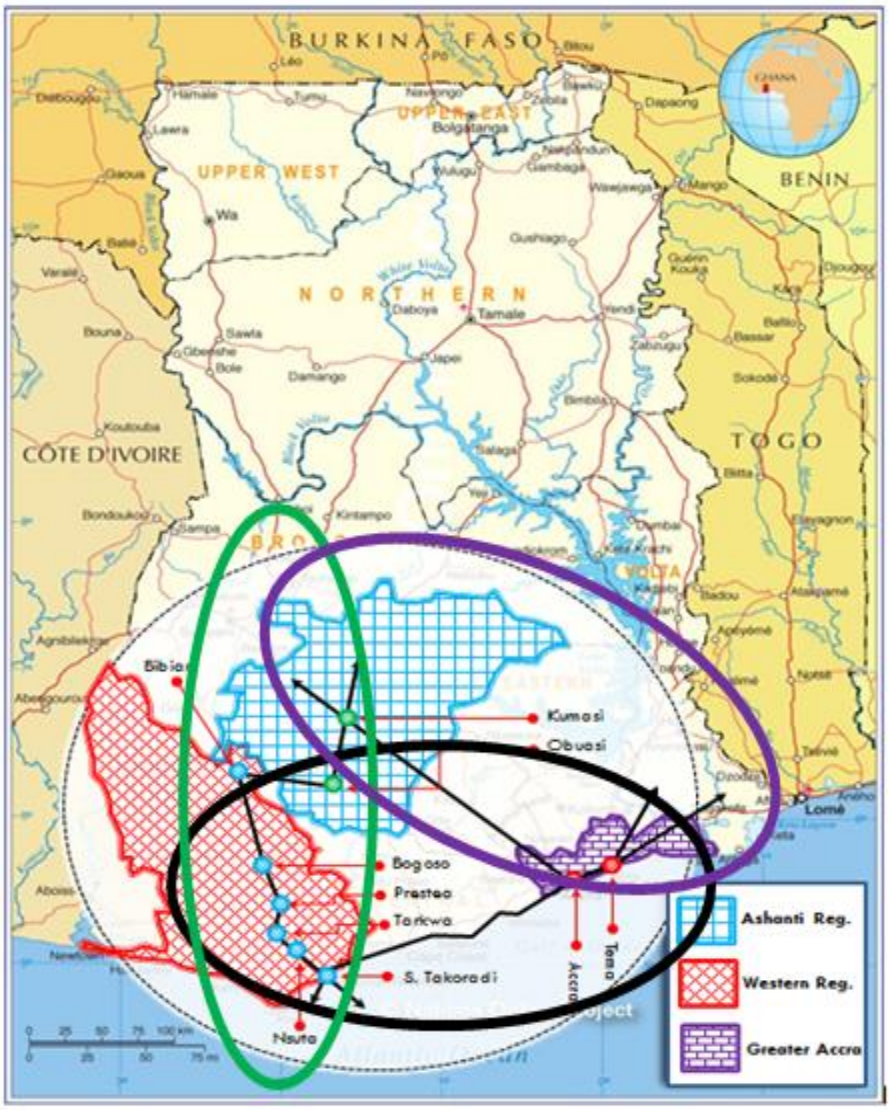

Figure 9. 1: Development Corridor Scenarios

Source:Author construct, 2013

Other scenarios could involve a Sekondi –Takoradi -Tarkwa-Bibiani-Kumasi corridor as shown in green in Figure 9.1. Alternatively, there could be a Tema-Accra-Kumasi-Obuasi corridor taking advantage of mining, commercial and industrial linkages that corridor would offer.

This approach has the advantages of maximising use of existing infrastructure (roads) to enhance new development and the economic upgrading of such infrastructure. Secondly, it helps to trigger or attract other clusters to existing, and possibly improved corridors (infrastructure-wise) and markets in the general processes of cumulative causation or agglomeration economies that growth points (nodes) and corridors habitually generate.

Governments' intervention in all of the above scenarios will thus be in the form of infrastructure, support for research and innovation and liaising to acquire regional and foreign markets. Whilst guarding against blind imitations (where programmes of other countries are superimposed on another without recourse to the region's growth dynamics), the example of Chile which has been fairly successful with resource clusters based on mining and agriculture as discussed in literature are always available in the form of success stories and lessons to be learnt.

Secondly, while the idea of resource clusters may seem fashionable it should be premised on long term planning and strategy based on local factors and exogenous ones based on globalisation and world urbanisation trends which have increasingly made possible increased opportunities for connection, borderless sharing of ideas and access to capital and financial market; thus a significant shift in the global dynamics of power and control of mineral resources to Asia with China and India being the forerunners. Ghana and Tarkwa therefore needs not to be reactive through incremental or piecemeal plans but should have a national policy agenda, plan and strategy as to how to deal with its resource regions, so that Multinational Companies are subject to a national agenda and not vice versa. The lack of foresight, clarity and cohesion in local and national level planning and policy making has given some leeway for MNCs to avoid or shirk their responsibilities to resource regions (especially CSR) and the country as a whole; the creation of long term National Development Plan/Framework will largely prevent some mishaps. Perhaps, the rapid influx of Chinese into the small and illegal mining sectors and the subsequent fallout - repatriation of 120 illegal miners (Essel, 2013) is not only a caveat to suggest an increasingly globalised and urbanised world but point to the potential challenges mineral economies and countries face. Thus the need for a long term vision of mining and planning

Thirdly, collaboration for development is key. Business enterprise owners and households in Tarkwa do not generally see beyond the financial benefits of MNCs and their CSR respectively. However, for any form of development to be sustainable in the long run, there is need for every actor to be an active participant of the development process. There is therefore the need for a re-orientation of especially the mindsets of indigenes of the crucial role they can play. The enterpreneurial ability of indigenes should be supported and nurtured either through incubators or clusters. This will not allow for sharing of ideas but the growing of a critical mass of human resource that will sustain development beyond mining. Moreover, formal mining employment will increasingly get limited with advances in technology. There is also the need to actively pursue education of the people of Tarkwa to inform and conscientise them on planning procedures, and

rationale of planning. The people should also be made to be actively part of the process of plan making, which might perhaps give them a sense of ownership of development activity in their communities. This requires budgetary support to the Town and country Planning Department and thus commitment on the part of the TNMA.

Collaboration among institutions involved in mining and development planning is also vital especially policy development around mining, which is often left to the Minerals Commission or Ghana Chamber of Mines. A case in point is the Gap Analysis Study which is supposed to form as bedrock for identifying categories of local manufacturing companies that can provide such services or products to MNCs as part of efforts to integrate mining into the economy (Adu Domfeh, 2012b). This was been spearheaded by the Ghana Chamber of Mines and Minerals Commission in collaboration with other stakeholders. Asmah (2009 as cited by Bloch & Owusu; 2011) notes that the Ghana Chamber of Mines has been the lead advocate of enforcing linkages between the Mining Sector and the rest of the economy as a national agenda. However, development content should proceed from a bottom-up approach revolving around the local District/Municipal Assemblies and the National Development Planning commission not vice versa where it is mostly around the Minerals Commission and Ghana chamber of Mines with later input from Assemblies. A much better approach would have been government and Assemblies first studying the supply-chain value of the mining sector and seeking out to exploit downstream and upstream linkages and minimizing risks as well. Proceeding from that, if Ghana came short in certain areas, then steps would be taken to appropriately develop such sectors in collaboration with other stakeholders and industry. Collaboration will also prevent the stalling of the process of plan implementation.

In terms of further research, the author suggests that the power dynamics at play in the development of mining resource regions is worth exploring. This is based on the fact that there seem to be an overbearing influence of multinational mining companies over other institutions of governance in channeling development. On the other hand, it could be that institutions of governance are too weak to carry out their development obligations despite efforts of Mining Companies. Another area of further research is exploring informality in the mining value chain of either small-scale mining or illegal mining and the contribution they are making to these mineral economies. This was one of areas of this research that is multidimensional needs untangling of the mix of issues. One of the key issues in the case of Tarkwa being small-scale mining and/or galamsey whose protrusion of the urban economy of Tarkwa is under researched and with the

influx of Chinese, should add an interesting twist to way small-scale mining is conducted in the future.

In conclusion, mining activity has orchestrated the development of a lot of towns in the past and is still a catalyst for growth of many more towns today and probably in the future. However mining's role as a continued catalyst for development of towns is not an absolute certainty as it is premised on a lot of factors with planning been one of them. The planning of resource regions like Tarkwa cannot be limited to a narrow path of town planning and medium- term development plans of individual districts but should be more synergetic in approach to take advantage of agglomerations across the mining frontier and of larger metropolis like Accra and Takoradi. Additionally, local authorities at the Assembles and the National government cannot afford to continue to be passive about any form of planning concerning resource regions. Globalisation and the rise of urban consuming populations mean if authorities in resource endowed nations like Ghana do not plan for what is theirs on a long term basis, other nations will strategise and these exploit resources for the maximum benefit of their citizenry and at colossal cost to host nations. Thus with a change in approach, Tarkwa and Ghana can begin to benefit more from cross-sectoral linkages of clusters, nurture the enterprenuerial ability of its people, also tap properly into the largely untapped forward linkages that mining present to host Tarkwa and Ghana at large. With effective collaboration across all institutions and with the people, sustainability of the Tarkwa mining region and all resource regions will be an achievable feat.

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APPENDICES

Appendix A: Key Mining Legislations/Laws in Ghana

1992 National Constitution: Article 36(4) which states that: *"Foreign investment shall be encouraged within Ghana, subject to any law for the time being in force regulating investment in Ghana"*
Mining Code
PNDC Law 153 – Minerals and Mining Law, 1986
PNDC Law 218 – Small-scale Mining Law, 1989
Act 475 – Minerals and Mining (Amendment) Act, 1994
Act 703 – Minerals and Mining Act, 2006
Fiscal Regime
LI 1349 – Mineral Royalty Regulation, 1987
Act 592 – Internal Revenue Act
Section 1 and 1st Schedule – Corporate Taxes
Section 20 and 3rd Schedule – Capital Allowance
Others
PNDC Law 219 – Precious Minerals Marketing Corporation law, 1989
PNDC Law 154 – Minerals Commission Law, 1986
LI 1652 – Environmental Assessment Regulation Act, 1994

Adapted from Bloch & Owusu (2008)

Appendix B: Some Key Feature of Minerals and Mining Act, 703

Table 1: Types of mineral Rights

License Type	***Reconnaissance***	***Prospecting***	***Mining Lease***	***Restricted Lease/License***	***Small-scale mining***
Purpose	Regional exploration not including drilling and excavation	Search for minerals and evaluation	Extraction of minerals	Building and industrial minerals	Extraction of minerals on small-scale basis
Area	Blocks of 21ha, not exceeding 5,000 contiguous blocks	Not exceeding 750 contiguous blocks	Not exceeding 300 contiguous blocks	Provisions relating to minerals rights apply	In accordance with the number of blocks prescribed
Maximum Duration	12 months, renewable	3 years, renewable, with reduction of area to not less than half	30 years or less depending on mine life. Renewable	15 years or less depending on mine life. Renewable	5 years, renewable
NB: small-scale mining licenses is granted to Ghanaians only foreigners can participate by way of service companies Restricted mining rights, which are reserved for Ghanaians, but in which foreigners can participate where the investment involved is not less than US$10 million.					

Source: Mining Journal, 2010

Table 2: Summary of Fiscal Regime

Imposts/Benefits	Provision
Mineral royalty rates royalty Base	3-6%. Based on gross market value of minerals sold
Application Fees	As prescribed in the regulations
surface rentals Annual Ground rent	Payable to landowner as prescribed
Income Tax:	
Tax Rate	25% now, prescribed in the law and 22.5% for listed companies on the Ghana Stock Exchange
Capital Allowances	Generous allowances
Allowable Losses	5 years carry forward
Dividend Withholding Tax	8%
import Duty	Plant, machinery, equipment specifically and exclusively for mining operations exempted
value Added Tax:	Mining Stage – Refundable Exploration Stage – Capitalised on making find

Source: Mining Journal, 2010

Appendix C: Procedure for grant of Mineral Rights under Act 703

13. (1) The Minister shall within sixty days on receipt of recommendation from the Commission make a decision and notify the applicant in writing of the decision on the application and where the application is approved, the notice shall include details of the area, the period and the mineral subject to the mineral right.

(2) The Minister shall, not less than forty-five days prior to making a decision under subsection (1), give a notice in writing of a pending application for the grant of a mineral right in respect of the land to a chief or allodial owner and the relevant District Assembly.

(3) A notice given under subsection (2) shall (a) state the proposed boundaries of the land in relation to which the mineral right is applied for, and (b) be published in

(i) a manner customarily acceptable to the areas concerned, and

(ii) the Gazette and exhibited at the offices of the District Assembly within whose district, a part of the area is situated.

(4) The applicant shall within sixty days of receipt of notification of approval, notify the Minister in writing of acceptance of the offer of the grant.

(5) The Minister shall upon receipt of the notification of acceptance of the offer, grant the mineral right to the applicant.

(6) An approved application shall lapse if the applicant fails to notify the Minister of an acceptance in accordance with subsection (4).

(7) Subject to the provision of this Act, a mineral right shall be subject to the terms and conditions that are prescribed from time to time.

(8) The rights and obligations of a holder of mineral right shall apply to the agents and employees of the holder.

(9) Subject to sections 73 and 74, a mineral right granted by the Minister under this section is sufficient authority for the holder over the land and entitles the holder to enter the land in respect of which the right is granted.

(10) The holder of a mineral right shall not remove or destroy a mineral obtained by the holder in the course of mineral operations without the permission in writing of the head of the Inspectorate Division of the Commission.

(11) Despite subsection (10), cores and samples may be retained by a holder for the purpose of assay, identification or analysis of the mineral.

(12) Where a core is retained under subsection (11), the holder shall maintain in respect of the core or sample, particulars sufficient for the identification of (a) the core or sample, and (b) the location and geological horizon of its origin as the head of the Inspectorate Division of the Commission may in consultation with the Director of Geological Survey Department determine.

(13) Geological core samples may after assaying, identification or analysis of a mineral be disposed of only with the express consent of the Commission given in consultation with the Geological Survey Department.

Appendix D: Key Institutions of mining and their functions

Ministry of lands and natural resources: The mission of the Ministry is to ensure efficient management of the nation's mineral resources and promote their judicious exploration, exploitation and processing with minimal harm to the environment, for optimum benefit to society.

Minerals commission: The Commission is responsible for the regulation and management of the development of the mineral resources of Ghana and the co-ordination and implementation of policies related to mining

Geological survey Department: The Department is responsible for the provision of reliable and up-to-date geological information for national development through geological mapping, research and investigations

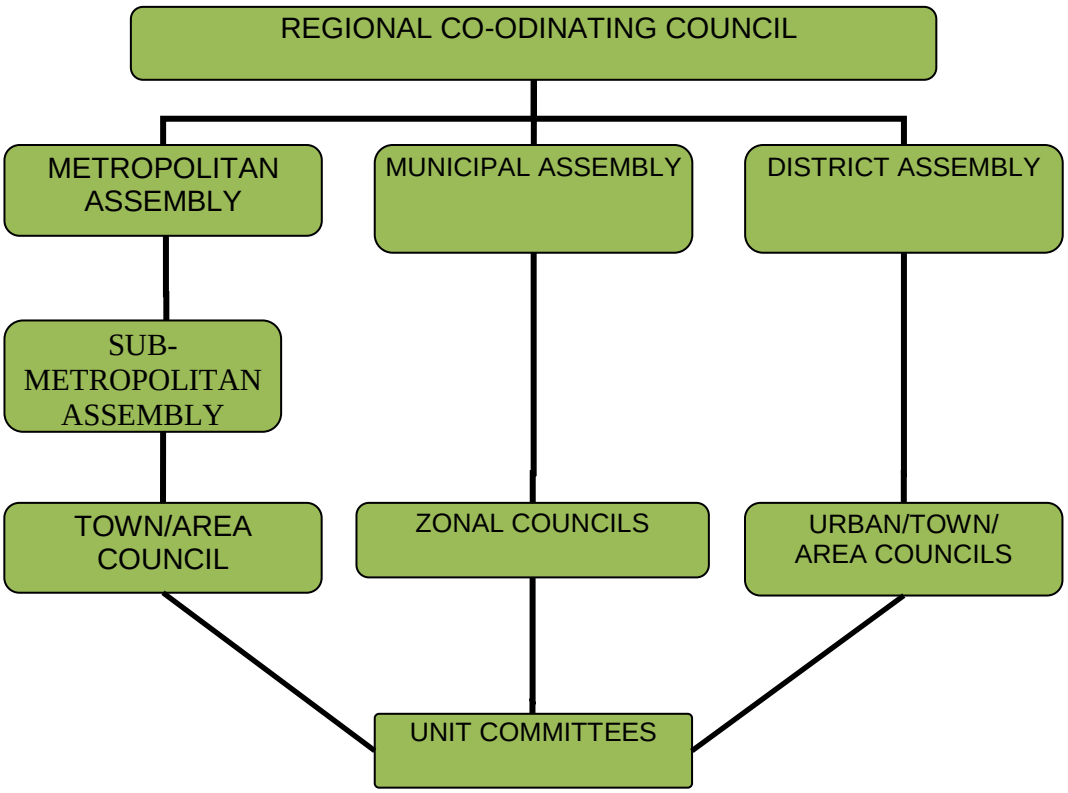
The chamber of Mines: The Chamber of Mines is the peak minerals industry association in Ghana. The Chamber represents the collective interests of companies involved in mineral exploration, production and processing in Ghana. Its activities are entirely funded by its member companies, which produce over 90% of the Ghana's mineral output. The Chamber has represented the industry's interests since 1928.

Precious Minerals Marketing co: Precious Minerals Marketing Co Ltd (PMMC) provides official marketing services for small-scale gold and diamond miners. It also promotes the development of precious minerals and jewellery industries in Ghana, and is responsible for handling the export of all diamonds produced in Ghana.

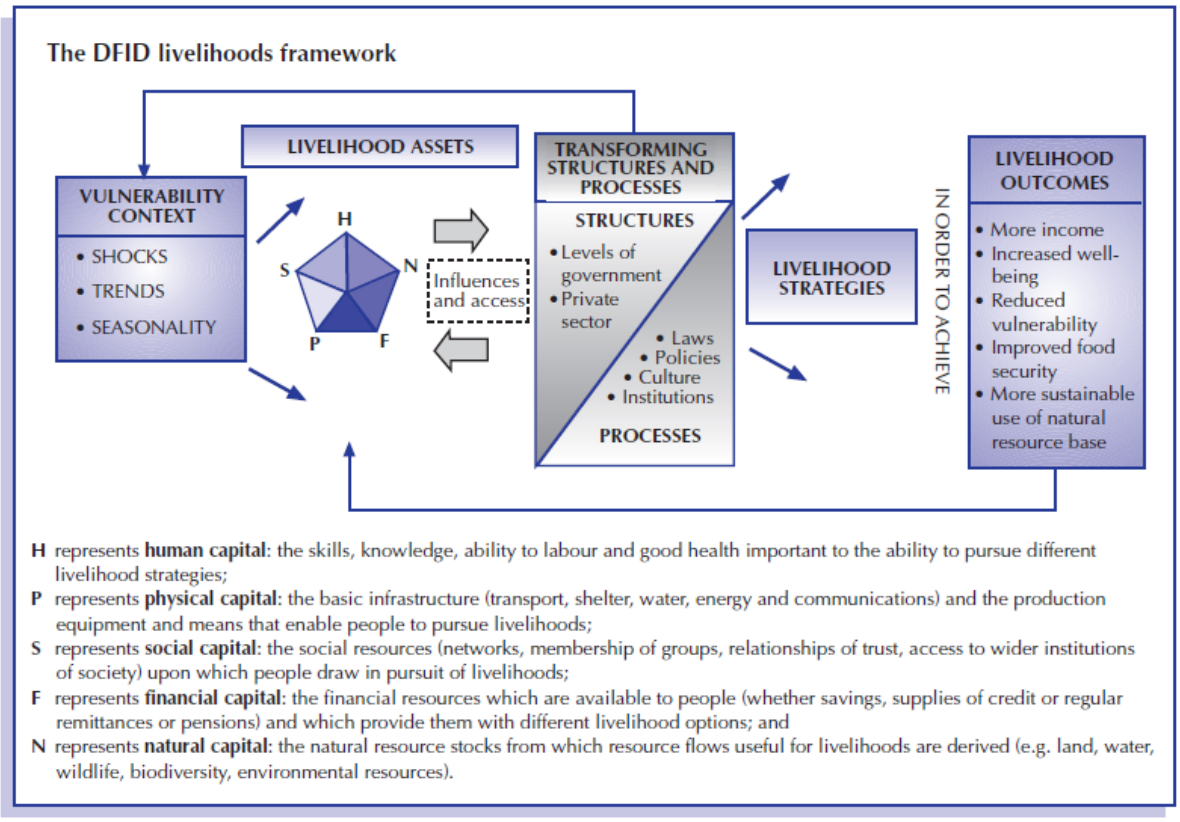
Lands commission: The Lands Commission is the body charged with the responsibility to ensure the judicious management of the country's land.

Environmental Protection Agency: The Mission of the EPA is to co-manage, protect and enhance the country's environment in particular as well as seek common solutions to global environmental problems.

Appendix E: Structure of Local Governance System in Ghana



Appendix F: DFIDs Livelihoods Framework



Source: De Satge et al (2002)

Appendix G :Business Enterprise Category Description

Manufacturing: Comprise enterprises that turn raw materials into finished products. Examples include wood processing, textiles and garments, metal works and food processing.
Services: Work done for somebody in return for payment that is non-manufacturing related. This range includes security services, engineering services, electrical and auto mechanic services, hairdressing and beauty services, pharmaceutical services.
Commercial: Primarily trade in goods -large or small-scale. Examples include trade in construction and building materials, food and related products, supermarkets, gold buying.

Source: Author construct, 2012

NB: The research excluded Banks, MNCs directly related to mining

Appendix H: Research Classification Characteristics for Informal Economic Activities

Small-scale operation with individual or family ownership: sole proprietorship or family owned, less than 5 years in operation and employs not more than 5 people.
Ease of entry and Exit: Could leave enterprise anytime due to financial and other constraints and re-start business enterprise any time because of low capital requirements.
Largely Labour Intensive: Use of manual labour and low level technology involved.
Occupation of unauthorised vacant land or space: Include clusters of workers or individuals like auto mechanics or traders who put up structures (kiosks, Tables, shipping containers) at places usually strategic to take advantage of customers.

Source: Adapted from Osei-Boateng & Ampratwum, 2012

NB: A business enterprise should possess 2 or more of these to fall under the informal economy category.

Appendix I: Household Questionnaire

Cape Peninsula
University of Technology

DEPARTMENT OF TOWN & REGIONAL PLANNING –

CAPE TOWN, SOUTH AFRICA

QUESTIONNAIRE FOR HOUSEHOLDS

Questionnaire Number	Name of Interviewer	Date	Location	Plot/Stand Ref. No	Comments

This survey is intended to inquire about relevant primary/ empirical data for the accomplishment of an academic exercise on the topic "Planning and Development of Mining Regions in Ghana (focus on Tarkwa): "An exploration of mining and urban development frameworks, policies and practices". This is for the award of a Masters degree in Town and Regional Planning from the Department of Town and Regional Planning, CPUT, South Africa. Your support and cooperation is very much anticipated since data collected will be treated with complete discretion.

1. *Sex a) Male b) Female 1b. Age……*
2. *Marital status a) single b) married c)divorced e)widowed*
3. *Level of education. a) primary b)JHS c) SHS d)Tertiary e) vocational f) others…specify*
4. *Type of employment and specify job a) government……. …… B) Private…….. c)self employed……..e)NGO……...f) others(……...)*
5. *Do you have secondary employment (specify)……...*

6 what is your average monthly income in Ghana cedis a). < 50 b) 51-100 c) 110-160 d) 161-211 e) 212-310 f) above 310

7a. How many years have you lived here? a) < a yr. b) 1-5 c)6-10 d) 11-15 yrs e) over 15 years

7b. Were you living somewhere else before moving here? a) Yes b) no

7c. If yes, where were you living……...

7d State reason for leaving……

……..

8. How many people live in your household? A) 1-2 b) 2-4 c) 5-6 d) 7-8 e) over 8 f) others ..

9. How many people in your household earn income? A) 1-2 b) 3-4 c) 4-5 d) 6-7e) none

10. How many people depend on you? A) 1-2 b) 3-4 c) 5-6 d) 7-8 e) over 8 f) none……

11. How many households live in this house? A) 1-2 b) 3-4 c) 5-6 d) 7-8 e) over 8

12. What is the average number of rooms in this house? A) 1-2 b) 3-4 c) 5-6 d) over 8

13. Type of house A) Bungalow/ detached b) semi detached c) compound e) storey building

f) Others……..

13a. Types of ownership for house A) owner occupied b) rented c) family house d) inherited e) others(specify)

13b. .If owner occupied/family/inherited, do you have a building permit?) yes B) No c.)Been processed d) others (specify)……...

If no,why……

……..

13c who owns the land this house is on? A) owner b) chiefs, c) family land d) government e) Mining company f)others (specify)……...

13d If owner/family, is your land registered? A) Yes B) No C. Been processed d.) Others (specify)

8b If no, why……

……

13c if rented, how much do you pay monthly, /yearly……

13d. size of plot 2)100x 100m b)80x 100 c)80x 60 others specify…… or number of plots(state)……..

13e. Number of houses on plot……

14. Please tick where available

Type of amenity /facility	*Availability of facility*	*Access to facility*	*Within house*	*Outside house* *Public/private*	*If outside house , distance covered averagely to access facility(distance in meters)*
Water (Stand pipe { }, well { }, borehole { }, stream {}, others……..)					*<100* *100m-200* *300m-400* *>500m*
Electricity					*<100* *100m-200* *300m-400* *>500m*
Toilet facility water closet { } KVIP { } free range { } others ……...					*<100* *100m-200* *300m-400* *>500m*
Refuse dump/dustbins					*<100* *100m-200* *300m-400* *>500m*

15. Rank your highest expenditure item monthly depending on frequency of use.

Item	*1.All the time(every day)*	*2.Most of the time(a few times within the week)*	*3.sometimes*	*4.Seldom*	*5.N/A*
Food					
Water					
Rent					
School fees					
Health					
Housing maintenance					
Funerals					
Others(specify)					

16. In what ways has mining activities affected/impacted your livelihood (Answer with strength of Agreement with the Rating Scale).Tick where appropriate

Impact	1.Strongly Agree	2.Agree	3.Nuetral/Indifferent	4.Strongly disagree	5.Disagree
Positives					
Employment					
Growth income directly or indirectly from mining					
Others(specify)					
Negative					
Increased cost of living					
Scarcity of land for building, farming etc					
Inadequate Housing					
Structural damages(specify)					
Health problems(specify)					
Others(specify)					

17a. How do you cope/deal with the negative aspects of mining individually? Please describe in detail with regard to what affects you the most.

……

18a. Which Municipal Assembly intervention/provision do you regard as important in improving livelihoods and helping you cope with mining impacts in your community/suburb/area?

……

18b What Assembly intervention will you like to see happen in your community/suburb/area?(Please list in order of importance)

……
……..…..

19a. In what ways has mining activities affected/impacted your Community (Answer with strength of Agreement with the Rating Scale).Tick where appropriate

Impact on larger Community	*1.Strongly Agree*	*2.Agree*	*3.Nuetral/Indifferent*	*4.Strongly disagree*	*5.Disagree*
Positives					
Provision of facilities……					
Free educational material, scholarships etc					
Community Training Programmes(specify)					
Others(specify)					
Negative					
Increased cost of living					
Scarcity of land for building,businesses farming etc					
Environmental Pollution(specify)					
Social vices Crime: Prostitution Drug abuse: School drop out					
Others(specify)					

19b How do you cope/deal with the effects as a community and through local level.

……

……...

Appendix J: Business Enterprise Questionnaire

DEPARTMENT OF TOWN &REGIONAL PLANNING –

CAPE TOWN, SOUTH AFRICA

QUESTIONNAIRE FOR BUSINESS ENTERPRISES

Serial No	Name of Interviewer	Date	Location	Plot/Stand Ref. No	Comments

This survey is intended to inquire about relevant primary/ empirical data for the accomplishment of an academic exercise on the topic "Planning and Development of Mining Regions in Ghana (focus on Tarkwa): "An exploration of mining and urban development frameworks, policies and practices". This is for the award of a Masters degree in Town and Regional Planning from the Department of Town and Regional Planning, CPUT, South Africa. Your support and cooperation is very much anticipated since data collected will be treated with complete discretion

CHARACTERISTICS OF BUSINESS ENTERPRISES

1. *What kind of enterprise/business' core activity(specify)*

   I Manufacturing……..
   ii service ……
   iii commercial/trading ……
   iv others (specify)……..

2. *Type of ownership?*
   I Sole proprietorship
   ii Family Business
   iii Partnership/Joint venture
   iv Subcontract
   v. Retail Chain/franchise

others(specify)……
…...

3. How long have you been in this enterprise? ……..months/years
4. A. Where you previously in a different enterprise/job? I Yes ii No
B. If yes,

I what were you doing……

ii Location

iii state reason for leaving previous job/enterprise?

……
……
……
……...

5. Why did you decide to locate your enterprise in Tarkwa?
……
……
……..

5A what do you make of the current location of your business?

I Good ii Bad iii indifferent iv others (specify)

5B Reason for answer in 5A above

……
……
……
……

6A Would you prefer a different location? I Yes ii No

6B Give, reason for your answer in 6A above

……
……
……
……

7A Do you pay toll/tax to the municipal assembly?

I Yes ii No

7B If No, why?

……
……
……..

8 If into manufacturing, please answer the following

9	***Type of product manufactured***	***No of items produced daily/weekly/monthly***	***No of items sold daily/monthly***	
i				
ii				
iii				
iv				
v				
10	*How much do you sell each product?*			
	Products	***Unit price (GH cedi)***	***Total (Ghana cedi)***	
i				
ii				
iii				
iv				
11A	*Do you have peak and lean seasons/periods for your enterprise? If yes, proceed to 11B*			
11B	*What is the peak season for your enterprise*			
i	*Peak season for businesses*	*…… ….*		
ii	*Lean season*	*…… ….*		
11C How much more/less do you make?				
	Peak season	*Per day/weekly/monthly*	*…… …….*	
	Lean season	*Per day/weekly/monthly*	*. …… …..*	
12A	*Do you have employees*		*I Yes*	*Ii No*
12B	*If yes, how many and what is the sex of employees*			
	Number		*Permanence*	
	Males…… …….		*Part time*	*…… ……..*
	Females…… …		*Permanent*	*…… …..*
13	*Where do you buy your raw materials from?*			
	Location?	*……..*		
	Type of supplier?	*…… ……..*		
14	*Who are your main customers /clients?*	*I ii…… ……iii…… ……*		

		iv…… *……v……..* *.....*

If into service, please answer the following

15	*How many people do you serve in a day (averagely)*			***……***
16	*How much do you make averagely?*			
	Per day			***……***
	Per week			***……***
	month			***……***
17A	*Do you have peak and lean seasons/periods for your enterprise? If yes, proceed to 11B*			
17B	*What is the peak season for your enterprise*			
i	*Peak season for businesses*	*……….*		
ii	*Lean season*	*……….*		
17c How much more/less do you make?				
	Peak season	*Per day/weekly/monthly*	*……..*	
	Lean season	*Per day/weekly/monthly*	*……..* *…..*	
18A	*Do you have employees*		*I Yes*	*ii No*
18 B	*If yes, how many employees*			
	Number		*Permanence*	
	Males……..		*Part time*	*……..*
	Females……..		*Permanent*	*…..*
19	*Who are your customers/ clients?*		*i……* *ii……* *iii……* *iv……..*	

20 For other enterprises other than Manufacturing and service (tick/answer where applicable to enterprise)

Other Enterprises
(specify)……..

21	***Type of product***	***No of items produced daily/weekly/monthly***	***No of items sold daily/monthly***	
i				
ii				
iii				
iv				
v				
22	*How much do you sell each product?*			
	Products	***Unit price (GH cedi)***	***Total (Ghana cedi)***	
i				
ii				
iii				
iv				
23A	*Do you have peak and lean seasons/periods for your enterprise? If yes, proceed to 11B*			
23B	*What is the peak season for your enterprise*			
i	*Peak season for businesses*	*…….…..*		
ii	*Lean season*	*…….…..*		
24 C How much more/less do you make?				
	Peak season	*Per day/weekly/monthly*	*…….……..*	
	Lean season	*Per day/weekly/monthly*	*. …….…..*	
25A	*Do you have employees*		*I Yes*	*Ii No*
26B	*If yes, how many and what is the sex of employees*			
	Number		*Permanence*	
	Males…….……..		*Part time*	*…….……..*
	Females…….…		*Permanent*	*…….…..*
27	*Where do you buy your raw materials from?*			
	Location?	*……..*		
	Type of supplier?	*……...*		
28	*Who are your main customers /clients?*	*I ii……iii…… ……iv…… ……v……..... .....*		

GROWTH OF BUSINESS ENTERPRISES, PERCEPTION OF MINING AND URBAN DEVELOPMENT LINKAGES

29A. Has mining affected your business enterprise in any way? I Yes ii No

29B. If yes, how has it affected your business in terms of

I Income generation

.....
.....
.....

ii Growth in your enterprise

Expansion of business…….....
……
……...
……
……
Increase in Employees……
……...
……
……...
……
……..
Expansion/Improving Business Enterprise structures……
……
……...
……
……
……

30. Would your business survive without mining activity in the Tarkwa region?

I Yes ii No

31. If No, how does your enterprise depend on mining activity?

I Miners are my major clients

ii Mining provides my source of raw material

iii Supply my goods and services to mining companies

iv other(specify)……
…

32A Has your enterprise ever received any support from the Assembly?

I Yes, ii No

32B If yes, what form of support was it?

I financial

ii training and skills development

iii provision of raw materials, equipment etc

iv others ,specify……

33A Are there any community based resources available for use by your outfit to help it grow

your business and improve livelihoods?

I Yes ii No

33B If yes,

Name them……
……

33c How have they helped your business and/or improved your livelihood?

……
……
……
……...

34. What Assembly intervention do you consider helpful in growing your enterprise and give reason for answer?

……
……
……
……...

35. Which factors within Tarkwa do most consider important as affecting the growth of your enterprise, on a scale of 1 to 3.(With 1, the most important and three least important)

I Transportation……...

ii Agriculture……..

iii Mining……..

iv Governance……

v Planning……

vi Labour……..

Vii Land ……

Others (specify)……

36. What factors do you consider the main reason for the continued success and sustenance of your enterprise?

ii innovation

Ii Competition

Iii Labour

iv Support from Assembly/NGO/Mining Companies

v. Collaboration/partnership with Assembly/Mining Companies etc

vi Well established/known within community

Others (specify)

37A. Do you receive any form of support from Mining Companies?

I Yes ii No

37B If yes, in what forms?

i Financial

ii Skills and training

iii Provision of Equipment etc

iv others(specify)

37c, How have this been helpful in terms of growing your business and livelihood.

……
……
……
……..

38 A Do you belong to any association/co-operative?

I Yes ii No

38B If yes, does your association/group collaborate/partner with the Mining Companies or Assembly or NGOs etc at any level?

I Yes ii No

38C If yes, what forms of collaborations exist with these institutions?

I Mining Companies……

……...

II NGO's……

……..

……..

III Assembly…….....

……...

……

38D.If No, should collaborations/partnerships exist between or among the Assembly, Mining Companies, etc. State reason for answer.

……..

39A. What are the challenges of operating an enterprise like yours in a mining region?

……..

39B. what have you had to do to cope with the negative aspects of operating in a mining region like Tarkwa?

……..

40. Are there any positive aspects to operating in a mining region like Tarkwa?

……

……
……..

41. What can be done to make Business enterprises like yours more sustainable in the long run?

……
……
……
……
……
……..

BACKGROUND OF RESPONDENT

42. Sex i) Male ii) Female

42 Age ……

43 Level of education.

Never went to school [ ]

Primary [ ]

Secondary [ ]

Tertiary [ ]

Other formal and non-formal training [ ]

……..……..

44.Space occupied /Location of business……..

Appendix K: Interview schedule for UMAT

DEPARTMENT OF TOWN &REGIONAL PLANNING - SOUTH AFRICA

UNIVERSITY OF MINES AND TECHNOLOGY

This survey is intended to inquire about relevant primary/ empirical data for the accomplishment of an academic exercise on the topic "Planning and Development of Mining Regions in Ghana (focus on Tarkwa): "An exploration of mining and urban development frameworks, policies and practices". This is for the award of a Masters degree in Town and Regional Planning from the Department of Town and Regional Planning, CPUT, South Africa. Your support and cooperation is very much anticipated since data collected will be treated with complete discretion

1. *What forms of collaboration exist between UMAT and Mining Companies?(Tick where appropriate)*
   - *A. Financial(Budget Support)*
   - *B. Scholarships*
   - *C. Building Projects*
   - *D. Training Programmes for students/staff*
   - *E. Donations (specify)……*
   - *F. Others(specify)…… …… …… ……*

2. *Which other institutions and government departments does the University effectively collaborate with.(specify the form of collaboration).*

   i…… …… …… …… ……
   ii…… …… …… …… …… ……..

iii……
……
……
……...
iv……
……
……
……

3. *Which other areas is the University keen on collaborating?*
   ……
   ……

   ……
   ……

   ……..
4. *How is the University taking advantage of its strategic location in a mining hub and the only institution of higher learning in mining research and learning?*

.....
.

.....

5. *How is the University contributing to the development of human resource in the Tarkwa region*
   .....

   …

   ……
   ……

Appendix L: Interview Schedule for TCPD, National Office

DEPARTMENT OF TOWN &REGIONAL PLANNING –

CAPE TOWN, SOUTH AFRICA

INTERVIEW GUIDE FOR TOWN AND COUNTRY PLANNING

DEPARTMENT/LUMP OFFICE, ACCRA

This survey is intended to inquire about relevant primary/ empirical data for the accomplishment of an academic exercise on the topic "Planning and Development of Mining Regions in Ghana (focus on Tarkwa): "An exploration of mining and urban development frameworks, policies and practices". This is for the award of a Masters degree in Town and Regional Planning from the Department of Town and Regional Planning, CPUT, South Africa. Your support and cooperation is very much anticipated since data collected will be treated with complete discretion.

1a. what were the problems with planning regulations in the recent past that hindered effective planning?

1b. In what ways did the above problems affect urban management?

2. What are the advantages of having an urban development policy for urban areas in Ghana?

3. What does the LUMP/ new spatial development framework seek to do with regard to planning and

4. How does this new framework help solve problems associated with planning and urban management in the past?

5. Why is the need for a spatial development framework for the Western Region and not any other region?

6. In your opinion, do you think single resource towns (like mining towns) should be planned for differently due to the boom and bust of growth associated with such towns? State reason for answer.

7.The way forward with regard to sustainable urban management of Ghanaian towns and mining regions in particular?

Appendix M: Correlation of age of respondent and Number of years lived in Tarkwa

	age of	number of

		respondent	years respondent has lived in Tarkwa
age of respondent	Pearson Correlation	1	.426**
	Sig. (2-tailed)		.000
	N	154	154
number of years respondent has lived in Tarkwa	Pearson Correlation	.426**	1
	Sig. (2-tailed)	.000	
	N	154	154
**. Correlation is significant at the 0.01 level (2-tailed).			

Appendix N : Chi square test: Level of Education and Employment Category

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	137.049	21	.000
Likelihood Ratio	111.411	21	.000
N of Valid Cases	154		

Appendix O: Chi square test: Age of Respondent and Previous Place of Stay

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.339	5	.030
Likelihood Ratio	19.098	5	.002
N of Valid Cases	154		

Appendix P: Chi square test: Length of stay in Tarkwa and Marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.541	9	.056
Likelihood Ratio	17.334	9	.044
N of Valid Cases	154		

Appendix Q : Chi square test: Length of stay in Tarkwa and Employment

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.359[a]	12	.344
Likelihood Ratio	14.369	12	.278
N of Valid Cases	154		