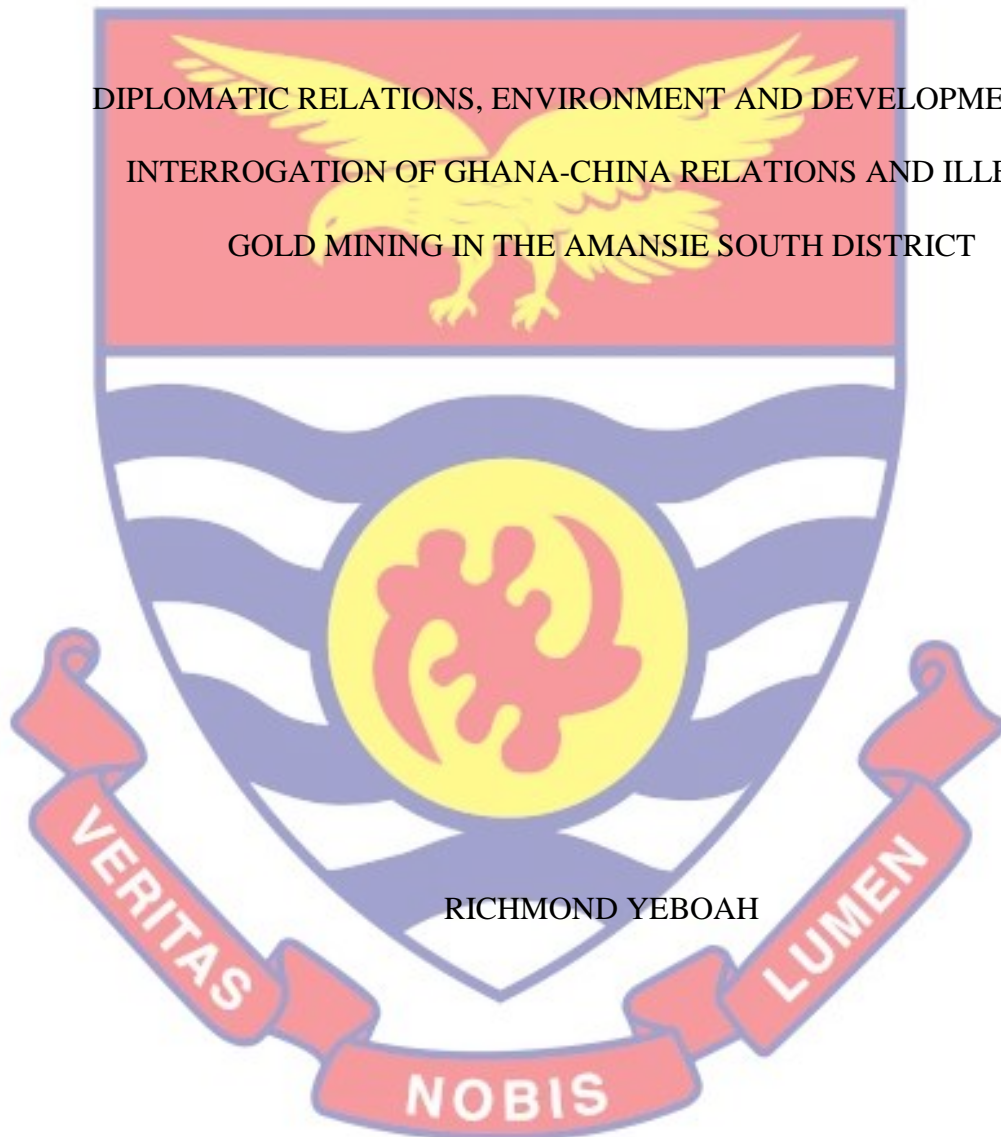


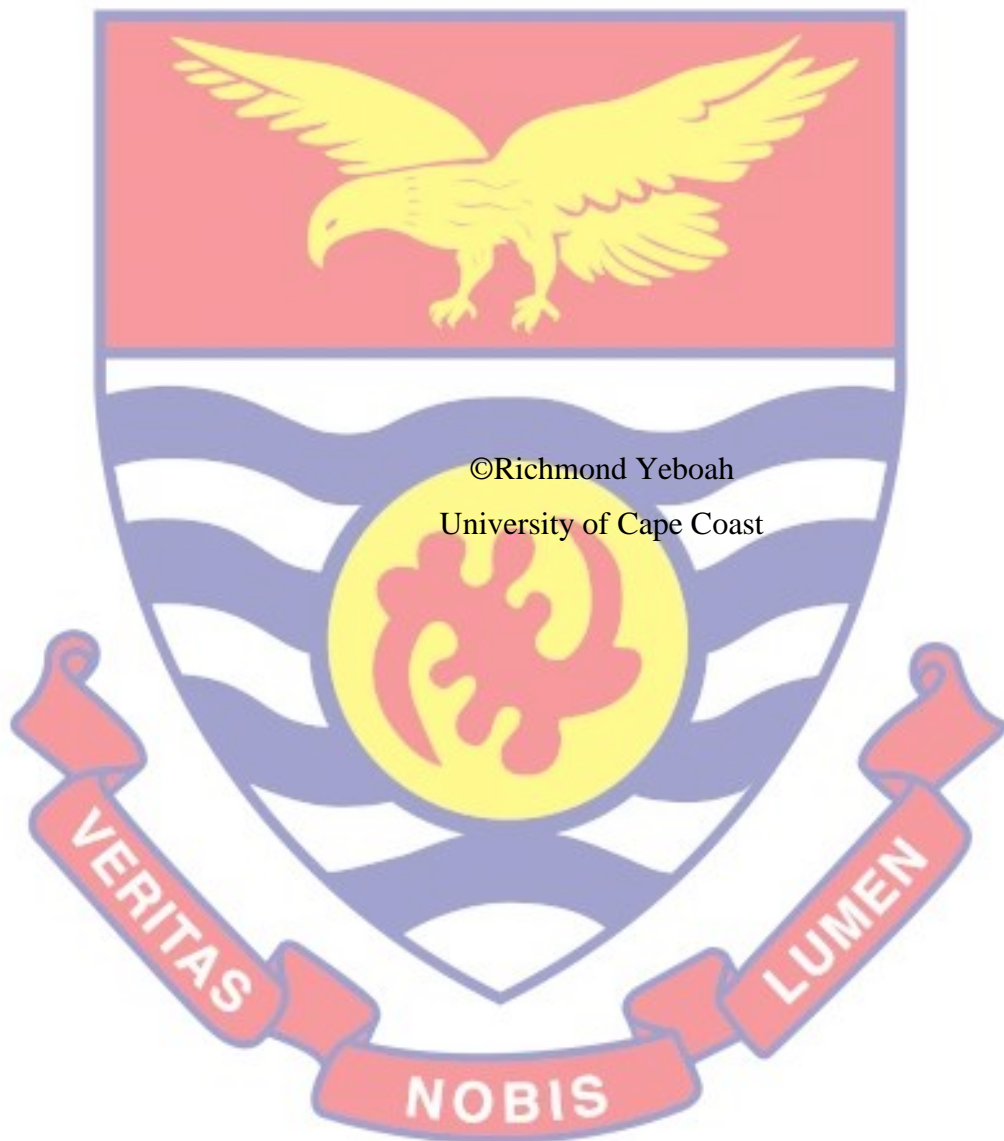
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DIPLOMATIC RELATIONS, ENVIRONMENT AND DEVELOPMENT: AN
INTERROGATION OF GHANA-CHINA RELATIONS AND ILLEGAL
GOLD MINING IN THE AMANSIE SOUTH DISTRICT



RICHMOND YEBOAH

2022



UNIVERSITY OF CAPE COAST



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GOLD MINING IN THE AMANSIE SOUTH DISTRICT

BY
RICHMOND YEBOAH

Thesis submitted to the Center for African and International Studies of Faculty
of Arts, College of Humanities and Legal Studies, University of Cape Coast, in
partial fulfillment of the requirements for the award of Doctor of Philosophy
degree in International Studies

MAY 2022

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature: Date:

Name:

Supervisors' Declaration

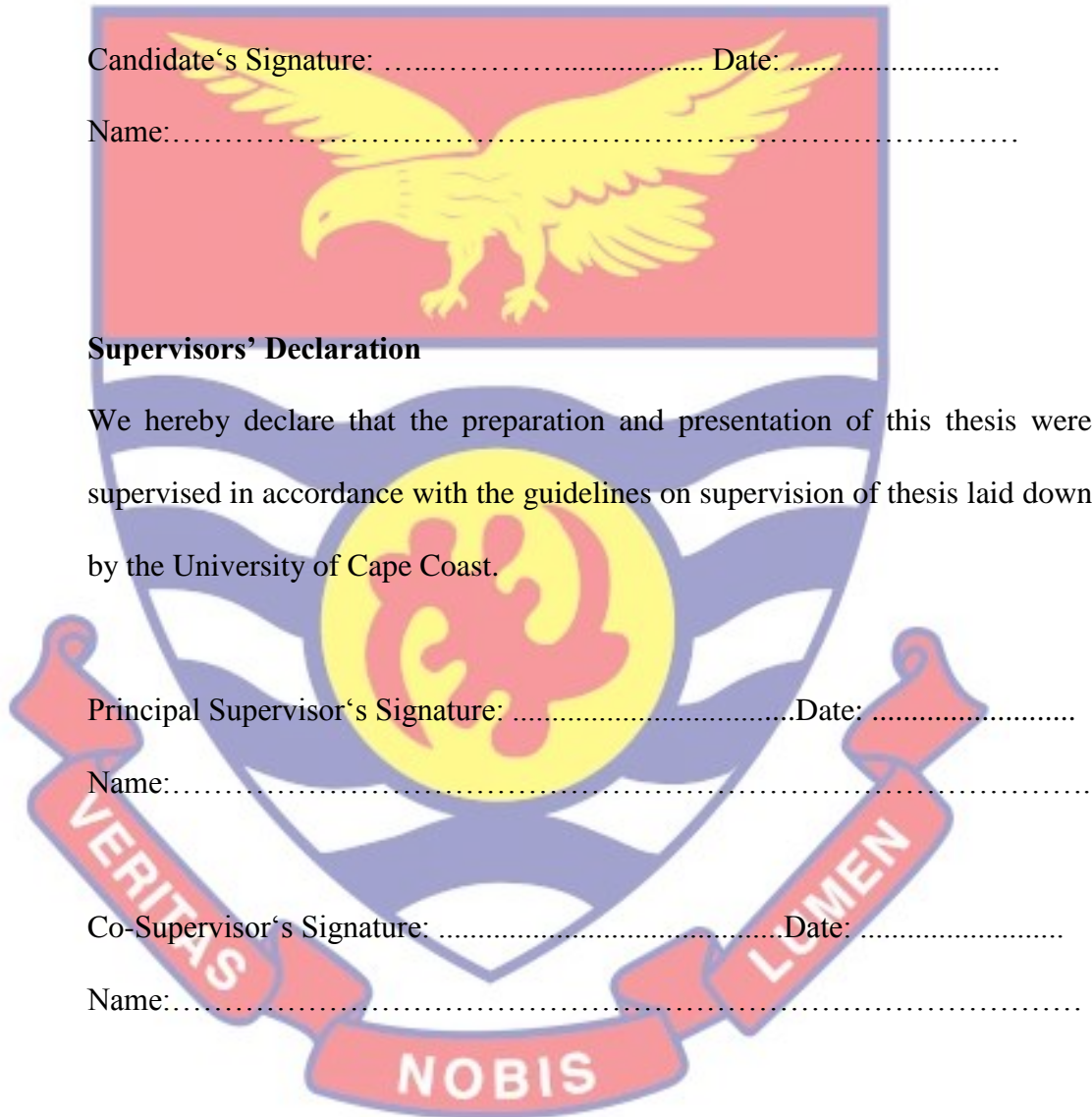
We hereby declare that the preparation and presentation of this thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature: Date:

Name:

Co-Supervisor's Signature: Date:

Name:



ABSTRACT

The thesis interrogates the environmental impacts of Chinese involvement in illegal gold mining (IGM) and how diplomatic relations impede programmes put in place to deal with this menace. Ghana-China diplomatic relations aim to promote cooperation, trade and economic development among the two states.

Ghana-China relations have therefore, promoted trade, Chinese migration and their involvement in IGM in Ghana. Recent reports of the depletion of Ghana's forests and water resources by Chinese illegal miners have sparked a raging debate in development circles on the future of Ghana-China relations and diplomacy. Environmental degradation as a result of illegal mining is a threat to the livelihood of individuals, countries and the attainment of sustainable development goals (SDGs), especially Goal 15. The study uses the dependency, neoliberal and sustainable development theories to explain the concepts of trade, bilateral relations, environment and development in relation to Ghana-China relations. To achieve the objective of the study, the qualitative research approach was used. A total of 26 individuals were interviewed. Exploratory and descriptive research designs were employed for the study. As part of data management, collected data from field work were cleaned and edited for spelling mistakes and inconsistencies before entries were made for analysis. Data analysis was carried out manually. For the different research objectives, content and thematic analyses were conducted. Finally, the study found that diplomatic relations conspire or combine to impede programmes put in place to deal with illegal mining, therefore, resulting in the destruction of the natural environment especially forest and water resources.

KEY WORDS

Development

Diplomatic Relations

Environment

Illegal Mining

Law Enforcement

Migration

Sustainable

Sustainable Development

Trade

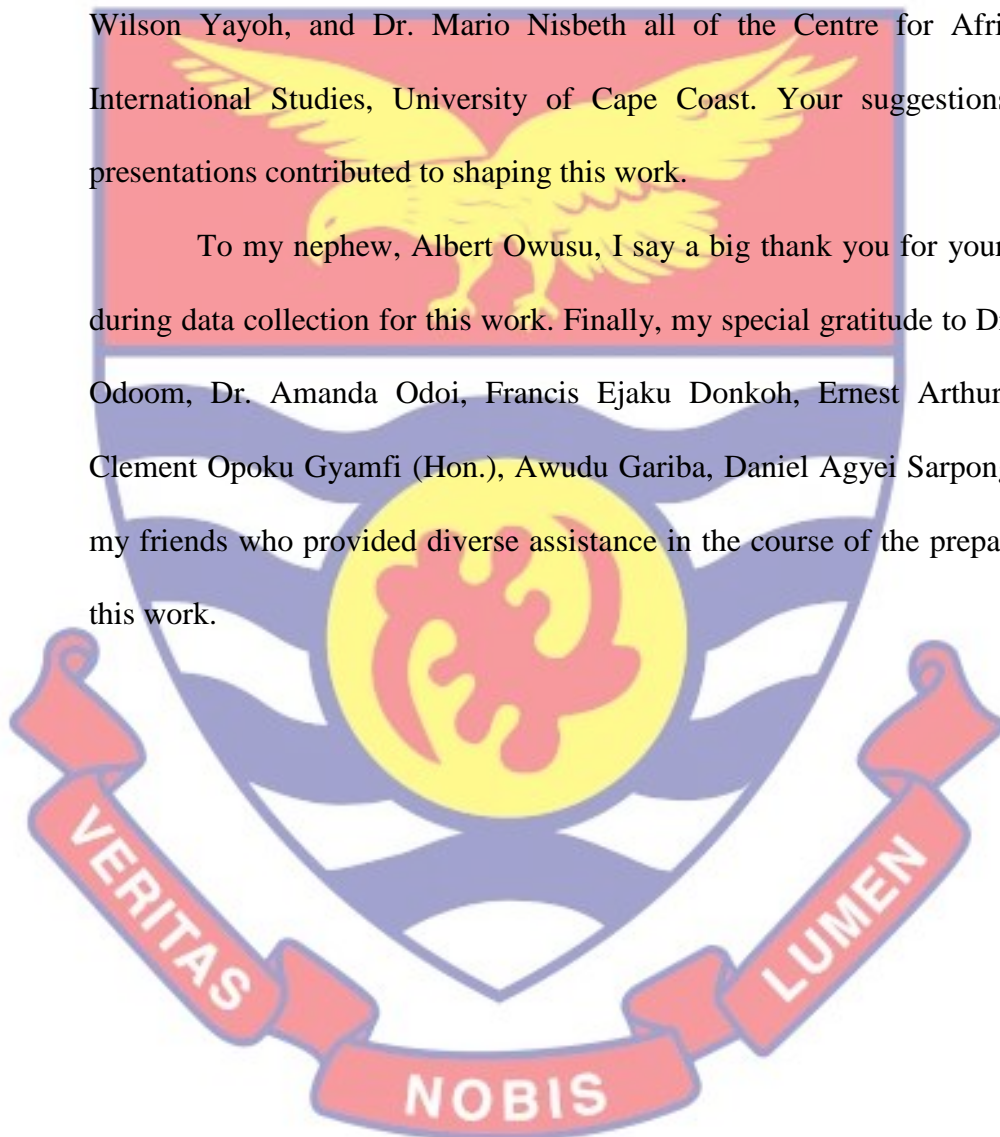
Trade Relations



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DEDICATION

To my wife, Ophelia Mensah Yeboah and daughter, Yeboah-Mensah Adom

Maame Akua Agyapomah



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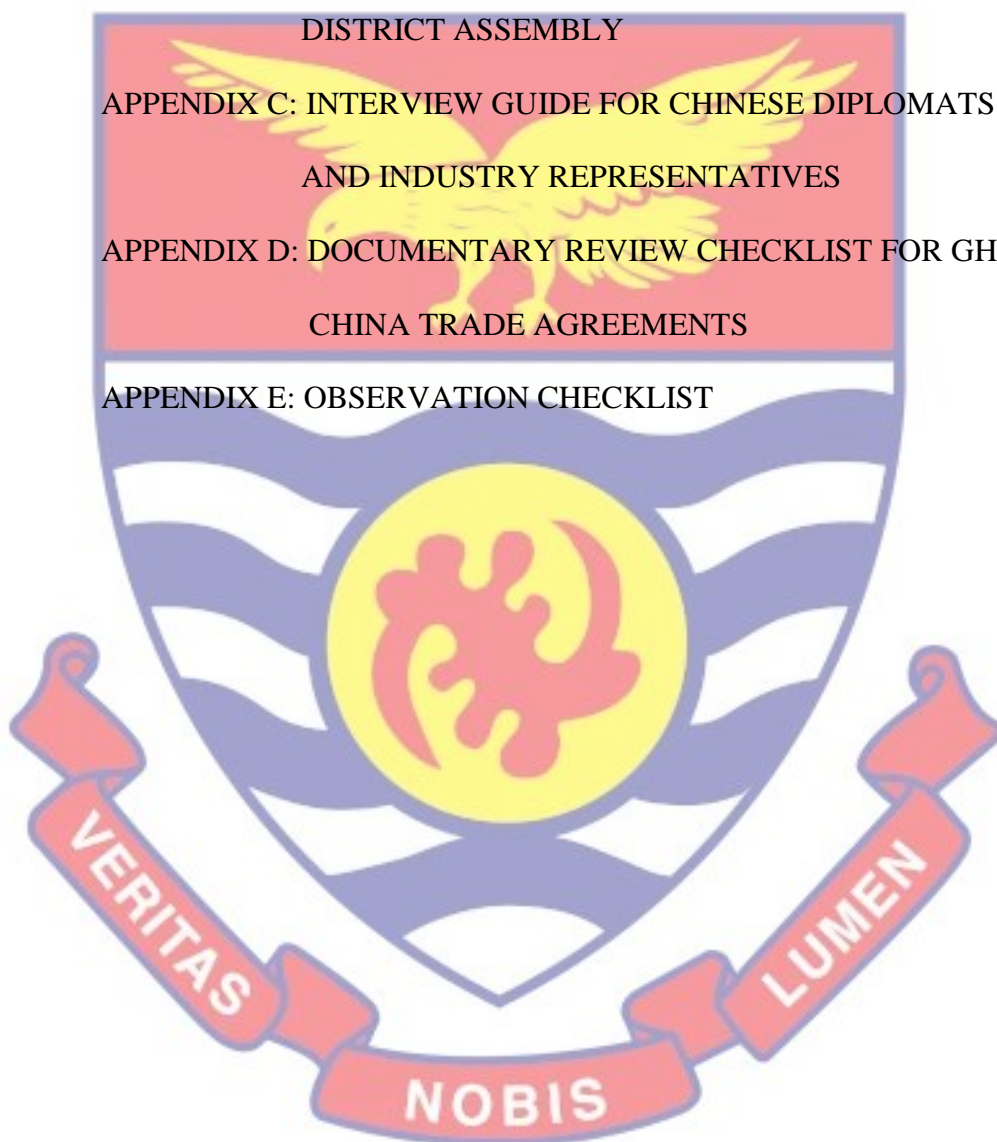
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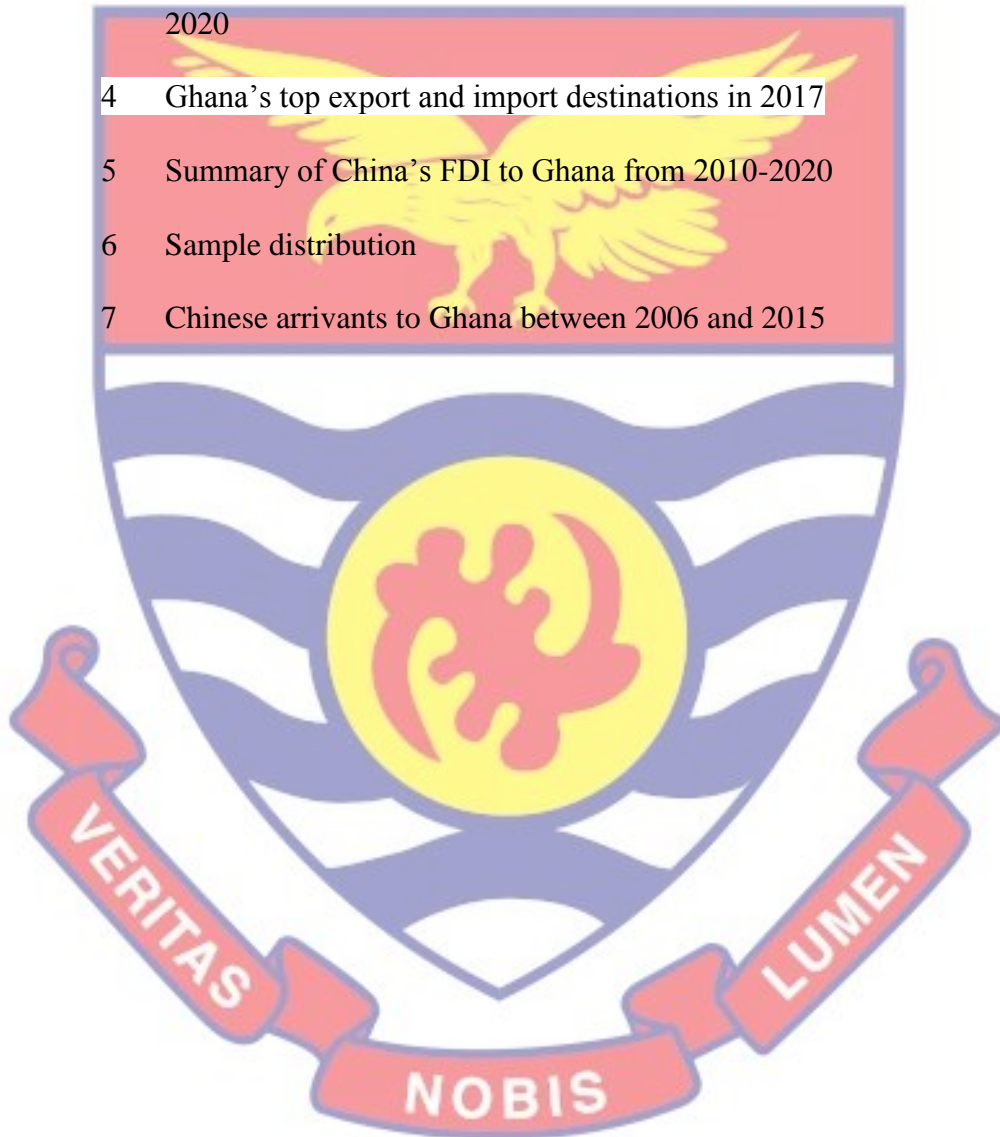
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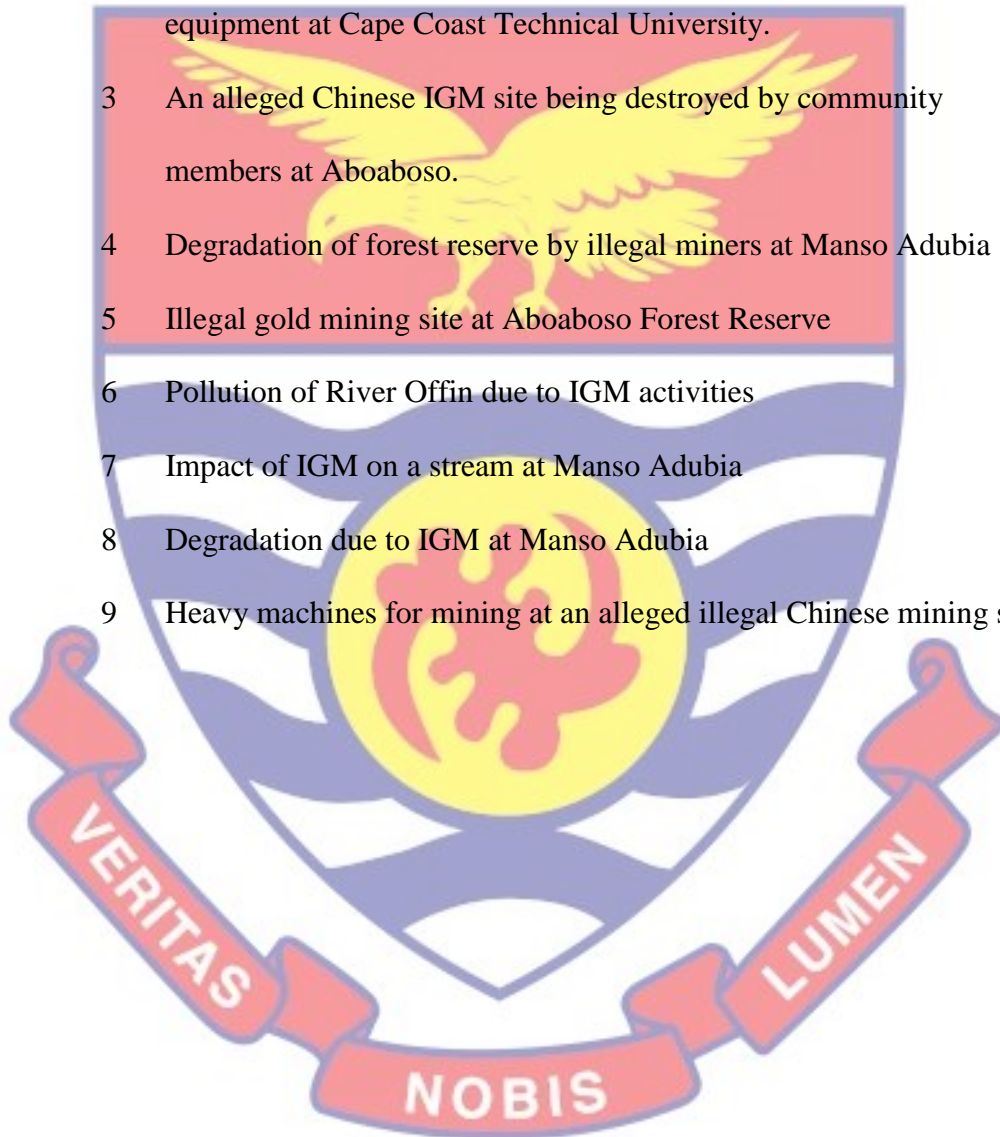
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LIST OF ABBREVIATIONS

AGOA:	Africa Growth and Opportunity Act
ASDA:	Amansie South District Assembly
ASM:	Artisanal and Small- Scale Mining
AU:	African Union
AVIC:	Aviation Industry Corporation of China
CBD:	Convention on Biological Diversity
CDB:	China Development Bank
CIIM:	Chinese Involvement in Illegal Mining
CIRR:	Commercial Interest Reference Rates
CO ₂ :	Carbon Dioxide
COVID-19:	Coronavirus
DRC:	Democratic Republic of Congo
EPA:	Environmental Protection Agency
EU:	European Union
FAO:	Food and Agriculture Organisation
FDI:	Foreign Direct Investment
FDMP:	Forestry Development Master Plan
FOCAC:	Forum of China Africa Cooperation
G8:	Group of Eight
GCR:	Ghana-China Relations
GCT:	Ghana-China Trade
GDP:	Gross Domestic Product
GFW:	Global Forest Watch
GIPC:	Ghana Investment Promotion Center



The logo of the University of Cape Coast is a watermark in the background. It features a shield with a yellow eagle with spread wings on a red background. Below the eagle is a yellow circle with a red Swahili symbol. The shield is flanked by two red banners with white text: 'VERITAS' on the left and 'LUMEN' on the right. At the bottom of the shield is a red banner with the word 'NOBIS' in white.

GIS:	Ghana Immigration Service
GNPC:	Ghana National Petroleum Commission
IFIs:	International Financial Institutions
IGM:	Illegal Gold Mining
IT:	International Trade
IMF:	International Monetary Fund
MDG:	Millennium Development Goals
MFA:	Master Facility Agreement
MINCOM:	Minerals Commission
MNC:	Multinational Corporation
MLNR:	Ministry of Lands and Natural Resources
MOFCOM:	Ministry of Commerce
MOFEP:	Ministry of Finance and Economic Planning
MOTI:	Ministry of Trade and Industry
MPSA:	Master Project Support Agreement
NAM:	Non-Aligned Movement
NATO:	North Atlantic Treaty Organisation
NEPAD:	New Partnership for African Development
NFPDP:	National Forest Plantation Development Programme
NGO:	Non-Governmental Organisations
OAU:	Organisation of African Unity
OECD:	Organisation for Economic Co-operation and Development
PRC:	People's Republic of China

REDD+: Reducing Emissions from Deforestation and Forest Degradation

SD: Sustainable Development

SDG: Sustainable Development Goals

SFM: Sustainable Forest Management

SSM: Small Scale Mining

SSGM: Small Scale Gold Mining

SSIM: Small Scale Mining/Illegal Mining

UK: United Kingdom

UN ECOSOC: United Nations Economic and Social Council

UN: United Nations

UNCED: United Nations Conference on the Environment and Development

UNCHE: United Nations Conference on the Human Environment

UNCTAD: United Nations Conference on Trade and Development

UNEP: United Nations Environment Programme

UNFCCC: United Nations Framework Convention on Climate Change

US: United States

USA: United States of America

VPA: Voluntary Partnership Agreement

WTO: World Trade Organisation (WTO)

CHAPTER ONE

INTRODUCTION

Background to the Study

International trade (IT) as a tool of diplomacy and foreign relations has occurred since the earliest civilisations. According to Bjelić (2008), it continues to play an important role in the world economy and development. IT helps countries to compensate for what they do not produce by importing them. It also offers countries which produce in excess, opportunities to export the surplus to states which do not have them. McMillan and Rodrik (2011) indicate that the flow of foreign direct investment (FDI) is as a result of increased trade relations between nation states. Therefore, neoliberal theorists argue that free trade promotes development among nation states (Adams, Dee, Gali, & McGuire, 2003).

The World Bank (2019), states that total world trade reached \$39.7 trillion in 2018. Out of this, \$20.8 trillion were in exports and \$18.9 trillion were in imports. It adds that trade drives 46% of the \$86 trillion global economy (World Bank, 2019). In spite of the importance of trade to the world economy, Reed (1996 cited in Harris, 2004) argues that trade has led to land degradation and destruction of the natural environment especially forests and water resources. Harris (2004) adds that foreign investment in resource-based industries, particularly oil extraction and mining, results in significant loss of local vegetation and environmental problems.

Nevertheless, trade plays a critical part in development. Many states in the developed world, since the fifteenth century are heavily dependent on the

imports of natural resource products for national development (Harris, 2004). It is worthy of note that the eighteenth century Industrial Revolution prompted Great Britain to link overseas territories such as Africa for raw materials, markets and investments. By the last quarter of the nineteenth century, other industrial capitalist countries notably France, Belgium, Portugal, United States of America (USA) and Germany challenged Britain's commercial supremacy and the scramble for Africa began (Harris, 1987).

Harris (1987) notes that, as a result Africa became an integral part of the world capitalist economy. It primarily functioned as producers of raw materials for western industrial manufacturing. Agriculture was redirected to produce primary goods and cash crops such as coffee, timber, tea, cocoa, and sugar (Farah, Kiamba & Mazongo, 2011; Harris, 1987). Africa, therefore, concentrated on the production of what it needed less (cash crops) and produced less of what it desired most (foodstuffs). This resulted in unfair trade and exchange between rich and poor countries (Farah, Kiamba & Mazongo, 2011; Harris, 1987; Rodney, 1986). This phenomenon has persisted up to the present.

As we entered the new millennium, the USA created the Africa Growth and Opportunity Act (AGOA) in the year 2000. China on the other hand, established the Forum of China Africa Cooperation (FOCAC) in in the same year. The creation of AGOA and FOCAC by the USA and China respectively were to further deepen cooperation with Africa. Some African states were skeptical and pushed new initiatives and visions for the transformation of the continent. In furtherance to the above, there was the need to revive the African integration agenda. This led to the formation and inauguration of the African

Union (AU) in July 2002 in Durban, South Africa after the disbandment of the Organisation of African Unity (OAU) (AU, 2006).

In addition, the New Partnership for African Development (NEPAD) was launched in July 2003 (AU, 2006). According to the AU (2006), the main goal of NEPAD was to strengthen relations with the Group of Eight (G8) countries in terms of development assistance and investment. Despite the fact that the NEPAD project emphasised mutual partnership with the G8 nations, Africa was largely dependent on the developed-world for financial assistance. As a result, it has become clear that relying on traditional donors for support has made it difficult for NEPAD to change the current framework of Africa's diplomatic ties and foreign policies with the North (AU, 2006).

Institutionally, the AU which is modeled after the European Union (EU) seeks; to achieve greater unity and cooperation among African states. It also aims to protect the sovereignty, territorial integrity, and independence of its Member States. Finally, the AU is to accelerate the continent's political and socioeconomic integration (AU, 2006). Given the nature of African international relations and powerful blocs in the West, the AU has faced several challenges right from its inception. At the turn of the 21st century, African countries began to reflect on their previous experiences with the West and assessed their internal and external circumstances (AU, 2006). The impacts of globalisation have started to reshape Africa's political and economic environment. As previously stated, Africans have pressed for international cooperation through NEPAD, working with both traditional alliances and newly emerging economies such as China as needed to promote growth and its interest (AU, 2006).

The emergence of China as a modern economic powerhouse has become a significant and alternative source of African development (Baah & Jauch, 2009). Africa's international relations from the 1990s have seen a marked step change. Aydin and Tekin (2015) states that from 2000, China has forged close ties with Africa especially in the area of development. In the year 2000, China established the FOCAC as part of its strategy into Africa (Aydin & Tekin, 2015). The FOCAC's action plan includes investments, business cooperation, trade and finance, technology transfer among others (Aydin and Tekin, 2015). Since then Africa has increased its relations with China.

The World Bank (2015) indicates that China outperformed the USA in 2009 to become the largest trading partner of Africa. According to MOFCOM (2018) and FOCAC (2010), China-Africa trade moved from US\$10 billion in 2000 to US\$91.07 billion in 2009. By 2018, it had reached US\$204.19 billion. Data from China's General Administration of Customs at the Ministry of Commerce (MOFCOM) indicates that the country's combined import and export value with Africa in 2018 was US\$204.19 billion, up 19.7% from the previous year (MOFCOM, 2018). Also, MOFCOM (2018) reports that China's exports to Africa rose by 10.8% to US\$104.91 billion, while imports increased by 30.8 percent to US\$99.28 billion; the surplus was US\$5.63 billion, down 70.0% year on year. China's trade with Africa grew at the fastest pace in the world in 2018. In addition, the rate of increase in imports was the highest in the world, 15 percentage points higher than the rate of rise in international trade imports over the same period (MOFCOM, 2018).

Cheru and Obi (2010) and Marafa (2007) explain that while formal relations between China and Africa were formed in 1955, trade and cooperation

between them dates back more than a century. Marafa (2007) states that China has set up trade relations with nearly 40 African countries. In addition, it has established more than 150 trade companies and trade and investment promotion centers throughout the continent (Marafa, 2007). China offers Africa an alternative to the West. Overall, there has been an increased engagement between Africa and China. McMillan and Rodrik (2011) submit that the flow of FDI from China to Africa is as a result of increased trade relations. Africa has become closer to China and Baah and Jauch (2009) argue that China's raw material demand has driven up the price of a number of African commodities on the global market.

Despite the huge opportunities China presents to Africans, questions have arisen as to whether China in Africa is an opportunity or threat. To Bai and Dent (2009), the rapid industrialisation of China, population growth and its quest to become a global superpower intensified pressures on the environment in China causing land degradation, pollution, and emission of greenhouse gases. Bai and Dent (2009) and Mushkat (2009), explain that industry is a substantial source of deforestation, greenhouse gas emissions, and waste generation, all of which have negative consequences on the health of humans and the atmosphere. Khan and Chang (2018) observe that the Chinese government acknowledged the problems and proposed some solutions, resulting in several changes and regulations, such as the Environmental Protection Tax Law 2017, Air Pollution Prevention and Control Action Plan. However, Khan and Chang (2018) contend that government reactions were criticised as insufficient because enforcement was weak.

In view of the above discussions, China's relationship with the environment both home and in Africa has become a subject of discussion and scrutiny. This is especially so because, China's investments in Africa are mostly in the extractive sector (natural environment) and their imports are primary commodities (Wilkes, 2016; Renard, 2011). Harris (2004) argues that the growth of foreign trade has highlighted the issue of the link between trade, development and the environment. According to Copeland (2009), trade is causing the depletion of fishery, forestry and other renewable resources in many countries in the world. Therefore, Dasgupta (2012) submits that the World Trade Organisation (WTO) found it increasingly difficult to disregard environmental issues in the 1990s.

In view of this, the Committee on Trade and Environment was formed in 1994 in Marrakesh (Dasgupta, 2012). The committee's basic principle is to determine the relationship between trade and environmental policies in order to facilitate long-term sustainability (Damien & Graz, 2001 cited in Dasgupta, 2012). Harris (2004) adds that in order to achieve resource conservation and environmental protection, the World Trade Organisation (WTO) recognises a special exception to trade rules. To Harris (2004), the WTO encourages efforts by countries to use trade as a tool to influence environmental policy especially outside their borders. As a result, the WTO gives responsibility for environmental regulations and policies to remain at the national level. International trade policy decisions, therefore, should not be complicated by environmental concerns which may undermine global effort in safeguarding the environment and climate change action (Harris, 2004).

According to the United Nations (UN, 2015), one of the most critical issues of today is climate change and its negative consequences. Climate change is linked to “rising global temperatures, rising sea levels, and ocean acidification, all of which have an effect on coastal regions and low-lying coastal countries, including many least developed countries and small Island developing states. The survival of many societies, and of the biological support systems of the planet, is at risk” (UN, 2015:4). Consequently, environmental protection and climate change action have become key parts of the UN SDGs.

For example, SDG 13 calls for an urgent action to combat climate change and its implications. Furthermore, the aim of SDG 15 is to “protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and biodiversity loss” (UN, 2015:18). Achieving SDGs 13 and 15 are critical for the attainment of no poverty, zero hunger and good health and well-being as spelt out in SDG 1, 2 and 3 respectively. These discussions clearly suggest that environmental consciousness has been gaining strength in global politics and policies. This gives credence to green politics as outlined in the green theory. This theory advocates for long-term ecological protection as against short-term political interests which undermine the environment and sustainable development (Dyer, 2017; Goodin, 1992). Concerns about the destruction of the environment and the impacts of climate change have heightened the fear of Chinese presence and activities in Africa and, in particular, Ghana.

Ghana is a beneficiary of Africa’s engagement with China. It is among Africa's top ten leading trade partners with China. Historically, diplomatic ties between Ghana and China dates back to 1960 (Frimpong & Nubuor, 2013).

Since the creation of FOCAC in 2000, economic cooperation between China and Ghana has strengthened. China has provided Ghana with development alternatives and support. At present, China is Ghana's number one importer and second exporter (UN Comtrade, 2019). There has been a surge in Ghana-China relations (GCR) and trade relations over the past decade. For example, the Chinese government has financed projects such as the Bui Hydro-Electric Dam, Kotokuraba Market, and the Cape Coast Stadium. Others include the 17-kilometer Ofankor-Nsawam route, the development of landing sites for fishing communities, and the Afife rice project.

Furthermore, in 2018, the two states signed eight (8) cooperation agreements. This includes the \$2 billion Master Project Support Agreement (MPSA) with Sinohydro Corporation Limited for infrastructural development in Ghana (FOCAC, 2018). In return, China will receive alumina supply (FOCAC, 2018) from bauxite mining in Atewa, Awaso and Nyinahin. Environmental groups such as Green Livelihood Alliance, Concerned Citizens of Atewa Landscape, KASA Initiative Ghana, Coalition of Non-Governmental Organisations (NGOs) against Mining in Atewa Forest and the Civil Society Organisations platform for SDG 15 have all kicked against the mining of bauxite in the Atewa forest. They argue that it could potentially have a negative impact on the forest reserve. This may affect the livelihood of over five million Ghanaians whose source of water comes from the forest.

Some critics argue that China's mining activities in Ghana may cause destruction to the natural environment and lead to dependency/neocolonialism. Other analysts also argue that GCR is good particularly in the area of trade, infrastructure finance, low interest loans, investments etc. Despite the criticisms

of China for lack of good environmental practices, its presence in Ghana has reduced the influence of Europe and America which hitherto controlled the economy during the colonial rule and decades after independence.

Ghana is an open state for trade and investment and in view of this; some foreign nationals take advantage of Ghana's drive for FDI. Recent reports of increased Chinese presence in Ghana, their disregard for the law and human rights as well as engagement in illegal gold mining (IGM) and logging have heightened awareness of their threat to the natural environment (Botchwey, Crawford, Loubere, & Lu, 2018). Bofo, Paolo and Dotsey (2019), indicate that about 50,000 Chinese gold miners have relocated to Ghana to engage in small-scale/illegal mining (SSIM) since the early 2000s. The involvement of Chinese migrants in SSIM is alarming. Legal and institutional arrangements guiding SSM in Ghana therefore, need critical attention. This is to safeguard forest resources and climate change mitigation efforts.

The World Bank (2006) indicates that Ghana's natural environment which supports the nation's economic activity and the livelihood of the people is being exhausted at an unprecedented pace. This is due to illegal mining and logging. Botchwey et al (2018) explain that small-scale alluvial mining and, in particular, IGM activities have caused serious environmental problems and soil degradation in Ghana. In addition, IGM destroys agriculture. The use of hazardous chemicals such as cyanide and mercury for processing gold also causes surface and ground water pollution (CSIR–Water Research Institute 2013 cited in Botchwey et al, 2018). Health-related pollution and the destruction of water bodies as a result of IGM have become health threats for the majority of the population (Botchwey et al, 2018).

It must be noted that these factors threaten the growth of Ghana's gross domestic product (GDP) (World Bank, 2006). The World Bank (2006) notes that Ghana's recent economic growth achievements, from a broader perspective, look much less remarkable and far less sustainable if analysed from its productive base not just in terms of GDP growth, but also in terms of human, natural, and social capital. In 2018, Global Forest Watch (GFW, 2019) estimates show that Ghana's primary rainforest loss increased by 60% from 2017 to 2018, the fastest in the world. This according to the report is largely due to SSIM. The Chinese migrants' participation in IGM is thus, a threat to Ghana's target towards the attainment of SDG 15.

Statement of the Problem

In 1960, Ghana and China established its first diplomatic relations. Since then, Ghana has given significant diplomatic assistance to China. It has returned the favour with material assistance for Ghana's development (Idun-Arkhurst, 2008; Tsikata, Fenny & Aryeetey, 2008). Ghana's increased cooperation with China has bolstered trade between the two states. This has led to increased Chinese migration to Ghana with some engaging in IGM activities. The involvement of Chinese migrants in SSIM have generated huge debate among the people especially development advocates, the media and environmentalists.

Baah and Jauch (2009) posit that many African leaders, in particular Ghanaian leaders admire China because of its no-strings-attached commitment to aid and investment. Nonetheless, China has been blamed for the recent destruction of the natural environment especially forest resources and water bodies in Ghana. It is alleged that Ghanaian political actors and their Chinese

counterparts provide protection for Chinese miners. This has bolstered the Chinese in galamsey operations (Boafo et al, 2019; Botchwey et al, 2018).

In view of this, there is growing interest and concern among academics, political leaders, diplomats, environmentalists and experts to understand the legal and institutional arrangements for SSM, Chinese involvement in SSIM and its impacts on the environment. Despite Ghana's increased engagement and trade relations with China, past studies by Idun-Arkhurst (2008), Tsikata, Fenny and Aryeetey (2008), Sarpong, (2015), Ibrahim (2018), Botchwey et al (2018), Boafo et al (2019) and others focused on textile industry, investments, Chinese migrants, gold/mining sector and GCR. There exist limited empirical studies on the environmental impacts of Chinese involvement in illegal mining (CIIM), the challenges in the fight against this menace and how diplomatic relations affect law enforcement regimes.

This study is discussed with particular reference to IGM in the Amansie South District Assembly (ASDA) in the Ashanti Region. The district has three forest reserves and two big rivers. There is high deposit of gold in the Amansie enclave and the area is noted for SSIM in Ghana. In addition, the Amansie South District has seen the influx of Chinese in the last two decades. According to the Ghana Immigration Service, Chinese illegal miners in the district constitute over 70% of 700 illegal miners repatriated in 2013 in the district (ASDA, 2021). These characteristics therefore, offer the researcher the opportunity to cover different mining sites to understand the impact of IGM on forest and water resources and the involvement of Chinese miners in the practice.

Research Objectives

The main objective of this study is to interrogate the environmental impacts of Chinese involvement in IGM and how diplomatic relations conspire or combine to impede programmes put in place to deal with IGM, therefore resulting in environmental destruction in Ghana. Specifically, the study seeks

to:

1. Examine the factors influencing Ghana-China trade (GCT) relations.
2. Investigate the reasons for Chinese migration to Ghana
3. Evaluate the influence of diplomatic relations in dealing with illegal Chinese miners in Ghana.
4. Explore the environmental impacts of IGM in Ghana.
5. Analyse the institutional framework guiding SSM and the failure of programmes put in place to deal with IGM.

Research Questions

1. What are the factors influencing Ghana-China trade relations?
2. What are the reasons for Chinese migration to Ghana?
3. How does diplomatic relations affect law enforcement?
4. What are the environmental impacts of IGM in Ghana?
5. a. What are the legal and institutional framework guiding SSM?
b. What account for the failure of programmes put in place to deal with IGM?

Significance of the Study

The livelihood of individuals and states around the world are threatened by environmental degradation. Ghana is fast losing its natural resources for many reasons and faces issues of environmental degradation and global warming. Small-scale mining (SSM), illegal logging, fishing and wildlife trade, robs the state of precious natural resources and ultimately of development benefits and livelihood. The study thus, seeks to offer insights into the environmental impacts of CIIM in Ghana and how diplomatic relations conspire to impede programmes put in place to deal with this menace. It also highlights the need to examine institutional framework and programmes put in place to deal with illegal Chinese miners in Ghana and step up plans in order to achieve sustainable development goal (SDG) 15. The findings of the study stand to offer academics, environmentalists and development advocates a tool to engage stakeholders in addressing CIIM. It will also shape and inform public discourse on GCR. Finally, the study seeks to contribute to theorising the environmental impacts of GCR to safeguard SDGs especially SGD 15.

Scope of the Study

Ghana-China trade (GCT) relations could be looked at from different perspectives. These are: politics, trade, investments, infrastructure finance, loans etc. However, the study is focusing on the environmental impacts of CIIM in Ghana. The study also looks at GCT relations from an environment perspective taking into consideration the role of diplomatic relations in the enforcement of local laws. Attention will be paid to issues including GCT relations, Chinese migration to Ghana, Chinese activities and investments in

Ghana, its environmental impacts, institutional framework and law enforcement. The study provides brief background of Africa and Ghana's past trade relations with China, environment and politics. The study also discusses the relationship between trade, environment, forest management and development. The scope of the study also focuses on the conceptual issues of GCT relations.

Organisation of the Study

The study is made up of seven chapters. Chapter one presents the introduction, which focuses on the background, statement of the problem, study objectives, research questions, scope of the study, significance of the study and organisation of the study. Chapter two looks at the theories, some concepts on GCT relations and presents the conceptual framework guiding the study. Chapter three focuses on brief background of Africa's trade relations with China, Chinese activities and investments in Ghana since 2000, environmental impacts of Chinese activities in Ghana and law enforcement and GCT and investment relations since 2000.

Chapter four outlines the main methodology used to gather as well as analyse the data. It discusses the study area, study design, different data sources, target population, sample size, sampling procedure, instrumentation, data management and limitations to the study. The fifth chapter presents the results and discusses the data collected on the factors influencing GCT relations, especially in relation to the main research questions. Results and discussions on the reasons for Chinese migration to Ghana, and the influence of diplomatic relations in dealing with Chinese illegal miners in Ghana are also presented in

this chapter. Chapter six discusses the environmental impacts of IGM in Ghana, legal and institutional framework and the failure of programmes put in place to deal with this menace. Chapter seven presents the summary, conclusions and recommendations of the study as well as areas for further study.



CHAPTER TWO

LITERATURE REVIEW, THEORETICAL AND CONCEPTUAL FRAMEWORK

Introduction

Literature review is an important aspect of the research process. It provides contribution to every aspect of the research. It helps researchers to establish the theoretical, conceptual and empirical bases of their studies; clarifying their ideas; and developing their research methodology (Jesson, 2011; Kumar, 2011; Hart, 1998). According to Fink (2014), review of literature is the examination of books, academic works, and relevant materials in a certain discipline, field of research, or theory. It gives a description, summary, and critical assessment of the study in relation to the research problem under study (Fink, 2014).

Furthermore, literature review helps to enhance and improve researchers' own knowledge base. It also helps researchers to situate their findings within the existing body of knowledge and frameworks (Kumar, 2011). In addition, Snyder (2019) states that the review is an excellent way to synthesise study findings and present evidence on a meta-level, as well as indicate areas where additional research is needed. Therefore, the literature review in this chapter serves to highlight how academics have discussed GCR, the impact of Chinese IGM in Ghana and how this affects the environment and development in the country. This chapter also uses this body of literature to help in establishing the main theoretical framework of the study. Finally, it also discusses the conceptual framework informing the study.

Theoretical Perspectives

The study is guided by the dependency theory which explains traditional trade relations that exists between the rich/developed/Global North and the poor/developing/Global South countries. This study is of the view that China's relations with Africa may lead to dependency if Africa fails to protect its natural environment and ensure that industrialisation takes place in Africa. Furthermore, if the current structure of trade, where Africa is a producer of raw materials and China, an exporter of manufactured goods continues, the former's environment will be depleted and lead to loss of livelihood of the people and consequently cause dependency.

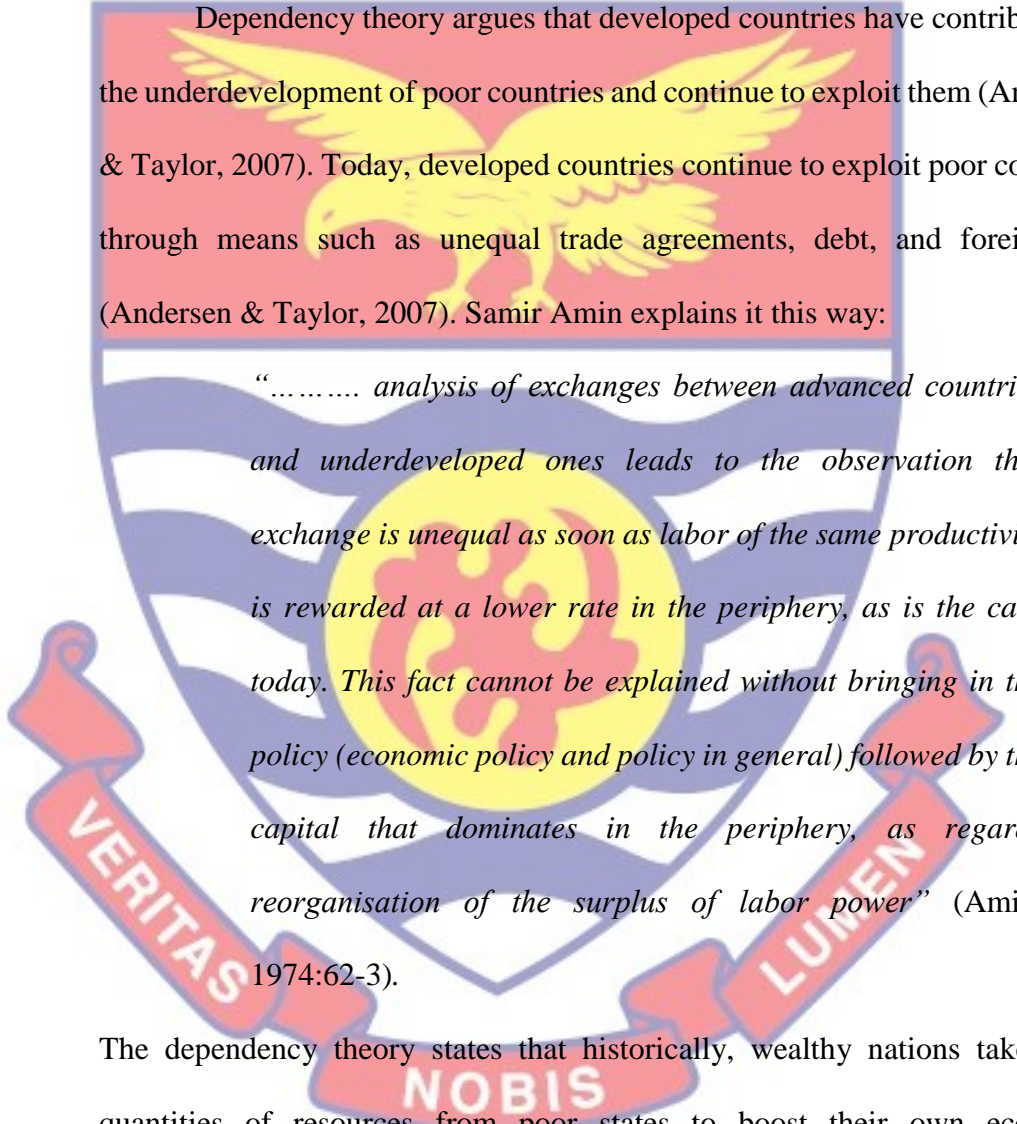
Contrary to these views, optimists believe that the current China-Africa relations (CAR) can bring development to African states as it provides development alternatives to the West. The current phase of Africa's development requires development assistance, low interest loans and infrastructure finance, which China provides. The West on the other hand is not enthused about providing huge infrastructural finance which Africa critically needs. Even if they do, it comes with stringent conditionalities.

Dependency Theory

The dependency theory was developed in the late 1950s by Raul Prebisch, Celso Furtado, and Aníbal Pinto at the UN Economic Commission for Latin America (Ferraro, 2008). It posits that economic activities in the wealthier states mostly resulted in severe economic challenges in the poorer states. In other words, developing countries export raw materials to rich countries for manufacturing (Ferraro, 2008; Dos Santos, 1971). The manufactured products

out of the exported commodities are imported to the poorer countries. Dos Santos (1971) defines dependency as “an historical condition which shapes a certain structure of the world economy such that it favours some countries to the detriment of others and limits the development possibilities of the subordinate economies” (Dos Santos, 1971:226).

Dependency theory argues that developed countries have contributed to the underdevelopment of poor countries and continue to exploit them (Andersen & Taylor, 2007). Today, developed countries continue to exploit poor countries through means such as unequal trade agreements, debt, and foreign aid (Andersen & Taylor, 2007). Samir Amin explains it this way:



“..... analysis of exchanges between advanced countries and underdeveloped ones leads to the observation that exchange is unequal as soon as labor of the same productivity is rewarded at a lower rate in the periphery, as is the case today. This fact cannot be explained without bringing in the policy (economic policy and policy in general) followed by the capital that dominates in the periphery, as regards reorganisation of the surplus of labor power” (Amin, 1974:62-3).

The dependency theory states that historically, wealthy nations take large quantities of resources from poor states to boost their own economic development (Andersen & Taylor, 2007). The theory explains the persistent poverty of the poorer countries as a consequence of capitalist exploitation (Ferraro, 2008; Frank, 1979). Furthermore, Ferraro (2008) and Frank (1979) stress that dependent states serve as sources of surplus capital, outdated

inventions, and finished goods, in addition to providing cheap resources, agricultural supplies, and cheap labor.

According to Speed and Dannreuther (2011), the current Africa-China development and economic relations may lead to Africa replicating its past North–South dependency. That is, the economic direction of Africa may be controlled by the growth and development of China. Therefore, optimists argue that Africa should seek increased partnership with China. This will lead to improved economic relations with China and development of African states. Ferraro (2008) contends that relations between dominant and dependent states have always reinforced and also intensified the unequal patterns that benefit dominant states. Here, China is seen as the dominant force with Africa as the dependent state. There is an anticipation that this relation may lead to dependency. In view of this, pessimists have argued that China, which is a mega economy, is likely to exploit and colonise Africa.

The dependency theory has been criticised for its failure to examine the relevance of externally imposed development initiatives. It does not critically explain the underdevelopment of poor states (Namkoong, 1999). It is also seen as dated in scholarship and limited in scope. Even though the dependency theory offers criticism to the modernisation theory, it does not offer any development alternative. In spite of the fact that the dependency theory is dated in scholarship on international affairs and politics, it remains relevant in terms of influence. An examination of the relations and impact of Chinese engagement in Africa clearly point to the usefulness of the dependency theory. Africa exports raw materials to China and imports manufactured goods. This kind of relations brings an unfavourable and unequal trade balance as explained by Amin (1974)

and Cox and Jacobson (1974). Cox and Jacobson (1974:1) explain that, in a state of dependence,

Economic growth is skewed so as to induce and perpetuate balance of payments deficits, to distribute income and wealth in a highly unequal manner, and to increase marginality in society. The relationship of dependency is created and maintained by a coalition of individuals in both the dominant and subordinate states who benefit from it and who act to ensure that their states pursue appropriate policies. The overall system, however, provides greater benefits for the dominant states than for those in subordinate positions.

Even though sino-pessimists argue that CAR may lead to exploitation and colonisation, neoliberal theorists Roskin, Cord, Medeiros and Jones (2013) argue that underdeveloped/poorer nations did not come to sound economic practices early. They add that once poorer nations learned the techniques of modern economies such as privatisation, free trade etc., they will prosper. In effect, the underdevelopment of Africa is largely due to its failure to take advantage of free trade and not dependence on the West. Thus, if Africa takes advantage of opportunities China presents especially in the area of trade alternative, infrastructure finance, investment and low interest loans under a neo-liberal world order, it will develop. This is explained by the accommodation school of thought. It posits that there is no alternative development to the Beijing and Washington Consensus'. This belief echoes Rowtow's modernisation theory which lays emphasis on international free trade.

Neo-liberal Theory

Neo-liberal theory (a free market economy) is essentially a revival and reformulation of classical liberalism. Classical liberal theorists including Adam Smith, postulated that government regulation and involvement in the economy with monopolies, subsidies, tariffs, and other restraints impede competition, efficiency, growth, and prosperity (Roskin, Cord, Medeiros & Jones, 2013 cited in Yeboah, 2017). Neoliberalism, according to Hay (2004), sees markets as the only efficient means to allocate scarce resources and that labour market flexibility is necessary.

Also, it explains that international/foreign free trade is preferable but state intervention is undesirable. Scholars such as Peck and Tickell (2002), Larner (2000) and Jenson (1999) have all used market relations to explain the neoliberal theory. For the purposes of this study, emphasis shall be laid on international free trade as a desirable instrument for development. In neoliberal reforms, it is necessary to shift from a protection-based domestic economic planning model to one that is more market-based by removing domestic restrictions that make cross-border trade difficult (Barkin, 2001).

Today, through globalisation, national economies are linked through international markets for products and factor markets. This has resulted in the expansion of cross-border movements of goods, capital, and labour, as well as flows of information, technology, and management know-how. Harvey (2005), states that neoliberalism is the main driver of globalisation (increases in IT relative to world GDP, and the rise of FDI and Multinational Corporations (MNCs). Even though Africa has been integrated into the capitalist economy, and after decades of trading with powerful blocs, development as underlined in

the neoliberal approach, continues to elude the continent. Instead, development driven by free trade continues to benefit Western capitalist states (Ghosh, 1997).

Nonetheless, neoliberalism has been criticised for not paying attention to the protection of the environment but economic development. The application of neoliberal concepts in different parts of the world has ramifications for the environment. Opponents of neoliberal initiatives argue that it causes havoc on the environment. Copeland (2009) argues that cross border trade causes environmental destruction. In addition, Paterson (2000) adds that neoliberalism does not pay attention to environmental issues as the most essential aspect or component of international relations and world politics.

In other words, neoliberalism pays attention to short term economic development and promotes efficient production. In addition, the neoliberal theory is referred to in this study to explain free trade, guided by free market principles, as an instrument that links different economies together for enhanced economic development. Environmental protection thus, is always seen as a long term goal (Paterson, 2000) contrary to the position of green theorists who argue that the environment must be protected for the continuation of humanity (Tarhan, 2018).

It can be argued in this regard that Ghana and China have taken advantage of the current globalised and neoliberal world order to come together to pursue mutual economic interests. As stated previously in chapter one, China is driven by the demand for natural resources to support its economic development. Its investments in Ghana have mostly been in the agriculture and extractive sector. Ghana on the other hand, is motivated by China's non-interference policy and has approached the Communist State for development

assistance, infrastructure finance and low interest loans. Thus, the two states have so far not paid attention to environmental protection and conservation in Ghana (Boafo et al, 2019). This is contrary to the tenets of the green theory which prioritises both economic development and environmental protection. Finally, the green theory is examined as it underscores the importance of the natural environment to economic growth and the attainment of UN SDG 15.

Green Theory

According to Patterson (2009), green theory is a more relatively modern theory in international relations. It focuses on environmental conservation as a result of the emergence of environmental problems and human impact on the environment. Green theory redefines issues such as environmental conservation and climate change in terms of the protection of the ecology for a long-term other than the current political interests (Dyer, 2017) which often undermine environmental protection. Green theory is ecocentric and puts the natural environment ahead of people. Ecocentrism prioritises healthy ecosystems and the environment because they are critical for human health and well-being. Like free trade, Dyer (2017:2) indicates that

“air and water pollution can cross borders and climate change cuts across all borders and populations. Simply, human populations are ecologically interconnected. This is the reason why we deal with transboundary and global environmental concerns collectively, setting aside national self-interest because global environmental problems require global solutions”.

Tarhan (2018) argues that production and efficiency are essential for globalisation and free trade to thrive. Tarhan (2018) adds that increasing impacts of industrialisation, globalisation and technological development underpinned in the neoliberal agenda have been beneficial for our lives but have also created many problems including environmental problems.

In contrast, Tulloch and Neilson (2014) argue that the Rio Declaration Principle 11 emphasises a neoliberal agenda on the opening up of trade barriers internationally in the pursuit of economic growth and the mutual benefit of the environment. For example, Agenda 21 emphasises the importance of balancing environmental and economic imperatives, and contributes towards environmental protection (Tulloch & Neilson (2014); UN Environment Programme (UNEP), 2010). Green theory is important to this study because it explains the need to pursue sustainable development which protects the environment and caters for the needs of the present and future generations within the context of an awareness of globalised economy.

Environmental protection gives rise to shallow and deep ecological views. Naess (1973) notes that the right of all forms (of life) to live is a universal right that cannot be measured from an ecological standpoint. No one species of living creature has a greater claim to life and development than any other. Sessions (2014) adds that the earth does not serve as a means for humans to freely exploit. This is explained by deep ecology (ecology-centered thought) which holds that the survival of any part is dependent upon the well-being of the whole (Naess, 1989).

It recognises that healthy ecosystems are critical conditions for human health, wellbeing and survival. In contrast, shallow ecology promotes

anthropocentrism (human-centred thought) and sees no reason in protecting the environment if it does not benefit humans. According to Naess (1989), shallow ecology promotes only the short-term instrumental value of nature to humans. Therefore, environmental protection should only be pursued to the degree that it serves human interests (Sessions, 2014).

These two perspectives are very important in discussions about GCR. Whilst one group is in favour of conservation of the environment, the other group sees no reason to protect the environment when it can support Ghana's economic development. In view of this, the ongoing Ghana-China relations should not only focus on economic growth which may undermine the quality of the natural environment. Rather, GCR should also commit to long-term ecological values and the protection of forest and other natural resources. This is important because Chinese investments in Ghana and imports are mostly in the extractive sector. For example, Ibrahim (2018) states that Chinese companies have made investments in mines which are often located in environmentally sensitive areas where environmental pollution is likely to occur. Ibrahim (2018) argues that Chinese firms tend to violate local forestry laws, abuse permits and concession licenses with the help of African counterparts.

Furthermore, Ibrahim (2018) indicates that the introduction of heavy machines in mining including excavators by foreign miners has the ability to destroy large areas of forest and farmlands. Bofo et al (2019) add that the natural environment is under threat because some of the Chinese illegal miners use sophisticated equipment in mining. It is instructive to note that China faces environmental degradation and pollution because, in its quest to lift the people

from poverty, it fails to take into consideration long-term ecological interests and sustainable development.

Larus (2012) contends that while there was the need for economic advancement in 1978, President Deng Xiaopeng failed to recognise the need for the revitalisation and protection of China's environment as a key issue in the reforms. In view of this, China has achieved tremendous economic development in the last three decades. Despite this feat, it still battles with environmental degradation and pollution inherited from Mao's Great Leap Forward policy for economic growth and social campaign. This policy was championed by the Communist Party of China. It aimed to transform China from a largely agrarian (farming) society to a modern, industrial society in just five years from 1958 to 1962 (Li, 2011; Shapiro, 2001). Li (2011) notes that during the period, forests were cut down and burned to power smelters as part of the backyard steel manufacturing plan, leaving the land vulnerable to erosion. As a result, dense crops and thorough plowing depleted nutrients in farms and exposed agricultural soil to erosion causing famine among the people.

From the foregoing, it can be argued that China's development experience, coupled with its environmental problems, must guide countries as they engage China for economic development. African states, especially Ghana, must be able to balance economic development and environmental protection to achieve sustainable development. This is because, if economic growth becomes the core reason of this engagement, China, whose interest is natural resources/raw materials (oil and minerals), will continue to exploit Ghana's forest resources and cause depletion of the natural environment. If this happens, it will hurt Ghana's efforts in achieving the SDGs especially environmental

preservation, climate change mitigation, quality health, poverty reduction, and food security.

Consequently, the depletion of Ghana's forest resources and environmental degradation may cause Ghana to depend on China as claimed by Sino-pessimist and dependency scholars (Oshodi, 2015). This study calls the current Sino-Africa (South-South) relations, 'neo-dependency' where Africa largely depends on China for trade, loans/aid and investments. It is instructive to note that China's penetration in Africa is largely through the use of soft power (Copeland, 2010; Nye, 2003).

China in Africa has generated a two way debate; positive and negative impacts of the relationship in terms of economic development. Oshodi (2012) describes this dichotomy as "Sino-optimism" and "Sino-pessimism". The optimists' and pessimists' perspectives explain the divisions within 'China in Africa' scholarship and engagement. Whereas optimists see CAR as a good one that can assist the development of Africa, pessimists see China's engagement with Africa as a new scramble for Africa that will lead inevitably to dependency and colonialism. However, Asongu and Aminkeng (2013) argue that China in Africa is neither an issue of pessimism nor optimism. It is rather based on a chain of inescapable evolving globalism and economic liberalism processes to which African nations must accommodate under a neoliberal order. This extends the Sino-Africa Relations discourse beyond the optimist and pessimist perspectives to include the accommodation school of thought.

Optimists, Pessimists and Accommodation Perspectives of Africa-China Relations

As indicated earlier, China's presence in Africa has generated a two way debate among scholars and policy makers in terms of the positive and negative impacts of the relationship. Oshodi (2015) explains that in the China Africa discourse, "Sino-optimism" refers to scholars and African policy makers/leaders who reject the decolonisation tag and instead see the engagement as an opportunity for Africa to develop and a departure from the past Western domination and exploitation. Similarly, Naidu (2007), Anshan (2007) and Le Pere (2007) describe Africa-China engagement as 'partnership,' "South-South" solidarity and 'opportunity' for Africa to develop. Dollar (2008) argues that Africa and China's shared histories have better positioned the former to benefit from Chinese technology and adapt to the Chinese model of development. Optimists see Africa-China relations as a good development alternative and offer Africa an opportunity to develop.

Aydin and Tekin (2015) and Naidu (2007) maintain that Africa's engagement with China, unlike past relations with the West, is a "win-win" partnership where both China and Africa will benefit. Similarly, Dollar (2008) argues that China's development experiences are similar to Africa which gives hope to African states. It must be noted that China's relations provide Africa with development assistance, low interest loans, infrastructure finance and the opportunity of adapting the Chinese development model (Cohen, 2011; Dollar 2008; Shelton & Paruk, 2008). For example, Aydin and Tekin (2015) and Cohen (2011) observe that the China Exim Bank, a state bank and the country's official credit agency, has extended financial credit to many African states.

China has extended more loans to Sub-Saharan Africa than the World Bank in the last decade (Aydin & Tekin, 2015; Cohen, 2011). Cohen (2011)

explains that China extended \$67.2 billion to the world's poorest regions between 2001 and 2010 as compared with the World Bank's \$54.7 billion. In terms of interest on loans, China has employed low-interest loan agreements to deepen its economic relations with Africa and to aid the latter's growth (Aydin & Tekin, 2015). Haroz (2011) states that China sees its international aid programme and investment in Africa as serving both Chinese economic interests and the development of Africa.

Accordingly, almost half of Chinese aid is listed as government assistance, with the remainder consisting of concessionary loans and debt reliefs. Also, between 2009 and 2012, China increased its assistance to Africa, including concessionary loans, from \$800 million in 2005 to a commitment of \$10 billion (Ado & Su, 2016; Haroz, 2011). In the past, Africa had difficulties in attracting finance for infrastructural development but now China is deeply involved in providing finance for infrastructural projects in Africa (FOCAC, 2018; Schoeman, 2007). For example, in 2018, China extended a \$2 billion facility to Ghana for infrastructural development (FOCAC, 2018).

It is instructive to note that the Tanzania-Zambia Railway, which was constructed between 1970 and 1975, for which China issued a zero-interest loan of RMB980 million (\$150 million), is an example of Chinese loans for projects in Africa (Yu, 2016). Cheru and Obi (2011) and Fernando (2007) argue that China provides Africa with a balance of power to the West. CAR are improving, posing an unwelcome threat to the West in Africa (Cheru & Obi, 2011). Although "Sino-optimists", academics and African policy makers/leaders disagree with the decolonisation tag and see CAR as good for Africa's development and a departure from the past western domination and

exploitation, the realities are that, this relation is similar to Africa's past relations with Western European States and the USA.

China claims that its development assistance and low interest loans do not come with conditionalities as characterised by the World Bank/IMF loans and credit facilities. Contrary to this claim by China, as part of conditions for Chinese loans, the Chinese government insists that contracts are given to Chinese companies. These companies bring labour from China to come and work on projects at the expense of Africans who need jobs. Many Chinese companies do not employ Africans, even if they do, they hire people with low skills. Ordinarily, few Africans with middle to high level manpower skills have the chance to work with the Chinese firms working in Africa so that the skills cannot be transferred to local people, keeping Africa perpetually dependent on Chinese skills and labour.

The Sino-pessimists consider CAR as a negative relationship which will not help Africa but lead to colonisation and exploitation of the people and its resources. Tull (2006) explains that the West has always had doubts about the success of CAR. This is because, Africa's gain results in a loss to the West and China's gain is a loss to the West. Nwoke (2007) argues that it is misleading and uninformed to attempt to suggest that this relation will lead to development. According to Oshodi (2015) and Nwoke (2007), China will not help Africa and their presence is a 'new' scramble for Africa.

Pessimists note that China's activities pose danger to the industrialisation of Africa. The pace of industrialisation in China enables it to mass produce products at cheaper costs. Industries in Africa are not able to compete with them. Its exports, therefore, will displace locally produced goods

both domestically and internationally (Sautman & Hairong, 2008; Lee, 2007). Adem (2016) adds that because of the comparative advantage China enjoys, its growing industrial/manufacturing power hurts local industries in Africa.

As a result, this process will compel national economies in Africa to remain as producers of primary commodities similar to old relations (Adem, 2016). Schoeman (2007) observes that there have been concerns that China has been undermining textile industries of various African countries with counterfeit, adulterated and sub-standard products. These situations make it difficult for African companies to compete with their Chinese counterparts, hence the reason for their collapse. Furthermore, pessimists contend that China's poor environmental footprint causing environmental degradation would further impoverish the toiling masses of Africans (Oshodi, 2012). A good number of pessimists have argued these issues within the context of Chinese colonisation thesis (CCT). China is poised to colonise Africa, according to this thesis, rather than guaranteeing a promising future (Oshodi, 2012).

As such Nwoke (2007) and Lee (2006) explain that China's recent influence in Africa is nothing but a second scramble for resources belonging to Africans. Pessimists have noted the systematic manner in which China transfers its citizens to Africa. For example, Baah and Jauch (2009) contend that as a strategy to address the problem of unemployment in China, it sends employees to work on projects carried out by Chinese state-owned companies or through labour brokers in other countries. Behar (2008 cited in Oshodi, 2012) explains that there are as many as one million Chinese citizens "circulating" in Africa. This is because each megaproject announced by China's government creates "collateral economies" and "population monuments" (Behar, 2008 cited in

Oshodi, 2012). This, according to Behar (2008 cited in Oshodi, 2012), will eventually lead to Chinese colonialism and dependency.

For example, Ghana and China signed the Master Facility Agreement (MFA) and the MPSA in 2012 and 2018 respectively. The loan agreements require that 60% and 70% of all contracts under them go to Chinese contractors (Parliament of Ghana, 2018; Parliament of Ghana, 2012). Also, Ghana used the sale of oil and refined bauxite as collaterals for these loans. A similar arrangement was made in 2007 where the Government of Ghana used cocoa exports to China as a guarantee for the \$ 622 million Bui Dam loan (Dreher, Fuchs, Parks, Strange, & Tierney, 2017). The construction of the dam was done by Chinese company, Sinohydro (Dreher et al, 2017).

Similarly, Shinn (2016) states that in 2008, a consortium of Chinese companies (with sixty-eight percent stake) and the Democratic Republic of Congo's (DRC) Gécamines (30% stake) entered into a joint venture agreement under the name "Sino-Congolais des Mines (Sicomines)". The deal included both FDI and development assistance totaling \$6 billion. Out of this, \$3 billion was earmarked for infrastructure provision and \$3 billion for the mining investment. It must be noted that a number of Chinese migrants came to DRC because of this project (Shinn, 2016).

Contrary to these views, Ado and Su (2016) argue that even though many studies see China's engagement with Africa as negative and may lead to exploitation, there is the need to rigorously analyse systematically the relations to understand China's activities in Africa. This presupposes that it is too early to conclude that CAR will lead to neo-dependency. The accommodation perspective notes that China may have neocolonial ambitions, and it is using the

norms of free market competition advocated by the Washington Consensus to penetrate Africa. However, Asongu and Aminkeng (2013) indicate that there are no development alternatives to the West and China, hence Africa should submit. The accommodation school, therefore, gives genuine reasons to be both pessimistic and optimistic about CAR, a position adopted by this study.

The fundamental challenge facing African countries today is how to shape this current engagement in a way that is distinct from earlier ones and to ensure that industrialisation occurs in Africa. This will result in job creation and economic development. These will be a major booster for the development of states in Africa. Therefore, if Africa wants to benefit significantly from its trading ties with China and prevent dependency, the structure of the existing trade relations, in which Africa is a producer of raw materials and an importer of manufactured products must change.

However, China as a dominant and powerful state is penetrating Africa through the provision of financial assistance, development loans and FDI. As a result, it has secured access to Africa's natural resources and key infrastructural projects. So far, China is investing in strategic sectors such as import and export, construction, transportation, storage, postal services, and mining. It is believed that these investments by China present it the opportunity to exploit Africa and cause dependency (Adem, 2016; Schoeman, 2007).

Review of Concepts and Key Issues in the Study

The concept of Environment

Environment is a complex and ambiguous term which is difficult to define. This study therefore, adopts the definition of environment offered by

Belcham (2014) and the North Atlantic Treaty Organisation (NATO, 2013). According to NATO (2013), the environment includes air, water, land, and natural resources, as well as flora and fauna, humans, and their interrelationships. Furthermore, the environment is often described as the biophysical foundation for human civilisation and economic systems (Rizio, 2016). The environment is made up of all the biotic, abiotic, natural, and human components that determine the form and survival of each component in a system at any given time or over a period of time (Seebacher & Franklin, 2012).

Broadly speaking, the environment can be divided into two components; natural and human (manmade). Rizio (2016) adds that the natural environment produces raw materials, natural capital stocks, and flows of ecosystem services. Moreover, Everett, Ishwaran, Ansaloni, and Rubin (2010) note that environmental assets aid in flood risk management and climate regulation. It also guarantees the provision of clean water and other resources in order to handle challenges to economic and social life. Thus, the natural environment is important to the growth of economies. It offers the necessary resources for the production of goods and services while also absorbing and digesting undesired by-products like as pollution and waste (Everett et al, 2010). It must be noted that the conservation of wildlife is critical because it contributes to the health of ecosystems (World Bank, 2019). For example, World Bank (2019) explains that forest elephants are important and contribute to the overall health of tropical forests. The diversity of fish populations also contribute to the health of marine ecosystems. Pollution and environmental degradation continue to threaten the environment and its ability to provide life support for human survival.

It is worthy of note that economic growth as a result of trade puts increased pressure on environmental resources causing serious damage to the environment (Yamaguchi, 2018; Everett et al, 2010). Yamaguchi (2018) contends that the surge in natural resource demand will increase environmental pressures that arise from the extraction, consumption and especially end-of-life management of such resources. According to Muigua (2018), the increased intensity of global economic development has been blamed for much of the global environmental disruption. Muigua (2018) adds that international trade is becoming a more significant contributor to global economic growth, making it an important driver of environmental change.

Yamaguchi, (2018) argues that trade liberalisation may lead to specialisation in deforestation and pollution-intensive activities especially in countries where there are no stringent environmental policies. The World Bank (2019) reveals that, as recently found in many key tropical forest basins, deforestation reduces the aesthetic and natural beauty of forests. It also enhances climate change by emitting greenhouse gases as trees are cleared or burnt. Therefore, the interaction between trade, environment and development is critical in international relations. This is because environmental issues, especially those involving air and water do not remain local. Furthermore, contamination knows no bounds, as shown by acid rain in Scandinavia caused by Eastern European industries in the 1980s and early 1990s (Henderson, 2009).

Similarly, rivers that flow through many countries collect pollution from communities downstream, necessitating a regional rather than national approach to management (Henderson, 2009). Some essential features of the environment, such as breathable air, oceans, and seas, as well as less visible

services, such as the life-supporting facilities provided by biodiversity, form a global commons, whose protection necessitates a concerted effort (Henderson, 2009). Notwithstanding, the UN Conference on Trade and Development (UNCTAD) notes that trade could result in the spread of new technologies which protect the environment or the spread of products and technologies that have a lower impact on the environment (UNCTAD, 2011).

Additionally, according to UNCTAD (2011), openness to trade and investment can help to support development goals and objectives by encouraging the transfer of new and modern technology and management systems. Consequently, the UNEP (2000) contends that trade liberalisation is neither necessarily good nor bad for the environment. This study interrogates the environmental impacts of the involvement of Chinese workers and investors in IGM and the threat to sustainable development. This is important because the natural environment plays a critical role of providing global life support functions including climate regulation (Bigg, Jickells, Liss & Osborn, 2003). Thus, there is the need to understand the impacts of trade on the environment and sustainable development.

This is due to the fact that one of the aims of China's close relations with Africa is the demand for natural resources. Once the environment is compromised in favour of trade and FDI for economic reasons, climate change action and attainment of SDGs become a mirage. Hobbs (2012) explains that forests act as a store for carbon which is fundamental for human survival and climate change phenomenon. The protection of the natural environment especially forest resources from Chinese exploitation, is thus, non-negotiable. This is because, sustainability of Ghana-China engagement and trade relations

depends largely on the availability of natural resources in Ghana. In summary, one can argue that the natural environment has provided the impetus for IT and the trade relations between the two states.

Trade

According to Vijayasri (2013:1), “trade is essentially an international transformation of commodities, inputs and technology which promotes welfare in two ways. It extends the market of a country’s output beyond national frontiers and may ensure better prices through exports. Through imports, it makes available commodities, inputs and technology which are either not available or are available only at higher prices, thus taking consumers to a higher level of satisfaction”. Rodrigue (2016 cited in Rodrigue, 2020), contends that trade plays an active role in the economic lives of nations and regions especially where there is a benefit for the partners involved. Furthermore, Bjelić (2008) notes that international/foreign trade is traditionally viewed as the exchange of goods and services across national borders.

Bjelić (2008) concedes that international trade flows have been so dynamic and nuanced that describing it seems unlikely. It has grown to be the world's most significant economic activity, especially in the second half of the twentieth century. Nonetheless, Rodrigue (2016 cited in Rodrigue, 2020) argues that foreign trade has taken place for centuries even before the formation of nation states. For the last 600 years, it has played an important role in human economic and cultural history (Rodrigue, 2016 cited in Rodrigue, 2020). It continues to play an essential role in international politics and development.

According to the UN (2015), SDGs (Agenda 2030) affirm that international/foreign trade is a driver of inclusive economic growth, poverty reduction, and contributes to the advancement of long-term/sustainable development. UNCTAD (2019) notes that foreign trade can be divided into two broad categories. These are trade in goods (merchandise) and services. Physical goods make up the majority of foreign trade, with services accounting for a slightly smaller portion. According to 2018 world trade statistics, trade in goods has grown steadily over the past decade, from about \$10 trillion in 2005 to more than \$18.5 trillion in 2014. It must be noted that there was a fall to about \$16 trillion in 2016 (UNCTAD, 2019). Also, trade in services increased from \$2.5 trillion between 2005 to almost \$5 trillion in 2016 (UNCTAD, 2019).

Fagerberg (2010) submits that the current structure of foreign trade as compared to the previous century has changed significantly. Fagerberg (2010) and Bjelić (2008) explain that industrial products or manufactured goods became dominant outputs in the structure of goods trade and generally in international trade from the middle of twentieth century. Even though manufactured goods first appeared during Britain's Industrial Revolution in the eighteenth century, they did not become important for foreign trade until the last century. This is because the business philosophy in the developed nations at the time was to import raw materials and use them as inputs for the manufacturing industry to produce industrial products for local consumption (Vijayasri, 2013).

The export of industrial product started to rise only when local demand was met and there was surplus of manufactured products (Vijayasri, 2013; Bjelić, 2008). Vijayasri (2013:111) explains that “in the modern world, there is mutual interdependence of the various national economies for goods, labour and

capital. All economies of the world have become open and thus, it is hard to find an example of a closed economy. This is because, no country is completely self-sufficient in the proportion of the goods and services consumed to their total output produced within a given country”.

As a result, a country engages in trade to export what it makes, procure what it needs and produce more effectively than its trading partners (Rodrigue, 2016 cited in Rodrigue, 2020). It must be acknowledged that IT does not involve only the export of products and services, but the export of national factors of production such as capital, labour and technology (Bjelić, 2008). Even though, the process of the “export” of capital started in 18th century, it got to significant levels in the 20th century (Bjelić, 2008). Furthermore, Bjelić (2008) contends that from the 19th century, large companies started to outsource their operations abroad and their business became transnational. That is, the flow of FDI is a product of trade. This phenomenon makes IT important because nation states have different capabilities and they specialise in producing different things.

In this study, international trade or foreign trade refers to the exchange of goods and services between two or more states, export of national factors of production such as capital, labour, technology and FDI. It is instructive to note that goods are considered as the most important component of foreign trade exchange. It accounts for about 75% of overall global exports (IMF, 2006). Similarly, the UNCTAD (2018) indicates that since 2015, trade in goods continues to decline but that of services has been more resilient during this period (UNCTAD, 2016). In fact, trade in service has risen steadily over the last decade across all service categories. Foreign trade in goods is increasingly tied to imports and exports of global south and thus South-South trade reached

almost \$5.5 trillion in 2014 (UNCTAD, 2016). There was a decline in South-South trade between 2014 and 2016. It stood at about 4.4 trillion US\$ in 2016. Nevertheless, trade with developing states and China has been more resilient, showing increases in most cases (UNCTAD, 2016).

On a whole, countries in the global North account for the bulk of world trade. According to UNCTAD (2016), apart from other developing country regions, the economies of Brazil, Russia, India, China, and South Africa (BRICS) account for a large amount of trade, particularly in the areas of intermediates and manufacturing. These countries also have a proclivity for importing few consumer items while exporting a sizable portion. UNCTAD (2016) adds that developing countries unlike developed states export more natural resources than they import. It must be noted that developing countries have limited share in all forms of commodities. They have a higher share of exports of primary products and imports of finished goods. Despite the fact that many countries are attempting to diversify their exports, agriculture and natural resources still account for a significant portion of export baskets in many countries in the global South (Muneno, 2011).

Similarly, energy exporting countries in the Middle East are dependent on African and Latin American countries for raw material supplies. Agriculture continues to represent a large share of total exports of most African countries (UNCTAD, 2016). Therefore, the development of states depends largely on world trade. Contrary to the above assertion, Barbier (2008) indicates that environmental impacts of the expansion of world trade have raised two concerns. The first is that trade is necessarily environmentally damaging. Concerns over industrial scale in relation to ecological boundaries, as well as

the implied effects of globalisation on incentives for domestic environmental protection, are commonly cited as economic reasons underlying this view. In general, the counter argument has been that trade is not the root cause of environmental issues (McDonald, 2018).

It can be argued that IT contributes to the efficiency and economic development of the world. McDonald (2018) indicates that countries that open up to trade attract capital and there is also efficient use of labour. Furthermore, Lee (1995) argues that the flow of capital and intermediate goods that are not available on the domestic market could boost productivity in manufacturing. It must be noted that export promotion also leads to more intense competition and improves productivity (Vijayasri 2013; Wagner, 2007). Vijayasri (2013) adds that foreign trade increases global competitiveness. As a result of exposure to international competition, domestic business units tend to become more efficient.

Similarly, Vijayasri (2013) explains that local entrepreneurs can have easy access to technological innovations as a result of integration with the world economy. Local enterprises can use the latest technologies to increase productivity. That provides society a higher level of economic welfare. In spite of the importance of trade to the world economy, Reed (1996 cited in Harris, 2004) argues that trade has led to land degradation, soil erosion and loss of biodiversity.

Trade and the Environment

Harris (2004) explains that trade and foreign investment have negative impacts on the environment. As seen in Ghana, Nigeria, Indonesia, and Papua

New Guinea, resource-based industries, particularly oil production and mineral mining can result in considerable local vegetation loss (Harris, 2004). According to the World Bank (2019), illegal logging, mining, fishing, and wildlife trade are global issues that have direct impact on source, transit, and consumer countries. This transnational crime, which is a fallout from free trade, causes damage to local communities, national economies, society, and the environment. Nevertheless, trade continues to be a powerful source of economic, technological and even societal change (Cernat, 2019).

It is in the light of this that trade/investment relations between China and Africa, and by extension Ghana, have deepened over the last few decades. Whilst China is in search of raw materials, Africa continues to look for alternative markets to the West and to maximise revenue from exports. In addition, China is a good source of FDI to Africa in general and Ghana specifically. Today, Ghana and the rest of Africa rely on China for consumables, machinery, electronics, textiles, and hi-tech products. China on the other hand, imports crude oil, iron ore, cotton, diamond and other natural resources and primary goods from Africa (Khan & Baye, 2008).

It is instructive to note that China has grown from having a negligible role in world trade over the last three decades to being one of the largest exporters in the world. It is also a major importer of raw materials, intermediate inputs and other goods (Feenstra & Wei, 2010). Thus, in terms of trade, China's impact is felt worldwide. In contrast to China's role in international trade, manufacturing and industrial production in China have led to pollution in the country, which can spill over international borders (Zheng & Kahn 2017; Feenstra & Wei, 2010) and affect sustainable development.

Even though China remains an important ally of Africa in terms of trade and development assistance, its trade and investment have taken similar shape like Africa's former trade relations with the West. For example, Chinese investments are mostly in the agriculture and extractive sectors. Ghana continues to import consumables and manufactured goods from China and exports raw materials with little or no processing. China, like the West, has failed to invest in the manufacturing sector in Africa which hitherto could lead to the creation of employment opportunities and economic development. It is in the light of this, that Sino-pessimists and dependency theorists argue that China's relations with Africa will lead to dependency and colonization (Oshodi, 2015; Nwoke 2007).

Development

The concept of development is an old one but regained prominence in international political agenda during the UN Conference on the Environment and Development (UNCED) held in Rio de Janeiro, Brazil in 1992 (UNCED, 1992). According to Rapley (2007) the issue of development became significant after World War II when Western Europe was rebuilding from the ravages of the war. Vonyo (2008) points out that development during this period looked at economic growth and social progress. Rabie (2016) and Thirlwall (1994) define development as an economic concept that entails the application of economic and technical measures to utilise available resources in order to bring about economic growth and improve people's quality of life. It is instructive to note that the concept of development has evolved over the years.

According to Rabie (2016) in the 1950s and 1960s, economic growth was commonly used to describe development. During this period, development was measured in quantitative terms rather than qualitative change in economic performance. As a result, development theories were designed to stimulate and speed up the economic growth process. These theories looked at moving developing countries along the path charted by Western industrialists. Developing countries were encouraged to move away from relying primarily on agricultural activity but rather industrial production and trade (Romeiro, 2012).

In the 1970s, a new development paradigm emerged, asserting that global economic growth could not be sustained at current levels. This was because arable land, water, and other natural resources were being depleted at unsustainable levels (Rabbie, 2016; Romeiro, 2012). Soares and Quintella (2008) posit that development now encompasses a much wider definition, adding the conservation of the environment and rational use of natural resources. These are critical in addressing economic growth and social challenges. This new model of development which caters for both economic and environmental goals is called sustainable development.

Sustainable Development

According to Becker (1993:49), “the Brundtland Commission, a product of the Rio process, defines sustainable development as a transformation process in which the exploitation of resources, direction of investments, orientation of technological development and institutional change are reconciled and reinforces present and future potential, in order to attend to needs and future aspirations”. It is that which caters for the needs of the present without

jeopardising the possibility of meeting the needs of future generations (Blewitt, 2015; Becker, 1993). Moreover, to Camino and Müller (1993 cited in Soares & Quintella, 2008), the scope of sustainable development includes: social justice, economic viability, environmental sustainability, democracy, solidarity and ethics.

Although sustainable development has been promoted since the Brundtland Commission report, it has seen significant levels of commitment from world leaders and policy makers in the last two decades culminating with the adoption of the Millennium Development Goals (MDGs, from 2000-2015) and the SDGs (2015-2030). Issues of climate change, food security, poverty reduction, protection of forest, water and ocean resources, and sustainable use of energy have made environmental protection the core of sustainable development. In this sense, the interaction between the environment and development is very important. Environmental sustainability is therefore, fundamental to SD.

The environment is at the core of each SDGS. Its destruction is detrimental to the attainment of the global goals. Unfortunately, economic interest has been the focus of both China and Africa in its economic relations culminating in the destruction of the former's environment. As African states seek development assistance from China, it is imperative to balance economic growth and environmental conservation to achieve sustainable development. Trade discussions between China and Africa and specifically Ghana must thus, take into consideration ecological issues and environmental conservation.

Trade, Environment and Development

The issue of trade and development has been the focus of international politics and international organisations for decades. Neoliberalists have always argued that free trade and its attendant FDI promote development (Adams, Dee, Gali, & McGuire, 2003). However, environmental concerns have come to the fore in recent decades, largely as a result of climate change and loss of biodiversity (UNCTAD, 2012). Lobbying activities of environmental groups, such as Greenpeace have also highlighted the need to protect the natural environment. According to UNEP (2000), the modern system of international environmental management dates to the 1972 UN Conference on the Human Environment (UNCHE), held in Stockholm.

Even though several international environmental agreements predate the Stockholm Conference, it was the first major environmental event that triggered a flurry of activity at national and international levels. It must be noted that the UNEP, headquartered in Nairobi, Kenya was established as a result of the Stockholm Conference. UNEP acts as a catalyst for the environment in the UN system (UNEP, 2000). Unfortunately, the Stockholm Conference could not promote the long-term advancement of the international environmental agenda as envisaged (Tulloch & Neilson, 2014; UNEP, 2000).

Therefore, in 1985, the UN established the World Commission on Environment and Development whose report first articulated the concept of sustainable development (UNEP, 2000). To Tulloch and Neilson (2014) the report became the foundation for a major review of all worldwide environmental activities in the UN through the UNCED which was first held in 1992 in Rio de Janeiro, Brazil.

Hewison and Underhill (1997) argue that the links between the objectives of liberalised IT, environmental protection and sustainable development have become high priority in international policy making. Today, the fundamental goals of the World Trade Organisation (WTO) are sustainable development, protection and preservation of the environment. These are enshrined in the Marrakesh Agreement, which established the International Trade Organisation (WTO, 2015). According to the WTO (2015), its creation in 1995 was an important step in the history of multilateral trade, helping to open up new avenues of discussion about how trade interacts with the environment. It also helps to ensure that trade and environmental policies work in tandem.

It is instructive to note that under WTO rules it is justifiable if a measure undertaken by a WTO member is found to be inconsistent with its own basic rules but seeks to achieve an environmental or health objective (WTO, 2015). This suggests that the environment is critical in world trade. In respect of the importance of trade to development, many developing countries are heavily dependent on the exports of natural resource products for foreign exchange. Again, the World Bank/IMF export led policies have promoted exports among developing countries in order to achieve trade surplus and also reduce rising debts. Most of these exports are raw materials. Exploitation of raw materials has led to environmental degradation and loss of biodiversity in Africa and Ghana is no exception. It is important to note that establishing and preserving property rights to natural resources is complex and expensive, and regulatory frameworks in many nations are extremely weak.

According to the World Bank (2006), “Ghana’s natural resources, upon which so much of the country’s economic activity and the population’s livelihood depend, are being depleted at an alarming rate”. It adds that more than half of the initial forest area has been cleared for perennial or annual cropping. Also, timber, and nontimber forest product reserves are increasingly being depleted with decreasing productivity. Moreover, during the dry season, coastal towns face extreme water shortages. There is serious decline in wildlife populations and biodiversity with health-related pollution, water and sanitation issues emerging as serious health challenges for the majority of the population (World Bank, 2006).

In view of these developments, issues pertaining to the environment must be a critical part of any discussion on GCT relations especially investments in the extractive sector. This is because the entire world is threatened by climate change, loss of biodiversity, desertification and environmental degradation. It must be noted that loss of forest resources as a result of desertification and environmental degradation threaten the attainment of UN SDGs also known as Agenda 2030. In respect of this, countries all over the world, since, 2015 are seeking to pursue sound forest management to achieve sustainable development. Economic planning and policy have taken into consideration the impacts of economic growth on the natural environment especially forest and water resources on which human lives depend.

To this end, Ghana National Trade Policy (2005) recognises the fact that long-term growth can be achieved if a good balance is maintained between economic interests, consumption patterns, and environmental protection. Therefore, the government’s programme towards sustainable development and

long-term economic growth is underpinned by the promotion of sustainable consumption patterns and the promotion of environmentally-friendly consumption. In spite of this provision, China-Ghana trade relations have often been defined by economic interest without any regard for environmental protection.

Ghana continues to seek development support from China and have thus, compromised on environmental protection and conservation. Chinese investors have been involved in IGM and logging for more than a decade now but the government of Ghana has not been able to put in place strategies to end these activities that continue to cause environmental problems in the country (Botchwey, Crawford, Loubere, & Lu, 2018). Therefore, as Ghana seeks economic growth, it must strive to balance it with environmental conservation and in particular the protection of forests and water resources.

Forest Management

Forest management has remained an important subject in environmental management practice and development discussions over the last three decades (Corezzola, D'Andrea, & Zapponi, 2016). Some of these discussions date back to the Brundtland Report in 1987, the Earth Summit in Rio de Janeiro, Brazil in 1992, the World Summit on SD in Johannesburg in 2002, and the Earth Summit in Rio de Janeiro, Brazil in 2012 (Nyirenda & Ngwakwe, 2014). Even though Forest management practices are not new, recent developments such as human population growth, global pollution, loss of biodiversity, soil degradation, and urban growth make it critical in development discussions. The Food and Agriculture Organisation (FAO, 2011:1) defines forest as “a minimum of 1

hectare in size, with at least 10 percent crown cover and with mature trees at least 2 m tall”.

Similarly, the UN Framework Convention on Climate Change (UNFCCC, 2001 cited in Kant, 2006:1) describes forest “as a minimum area of land of 0.05-1.0 hectares with tree crown cover (or equivalent stocking level) of more than 10-30 per cent trees with the potential to reach a minimum height of 2-5 meters at maturity in situ. A forest may consist either of closed forest formations where trees of various storeys and undergrowth cover a high proportion of the ground or open forest”. The FAO (2011) contends that forests and farm trees provide direct source of food and cash income. It adds that more than a billion of the world's poorest population depend on forests for both staple and supplemental foods such as fruits, edible leaves, and nuts.

According to the UN (2015), about 1.6 billion people around the world depend on forests for their survival. Forests and trees help to ensure food sustainability by improving diets and wellness. Forest plants and animals provide essential nutrient-rich supplements to rural households. Apart from providing livelihood to over 1.6 billion people, forests are vital in sustaining human life, biodiversity, and environmental services worldwide (FAO, 2016; UN, 2015). Also, forests and trees are a source of timber and supply a variety of environmental and social resources, thus increasing resistance to climatic events (Morrison-Métois & Lundgren, 2016).

Similarly, Alkama and Cescatti (2016) argue that trees in urban environments sequester some amounts of carbon, transpire large quantities of water and oxygen, and absorb more radiation, to keep cities cooler. In addition, plantations of mangroves found in coast areas, serve as a break and protect

coastlines against the effects of storm surges and rising sea level. The above discussions indicate that the importance of forest cannot be overemphasised. Therefore, managing forests sustainably is non-negotiable and demands the commitment of everyone.

Sustainable forest management (SFM), according to UNFCCC (2009) is defined as a dynamic and developing concept aiming at protecting and improving the economic, social, and environmental value of all types of forests for current generations while not jeopardizing future generations. In this regard, policies such as the 'Bonn Challenge', the 'Convention on Biological Diversity (CDB) Aichi Targets', the 'Reducing Emissions from Deforestation and Forest Degradation (REDD+) Programme' in the Paris Agreement, are driving a new focus on SFM (Chazdon, Brancalion, Laestadius, Bennett-Curry, Buckingham, Kumar, Wilson, 2016). Achieving the SDGs, especially goals number one, two, three, twelve, thirteen, fourteen and fifteen underscore the importance of forest. It places forest management and sustainability into the international development framework.

A UN Economic and Social Council (UN ECOSOC) report published in 2017, identifies declining land production as a serious concern and emphasises SFM as a way to curb it in an attempt to improve the lives of more than one billion people on earth (UN, 2017). Forests can be replenished and regenerated in several ways. Lawson and Michler (2014) posit that many countries have made efforts to preserve biodiversity by looking at reforestation, afforestation and reclamation of degraded lands as important means of regeneration.

According to Grebner, Bettinger and Siry (2013), reforestation is the establishment or planting of native trees in degraded forest reserves. On the

other hand, afforestation is the process of planting trees in a barren land which did not have trees to create a forest (Grebner, Bettinger & Siry, 2013; FAO, 2010). Degraded forest reserves as a result of mining and construction activities are regenerated through reforestation. In order to prevent future deforestation and degradation that occurs as a result of agricultural activities, the FAO (2016) recommends agroforestry programme as a means to restore degraded land, increase productivity and diversify incomes for farmers.

According to the FAO (2016) and Grebner, Bettinger and Siry (2012), this approach is the most effective way to guarantee food security and at the same time increase carbon storage in both the soil and the trees. It also helps in the prevention of erosion, climatic instability, and desertification. The FAO (2016) defines agroforestry as the integration of trees into farming systems so that productive ecosystems are preserved and adapted to climate change.

In China, historical studies and current status of forest resources have become important in debate on SFM in the region (Yu, Zhou, Zhou, Ding, Wang, Wang, Wu, Dai, 2011). This is because, excessive logging has led to the exploitation of forest reserves in China. Forest reserves were almost exhausted and a substantial decrease in the area of natural forests due to serious degradation. Therefore, in 1998, China shifted the country's primary focus of forest management from timber production to environmental sustainability. It adopted ecological restoration and protection (Yu et al, 2011). China launched the Natural Forest Conversion Programme and implemented a new system of Classification-based Forest Management. In addition, Yu et al (2011) state that China has invested US\$ 100 billion in the past decade to planting of trees.

It can be said that China is one of the main culprits of environmental degradation in the world, because of its ambition to become an economic giant and a global superpower. Nevertheless, over the last few years, the Communist government, recognising the impacts of environmental degradation and depletion of forests, has implemented programmes aimed at environmental protection and conservation in China. However, it has not improved its relations with Africa's natural environment. China continues to exploit Africa's forest for natural resources for its development. In view of the above, Vijay, Pimm, Jenkins, and Smith (2016) indicate that Côte d'Ivoire, Guinea, Guinea-Bissau, Liberia, Sierra Leone, and Ghana, for example, face complex problems in SFM and environmental protection.

Forest Management in Ghana

Forests play an important role in the economic development of Ghana and the lives of Ghanaians, especially rural dwellers. It is a source of exports to countries in Africa, Europe and Asia. In Ghana, key forest exports include sawn wood, plywood and veneers (FAO, 2010). Marfo (2010) indicates that chainsaw milling has a major impact on rural livelihoods. It is estimated that it employs around 100,000 people directly and supports the livelihoods of approximately 700,000 individuals (Marfo, 2010). Furthermore, Kpelle (2013) and Marfo (2010) state that many rural households depend on fuel wood and charcoal to meet their everyday energy needs. According to the Forestry Commission (2017), Ghana's total forest cover is 5,768,678 hectares, approximately one-fifth of the total land area. Out of this, 2.6 million hectares is classified as forest reserve dedicated to both timber production and conservation (Forestry

Commission, 2017). Also, about 500,000 hectares of unreserved forests ('off-reserve') and 2 million hectares of cropland are also used as a source of timber (Forestry Commission, 2017).

In Ghana, deforestation and forest degradation are two major concerns for conservation, and SFM (Forestry Commission, 2017). Agricultural expansion, logging (legal and illegal), urban expansion, infrastructural development and mining are the major causes of deforestation and forest degradation (Kissinger, Herold, De Sy, 2012; FAO, 2010). These have caused the shrinkage of Ghana's formal forestry sector which was estimated at 9.17 million hectares as at 1995 to 5,768,678 hectares in 2017 (Forestry Commission, 2017; FAO, 2010). In view of this decline, successive governments have taken a host of measures to enhance forest resource management in Ghana and reduce illegal logging. According to Oduro (2016), one of the important strategies adopted by government to manage forests and meet the growing demand for timber resources in Ghana is plantation development.

In respect of this, between 1970 and 1980, the government established 75,000 hectares of plantations within degraded forest reserves as part of the agroforestry programme. The agroforestry programme in Ghana, according to Oduro (2016) is a forestry system in which farmers are allocated a portion of degraded forest reserves to inter-plant timber trees with food crops in order to assist in the establishment and maintenance of timber trees. Oduro (2016) states that the Ghanaian government began a reforestation campaign in the mid-1990s as part of the 1994 Land and Wildlife Policy. The policy aimed to address the issue of deforestation and forest destruction, which resulted in the declining of forest resource base. Similarly, the Forestry Development Master Plan (FDMP

1996–2020) was launched in 1996 to promote private plantation development, with a target of 10,000 hectares annually for 20 years (Oduro, 2016; Milton 1994).

The government of Ghana in 2001 initiated a National Forest Plantation Development Programme (NFPDP) to plant 20,000 hectares per annum. The main objective of the NFPDP was to restore forest cover of degraded forest lands (Forestry Commission, 2013). It also sought to create job opportunities as a method of reducing or alleviating rural poverty, as well as solving future wood shortages and improving food production (Oduro, 2016). Consequently, legal reforms were carried out in 2002 to encourage the development of plantation.

The Timber Resources Management (Amendment) Act, 2002 (Act 617), and the Timber Resources Management (Amendment) Regulations, 2002 (LI, 1721) were promulgated to prohibit the granting of timber rights on land with private tree plantations or land with any timber grown or owned by individuals or groups of individuals (Forestry Commission, 2013). Small-scale farmers in off-reserve areas were given incentives to participate in on-farm tree planting as a result of the reforms. As a result, between 2002 and 2012, the NFPDP saw the establishment of 168,910 hectares of forest plantations across the country, mostly in degraded forest reserves, by both the public and private sectors (Oduro, 2016; Forestry Commission, 2013).

Even though these measures have boosted Ghana's forest resources, the natural forest continues to deplete at an alarming rate through illegal logging and trade of timber. To curb this problem, Ghana signed the Voluntary Partnership Agreement (VPA) with the European Union (EU) in 2009 (FAO, 2010) to end illegal trade of timber to the EU market. The VPA is a bilateral

trade agreement between the EU and timber exporting countries. Primarily, the VPA seeks to provide legal framework that ensures that timber products are harvested, processed and transported legally. It must be noted that the VPAs apply to timber and timber products only.

The implementation of the VPA has thus resulted in a number of legal and regulatory reforms aimed at curbing illegal logging and trade of timber products to EU markets (FAO, 2010). Furthermore, the government, recognising the important role of forest resources in food security, climate change mitigation, poverty reduction and sustainable development, is promoting ecotourism in forest reserves. In addition, it has placed ban on logging (legal and illegal) and trade of rosewood. It has also instituted the Operation Vanguard and Galamstop Taskforce to support the fight against IGM, and the Youth in Afforestation programmes among others. These programmes will be discussed in the next chapter.

Despite these programmes to protect forest resources and to attain sustainable development, Ghana's forest resources continue to be exploited causing water pollution in rivers Pra, Oti, Offin and Ankobra, among others. Ghanaian and Chinese miners continue to engage in IGM and logging in the face of bans placed by government. The issue of Chinese involvement in these illegal acts has often brought into question institutional framework guiding SSM in Ghana and the kind of relations that exist between Ghana and China. Whilst some argue that Ghanaian authorities have failed to enforce environmental laws to protect its relations with China, others suggest that Ghana cannot enforce its laws because it depends on China for development assistance. This study is of the view that Ghana may fail to achieve food security, climate change

mitigation, quality health and sustainable development if it compromises on environmental standards in its relations with China.

China, Politics and the Environment

According to Grano (2008), China's environmental problems have become a critical component in environmental discussions throughout the world. Grano (2008) adds that recent discussions in the media and among academics detailing the degradation of the Chinese environment and its deadly effect on the rest of the world have generated public attention and concern. This is because China has been the world's leading emitter of Carbon Dioxide (CO₂) annually since the year 2000. Furthermore, Yong (2015 cited in Shinn, 2016:26) states that "the 2014 Report on the state of the environment in China revealed that less than ten percent of 161 cities included in the national air quality monitoring system met national standards". Although China ratified the Kyoto Protocol without binding targets as a non-Annex B party and ratified the Paris Agreement to combat climate change, it is the world's leading producer and consumer of coal (Cornot-Gandolphe, 2019).

In recent times, China has worked hard to change the energy structure which culminated in a decrease in coal consumption from 2013 to 2016 (Cornot-Gandolphe, 2019). Cornot-Gandolphe (2019) adds that China, the US and India remain the biggest coal users in the world and have increased coal mining since the year 2017 in pursuit of economic growth. According to Yamaguchi (2018), China's economic reforms, which began in 1979, have resulted in a phenomenal surge in economic growth; making China's economy the second largest in the world. It has grown by a factor of 30 in real terms since the reforms started in

1978, gaining middle-income status and pulling hundreds of millions of people out of poverty (Yamaguchi, 2018).

Similarly, Mushkat (2009) argues that China has prioritised economic development at the expense of environmental standards with negative consequences. It is worth noting that while China has managed to lift millions of people out of poverty in recent years, it lacks the natural resources to sustain this development (Gordon, 2012; Mushkat, 2009). Gordon (2012) states that China's economy grows at a rate of 10% or more each year, resulting in increased demand for natural resources such as coal, oil, wood, natural gas, and potable water.

This places enormous pressure on the natural environment and as a result, forests have been exploited to meet the growing needs of the population (Yong, 2015). Ma and Ortalano (2000) note that air pollution in cities is a serious health problem in the world. In addition, Jain-Cocks (2011) and Ma and Ortalano (2000), point out that China has the largest death toll due to air pollution, with 1.14 million deaths due to exposure to ambient air pollution.

At the end of 2011, 40% of China's rivers had been contaminated by industrial and agricultural waste (Jain-Cocks, 2011). It is evident that industrial growth has consequences for public health, the environment and ultimately the economy. In view of this, China has taken steps to impose environmental regulations. Even though regulations such as the 1979 Environmental Protection Law of China are fairly stringent, Ma and Ortalano (2000) note that China has suffered from significant environmental degradation and pollution in recent decades, because the laws are poorly enforced.

Pro-economic growth local officials have been accused for impeding the successful implementation and effective enforcement of environmental laws (Lieberthal, 1997; Ma & Ortolano, 2000; Van Rooij, 2006 cited in Johnson, 2009). Johnson (2009) indicates that in China, despite strong environmental reforms, the poor status of environmental protection departments reflects the prioritisation of economic development. Similarly, Ma and Ortolano (2000) add that local governments and elected leaders often ignore environmental regulations in favour of rapid economic development. Percival (2013) contends that China's phenomenal economic expansion has taken a tremendous toll on China's environment, resulting in horrific air and water pollution that has become a significant concern to public health in many parts of the nation.

Bai and Dent (2009) add that economic activities especially development of infrastructure and exploration of natural resources are always bound to have negative impact on the environment. This may include disturbance in the ecological system, soil erosion, a decrease in air quality and a variety of other environmental issues (Bai & Dent, 2009). According to Berry, Olson, and Campbell (2003), China's land resources have been substantially degraded over the last 50 years. China is one of the most affected countries in the world in terms of the extent, severity, and economic impact of land destruction because of its pursuit for industrial development (Bai & Dent, 2009).

Economy (2007) argues that China's environmental impact is global in scope. This is shown in acid rain originating from China falling on the Korean Peninsula and Japan (Yoko & Emilson, 2007). In addition, Guan, Peters, Weber, and Hubacek (2009) indicate that trans-boundary pollutants from China have been found as far away as the west and east coasts of the USA. These impacts,

according to the Organisation for Economic Co-operation and Development (OECD) (Yamaguchi, 2018), impose significant costs on the economy and are a growing source of public concern. This is because it affects long-term impacts for sustainability throughout the global economy and supply chains.

Furthermore, Shinn (2016) indicates that Chinese mining companies in the Democratic Republic of Congo have destroyed some agricultural fields and disturbed local schools whilst prospecting for minerals. According to Shinn (2016), approximately 200 local people were displaced without compensation and a number of mining firms in the Katanga area, have a history for poor environmental practices. This situation is not different from other parts of Africa where China has investments. In Gabon, activities of Chinese company, SINOPEC were halted for prospecting for oil in the Loango National Park which is the main source of livelihood to the local people (Shinn, 2016). These examples and others reinforce the position of Sino-pessimist that Africa-China relations may lead to dependency.

It is worthy of note, that in 1972, China started to develop environmental institutions through the UNCHE. Nonetheless, there was no significant improvement to the natural environment even after the National Conference on Environmental Protection in 1973 (Grano, 2008). According to Zhilin, Shuchun and Bing (2014), in 1979, the first special environmental legislation was enacted. With the accelerated economic growth that followed the reforms of the 1970s, environmental degradation became a major issue in China.

In view of the above, initial legislation focused on environmental pollution control (Zhilin, Shuchun and Bing, 2014). Sun (2008) argues that the

concept of SD was not part of the implementation of China's initial environmental legislation even though it is an important guiding principle for environmental legislation at any level for good ecological practices. Sustainable development was not a critical issue because the natural guiding ideology for many legal systems designed was based on the thinking of "Economic Interests Above All" (Zhilin, Shuchun & Bing, 2014).

Zhilin et al (2014) add that ecological pressures from rapid industrial expansion became a major policy problem after the turn of the century. This is because pollution (air and water) and soil degradation in China had reached alarming levels. In addition, Zhilin et al (2014) explain that the bottlenecks and contradictions between resources development and environmental concerns were visible and related to the long-term, accumulated development in China. Drawing on lessons learned at the 1992 UNCHE, China enacted new environmental protection laws and amended several other existing laws (Zhilin et al, 2014). Besides, Zhilin et al (2014) assert that the Chinese government published Ten Strategic Policies on Environment and Development.

For the first time, it was announced that China was going to implement a SD strategy, and proposed environmental policies for implementation in ten areas. The Standing Committee of the Chinese National People's Congress approved thirty laws on environmental preservation and resource management between 1992 and August 2014. These laws were to improve pollution prevention, resource and energy conservation (Zhilin et al, 2014). Despite the fact that the development and execution of China's environmental laws have played a significant role in the country's environmental protection efforts, the legislation still has numerous flaws and shortcomings (Zhilin et al, 2014).

According to Zhilin et al (2014), this is due to the fact that China's existing environmental pollution controls are ineffective, indicating a trend of partial improvement but decline from the overall view (Zhilin et al, 2014). Weak environmental law enforcement, as well as defects in the law and issues with environmental legislations, cannot be overlooked (Bai & Dent, 2009).

According to Khan and Chang (2018), the Chinese government, recognising the problems of environmental degradation and pollution, put in place legislations such as Environmental Protection Tax Law 2017 which was implemented in January 2018. This law imposes a number of taxes on manufacturing units that emit air, solid waste, causes water and noise pollution (Khan & Chang, 2018).

The discussions above suggest that China's relations with the environment is shaped and influenced by its aim to become a global superpower. To this end, laws are often disregarded by citizens and city authorities so long as it brings economic growth. This means that enforcement of stringent environmental laws in China has been sacrificed for development. Lack of enforcement of environmental laws in China has affected compliance and has caused air and water pollution and in some instances loss of livelihoods. Disregard for environmental laws has become normalised and this has often been transferred to Africa. For example, there was opposition against the construction of the Three Gorges Dam in China from both home and abroad because of environmental consequences and loss of livelihood of the local people.

The Chinese government went ahead to construct the dam because of its economic benefits. Xu, Tan, and Yang (2013) state that since the completion of the dam, archaeological and cultural sites have been flooded, some 1.3 million

people have been displaced. It has caused significant ecological changes including an increased risk of landslides. Also, some Chinese miners in Ghana continue to disregard local mining and environmental laws. They are directly or indirectly involved in SSM. Crawford et al (2015) indicate that the scale of Chinese citizens' engagement in informal gold mining in Ghana has grown to such proportions, with instances of local conflict. This disregard for environmental laws will continue if government and law enforcement agencies fail to ensure compliance with appropriate laws. The lack of prosecution of Chinese illegal miners and loggers has received criticism from Sino-pessimist and dependency scholars who argue that China is on its way to colonise Africa.

Conceptual Framework

The conceptual framework for this study shows how various concepts used are connected. It describes how all the concepts of interest to this study come together to describe CIIM and how Ghana-China diplomatic relations conspire to impede programmes put in place to deal with IGM. It also explains the legal and institutional arrangements guiding SSM in Ghana. The concepts; diplomatic relations, trade, FDI, environmental impacts, forest management, sustainable development and dependency are examined or used to explain this relationship. The environment especially forests play critical role in all aspects of human life. Apart from the economic benefits of forests, it plays vital role in sustaining human life, biodiversity, protection of water bodies, climate change mitigation and development. Similarly, bilateral relations promote development of countries through economic and political cooperation.

One of the drivers of bilateral engagement is trade as envisaged by the neoliberal theory. Since time immemorial, states have been connected through the exchange of goods and services. International trade among states has often led to investment decisions. Ghana and China are connected particularly in the area of trade and investments (Idun-Arkhurst, 2008; Tsikata, Fenny & Aryeetey, 2008). In short, China is engaging in soft diplomacy as a way to exploit Ghana by offering it infrastructure finance, low interest loans, investments, and aid among others. Ghana on the other hand, offers China oil, gold and timber to feed the Chinese manufacturing industry. Idun-Arkhurst (2008) state that Ghana and China continue to make conscious efforts to ensure the realisation of their respective development agenda. Ghana has thus, urged closer to China because the Communist state provides development alternatives to the West whose relations with Africa, and for that matter Ghana, has been exploitative as underlined in the dependency theory.

China's relations with Ghana have been hailed by successive governments as a game changer for its development especially in the area of infrastructural provision. Therefore, both governments have pursued programmes geared towards enhancing diplomatic and economic ties between them. Even though, Ghana in particular, has used the opportunity FOCAC presents and continues to enjoy development assistance from China, Chinese presence in Ghana has been criticized. It is seen as destructive to the natural environment, especially forest resources.

Chinese miners continue to destroy Ghana's forest but for fear of ruining diplomatic and economic relations, governments in Ghana, past and present have failed to enforce the laws (Boafo, Paolo & Dotsey, 2019). It must be noted

that deforestation and degradation of the forests, affect Ghana's development and hinder global efforts in achieving SDGs. In this regard, strong legal and institutional framework is essential. This is critical for the protection of forests and the attainment of SD as espoused by green theorists.



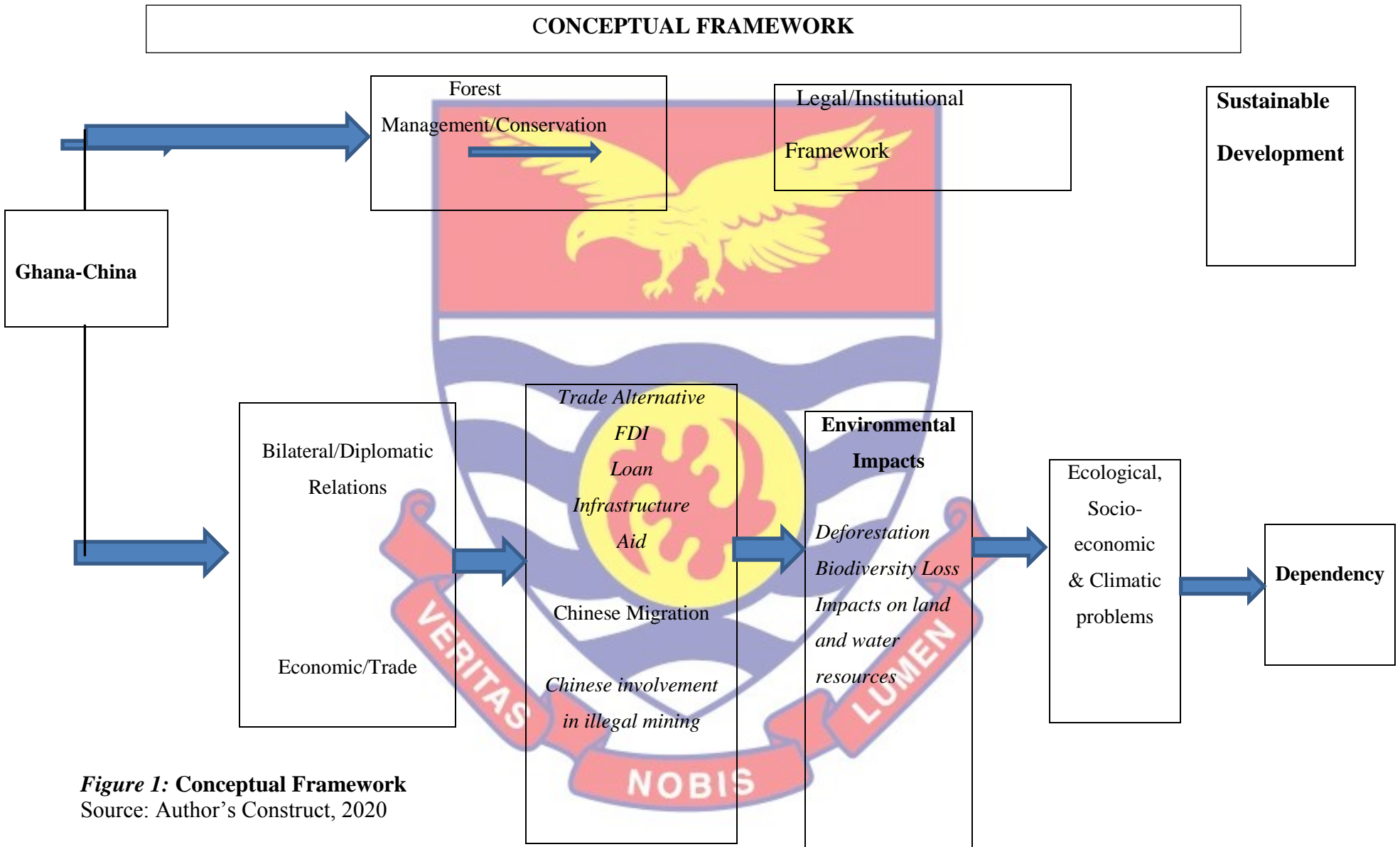


Figure 1: Conceptual Framework
Source: Author's Construct, 2020

Chapter Summary

This chapter sought to demonstrate that Ghana-China relations may lead to dependency as a result of unequal trade between the two states. As indicated earlier, the dependency theory which was developed in the 1950s explains the phenomenon whereby rich states become richer and poor states become poorer. Liberal economic theorists argue that increased trade would lead to economic benefit for all. Even though, the dependency theory has been abandoned in modern international relations and political discourse, its explanatory power, makes it an important theory in GCT relations and discourse. The chapter also discussed the importance of trade in relations to neoliberal theory and environmental protection to sustainable development. It also highlighted the significant role forest management plays in development. This was explained using the green theory.

Furthermore, this chapter revealed that China is in Africa for raw materials to feed its growing manufacturing industry as it is the case of western capitalist states. As a result, some of the Chinese investments especially mining are causing destruction to the natural environment especially forests and water resources. One critical issue raised in the review is the need for sound forest management to safeguard the Ghanaian forest which serves as a source of livelihood for most rural households, supports human life and climate change mitigation efforts.

It is worthy of note that, if China and Ghana will recognise the importance of the environment especially forest resources to sustainable development as posited by green theorists and shape the current structure of engagement, both states will achieve development without compromising the environment. Furthermore,

this chapter underscored the relationship between trade, environment and economic development. Therefore, development efforts must not only focus attention on economic growth but also environmental protection to achieve sustainable development. The strengthening of state institutions will also support programmes put in place to clamp down IGM in Ghana.



CHAPTER THREE

OVERVIEW OF CHINA-AFRICA TRADE RELATIONS

Introduction

This chapter presents an overview of China-Africa trade relations, the environmental impacts of China-Africa engagement and Ghana-China relations among others. The chapter is divided into nine sections. Section one discusses brief background of Africa-China trade relations. The second section presents the environmental impacts of Africa-China relations. Ghana-China bilateral relations are discussed in section three. Some key loan agreements between the two states are highlighted in section four. Section five looks at Chinese activities in Ghana, and GCT and investments since 2000. The sixth section explains Chinese migration to Ghana and SSIM. The next section discusses state response to IGM in Ghana and legal and institutional framework. The empirical review is presented in section eight. The last section gives a summary of relevant issues in the review.

Brief Background of Africa-China Trade Relations

The turn of the 21st century has seen China and Africa form close economic and political cooperation for development. Eisenman (2012) states that trade relations between Africa and China is influenced by both diplomatic/political and economic reasons. Asongu and Aminkeng (2013) argue that China's growing presence in Africa is both a political and economic fact. It is part of a larger geopolitical agenda towards a multipolar world. Asongu and Aminkeng (2013) contend that the new Chinese model could offer an alternative to the structural

adjustment associated with the Washington Consensus that have largely failed on the African continent in the past three decades.

China-Africa relations were officially established in 1955, but trade and collaboration dates back more than 100 years (Marafa, 2007). In fact, Lambard (2007) claims that Beijing's investment in Africa dates back to the sixth century, when traders from Asia crossed the Indian Ocean. However, Marafa (2007) and Konings (2007) indicate that China's first interaction with post-colonial Africa started in 1955 in Indonesia at the Bandung Conference of Non-Aligned Nations. The Asian-African Conference of 1955 was attended by a majority of newly independent Asian and African countries. Marafa (2007) notes that Egypt became the first country in Africa to formally establish diplomatic relations with China in 1956 after this conference.

As a result of China's deteriorating relations with the Soviet Union, relations between China and Africa significantly improved by the end of the 1950s (Marafa, 2007). This was because, China was searching for 'friends' in Africa in order to oppose Soviet hegemony and Western imperialism. Therefore, they supported movements for independence and anti-colonial activities in Africa. In addition, "Maoist China" sponsored and trained anti-colonial liberation groups and leaders in Sub-Saharan Africa in the mid-twentieth century, as well as aiding new Sub-Saharan Africa. For example, China gave military aid and training to revolutionary movements in Tanzania, Algeria, Mozambique, Guinea-Bissau, Rhodesia (now Zimbabwe), South Africa, Dahomey (now Benin), Ivory Coast, Cameroon and Mali.

Furthermore, in 1963, China sent military supplies to guerillas in eastern Congo and a secret military camp in Ghana from Tanzania and Congo-Brazzaville (Rotberg, 2009). Scholars such as Friend and Thayer (2018) explain that CAR served multiple purposes. First, China needed the support of African in its diplomatic battle with Taiwan (Republic of China). This was not only to support a "one China" policy but also to aid China's UN membership bid. As a result, recognition was seen as a reflection of sovereignty, the golden ring that political leaders hope to grasp (Krasner, 2009). According to Hanauer and Morris (2014), Africa became a focal point to China's ideological effort to promote revolution, anti-colonialism, and Third World solidarity. In return, China supported Africa's liberation movements during the struggle for independence in both moral and material form.

Hanauer and Morris (2014) add that China's Premier, Zhou Enlai's visits to ten African countries in 1963 and 1964 boosted relations even further. During the visit, the Chinese Premier articulated the Principles for Economic Aid and Technical Assistance to African countries. This would form the basis of China-Africa engagement going forward (Hanauer & Morris, 2014). China's principle of "equality, mutual interest and non-interference" that govern its relations with Africa is based on the "Principles of Peaceful Coexistence." These principles underpin China's present-day emphasis on "friendly relationships" free of political conditions or interference in the internal affairs of African countries (Hanauer & Morris, 2014). Yueh (2012) contends that relations between China and Africa were

consolidated during the 1978 Deng Xiaoping economic reforms which shifted China's foreign and domestic interests, as well as its Africa policy.

According to Hanauer and Morris (2014), the success of China's strategic developmental goals and the unleashing of economic market forces were pull factors for Chinese state-owned enterprises (SOEs) to look outside. They enjoyed access to capital from China's centrally managed policy banks. Africa thus, became the recipient of these investments (Yueh, 2012 cited in Hanauer & Morris, 2014). Chinese policymakers, on the other hand, conceptualised a new framework of all-around cooperation with Africa in the late 1990s, encompassing trade, cultural, and diplomatic ties. This led to the formation of the FOCAC in October 2000. Hanauer and Morris (2014:20) state that "FOCAC was established to coordinate China's activities in Africa and has become the institutional vehicle for managing cooperation with Africa across a range of technical, economic, and political areas". The first ministerial conference under the auspices of the FOCAC took place in October 2000 in the Chinese capital of Beijing.

At this inaugural meeting, Zeleza (2008) and Marafa (2007) indicate that there were over 80 Chinese ministers in attendance, as well as ministers from 44 African countries. Marafa (2007) adds that the Beijing Declaration of the FOCAC promulgated and adopted to serve as the basis for future collaboration. The action plan includes: investments, business cooperation, trade and finance, technology transfer, among others (Aydin & Tekin, 2015). Consequently, Beijing used the FOCAC framework to set out three-year engagement plans toward Africa in the

form of strategic initiatives and economic commitments (Yueh, 2012 cited in Hanauer & Morris, 2014).

In summary, Baah and Jauch (2009) state that Chinese engagement with African nations were driven by ideological considerations during the 1960s and 1970s, with China positioning itself as an alternative to both the West and the Soviet Union. It must be recalled that between 1945 and 1992, Soviet Union-and Africa had relations which covered diplomatic, political, military and cultural engagements. According to Matusевич (2009), in an attempt to reach Africa, the Soviet Union devised four primary strategic objectives. These objectives included creating a long-term presence on the continent, having a say in African politics, undermining Western/NATO hegemony, particularly by associating capitalism with Western imperialism, and preventing communist China from developing a countervailing presence in Africa (Matusевич, 2009).

Baah and Jauch (2009) indicate that at the time, China's assistance to Africa largely consisted of moral and material support for independence movements. In the 1980s, Africa and China relations switched towards economic cooperation based on common objectives. Following the end of the 'Cold War' era, China placed high value to both political and economic benefits portraying itself as an appealing and a more desirable economic partner and political ally. The 'Beijing Consensus', assistance without interference became an alternative to the Washington Consensus (Baah & Jauch, 2009).

According to Osei and Mubiru (2010 cited in Asongu & Aminkeng, 2013), CAR has really sparked a raging debate in development circles. Baah and Jauch

(2009) argue that many African leaders admire China because of its no-strings-attached commitment to aid and investment. If African countries want to avoid being merely material suppliers, they must work to shape their relations with China (Baah & Jauch, 2009). Pessimists have always argued that China's presence in Africa is a threat to the sanctity of the latter's environment. African governments, on the other hand, see their relations with China as a credible and realistic alternative to their neocolonial ties with the West, as exemplified by the neoliberal policies of the 'Washington Consensus'. The term Washington Consensus is used to refer to common policy advice by Washington-based institutions such as the International Monetary Fund, and the World Bank backed by the US. These policies include fiscal policy discipline, tax reforms, trade liberalisation among others (Pee, 2018).

China offers Africa trade alternatives to the West. As indicated earlier, China's economic development and growth are fueled by growing manufacturing industries that need more energy and raw materials (Ado & Su, 2016). Africa is seen as a continent which can provide these resources to China at a competitive price. Until recently, Africa had no major external trading partner except the West. This dates back to the pre-colonial era when Portuguese merchants arrived in Africa. The West monopolised trade in Africa and almost all of Africa's major export commodities were sent to Europe and America. This led to the exploitation of African states because there was no competition in trade (Hahnel, 2002; Rodney, 1972). With the current interest from China, Africa has an alternative. In recent times Africa has traded more with China than the USA and the European Union.

It has been observed that deepening economic partnership with China has increased market prices of certain African commodities resulting in additional revenue and economic growth for African states (Ado & Su, 2016; Marafa, 2007). According to Marafa (2007:5), “a cursory look at China’s import of energy and oil resources show that it imports between 25% to 30% of its oil from Sub Saharan Africa, mostly Sudan, Angola, Nigeria, Gabon”. In terms of global trade, China surpassed the USA and France to become Africa's leading trading partner in 2009 (World Bank, 2015) and this continues to grow. For, example, China-Africa trade moved from US\$10 billion in 2000 to US\$91.07 billion in 2009 (FOCAC, 2010). By November 2018, China's combined import and export volume with Africa had reached US\$204.19 billion, a year-on-year increase of 19.7%, according to data from China's General Administration of Customs (MOFCOM, 2018).

In addition, MOFCOM (2018) reports that China's exports to Africa increased by 10.8% to US\$104.91 billion, while imports increased by 30.8% to US\$99.28 billion, resulting in a US\$5.63 billion surplus, down 70.0% year on year. China's trade with Africa expanded at the fastest pace in the world in 2018. In addition, the rate of increase in imports was the largest in the world, 15 percentage points higher than the rate of increase in international trade between China and its other trade partners over the same period (MOFCOM, 2018). Ado and Su (2016) and Marafa (2007) indicate that China has formed trading ties with almost 40 African countries and established more than 150 trade companies and agents on the continent. Table 1 shows the volume of China and Africa imports and exports from 2004-2020.

Table 1: China's imports from Africa and exports to the same destination

Year	Imports (US\$ billion)	Exports (US\$ billion)
2004	13.74	13.73
2005	18.99	18.60
2006	26.79	26.58
2007	33.91	37.37
2008	51.04	51.09
2009	40.31	47.64
2010	60.27	59.81
2011	73.63	72.92
2012	78.91	85.13
2013	81.11	92.57
2014	79.86	105.83
2015	47.53	155.70
2016	41.27	91.98
2017	60.21	94.50
2018	80.34	104.95
2019	78.68	113.05
2020	61.95	113.96

Source: UNComtrade data from 2004-2020

Furthermore, investment, especially in oil and minerals has been a critical factor in China's economic interest in Africa (Ado & Su, 2016). In the last three decades, China has bought and started a number of businesses in Africa. Unlike the states in the West, which saw Africa as producers of raw materials and had few strategic investments in Africa, China has put up manufacturing plants in almost

every part of Africa (Ado & Su, 2016). Marafa (2007) states that China has acquired rights on copper, oil and other mineral resources in Zambia, Democratic Republic of the Congo, and Ghana etc. Chinese firms in Africa have shown remarkable prowess in sectors such as manufacturing, resources, and infrastructure. Apart from oil, coal, and other natural resources, which dominated early trade between the two parties, Chinese citizens are gradually looking to Africa as a new market destination for a variety of goods (Ado & Su, 2016).

Mining, manufacturing, agriculture, banking, finance, transportation and logistics, housing, information communications technology, and telecommunications are among the sectors where Chinese companies are investing heavily (Sautman & Hairrong, 2007). In the opinion of Hanekom (2017), there are over 10,000 Chinese companies operating in Africa, employing several million Africans. This fiscal stimulus has a substantial economic effect on cities that have long suffered from economic inequalities. Sautman and Hairrong (2007) submit that in 2004 Chinese companies invested about \$135m in Africa and in the first ten months of 2005, \$175m came to Africa as investment. In recent years, Africa has thus become a popular FDI destination for Chinese firms. With growing outflows to the continent in recent years and predicted to rise in the future, China's FDI portfolio in Africa reached more than \$26 billion in 2018 (UN Comtrade, 2020). Table 2 presents Chinese FDI to Africa from 2013 to 2020.

Table 2: Summary of China’s FDI to Africa from 2013-2020

Year	US\$ 100 million
2013	262.00
2014	323.50
2015	347.02
2016	398.92
2017	433.25
2018	461.22
2019	444.15
2020	433.92

Source: UNComtrade data from 2013-2020

Furthermore, China provides development assistance, loans and infrastructure finance. Africa has had a very long standing relationship with the West especially because of colonial rule. The West continues to have interests in Africa and continues to provide development assistance, loans and policy interventions to African states. These development assistance and policy interventions however, have often come from the World Bank and the International Monetary Fund (IMF) with stringent conditionalities, unlike loans and aid from China. For example during the economic crisis of the 1980s, African states approached the World Bank and IMF for support (Blankson, Mbah & Abeson, 2015; Milward, Giles, & Zack-williams, 2000).

In order to qualify for the loans, it was mandatory for states to reform their economic structure. As a result, countries adopted economic strategies in order to

qualify for new World Bank and IMF loans. It was also to help them offset older debts owed to commercial banks, states, and the World Bank. Cohen (2011) observes that the China Exim Bank, a state bank owned exclusively by the Chinese government and the official credit agency of the country, is the largest export credit agency in the world. Over the past decade, in total, China has provided Sub-Saharan Africa \$12.5 billion more in loans than the World Bank.

According to Cohen (2011), between 2001 and 2010, the world's poorest region received \$67.2 billion in loans from China, relative to the World Bank's \$54.7 billion. In terms of loans, China has employed low interest loan agreements aimed at strengthening its economic relations with Africa and aiding the continent's growth. China sees its foreign assistance and investment as promoting Chinese economic interests as well as assisting Africa's development (Haroz, 2011). As a result, almost half of Chinese assistance is listed as official aid, with the remainder consisting of concessionary loans and debt reliefs.

Haroz (2011), states that China provided \$800 million in aid to Africa in 2005, including concessional loans. It must be noted that between 2009 and 2012, this commitment has reached \$10 billion. In the past, Africa had difficulties in attracting finance for infrastructural development. Today, China is deeply involved in providing finance for infrastructural projects in Africa (Schoeman, 2007). It is instructive to note that one of the first famous examples of Chinese loans for projects in Africa is the Tanzania-Zambia Railway. It was constructed between 1970 and 1975 and for which China offered an RMB980 million (\$150 million) zero-interest loan.

The discussions above clearly show how important China has become in terms of development assistance to African states. For more than a century, Africa's trade partner was the West, which hitherto, monopolised trade between them. This monopoly led to the exploitation and underdevelopment of Africa and the development of the West as suggested by dependency theorists. It is evident that the current China-Africa trade relations present opportunities for Africa's development. China's support is by way of low interest loans, infrastructure finance and an alternative to the Western capitalists' development model. Even though the Sino-Africa relations have produced some positive results, there have been some drawbacks which are largely due to the nature of the relationship.

According to Baah and Jauch (2009), South Africa, Egypt, Nigeria, and Algeria are the major African export destinations for China. On the other hand, African major exporters to China are Angola, South Africa, Congo, Equatorial Guinea, and Ghana are the main African. Minerals, petroleum, and timber are Africa's main exports to China. These are mainly raw materials with limited processing. Africa's imports from China are largely consumer goods, capital and now labour. Overall, the trade balance is slightly in China's favour (UNComtrade, 2020). Baah and Jauch (2009) state that several countries like South Africa, Morocco and Ghana have substantial trade deficits and China's need for natural resources has negative environmental consequences.

Environmental Impacts of China-Africa Relations

Even though CAR is rooted in a long history comprising of diplomatic, economic, socio-political, strategic and cultural dimensions, Konings (2007) argues that the relationship has largely been based on development ventures related to China's need for natural resources. These include crude oil to power its current, emergent economy. It is also to preserve its growing industrial base in addition to catering for the speedy development of its manufacturing sector (Konings, 2007). Bosshard (2008) adds that even though China's investments in Africa might bring growth in trade and industry, in the long term it causes resource depletion and may impact adversely on the environment. Economy (2007) states that environmental concerns have arisen because Chinese investments, which range from energy to infrastructure, are frequently ecologically sensitive.

Moreover, water powered projects and lumberjacking sectors generally are huge environmental risks (Economy, 2007). It is interesting to note that a basic understanding of China's environmental practice and law show that domestic environmental policies eventually tend to reflect in its approach elsewhere, including Africa (Bosshard, 2008). In support of this claim, Compagnon and Alejandro (cited in Shinn, 2016) conclude that Chinese companies replicate in Africa, poor environmental practices and attitudes they had routinely adopted at home.

Furthermore, Shinn (2016) submits that environment conservation and protection have never been a particularly high priority for African governments. Traditionally, leaders in Africa have been interested in poverty, ethnic violence,

and disease among others. For example, Shinn (2016:29), reports that a study by “the Pew Research Center’s Global Attitudes Project, surveyed people in forty-four countries regarding five of the greatest dangers in the world: religious and ethnic hatred, inequality, AIDS and other diseases, nuclear weapons, and pollution and the environment”. The survey was done in nine African countries including: Nigeria, Tunisia, Egypt, Tanzania, Senegal, Kenya, South Africa, Ghana and Uganda. With the exception of one, all the countries viewed degradation to the environment as less important of the five concerns (Shinn, 2016).

Nonetheless, Shinn (2016) explains that in recent times, the Exim Bank of China, the main lending institution for Chinese firms doing business abroad, has been promoting sound and sustainable environmental policies. For example, in 2004, the bank created its own environmental policy and impact assessment. It urged Chinese companies doing business in other countries to comply with host country policies on sustainability and environmental conservation (Corkin, 2009). Environmental issues were not a major part of the dialogue in the early years of the FOCAC 2006 in Beijing (Corkin, 2009).

At FOCAC 2006, Chinese and African leaders pledged to strengthen environmental cooperation, share experiences, and promote long-term development (FOCAC, 2006 cited in Shinn, 2016). This was as a result of a recommendation by an OECD working party on environmental performance in June, 2006 (Shinn, 2016). Although environmental concerns have become an important part of discussions of FOCAC since 2006, environmental concerns have not been a priority in the China-Africa trade relations. The need for economic

growth and natural resources has now become the focus of both African and Chinese governments respectively. In respect of this, China has been criticised for causing environmental destruction particularly depletion of forests and pollution of water bodies in Africa. This therefore provides support for the dependency scholars and western critics who argue that the Communist state is on the verge of colonising Africa. The ongoing engagement between China and Ghana is not an exception to this problem but in many ways help to exacerbate this dilemma.

In Ghana, China's record on the environment is not different from what pertains in China and other parts of Africa as noted earlier. China is involved in mining, provision of infrastructure and construction, among others. This study focuses on the environmental impacts of Chinese SSIM on the environment especially forest. In Ghana, the involvement of Chinese in IGM (known locally as galamsey) has become a common phenomenon. Crawford and Botchwey (2017) submit that although SSM and illegal mining are not new in Ghana, the proliferation of Chinese miners and the use of heavy equipment/machines such as excavators, bulldozers, and trench drills, among others, are causing serious damage to Ghana's forest and water resources.

Large areas of land are dug and excavated in a few days because of the use of modern machines and capital. This mechanisation has served as an incentive for local miners to partner with Chinese investors because it comes with high revenue (Boafo et al, 2019; Crawford & Botchwey, 2017). Traditionally, small-scale/illegal miners use basic tools such as pick-axes, shovels in mining. The destruction of land while noticeable was small compared with the recent pattern of Chinese

participation in IGM in Ghana (Boafo et al, 2019). It must be noted that the unregistered small- scale mining undertaken by Ghanaians popularly known as galamsey is unlawful. The Minerals and Mining Act 2006 (Act 703, Section 83a), reserves artisanal and small- scale mining (ASM) for Ghanaian citizens (Parliament of the Republic of Ghana, 2006 cited in Botchwey et al., 2018).

It is therefore illegal for Chinese miners and other foreign nationals to participate in SSM activities in Ghana. It is instructive to note that gold miners from China have been accused of taking over alluvial gold mining from Ghanaians. This has also contributed to conflicts between indigenous miners and Chinese miners over rights to mining sites (Botchwey, Crawford, Loubere & Lu, 2018). Nonetheless, in some cases, Ghanaian miners apply for mining licenses from the Minerals Commission (MINCOM) and form partnerships with Chinese investors and miners (Teschner, 2012). Despite the fact that in many cases, Ghanaians have the mining permits to operate SSM and legally own small-scale mines, the mines are controlled by Chinese investors (Lu, 2017). Crawford and Botchwey (2017) and Teschner (2012) indicate that Chinese migrant miners have therefore, been integrated into the widespread IGM sector.

The SSM sector has seen increases in gold production. It has also caused serious destruction to the natural environment (Botchwey et al., 2018). The involvement of the Chinese in this unregulated small scale and IGM has resulted in environmental degradation, water pollution and biodiversity loss (Owusu-Nimo, Mantey, Nyarko, Appiah-Effah, & Aubynn, 2018). Boafo et al (2019) note that the use of heavy equipment such as excavators, bulldozers has caused large-scale

destruction of the environment, devastation of farmlands, and pollution of water bodies, particularly rivers and streams that serve as sources of potable water for communities. Teschner (2012) adds that illegal mining has contaminated and destroyed water bodies, such as the Offin, Ankobra, Prah, and Birim rivers, which serve many communities in Ghana. Cocoa farms and forests have also been destroyed by illegal miners through the use of earthmoving machines (Teschner, 2012).

One of the most prominent issues defining recent China-Ghana diplomatic ties is the pervasiveness of Chinese nationals in IGM operations. Consequently, Aidoo (2016) notes that the general populace put pressure on the government to respond to the rising involvement of the Chinese in IGM and the destruction it causes to the environment. Aidoo (2016) claims that the \$3 billion and \$6 billion dollars loans from the China Development Bank (CDB) and the China Exim Bank, approved in April 2012 respectively faced challenges after the disbursement of approximately \$600 million by 2013. These challenges, according to Aidoo (2016) and Sanderson and Forsyth (2013), were based on Ghana's newly discovered oil resources with which China's interest in the sector remained contentious.

This was further complicated by the IGM (galamsey) crisis which came to a head in 2013 and the deportation of Chinese illegal miners arrested by the anti galamsey Taskforce. Debrah and Asante (2019) explain that between April and June 2013, about 5234 Chinese migrant illegal miners were arrested and deported after the Taskforce conducted sporadic swoops on mining sites. The Taskforce also arrested several of their Ghanaian associates. Consequently, the three billion dollar

loan disbursements stalled (Wayne & Hinshaw, 2014) and by the fourth quarter of 2014, Ghana had returned to IMF for a loan of almost \$1 billion dollar (Bax & Dontoh, 2014).

Aidoo (2016) argues that the Ghanaian government's anti-galamsey activities complicated its relations with China in general and hampered a historic move in Ghana-China economic engagement. In recent times, it was revealed that a Chinese national, Aisha Huang, who engaged in IGM activity, became so powerful that she used her relationship with some top government officials to undertake IGM. She was untouchable in the country and operated several illegal mining sites (Botchwey, Crawford, Loubere, & Lu, 2018). On May 9, 2017, she was arrested with four other Chinese illegal miners. Botchwey et al (2018) explain that they were arraigned before court for operating illegal mining activities at Bepotenten in the Amansie Central District in the Ashanti Region (Botchwey, 2018). The Attorney General's Department subsequently withdrew the case and they were hurriedly repatriated to China in December 2018.

In the wake of criticisms, the Senior Minister, Yaw Osafo Maafo indicated that jailing Aisha Huang would not have solved Ghana's economic challenges. Attention was therefore directed to the benefit of GCR as seen in a \$2 billion deal to provide infrastructure. This comment was condemned by leading politicians, civil society groups and Ghanaians (*Daily Graphic*, 2019). The complexity of GCR contributes to the debate between pessimists and optimists of China's growing role in Ghana. To Aidoo (2016), CIIM is part of a larger discussion of the impact of

sub-national elements on foreign political economic relations among countries with focus on the implications of paradiplomacy in developing world.

The above discussions show that Ghana and China in the last two decades have supported each other in terms of development. In this regard, Ghana has turned to China for low interest loans, development assistance, trade (imports) and infrastructure finance. In return, the West African state exports natural resources and raw materials such as oil, gold, timber, cocoa among others to feed the growing Chinese manufacturing industry. China has thus, become a leading trade partner (export) of Ghana ahead of the USA and United Kingdom (UK) in recent years.

Nonetheless, Chinese migrants have been accused of engaging in IGM and logging thereby causing environmental problems such as forest degradation and pollution of water bodies in Ghana. All efforts by government to end these IGM have proved futile. To this end, this study argues that government officials have compromised the law in order not to ruin its relations with China. This position is supported by dependency and Sino-pessimists theorists who claim that China-Ghana trade relations may lead to colonisation and exploitation of the people and its resources.

Ghana-China Diplomatic and Bilateral Relations

Bilateral relation is formed when two nation states recognise each other and agree to diplomatic relations. Political, economic, cultural, and historical ties, as well as people-to-people interaction, are all examples of bilateral diplomacy (Melissen, 2005). Melissen (2005) adds that bilateral relations are characterised by

cooperation between organisations and individuals at the institutional and political levels. It also includes cooperation in the private sector, academia, and civil society. Bilateral relations encompass a wide range of issues, such as investment and commerce, cultural linkages, and general knowledge. Others include understanding and public awareness of the other country and the ties that exist among them (Melissen, 2005).

China has deep historical ties with Ghana and this dates back to pre-colonial times. Formal diplomatic relations between the two states were established in 1960 (Idun-Arkhurst, 2008). Indeed, Sarpong (2015) states that a Chinese community has existed in Ghana since, at least, the 1940s. Furthermore, Sarpong (2015) indicates that in the late 1940s and early 1950s relatives of ethnic Chinese migrated to Ghana. In the late 1960s and early 1970s, some of them began transporting their wives and children to Ghana (Sarpong, 2015). With the financial reform and opening up in the People's Republic of China, migration to Ghana intensified in the 1990s. Frimpong and Nubuor (2013) posit that even though formal bilateral relations between Ghana and China dates back to 1960, China's role in Ghana became significant only recently.

Frimpong and Nubuor (2013) state that the Nkrumah government and the Communist Party of China were important allies in the struggle to decolonise Africa. Consequently, China built a secret military training camp in Ghana to train freedom and liberation fighters for independence struggles in Africa. As allies, Ghana and China waged war for the decolonisation of Africa and provided support to African countries. In return, Ghana and the rest of Africa supported the re-

instatement of the People's Republic of China (PRC) as the legitimate government and representative of China at the UN in 1971 (Sarpong, 2015). The first high level visit between the two states occurred in 1964 when Chinese Premier, Zhou Enlai, visited Ghana (Sarpong, 2015). In 1989, Ghanaian military leader Jerry John Rawlings paid a visit to China shortly after the Tiananmen affair.

At a time when China was facing foreign criticisms and alienation, Ghana became the first country to send a high-level official to China (Sarpong, 2015). Ghana and China continue to enjoy close ties and the friendship has been consolidated through high level exchanges between leaders of the two states (Idun-Arkhurst, 2008). Presidents John Agyekum Kufuor and John Evans Atta Mills both visited China during their terms in office. China responded by sending representatives and leaders to Ghana, including President Hu Jintao and Premier Wen Jiabao in 2003 and 2007 respectively (Idun-Arkhurst, 2008).

The current President, Nana Addo Dankwa Akufo-Addo in September 2018, visited China to attend the Seventh Summit of FOCAC in Beijing (FOCAC, 2018). This visit was reciprocated by Sun Chunlan, the Vice Premier of the People's Republic of China in November 2019 (*Daily Graphic*, 2019). According to Idun-Arkhurst (2008), since 2007, the relations between Ghana and China have been strengthened. This is seen in the area of trade, infrastructure development, telecommunications, education, health and culture. For example, in 2018, the two states signed eight (8) cooperation agreements including the \$2 billion MPSA with Sinohydro Corporation Limited to develop infrastructure in Ghana (FOCAC,

2018). In return, China will receive alumina supply from Ghana's bauxite deposits in Atewa, Awaso and Nyinahin (FOCAC, 2018).

Despite establishing diplomatic relations in the 1960, China's influence in the development of Ghana was limited except the establishment of a military training camp in the country to support Africa's liberation struggle from colonial rule. Nevertheless, in the last two decades, the two nations have shaped this relation to focus more on economic development. China has therefore, become one of Ghana's key trade partners in both imports and exports of raw materials, goods and services. It is instructive to note that loan agreements between Ghana and China have led to increase trade relations amongst them.

Key Loan Agreements Signed between Ghana and China

Since 2007, Ghana and China have entered into different loan agreements in support of infrastructural development in the West African state. These loan agreements are often guaranteed through export sales of raw materials to China. Key among these loans are the 2007 Bui Dam Project, the MFA signed in 2011 and the 2018 MPSA among others. It will be recalled that in December 2007, Ghana and China signed a loan agreement for the building of the Bui Power Dam estimated at a cost of US\$622 million (Sarpong, 2015). The China Exim Bank provided a concessional loan of US\$270 million at 2% interest and a commercial export buyers credit of US\$292 million at 1.075 per cent over the prevailing Commercial Interest Reference Rates (CIRR) (Dreher, Fuchs, Parks, Strange, and Tierney, 2017; Sarpong, 2015). The government of Ghana, on the other hand, contributed the

remaining US\$60 million. The repayment period for the concessionary and the commercial loans are 20 years and 17 years (a grace period of five years) respectively (Dreher et al, 2017).

Furthermore, in 2012, the Ghanaian government signed loan agreements with the CDB and the Exim Bank totaling US\$ 13 billion, accounting for 33 percent of Ghana's GDP (GDP) (Parliament of Ghana, 2012). The deals included a US\$ 3 billion CDB facility known as the MFA. This loan facility was earmarked for the Western Corridor Gas Commercialisation Project. Another US\$ 9 billion deal with the China Exim Bank was signed for road, railway and dam projects (Sarpong, 2015). The two states again signed a US\$ 250 million deal for the rehabilitation of the Kpong Water Works (Sarpong, 2015). They also signed an \$850 million agreement for a gas project between the Ghana National Gas Company and China Petroleum and Chemical Corporation.

Finally, in 2018, Ghana and China signed eight (8) different Cooperation Agreements and Memoranda of Understanding in various sectors to further strengthen bilateral relations (FOCAC, 2018; Ministry of Foreign Affairs and Regional Integration (MFA, 2018). The cooperation agreements were “One belt, one road Memorandum of Understanding, Memorandum on Regional Aviation Cooperation, Agreement for Cooperation in the peaceful use of nuclear energy, Cooperation to carry out Maternal and Child Health Project Framework, Economic Cooperation on Phase 2 project of the University of Health and Allied Sciences in Ho, Cooperation on the expansion of the Cape Coast Stadium and Cooperation on the supply of police vehicles to the Ghana Police Service” (MFA, 2018:1).

The agreement also includes the \$2 billion Sino-Hydro Master Project Support Agreement (MPSA) for infrastructural development (MFA, 2018). The \$2 billion MPSA is part of a wider loan facility worth \$19 billion agreed between the two states (MFA, 2018). Ten (10) billion dollar out of this money is earmarked for the establishment of bauxite processing factory, the development of industrial and railway sector. Construction work on the railway sector will cover a total of 4,000KM of new routes. Some of the key towns in Ghana to hold terminals are Kumasi, Sunyani, Techiman, Tamale and Paga (Debrah & Asante, 2019).

It is instructive to note that loan agreements between Ghana and China from 2007 have always created trade (import and export) between the two states. It has also promoted Chinese migration to Ghana. Each loan agreement requires the supply of raw materials such as cocoa, oil and alumina from Ghana to China. For example, the Chinese loan for the Bui Hydro Power Project was guaranteed through export sales of cocoa beans. Dreher et al (2017) indicate that Genertec Corporation of China signed cocoa sales agreement with the Ghana Cocoa Board for up to 40,000 metric tonnes. This was made up of 30,000 from the main crop season and 10,000 from the light crop season annually over the life of the loan which is 20 years (Dreher et al, 2017 & Sarpong 2015).

Also, Ghana agreed to supply 750 million barrels of its crude oil to China for more than 15 years under the 2012 MFA. The agreement “provides for Ghana National Petroleum Commission (GNPC) to deliver to UNIPEC Asia and for UNIPEC Asia, to purchase and lift from the GNPC, 13,000 barrels per day of

Jubilee Crude Oil at a standard cargo size of 950,000 net U.S. barrels” (Parliament of Ghana, 2012:7). In the agreement, the:

“Ministry of Finance and Economic Planning (MOFEP) and GNPC assumed a price of US\$85 per barrel of Jubilee Crude for the first five (5) years; US\$90 per barrel of Jubilee Crude for years 6 to 10; and US\$95 per barrel of Jubilee Crude for years 11 to 15. Therefore, based on the supply of 13,000 barrels per day, the total amount payable to the Government by UNIPPEC Asia over the 10 years period of the Subsidiary Agreement is US\$4,157,875,000. This figure is in excess of the loan amount of US\$3.0 billion” (Parliament of Ghana, 2012:14).

Dreher et al (2017) indicate that the loan agreement also stipulated that 60% of all contracts under the loan agreement will go to Chinese companies. The rest is reserved as local content for Ghanaian contractors.

Furthermore, under the 2018 MPSA commodity-swap arrangement discussed above, Ghana will give a portion of its bauxite reserves to China as an exchange for the loan (FOCAC, 2018). According to the agreement, the government of Ghana will pay Sinohydro the total contract amount using proceeds from the sale of refined bauxite as a source of funds, which will be charged over a twelve-year cycle after a three-year deferred period (Parliament of Ghana, 2018). The agreement also provides for 70% of all contracts under the Sinohydro agreement going to Chinese contractors with 30% local content reserved for Ghanaian contractors (Ministry of Information, 2018).

The above examples show how loan agreements between the two states have resulted in the exports of raw materials from Ghana to China as guarantee for the loans. It has also promoted the migration of Chinese nationals who come to Ghana to work on some of these contracts. In this regard, it can be argued that, whilst China is in Ghana for oil, gold, timber, cocoa and other raw materials, the West African state has approached China for trade and low interest loans to finance infrastructure. Since 2000, China has financed some key infrastructural developments in Ghana. Examples of some of these projects are discussed in the next section.

Chinese Activities in Ghana Since year 2000

As noted earlier, diplomatic relations between Ghana and China have existed since 1960. This relation has evolved from a diplomatic one to economic cooperation (Debrah & Asante, 2019; Aidoo, 2016). Aidoo, Martin, Ye and Quiroga (2017) explain that relations between China and Ghana have progressed from ideologically driven alliance since the Nkrumah regime to a constructive economic partnership. As a result, China has consistently shown interest in various sectors of the Ghanaian economy. This includes infrastructure loans and investments, as well as fiber optics (Aidoo, Martin, Ye & Quiroga, 2017; Aidoo, 2016; Ado & Su, 2016). Aidoo (2016) adds that Ghana has benefited from complementary economic engagement with Beijing as it seeks to expand its resources and role in Africa.

Chinese investments in Ghana have led to the successful implementation of key projects such as the Cape Coast Sports Stadium, Kotokuraba Market, the Bui

Hydro-electric Dam, the Kpong Water Supply Expansion Project, the Gas Pipeline Project, construction of the Esipong stadium at Sekondi-Takoradi and the Sunon-Asogli Power Plant (Debrah & Asante, 2019; FOCAC, 2018; Idun-Arkhurst, 2008). In addition, Ghana's gas processing plant located in Atuabo was built by Chinese energy firm Sinopec and financed by the China Development Bank (Debrah & Asante, 2019; Aidoo et al, 2017). In addition to external aid and technical assistance China provides to Ghana's oil sector, it has, in the past, offered four helicopters and patrol boats to be used by the Ghana Navy for securing oil resources (Aidoo et al, 2017).

In June 2007, during the visit of Chinese Premier Wen Jiabao to Ghana, China and Ghana issued a Joint Communiqué on improving cooperation in commerce, technology, telecommunications, education, health, and culture (Idun-Arkhurst, 2008; Shelton, 2005). In addition, Idun-Arkhurst (2008) states that six development agreements were signed between Ghana and China during the Chinese Premier's visit. These include a \$66 million loan deal to expand and modernise Ghana's telecommunications network, including the building of fiber optic networks, and an agreement to build a malaria center and a primary school in Ghana. Frimpong and Nubour (2013) note that the newest areas of Chinese financing and investment are emerging in the fledgling oil and gas sectors. From 2014 to 2018, Sinopec engineers were responsible for providing technical operations for Ghana Gas Company.

At present, the Chinese government through Sinohydro Corporation is financing some selected projects in Ghana under the MPSA or the \$2 billion

Sinohydro Loan. Some of the ongoing projects are the Tamale Interchange, construction of Accra Inner City roads, construction of Kumasi and Mampong Inner City roads, the PTC Roundabout Interchange, in Sekondi-Takoradi, and the dualisation of the Adenta-Dodowa road. Other projects include the construction of the Sunyani Inner City and Berekum Township roads, construction of Prestea Township and Cape Coast Inner City roads, and upgrading of Selected Feeder Roads across the country (Ghana Presidency, 2019).

In terms of education, the Ministry of Education indicates that more than 300 Ghanaian students have earned scholarships from the Chinese government and universities to pursue bachelors, masters, and doctoral degrees in medicine, agriculture, software engineering, and other disciplines (*Daily Graphic*, 2018). As at the end of 2017, a total of 1,076 Ghanaian students had won Chinese government scholarships (*Daily Graphic*, 2018). In 2010, Parliament of Ghana approved a concessional loan of \$119.1 million from Exim Bank of China for the upgrade and construction of state of the art training workshops for polytechnics, technical universities, and ten technical institutes (Parliament of Ghana, 2019). The project which includes mechanical engineering, automobile engineering, civil engineering, welding engineering and others are being constructed by Aviation Industry Corporation of China Limited (AVIC holding), a Chinese company.

Since year 2000, China has been a key partner to Ghana's development (Parliament of Ghana, 2019). Additionally, China's emerging economy also serves as ready market for Ghana's natural resources such as oil, gold, timber, diamond, bauxite and other non-traditional exports (Frimpong & Nubour, 2013). Unlike

Western development assistance, which comes mainly in the form of outright transfers of cash, material and are often concentrated around institutional and policy frameworks (Opoku-Mensah, 2010 cited in Frimpong & Nubour, 2013), Chinese assistance consists mostly of export credits and loans which are fast and flexible. They come with low or no interest and largely without conditions for infrastructure projects.

The Chinese arrangement has become more favourable and attractive to African governments including Ghana. Ghana has signed different agreements with China for loans to finance huge development projects in the last two decades. As a result, exports to China have increased substantially. The Communist state has thus, become the leading source of Ghana's export in oil/fuel and minerals.

Ghana-China Trade and Investment Relations since 2000

Since the year 2000, China's trade and investment in Ghana has increased steadily. Trade volume has surged from less than \$100 million in 2000 to \$6.7 billion in 2017 according to the Ministry of Trade and Industry (MOTI) (UN COMTRADE, 2019; World Bank, 2018). Exports from Ghana to China was US\$2.03 Billion and Ghana imports from China was US\$2.27 Billion during 2018 (GIPC, 2019). The Chinese Embassy (2019) reveals that Ghana's trade deals with China have increased significantly, making Ghana move up to the 7th position among African countries. Table 3 shows Ghana's imports from China and exports to the same country.

Table 3: Summary of Ghana’s imports from China and exports from 2004-2020

Year	Exports (US\$ Million)	Imports (US\$ Million)
2004	80.38	510.40
2005	96.01	672.42
2006	79.68	803.09
2007	53.52	1228.02
2008	93.40	1747.89
2009	79.62	1533.70
2010	123.38	1932.87
2011	363.18	3109.95
2012	643.55	4790.75
2013	1203.33	3946.03
2014	1452.60	4134.57
2015	1296.47	5308.88
2016	1309.65	4666.60
2017	1852.94	4824.80
2018	2426.14	4821.89
2019	2543.92	4906.97
2020	1740.92	6756.06

UNComtrade data from 2004-2020

According to Aidoo (2016), the collaboration between these two countries has yielded significant gains. GCT volume registered \$6.7 billion in 2017 up by 11.69 percent of 2016 figures (GIPC, 2018). Frimpong and Nubuor (2013) contend that the increasing share of Chinese imports in Ghana, as well as the more diverse

imports, compared with other countries, can be attributed in part to the attractiveness of Chinese imports compared to other traditional sources of Ghanaian imports, as well as the Structural Adjustment Programme, which developed an austerity climate that forced Ghana to search for cheaper imports.

Despite the growth in trade, Idun-Arkhurst (2008: 12) argues that “Ghana-China trade follows a classic North-South model, with Ghana exporting mainly primary commodities such as cocoa beans; manganese; sawn timber; natural rubber and vegetable products; oil and metal ores, concentrates and scrap”. Conversely, Ghana’s imports from China are mostly a wide range of manufactured goods. These goods include electronics, textiles, clothing, machinery and automobiles. Currently, China is Ghana’s second largest exporter (World Bank, 2019). In terms of imports, China has overtaken the US as Ghana’s largest importer. Table 4 presents the 2017 export and import destinations of Ghana.

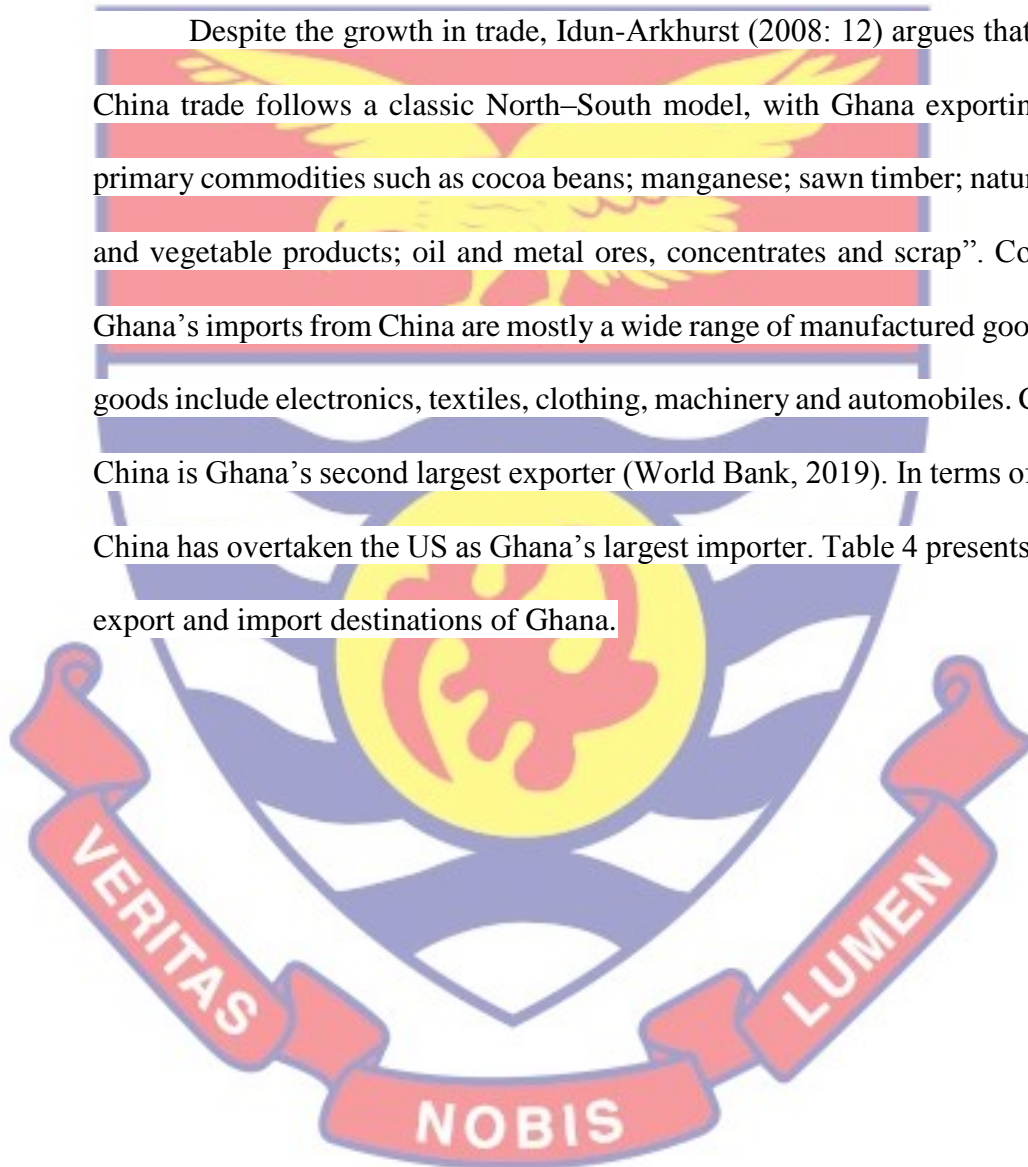


Table 4: Ghana's top export and import destinations in 2017

Country	Total Export (\$)	Percentage Share (%)	Total Import	Percentage Share (%)
India	2,689,424.01	18.73	633,288.86	4.98
China	2,381,361.08	16.59	2,134,176.11	16.78
Switzerland	1,660,098.20	11.56	46,441.42	0.37
South Africa	910,266.14	6.34	910,863.91	3.23
USA	407,970.07	2.84	1,200,057.70	9.44
UK	329,469.63	2.29	1,099,103.12	8.64
France	261,795.33	1.82	192,901.21	1.52
Germany	233,065.97	1.62	341,512.26	2.69
Spain	213,181.19	1.48	754,551.58	5.93
Belgium	155,800.41	1.09	718,810.38	5.65
Others	-	35.64	-	40.77

Source: Ministry of Trade and Industry (2018) and World Bank (2019)

In terms of investment, Idun-Arkhurst (2008) states that Chinese reported flows have risen to \$1.6 billion in 2014, up from \$4.4 million in 2000, according to the Ghana Investment Promotion Centre (GIPC, 2018). Despite the fact that the manufacturing sector reclaimed its position as the main retainer of Chinese investment in 2014, the General Trade sector has seen a steady flow (GIPC, 2018). By 2017 however, China became the lead source of FDI in terms of project numbers in Ghana, followed by India and the UK from January to September (GIPC, 2017). The 2018 data from GIPC shows that China is still the leading source country in

terms of the number of projects. Chinese investors participated in 37 different ventures, with 18 projects; India came second with investors participating. This was followed closely by the Netherlands and UK with 15 and 12 projects respectively (GIPC, 2018). Table 5 gives details of Chinese FDI flow to Ghana from 2010-2019.

Table 5: Summary of China's FDI to Ghana from 2010-2020

Year	US\$ Million
2010	55.98
2011	40.07
2012	208.49
2013	122.51
2014	72.9
2015	283.22
2016	490.61
2017	44.2
2018	124.25
2019	29.41

UNComtrade data from 2010-2019

China's close relations and deep involvement in Ghana point to its quest for natural resources which is the driving factor in CAR. Driven by the neoliberal agenda, China seeks to exploit Ghana's cheap production and natural resources to meet Chinese demand, and then use Ghana as one of African markets for its manufactured goods such as electronics, clothing and textiles. As stated earlier, China has numerous agreements with Ghana for access to oil and mineral rights.

Increased exports have played in expanding Ghana-China trade. The influx of these goods into the Ghanaian market has threatened local businesses. Sino-pessimists and media analysts have been quick to point out the dangers posed by the rapid influx of Chinese goods into Ghana, and the impacts to its development.

Critics also argue that this practice has the tendency of collapsing Ghanaian clothing and textile industries thereby causing unemployment, reduced government revenue, decline in economic growth and dependency leading to degradation of the environment by the increasing number of poor people. In addition, the rise of IGM and trade by Chinese immigrants in Ghana continue to pose threat to the attainment of Ghana's SDGs.

Chinese Migration to Ghana and Small-Scale/Illegal Gold Mining

Ma Mung (cited in Park, 2009) groups Chinese migrants to Africa into three types. These are temporary labour migrants who are brought by large Chinese enterprises to work on public building works and large infrastructure development projects. The second and third types of migrants are small-medium entrepreneurs and transit migrants. According to Ho (2008), the earliest ethnic Chinese migrants to Ghana arrived from Hong Kong in the late 1940s and early 1950s. Nonetheless, Li (2012 cited in Botchwey, Crawford, Loubere & Lu, 2019) states that Chinese migration to Ghana dates back as far as the indentured Chinese labourers who were introduced to the former Gold Coast (now Ghana) by the British colonial government in the late 1800s to work in the gold mines.

Ho (2008) adds that the second wave of Chinese migrants to Ghana consisted largely of men who worked as employees in Chinese-owned factories which were concentrated in western Ghana. The Chinese began to move to Accra and Tema when the Kwame Nkrumah government began to implement plans to promote development in the eastern part of the country after independence (Botchwey, Crawford, Loubere & Lu, 2018). In the 1990s, migration from mainland China intensified as a result of the economic reform and opening up of the Chinese state as noted earlier. These migrants worked in a number of industries in Ghana, including tobacco-growing venture, a factory in Takoradi making cooking implements, and wax print clothes, as well as small merchants operating import-export businesses and restaurants (Ho, 2008).

Botchwey et al (2018) add that the number of Chinese non- resident migrant workers in Ghana has increased. This is because Chinese migrants come to Ghana to work on government projects financed by China through an ‘infrastructure- for- resources loan’. In the past, Chinese migrants have come to Ghana to work on projects such as the construction of arterial roads, the Bui dam, and facilities related to the oil and gas industry (Botchwey et al, 2018). Crawford and Botchwey (2017) posit that more recently, Chinese migrants operate small-scale gold mining (SSGM) in Ghana. They also supply funding and heavy machinery to local miners in both legal and illegal mining operations. According to Botchwey et al (2018), Lu (2017) and Kane (2013), gold price hikes in 2008 triggered a rush of foreign miners to Ghana, primarily from China.

Botchwey, Crawford, Loubere and Lu (2018) add that approximately 50,000 illegal Chinese migrants entered Ghana between the mid-2000s and 2013 to participate in SSGM. Currently, there are over 5,000 illegal Chinese gold miners in Ghana according to Boafo et al (2019). In addition, according to the Ghana Immigration Service (2013; 2012), there were 20,392 and 18,307 arrivals of Chinese citizens in Ghana in 2012 and 2013 respectively. Botchwey et al (2018) indicate that many of these migrants came to Ghana because of a boom in SSM. These Chinese miners have introduced new machinery and technology in SSM in Ghana. The introduction of excavators by Chinese miners has the ability to destroy large areas of forest, farmlands and water bodies (Boafo et al, 2019).

State Response to Illegal Gold Mining (IGM)

The first official government response in dealing with IGM in Ghana was the legalisation of SSM in 1989, 'Small-Scale Gold Mining Law, PNDC L I 218'. After the passage of the law, there was a military intervention to deal with all illegal miners (Hilson, Yakovleva, & Banchirigah, 2007). Unfortunately, the passage of the law to legalise SSM and the military operation could not resolve the issues surrounding IGM in Ghana. In September 2006, government announced an operation known as 'Fight Against Illegal Mining or Operation Flush Out'. It was a nationwide military exercise to sweep illegal miners who were expanding to legal mining sites and causing destruction to the natural environment (Hilson, et al, 2007). Hilson et al (2007:3) add that "during the months before the sweep, the Ghanaian government, being aware that illegal mining was becoming

unmanageable and under pressure from the country's mining companies to address the problem, intervened to prevent further expansion of galamsey camps”.

The government had indicated that it was going to earmark areas for galamsey after putting a halt to IGM operations. This never happened and illegal miners returned to galamsey sites (Hilson et al, 2007). Since the failure of this initiative, governments had put in adhoc measures to fight IGM. These have not solved the problem of illegal mining and destruction to forests and water resources. The involvement of Chinese migrants and the use of heavy equipment in illegal mining led to new initiatives by government to deal with this menace.

According to Boafo et al (2019), in May 2013, the Government of Ghana commissioned a five-member Inter-Ministerial Taskforce to clamp down on illegal SSM. The ministries included the Ministry of Lands and Natural Resources (MLNR), Ministry for the Interior and Ministry of Defense. Among other things, the Taskforce was tasked with arresting and prosecuting all Ghanaians and foreigners involved in illegal SSM, seizing equipment belonging to illegal miners and deporting all non-Ghanaians involved in the activity.

Also Ghanaians who have sub-leased their concessions to foreigners should have their licenses revoked (Boafo et al, 2019; Crawford, Agyeyomah, Botchwey & Mba, 2015). Crawford, Agyeyomah, Botchwey and Mba (2015) state that while some members of the public praised the president's initiative, others, especially politicians questioned the effectiveness of the Taskforce's ability to crack down on Chinese miners because of the political ramifications it may cause to the Ghana-China diplomatic ties.

In spite of these concerns, Boafo et al (2019) submit that by 2013, the Taskforce had destroyed hundreds of illegal mining sites and evicted thousands of Ghanaian and Chinese miners from sites. Boafo et al (2019) add that in 2013, over 4500 illegal Chinese miners were arrested in Ghana and deported. Even though some Ghanaians disagreed with the decision to deport the Chinese instead of prosecution, the Chinese government was not happy with the decision. The Chinese government sent a delegation to Ghana to discuss the matter with the Ghanaian government (Aidoo, 2016). According to Boafo et al (2019), in the middle of 2013, Gong Jianzhong, the then Chinese Ambassador to Ghana, also paid a courtesy call to Alhaji Inusah Fuseini, the then Minister for Lands and Natural Resources. He was also the chairperson of the Inter-Ministerial Taskforce, to review the status of bilateral relations between Ghana and China.

The Chinese Ambassador, as part of the discussions proposed a new agreement in which the MINCOM would encourage Chinese miners to collaborate with approved Ghanaian SSM firms. The Ambassador explained that this was to help the Chinese to pass on technical knowledge to their Ghanaian counterparts to develop their capacity for the growth of artisanal mining in Ghana (Boafo et al, 2019). This was rejected because it is in contravention of Ghana's Minerals and Mining Act of 2006 (Act 703). The law prohibits foreign citizens from participating in small-scale economic activities, such as galamsey, which are unregulated.

According to Boafo et al (2019), although the crackdown by the security reduced the number of Chinese illegal miners, the work of the Taskforce could not wholly stop illegal mining involving foreigners (Chinese) and locals. This is

because the Taskforce was made up entirely of state actors, with no input from traditional land actors like chiefs, who deal directly with illegal miners through land acquisitions. The failure of the above programmes to crackdown on the involvement of the Chinese in IGM led to the launch of the campaign against IGM by the Media Coalition Against Galamsey in 2017. Boafo et al (2019) point out that the government responded and launched the Operation Vanguard to end SSIM in the Ashanti, Eastern and Western Region. The operation later targeted the Central Region. The Operation Vanguard was a Joint Military Police Taskforce comprising 400 servicemen from the military and police service.

In 2019, the Ministry of Environment, Science, Technology and Innovation (MESTI) also set up a 64 member Galamstop Taskforce to support the Operation Vanguard team in fighting illegal mining (www.myjoyonline.com, 2019). Boafo et al (2019) submit that government placed a six month ban on all forms of SSM in the country before the work of the Operation Vanguard started. The ban was to make their operations easier and successful. The Taskforce carried out its mission, and by February 2018, over 1000 illegal miners, both Chinese and Ghanaians, had been apprehended.

In addition, hundreds of temporary shelters of illegal miners were destroyed, along with the confiscation and burning of mining equipment. Many detained were either fined or jailed. Foreign nationals who were arrested were deported (Boafo et al, 2019). Hausermann and Ferring (2018) indicate that some corrupt members of the security task forces and others who were under the control of “big men” with political power provided support to foreigners engaged in illegal

operations for personal gains. State interventions to combat SSIM therefore failed to combat IGM partly due to failure of state institutions (Hilson & Maconachie, 2020).

Legal and Institutional Framework for Managing Mining in Ghana

According to Teschner (2012), Ghana has, since the 1980s, put together and adopted legal and institutional framework to guide the operations of both large and SSM industries. The main aim of this framework was to ‘promote, formalise and regulate the mining sector’ (Teschner, 2012). For example, in 1986, government recognising the importance of mining to the development of the nation enacted the Minerals and Mining Law (PNDC Law 153). This law sought to promote and regulate the orderly development of the sector. It is worthy of note that in Ghana, the responsibility for environmental policy and management is spread across different ministries and agencies. The MLNR, MESTI and Fisheries and Aquaculture have overall sector responsibility and lead responsibility for environmental policy.

The Environmental Protection Agency Act 490 (EPA, 1994:1) mandates the EPA to “manage, protect, enhance the country’s environment and seek common solutions to global environmental problems. The agency is dedicated to improving, conserving and promoting the country’s environment and striving for environmentally sustainable development with sound, efficient resource management, taking into account social and equity issues. It oversees the implementation of the National Environment Policy”. The Forestry Commission Act 571 of 1999 establishes the Forestry Commission of Ghana as a corporate body

“responsible for the regulation of the utilisation of forest and wildlife resources, the conservation and management of those resources and the co-ordination of policies related to them” (Forestry Commission, 1999:1).

Furthermore, the responsibility for the regulation and management of the utilisation of the mineral resources of Ghana and the coordination and implementation of policies relating to mining is vested in the MINCOM. The Commission was established under Article 269 of the 1992 Constitution and the Minerals Commission Act 1993, Act 450. It also ensures compliance with Ghana’s Mining and Mineral Laws and Regulation through effective monitoring. Artisanal and small-scale mining (ASM) is also reserved for Ghanaians under the Minerals and Mining Act of 2006 (Act 703, Section 83a) (Parliament of the Republic of Ghana, 2006). It must be noted that SSM was legalised in 1989 under the ‘Small-Scale Gold Mining Law, PNDC L 218’. According to the Minerals and Mining Act 2006 (Act 703), SSM ‘operation means mining operation over an area of land in accordance with the number of blocks prescribed’.

License for SSM is for five (5) years duration. This is renewable upon satisfactory performance during the stipulated period. The MINCOM and the EPA are the core government institutions charged with mining permitting. The EPA and the Water Resources Commission approve an environmental permit (which includes a water use permit). The Minister of MLNR represents the government and, on the advice of the MINCOM, approves the mineral rights for the prospective company. In addition, the inspectorate division of the MINCOM issues final

operating permits. Regulators from the MINCOM District Offices and the EPA conduct on-field monitoring visits to mining sites.

Small scale illegal mining activities in Ghana have evolved and grown steadily over the past two decades from an artisanal mining into a more organised and mechanised sector (Teschner, 2012). In 2018, the Minerals Commission (2019) report indicates that SSM contributed 43% of the total gold production in Ghana. This growth has been linked to the involvement of foreign investors such as the Chinese and the introduction of technologies and heavy earth moving equipment like bulldozers, excavators, crushing machines and suction equipment (Crawford et al., 2015; Teschner, 2012; Hinton, 2005). Unlike in the past, today, mining is not only taking place on land but on riverbanks and riverbeds. This has caused contamination to major water bodies nationwide (Hilson and Maconachie, 2020). In the last decade, both domestic and foreign illegal mining operations have increased (Crawford et al., 2015; Teschner, 2012).

Despite the mandate given to government ministries, departments and agencies to enact laws, bye-laws and to manage the environment, the rate at which Ghana is losing its forest resources as a result of IGM is alarming (Boafo, Paolo & Dotsey, 2019; World Bank, 2006). The loss of these resources will impact negatively on Ghana's quest of achieving the SDGs one, two, three, twelve, thirteen, fourteen and fifteen. Teschner (2012) argues that political leniency and corruption in the enforcement of laws have resulted in the booming of the SSM sector. Regulation has therefore, become highly difficult over time.

Mcquilken and Hilson (2016) explain that inadequate financial, personnel and logistical capacity of state regulators have deepened the enforcement problem. Teschner (2012) indicates that lack of information also contributes to the problem. This is because, miners and operators in the informal sector lack knowledge of the institutions and legal requirements governing the subsector. They also lack basic technical skills and capacity needed for practicing sustainable mining (Teschner, 2012). Hilson (2002) adds that there is generally low environmental awareness within the sector.

Acquisition of Land for Mining in Ghana

Adu-Baffour, Daum and Birner, (2021) note that minerals in their raw states are the property of the state in the trust of its citizens. However, the lands on which such minerals are found could have different type of ownership. Adu-Baffour et al (2021), add that the location of the land and the tenure system play an important role in the transfer for use as a mining concession. According to Adu-Baffour et al (2021:6), “there are five (5) land ownership types in Ghana. These are state lands, vested lands, stool lands, family land and privately acquired lands. The second type is vested lands. Another type is the stool lands. These are lands vested in an appropriate stool or clan authority, represented by the chief or traditional leader, on behalf of its subjects, in accordance with customary law and usage. The fourth type is the family lands. These are lands vested in a family represented by a family head. Finally, the privately owned lands. These are freehold interest lands that have been purchased by an individual or a group of persons”.

It is instructive to note that most lands in rural Ghana where mining concessions are commonly located are owned by traditional leaders, extended families or individuals in the trust of members of the communities they lead (Adu-Baffour et al (2021). The Ministry of Land and Natural Resources indicate that about 78% of total lands in Ghana, including forest reserves, are owned by customary landowners or allodial titleholders (clans, stools, families). Customary law allows these landowners to exercise surface rights to lease or appropriate portions of these lands in the interest of their welfare to mining companies and individual miners. Traditional leaders, individuals and families therefore, lease lands to individuals including Chinese for mining. As noted earlier, Ghanaian miners who apply for mining licenses form partnerships with their Chinese collaborators. These account for Chinese involvement in SSM (illegal mining) even though this type of mining is a reserve of Ghanaians. CIIM come in different forms such as financial, technical, managerial and marketing of gold (Crawford et al., 2015).

From the above discussions, it can be argued that weak legal and institutional framework is one of the factors that account for weak enforcement of mining laws in Ghana. This is because in spite of the formation of Operation Vanguard and Galamstop Taskforce by government to arrest and prosecute illegal miners, the practice is still pervasive. Also, despite the decision of the government in 2013 to ban the logging and sale of rosewood in Ghana, illegal logging and export of rosewood to China has continued. The unfortunate aspect is that, Ghana has stringent laws to protect the environment as stated earlier. There have been reports

of the arrest of some illegal miners and loggers especially Chinese nationals in Ghana but, prosecution of these offenders has so far not been successful. To achieve compliance with the law and protection of the natural environment, government must enforce appropriate environmental laws without making any compromises.

Empirical Evidence on Africa (Ghana)-China Relations

A number of studies have been conducted on Africa-China relations. Also, there are few studies conducted on Ghana-China relations such as Boafo, Paalo and Dotsey (2019), Ibrahim (2018), Aidoo (2016), Idun-Arkhurst in 2008 among others. These studies outline the history, significance, and the environmental impacts of the cooperation. This section presents a review of works relevant to the study.

A study was conducted by Ado and Su (2016) to assess the significant contributions to the scholarly literature on China's increased focus on Africa, from 2001 to 2011. It examines important developments in China's involvement in Africa and provides judgments on the importance of the research by highlighting and contrasting prevailing positions. This research adopted a qualitative research approach and built upon an integrative and comprehensive literature review based on research analysis spanning a decade (2001 and 2011). It was observed that China's efforts in Africa are still controversial and one cannot claim that Chinese presence in Africa is win-win or otherwise.

Moreover, this study could not clearly establish that CAR may lead to dependency and colonisation or otherwise. However, the study provided strong

empirical evidence that supported the controversial idea that Chinese FDI to Africa is driven by natural resource endowment (oil and minerals) and market opportunities. This support the argument that most Chinese investments are in the extractive sector and hence cause destruction to the environment especially forests.

Khan, Baye and Tange (2009) also studied “the Impact of China-Africa Trade Relations: Case Study of Cameroon Trade with China”. An analytical approach derived from framework papers and scoping studies was used. It was found that trade between the two states has increased significantly over the past few years. There was a surge in Cameroon imports from China, while exports were declining. According to the study, imports are made up of a large variety of essentially manufactured goods. Cameroon exports to China on the other hand, were limited to few raw materials such as cotton and wood.

Oyeranti, Babatunde, Ogunkola, Bankole (2010) studied China-Africa investment relations in Nigeria from the period between 1997 and 2007 employing both quantitative (descriptive analysis) and qualitative (key informant interviews and surveys) methods. According to the study, Chinese investment in Africa is concentrated in a few strategic sectors, especially the extractive sector, which focuses on the exploration and/or extraction of oil and other mineral products in Africa.

Also, the study observed that the oil sector receives the most Chinese FDI in Africa, followed by other solid minerals. A small percentage of Chinese investment may be found in the manufacturing sector, especially in the agro-processing, pharmaceutical, and telecommunications sectors. The nature of these

investments meant that raw materials were exported to China. Coupled with inadequate investment in the manufacturing sector may cause unequal trade to the disadvantage of Nigeria. Clearly, this study supports the argument of dependency scholars which claim that China is driven by the need for natural resources and that informs its investments in Africa. China's relations with Africa have therefore, taken the form of past relations Africa had with the West which was exploitative.

Furthermore, Argut (2016) studied the environmental impact of china's activities in Africa, the case of Kenya. This study used qualitative research and utilised secondary sources of data for the research. It was revealed that China benefits more from its economic relations with Kenya. Kenya's exports to China are minimal and are estimated at one percent. On the other hand, Chinese imports especially in textile and clothing are high. These have caused decline in the textile and clothing production sector that provides 20 per cent of all formal manufacturing employment in Kenya. Secondly, it was evident that China had interests in natural resources. The relationship between China and Kenya is thus, driven by the importation of raw materials and extraction of natural resources. China's investment in Africa is concentrated in ecologically delicate sectors and in infrastructural projects like roads, railway line, transmission lines, oil exploration, telecommunication, and infrastructure.

Finally, Mohan and Tan-Mullins (2009) studied Chinese migration to Africa using analytical framework and secondary data sources. The study found that Chinese migrants to Africa and other oversea countries are conditioned by the Chinese government policies. It was observed that Chinese migration fluctuated

over time. This reflects China's diverse economic and political circumstances, as well as its overseas commitments. The study also found that Chinese migrants range from business to transit to illegal migrants who arrive as 'guests' and later decide to stay. With time, they are more willing to move to greener pastures when the chance arises (Mohan & Tan-Mullins, 2009).

The above empirical evidence on China-Africa trade relations point to the fact that, this relations is similar to past trade relations between Western Industrial states and Africa. Sino-Africa relations like Africa's past relations, Africa exports raw materials and imports manufactured goods. Chinese investments are concentrated in ecologically fragile areas and cause environmental degradation. In addition, as part of conditions for Chinese loans, Chinese government insists that contracts are given to Chinese companies. This further enhances the general ideas of the dependency theorists and Sino-pessimists who claim that this trade relation between Ghana and China will lead to dependency and China is thus, set to colonise Africa.

Chapter Summary

This chapter presented the overview of China-Africa trade relations and the environmental impacts of China-Africa engagement. It briefly reviewed the background of CAR. Ghana-China bilateral relations, Chinese migration and activities in Ghana were all discussed. The chapter highlighted some key loan agreements between the two states. It also presented the legal and institutional framework guiding SSM in Ghana. The review showed that diplomatic relations between Ghana and China date back to the 1960s.

Nevertheless, in recent times, the two states have forged closer ties for trade and economic reasons. China has therefore, supported and continues to support Ghana in the provision of infrastructure finance, low interest loan, investment, development aid and most importantly trade. In return, Ghana assists China's development with the provision of oil, timber, gold and also serves as a source of export for Chinese products. It was apparent in the review that, China presents an alternative to the Washington Consensus and can support Ghana's development agenda provided the right balance can be found.



CHAPTER FOUR

STUDY AREA AND RESEARCH METHODOLOGY

Introduction

Neuman (2014) and Bhattacharjee (2012) posit that the scientific community has its norms, guidelines and values. These govern and specify how all research, regardless of the topic, should be conducted. These principles are important to the scientific community because they define the research mindset, the techniques to use, the universality of results, and replication of findings, among other things (Neuman, 2014). This chapter, therefore, discusses the methods used in the research process to obtain valid and reliable data for the study.

A short review of the nature and philosophical assumptions underlying this research is provided. The study adopts the interpretivist paradigm which utilises qualitative methods. It also presents the research design, the study area and population, data collection methods and procedures, method of data analysis, ethical issues in research, data management and how the data was analysed. The final section provides a summary of the chapter of the main issues covered.

Research Design

According to De Vaus (2001), research design refers to the general approach that is used to integrate the many components of the study in a coherent and logical manner so that the research problem is properly addressed. In other words, it's the template for data gathering, measurement, and analysis (De Vaus, 2001). Accordingly, this study employs the interpretivist research paradigm which avoids rigid structural frameworks associated with positivist research and adopts a

more personal and flexible research structure (Neuman, 2014; Sarantakos, 2012; Black, 2006). The basic premise of this research paradigm is that reality is socially and historically constructed and how we know (or perceive) what we know is subjective and that research is value laden (Black, 2006; Jupp, 2006; Neuman, 2000).

Qualitative research assumes that the world is socially constructed (Punch, 2000 cited in Neuman, 2014; Sarantakos, 2012; Black, 2006). With regard to this study, qualitative research stresses the importance of recognising subjectivity, not only that of the researched but also that of the researcher (Creswell & Creswell, 2018; Sumner, 2006; Neuman, 2000). As a result, this research technique demonstrates a reluctance to the use of empirical positivist methodology and opposes the value-free nature of quantitative research (Punch, 2000 cited in Neuman, 2014; Sarantakos, 2012), which this study aimed to achieve. This paradigm was appropriate for the study's theoretical and research strategy. The use of this paradigm helps to appreciate the diversity in understanding GCR from the Sino-optimist and Sino-pessimist perspectives.

The qualitative methodology is used in this study since it is appropriate for the paradigm chosen. Qualitative approaches address non-numeric data and underline the fact that reality is socially constructed. Furthermore, qualitative methodological approach focuses on a range of theoretical concepts such as phenomenology, hermeneutics and social interactionism, using non-quantitative data collection and interpretation techniques to investigate social interactions, and explains reality as perceived by respondents (Creswell, 2013 & Sarantakos, 2012;

2005). Yin (2003 cited in Yeboah, 2017) argues that qualitative research approach has become pleasing in recent times, if not mainstream, form of study in both academic and professional fields of operation.

Higgs and Cherry (2009), acknowledge that it was incrementally regarded as a strong and effective method to illustrate and understand the human environment, given some researchers' reservations. The main drawbacks associated with qualitative research, according to Yauch and Steudel (2003 cited in Yeboah, 2017), are that the process is time-consuming. Also, a particular important issue could be overlooked and the interpretations of the researchers are limited. Yauch and Steudel (2003) maintain that in qualitative research, the study's findings and results are informed by personal experience and expertise. Also, qualitative research is criticised for being subjective, lacking the rigour and hardness of scientific study, and not allowing for the verification, replication, or generalisation of findings (Denzin & Lincoln, 2005). This study, on the other hand, does not seek to generalise; instead, it seeks to raise awareness about the subject at hand.

The main reason for adopting qualitative research design for this study is that, the study aims at achieving deeper understanding/insight into the involvement of the Chinese in IGM. It also seeks to understand how diplomatic relations between Ghana and China impede programmes put in place to deal with CIIM. This was done by interrogating the environmental impacts of CIIM in the Amansie South District Assembly. The qualitative research design is employed by using non-random sampling techniques in key informant interviews. This is because, there was the need to interview officials who knew about particular government policies

relating to the China-Ghana trade relations, Chinese migration and programmes put in place to deal with IGM.

Methodologically, exploratory and descriptive research designs engage the qualitative methodology instead of quantitative methods (Neuman, 2014; Sarantakos, 2012). Additionally, Neuman (2014) and Sumner (2006) state that it employs qualitative methods such as in-depth interview, focus group discussion, observation, documentary reviews and other innovative methods such as consciousness raising, drama and group diary. According to Altheide and Johnson (1998 cited in Yeboah, 2017), exploratory research entails a thorough examination of all the relevant factors to arrive at an accurate description of the reality of the existing situation.

Exploratory research, according to Streb (2010), Altheide, and Johnson (1998), aims to uncover new knowledge, fresh perspectives, new interpretations, and elements relevant to the topic. More so, Neuman (2014) and Davies (2006) explain that exploratory research is concerned with discovery and development of new theories. It must be noted that research is conducted where there exists little information on or about a topic, a subject is new or nothing is known about it (Neuman, 2014; Patton, 2002). Streb (2010) and Babbie (2005) concede that the results of exploratory research provide a better understanding of the sample being investigated.

Although studies by Boafo, Paalo and Dotsey (2019), Botchwey, Crawford, Loubere & Lu (2018), and Ibrahim (2018) have examined CIIM and logging in Ghana, research is yet to reveal specifically the environmental impacts of these

practices. Also, the reasons for the failure of programmes put in place to deal with CIIM are not known. Therefore, the use of exploratory research design helps to identify new areas of knowledge and a deep insight into environmental impacts of Chinese involvement in SSM in Ghana. The study also uses descriptive design because it entails a systematic collection and presentation of data on various issues of the environmental impacts of Chinese involvement in SSM in Ghana to give a clearer picture of the prevailing situation. The key idea behind using descriptive design is to better describe an opinion, attitude, or behaviour held by a group of people on a given subject (Given, 2007; Amedahe, 2002).

An exploratory descriptive research design allows you to look into all facets of the subject you are researching (Sarantakos, 2005). It is appropriate to do an exploratory descriptive study to interrogate the environmental impacts of CIIM in Ghana and how diplomatic relations impede programmes put in place to deal with IGM because of limited studies on this subject. The study seeks to determine the nature of current circumstances, activities, attitudes, and opinions expressed by people about the environmental effects of Chinese participation in SSM in Ghana. The exploratory and descriptive nature of this study provides the researcher the opportunity to examine the environmental impacts of CIIM in Ghana, how diplomatic relations affect law enforcement and analyse the failure of programmes put in place to protect the environment.

Overview of the Study Area

The study was carried out in the Amansie South District in the Ashanti Region of Ghana. This district was chosen for this study because of its suitability in meeting the research goal in interrogating the environmental impacts of CIIM in Ghana. The district has rich gold deposits which predispose the area to mining and foreign investments. The Amansie South District is one of the 43 administrative Metropolitan, Municipal and District Assemblies (MMDAs) in the Ashanti Region of Ghana. It is located within latitudes 6.05° West: 6.35° North: 1.40° South and 2.05° East. It shares common boundaries on the north with Amansie West, the east with Atwima Nwabiagya and Atwima Mponua, the west with Amansie Central and Obuasi Municipal, and the south with the Upper Denkyira East District of the Central Region.

The District has a total land area of about 76506.0 hectares or 189049 acres of land (ASDA, 2021). It accounts for nearly 3.4% of the total land area of the Ashanti Region. The capital Manso Adubia is about 65 km from Kumasi, the Ashanti Regional capital. Amansie South district was carved out of the Amansie West District in 2018 with Legislative Instrument 2325. The Amansie South District just like all MMDAs in Ghana derives its mandate and functions from the Local Governance Act, 2016, Act 936 section 12 sub sections (1) to (9). The topography of the district is typically undulating with an elevation of 300m above sea level. The most prominent feature is the range of hills, which stretches across the north-western part of the district. The district has two major rivers, the Offin and Oda and several streams (ASDA, 2021).

The climatic condition in the district is wet semi-equatorial, with a double maximum rainfall system. The main rainy season is between March and July and the minor rainy season is between September and November. The mean annual rainfall ranges between 855mm and 1,500mm and records a mean monthly temperature of 27°C. The climate is ideal for the production of cash and food crops like cocoa, citronella, oranges, plantains, and vegetables. The vegetation of the district is mostly a rain forest with moist semi-deciduous characteristics. This makes the land very fertile and ideal for agricultural investments. The district is largely an agrarian one. Agriculture is the main contribution to Gross Domestic Product (GDP). Nevertheless, the engagement of the youth in the mining sector threatens the agriculture sector. As a result of IGM, the district imports most of the agricultural products from neighbouring districts.

There are three main forest reserves in the district namely the Odaho, Apanprama and Aboaboso Forest Reserves. IGM and illegal logging activities have gradually destroyed these forests and the natural environment. Areas with gold deposits include Tontokrom, Datano, Manso Nkran, Adubia, Aponapong, Aboaboso and others. A large area of the district has been acquired as concessions by some individuals and mining companies. Mining activities in the district have made the area attractive to both local and foreign miners. According to the Ghana Statistical Service, the population of the District is 116,366. This is made up of 61,460 males and 54,906 females representing 53% and 47 percent respectively (ASDA, 2021). A larger proportion of the population falls within the active labour force bracket of between 19 and 45 years.

Large gold deposits and proximity to Kumasi have made the district attractive to both local foreign miners including the Chinese. Unemployment in the district and the boom in mining have made the mining sector attractive to the youth. Some work with SSM firms and others are involved in IGM (ASDA, 2021). According to ASDA (2021), IGM is pervasive in the district with community members forming partnerships with some foreign nationals including Chinese, ECOWAS citizens, Indians and Russians. Challenges in dealing with illegal mining include poor road network, and the lease of family lands to SSM. The ASDA is unable to deal decisively with illegal miners because of inadequate resources both human and logistics. These challenges have bolstered illegal mining in the district (ASDA, 2021).

Study Population and Sample

Babbie (2005) defines population as the group to which the results of the study are intended to apply. It is the group about which the researcher wishes to learn more about and draw conclusions (Streb, 2010; Sarantakos, 2005). The study sample comprises twenty-six (26) respondents as shown in Table 6. This is made up of officials of government institutions in charge of regulating trade and environment, Chiefs, Opinion leaders, Assembly members, Members of Inter-Ministerial Committee, small scale miners, officials of Ghana Immigration Service (Headquarters, ASDA, Kotoka International Airport, and Aflao Border), members of Taskforce Against IGM and Chinese industry representatives.

Table 6: Sample distribution

Category of Respondents	Sample
Ministry of Trade and Industry	2
Forestry Commission	3
Ghana Immigration Service	4
Minerals Commission	1
Chiefs/Opinion Leaders	3
Members of Inter-Ministerial Committee	2
Small Scale Miners	3
Officers of ASDA/Assembly Members	5
Chinese Industry Representatives	3
Total	26

Source: Field Survey, Yeboah (2020)

Sampling Technique

Fraenkel and Wallen (2008) define a sample as the group from which information is obtained. The need to select a sample for a study is based on a number of factors including expenditure, time, and accessibility which often prevent researchers from gaining information from the entire population (Fraenkel & Wallen, 2008). This is done so that the knowledge obtained is representative of the whole population under study. In selecting a sample for this study, the non-probability or non-random sampling technique was employed in data gathering. This is because, the study is not interested in large numbers or generalizing the results of the study. This sample strategy was chosen because it works well in

qualitative investigations (Bryman, 2012) and in exploratory analysis (Sarantakos, 2012).

More specifically, the purposive sampling technique was used to draw respondents for the study. Purposive sampling, according to Yin (2011), is the process of selecting participants or data sources for a study based on their expected richness and relevance of information in relation to the study's research questions. Palinkas et al (2015) add that the underlying premise behind the use of this approach is that with excellent judgment and adequate strategy, the researcher may handpick the cases to be included in the sample and thus establish sample units that are valid and satisfactory for the analysis.

Purposive sampling was used to sample Chiefs, Opinion Leaders, Assembly members, Chinese diplomat(s), Chinese industry representatives, officials of government institutions and agencies. This was because it is believed that they could provide the best information to help address the research objectives. Snow ball sampling was used to sample small-scale miners who are scattered among the population. It must be noted that snowball sampling is used when respondents for a study are rare and difficult to find (Berg, 2006; Atkinson & Flint, 2001).

Data Collection Techniques

Unstructured interviewing and non-participant observation are the primary data collection techniques used in this study. Documentary review is also used to analyse existing trade, development agreements and investment statistics between Ghana and China. Unstructured interviews were employed to solicit individual

perspectives on the environmental impacts of CIIM with regard to Ghana-China trade/loan agreements. The data was gathered from respondents at three levels namely officials of government institutions, community leaders and members, and Chinese representatives.

Government officials for the study were drawn from state institutions regulating trade and environment. Community leaders and members consisted of Chiefs, Opinion leaders, Assembly members and illegal miners. Chinese representatives include Chinese working on projects in Ghana. This is because, they are known to have an advantage of building positive rapport with respondents, resulting in a more comfortable and healthy atmosphere in which respondents are more willing to participate, answer questions, and clear misunderstanding about any part of the research (Babbie, 2005).

Observation involves the systematic noting and recording of events, behaviours, and objects in the social setting (Marshal & Rossman, 2011). The study made use of non-participant observation to study Chinese interaction with forests in Ghana. The non-participant observation provides an opportunity to validate some responses that were provided by respondents. Mining sites, equipment and logistics for mining were also observed to understand how the use of these equipment cause destruction to the environment. The observation also helped the researcher to get first-hand information on the extent of destruction to forests and water bodies by illegal miners. Babbie (2005) insists that an advantage of the use of field research is the presence of the researcher observing events at the scene of the action. This helps the researcher to give accurate account of the process or event being observed.

Documentary review/analysis is a non-reactive and non-obstructive data collection method where documents are analysed without the researcher influencing the fact that are being used (Robson, 2002). According to Bryman (2004), organisations as well as government produce many documents. Loan, trade agreements/policies and laws on mining were reviewed. The documentary review offers the opportunity to understand Chinese loans, the trade relations between Ghana and China and the reasons for Chinese migration to Ghana. During the documentary analysis, notes were taken and checklist marked.

Data Gathering Procedure

The data gathering was carried out by two persons, one field assistant and the researcher. All interviews with respondents were face to face interactions. The interviews were carried in English language and one local language, Asante- Twi. Respondents were approached at their places of work, homes and other settings suggested by the respondents. The researcher explained to each respondent the purpose of the research before they were engaged in the interviews. Interviews were recorded using an audio recorder and note book. The researcher sought permission from respondents before recordings were done. Notes were taken where permission was denied. The unstructured interview guide was used for the study. The data gathering began with interviews. Two to three interviews were carried out a day with each lasting a minimum of 30 minutes.

In addition, observations were carried out in some mining communities in the Amansie South District. Odaho, Apanprama Aboaboso, Agroyesum, and Manso Adubia forests were observed. This is because of the presence of mining

activities in the forests. Photographs were taken at these sites for the study. Also, documentary reviews of loan/development agreements and laws on mining in Ghana were carried out. Results from observations and documentary reviews were used to validate responses from interviews.

Data Collection Instruments

The main qualitative field instruments or tools employed for data collection in this research were interview guides, observation checklist and documentary review/analysis checklist. With regard to the collection of data from officials of government institutions, Chiefs, Opinion leaders, Assembly members, illegal miners, members of anti-illegal mining Taskforce and Chinese industry representatives, interview guides were used. The unstructured interview guide was organised around themes derived from the study objectives. The factors influencing GCT relations, Chinese migration to Ghana, the influence of diplomatic relations in dealing with Chinese illegal miners in Ghana, the environmental impacts of SSM in Ghana, institutional framework and failure of programmes put in place to deal with IGM were the themes in which questions were asked during the interviews.

To ensure that recording of events were done systematically, observation checklist was adopted. The observation checklist was structured around mining practices and environmental destruction. After the researcher was given permission by respondents to record the interviews, tape recorders were used to capture responses. The researcher used a camera to capture some of the events observed at different mining sites used in the study. Documentary review checklist was also

used to obtain information from parliamentary hansard, GIPC investment statistics, development agreements between Ghana and China and budget statements of the MOFEP and MOTI.

Data Processing and Analysis

Amedahe (2002 cited in Yeboah, 2017) explains that data analysis involves organising and breaking down of data into constituent parts with raw data to offer answers to the questions initiating the research. The data gathered from the field was edited for spelling errors and anomalies. In this case, before entries were made for analysis, data was cleaned to ensure that all the instructions were followed and checked whether all questions were answered. This exercise involves certifying certain figures presented by the officers of the main organisations. This includes small-scale miners, Chiefs, Opinion leaders and Assembly members. The data was further re-organised in a manner appropriate for qualitative research. Qualitative research takes the form of transcribing recorded tapes, content and documentary studies.

Babbie (2005) and Sarantakos (2005) argued that with data collected through the use of interview guides, researchers ought to be guided by an analytical technique which provides versatility for qualitative studies. The analysis of data was performed manually. Thematic analysis was employed in analysing the data for the study (Creswell, 2009). Content and thematic analyses were done for the different research goals. The data was coded after identifying common patterns.

These common trends from the data were organised mainly around the thematic areas based on the data on the original objectives and questions.

Here, the various responses provided by the respondents on the factors influencing GCT relations, Chinese migration to Ghana, the influence of diplomatic relations in dealing with CIIM in Ghana, the environmental impacts of SSM in Ghana and failure of programmes put in place to deal with IGM were analysed. Relevant quotations are used to enrich the discussion. In this case, responses provided by respondents during data collection were collated, coded using the conceptual framework as a reference for the analysis and discussion. Finally, qualitative content analysis was used to analyse secondary data.

Data Management

The data for this study came from audio recordings, notes and photographs taken during the collection of data of fieldwork. The researchers ceased the collection of data when it became saturated in accordance with rules in theoretical sampling technique (Glaser & Strauss, 1967 cited in Saunders et al, 2018). Data collection and management went hand in hand. At the end of each day of data gathering, transcription, coding, and organising of data to develop themes were carried out. The researcher transcribed the recorded interviews with the help of the field assistant at the end of the field gathering. The data was examined in depth at this time in order to aid in conclusive coding. The researcher and field assistant were the only people who had access to data that was collected.

Data is stored on external drive for short term use and cloud services for the purposes of future usage. According to the Netherlands Code of Conduct for Research Integrity (2018) research data must be kept for (at least) 10 years. In view of this, even though data collected and analysed remain confidential and stored properly, they will be kept for ten (10) years. This is because, the researcher will use the data as reference for future publications. Data will be disposed by deleting it from all electronic and media files.

Ethical Considerations

Approval and ethical clearance was sought from the Institutional Review Board of University of Cape Coast. Officials of institutions involved in the study also granted approval to the researcher before data was collected. Voluntary participation, right to privacy, anonymity and confidentiality of information were considered in the design of instruments. Regarding voluntary participation, every respondent who took part in the data collection exercise was allowed to participate on their own free will without any compulsion. Also, respondents were allowed to give answers to the interviews on their own right as a way of adhering to privacy in research. An appropriate medium was also communicated to respondents for unclear questions to ensure that they provided appropriate answers to questions asked.

Furthermore, on anonymity, respondents were restricted from providing personal details such as names, contact numbers and personal addresses. In addition, respondents were made to understand that their identities would not be revealed to the public. Also respondents were assured that information gathered in

this research would not be used for purposes other than this study. Moreover, the study ensured confidentiality of information provided by respondents and all information provided were kept confidential. They were also assured that information given would not be used against them. Some respondents who wanted to opt out were encouraged to withdraw from the research. Finally, no material reward was given to respondents to induce participation and responses. Additionally, informed consent of the participants was sought before conducting the interviews. Other codes of ethics regarding accuracy of research design, data collection and processing, as well as acknowledging sources of information were adhered to.

Limitations of the Study

This study cannot be generalised because qualitative approach to research was employed for the study. Denzin and Lincoln (2005) indicate that qualitative approach to research is subjective and lacks replication. Also, Creswell and Creswell (2018) and Sumner (2006) state that qualitative research stresses the importance of recognising subjectivity. Nevertheless, this study highlights key issues responsible for the destruction of forests and water bodies in the Amansie enclave. It also underscores impediments to the fight against IGM especially the involvement of Chinese investors. Additionally, even though the study found that there is a partnership and collaboration between Ghana and Chinese illegal miners, it failed to examine the nature and the extent of these threats on the protection of the natural environment due to limited financial support for the study.

Some limitations to data gathering exercise emerged from the rising coronavirus (COVID-19) cases in Ghana during the period of data collection (February and March). Respondents were therefore, not ready to come into contact with the researchers for fear of contracting the virus. Others were unable to respond to the interview because they were uncomfortable discussing IGM and trade relations between Ghana and China. The support of some officials of the MOTI, Forestry Commission, GIS, MINCOM and the ASDA who introduced me to respondents helped to overcome this limitation. Finally, Chinese diplomats were inaccessible. This was due to limited access granted to persons who visit the embassy as a measure to reduce the spread of COVID-19 disease. Chinese industry players were not ready to talk about their involvement in IGM.

Researcher's Background Influence on Study Participants

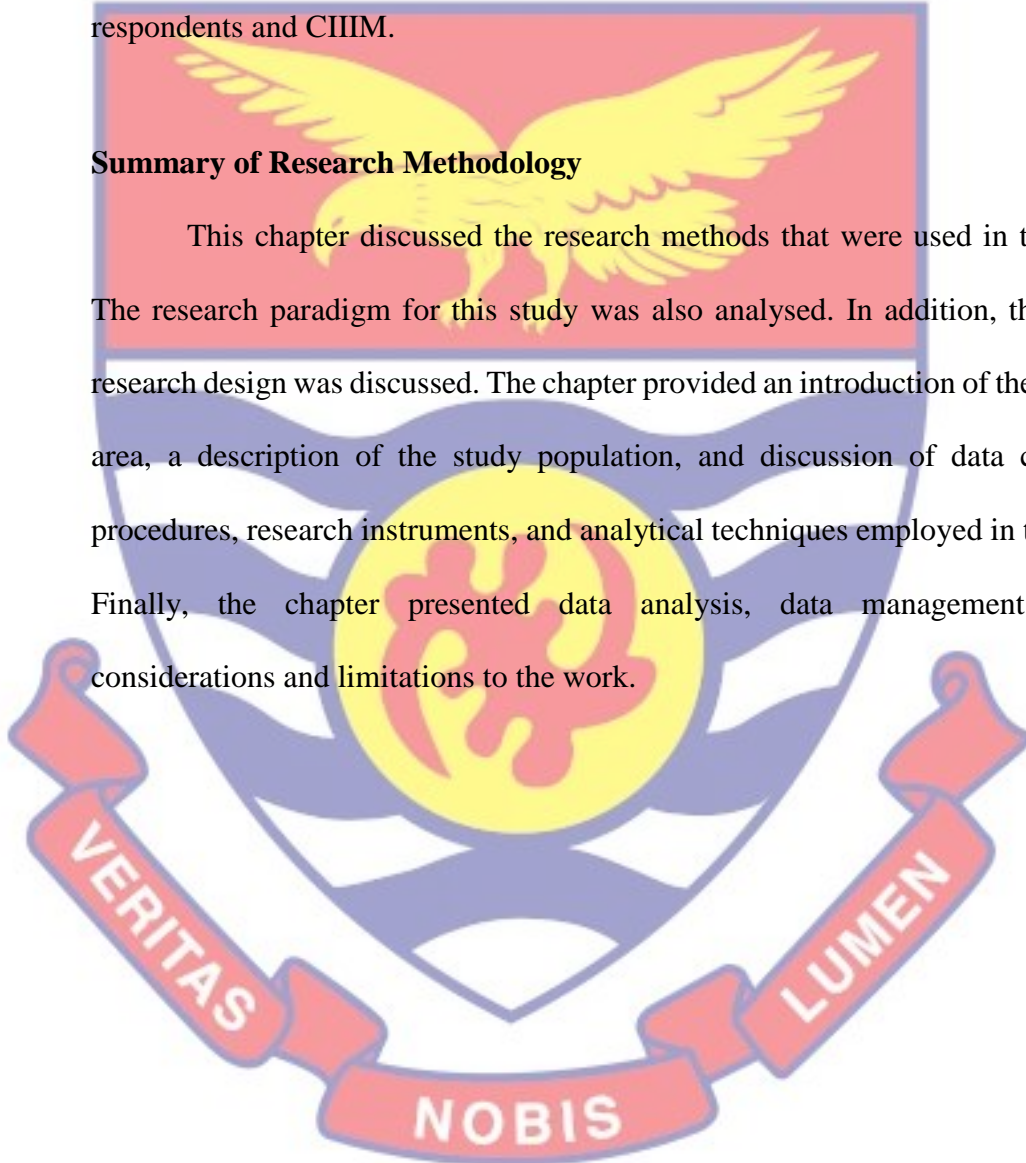
The researcher developed interest in the environment whilst studying for Masters of Philosophy Degree in Development Studies between August 2014 and March, 2017. This is because of the many livelihoods of rural folks that depend on the natural environment. The protection of forests and water resources are therefore, very critical for the attainment of sustainable development. Based on this, the researcher has been following conversations on environmental protection and the threat illegal mining of gold poses to the environment. Recent media reports of IGM and the involvement of the Chinese in the Amansie enclave heightened the researcher's interest.

Prior to this study, the researcher had not been to the ASDA and has no relations with respondents. However, the researcher's relationship with some

officers of the assembly bridged this difference. Respondents' were excited to participate in the study when they realised that it was attempting to highlight the issues of Chinese in IGM in the district. This made it much easier to probe into issues and gather information. This made the researcher an outsider to the respondents and CIIM.

Summary of Research Methodology

This chapter discussed the research methods that were used in the study. The research paradigm for this study was also analysed. In addition, the study's research design was discussed. The chapter provided an introduction of the research area, a description of the study population, and discussion of data collection procedures, research instruments, and analytical techniques employed in the study. Finally, the chapter presented data analysis, data management, ethical considerations and limitations to the work.



CHAPTER FIVE

GHANA-CHINA TRADE RELATIONS, CHINESE MIGRATION TO GHANA AND DIPLOMATIC RELATIONS AS IMPEDIMENT IN DEALING WITH ILLEGAL CHINESE MINERS IN GHANA

Introduction

This chapter discusses the data obtained from the fieldwork. The aim of the chapter is to examine factors influencing Ghana-China trade, and investigate the reasons for Chinese migration to Ghana. It also looks at how diplomatic relations affect law enforcement efforts by the Ghanaian Government in dealing with Chinese illegal miners. The analysis in this chapter covers objectives one, two and three, with objective one examining the factors influencing GCT relations. Objective two focuses on the reasons for Chinese migration to Ghana. Objective three seeks to evaluate the influence of diplomatic relations in dealing with Chinese illegal miners in Ghana. These three objectives are analysed together because they are centered on the reasons for Chinese migration to Ghana in the last two decades, their involvement in IGM activities and whether diplomatic relations affect law enforcement regimes with regard to programmes put in place to deal with CIIM.

It is worthy of note that the overall goal for gathering this information was to understand how trade influences Chinese migration to Ghana. It also aims at understanding the motivation behind the influx of Chinese nationals to Ghana. Finally, this information provides knowledge on how diplomatic relations affect law enforcement efforts in dealing with CIIM. The discussion is divided into four parts. The first part looks at the nature of GCT while the second part deals with the

factors influencing GCT relations. Part three discusses Chinese migration to Ghana while the last part deals with the influence of diplomatic relations in the fight against CIIM.

Questions on the factors that account for Chinese migration to Ghana, the influx of Chinese people into Ghana, and how diplomatic relations affects law enforcement efforts in dealing with Chinese miners, were asked to help address objectives one, two and three. The nature of GCT is discussed in this section in order to understand the reasons for the increased trade relations between the two states and how trade promotes Chinese migration to Ghana. The results for this chapter are based on the responses from the interviews from key participants and documentary analysis on budget statements, development agreements, Parliamentary Hansard, GIPC and Ghana Immigration Service reports.

Nature of Ghana-China Trade

The nature of trade relations may define the import and export activities that exist between two or more nation states. It may be bilateral (involving two states) such as Ghana-China, Ghana-UK or multilateral (involving more than two states) as in the case of Ghana-EU, China-Africa, Russia-Africa, among others. To initiate conversations that would bring out the nature of GCT relations, questions on whether there exists trade agreement(s) between the two states was asked. Interviews with government officials revealed that there was no specific trade agreement between Ghana and China, even though trade between the two states continues to increase (March 19, 2021). Respondents from the MOTI indicated that

generally, these two states trade under WTO rules. They have therefore, not signed bilateral trade agreements. An official of the MOTI remarked:

I hope you are aware that Ghana and China are members of WTO and so technically, we do not require specific agreements to guide our trade, even though there are tailor made cooperation agreements with China in respect of development and loan agreements such as Master Facility Agreement (MFA) and Master Project Support Agreement (MPSA) (March 19, 2021).

With regard to the nature of Ghana-China trade, a respondent from the MOTI stated:

“In respect of the nature of our trade with China, we are highly dependent on China for manufactured goods. We export raw materials. The real value of manufactured goods from China is higher than that of Ghana’s raw material exports” (March 19, 2021).

In addition to the above, documentary sources such as budget statements, development agreements, Parliamentary Hansard, GIPC quarterly, Ghana Immigration Service reports and World Bank trade data corroborates the above responses. It was found that Ghana’s exports to China consisted primarily of raw materials whereas imports from China were mainly consumer products and capital goods. Ghana’s exports to China include cocoa, oil, gold, timber, wood, vegetables etc. On the other hand, Ghana imports delivery trucks, cars, heavy duty equipment/machines etc. from China.

From the above discussions, it can be seen that Ghana and China trade was not guided by any bilateral agreement. The two states traded under WTO rules despite the increased trade relations between them. Ghana is an exporter of raw materials to China and an importer of manufactured goods from China. Ghana-China trade relations is thus, similar to trade relations with the West, where Ghana relied on Europe and America for manufactured goods and exported raw materials for foreign exchange. This finding confirms the dependency theory where Ghana is exporting mainly primary commodities, while importing from China a wide range of manufactured goods. Furthermore, it could be seen that GCT had contributed to the increased relations between the two states. Ghana had benefited from cheap imports, Chinese aid/loans and FDI. These findings on the nature of GCT relations confirm a number of previous studies (Argut, 2016; Idun-Arkhurst, 2008; Oyeranti et al., 2010).

In a study on the environmental impacts of China's activities in Kenya, Argut (2016) claims that China benefits more from its economic relations with Kenya and for that matter Africa. For example, Kenya's exports to China are minimal and are estimated at one percent of its imports from China. On the other hand, Kenya's imports, especially in textile and clothing, are high. Also, China has interests in natural resources and its relationship with Kenya is thus, driven by the importation of raw materials and extraction of natural resources (Argut, 2016).

Similarly, in a study by Idun-Arkhurst (2008) it was observed that

“...Chinese-Ghanaian trade follows a classic North-South model, with Ghana exporting mainly primary commodities such

as cocoa beans; manganese; sawn timber; natural rubber, vegetable products; oil and metal ores, concentrates and scrap, while importing from China a wide range of manufactured goods, including textiles and clothing, electronics, machinery and automobiles”.

Furthermore, the results of this study mirror that of Oyeranti et al (2010) on China-Africa investment in Nigeria which found that China’s investment is concentrated in a few strategic sectors, especially the extractive sector, which focuses on the exploration and/or extraction of oil and other mineral products in Nigeria. The study also found that the oil sector receives the most Chinese FDI in Africa, followed by other solid minerals. A small percentage of Chinese investment may be found in the manufacturing sector, especially in the agro-processing, pharmaceutical, and telecommunications sectors.

Factors Influencing Ghana-China Trade Relations

Eisenman (2012) states that trade relations between Africa and China is influenced by both diplomatic/political and economic reasons. With regards to factors influencing GCT relations, six (6) respondents were interviewed. The factors that influence GCT relations emanating from the study can be categorised into four main themes. These are cheap cost of imports/alternative trade, development assistance, access to infrastructure finance/loan and FDI.

Cheap cost of Chinese imports and alternative export destination

From the discussions on the nature of Ghana-China trade, it can be concluded that most of Ghana's imports from China are processed food, manufacturing products and machines. Comparatively, China offers cheap products to other trading partners such as Europe and America. In view of cheap products from China, trade between Ghana and China increased tremendously over the last decade. An official from the MOTI commented, "*the cost of Chinese imports is one of the factors that influence our trade relations with China*". It is generally believed that commodities from the Chinese market were less expensive as compared with those from the Western world.

In the words of an officer from the MOTI, "basically, Chinese products are very cheap. Importers can get similar products at a cheaper cost from China than from probably Europe or America. Thus, a lot of African and Ghanaian importers buy goods from China". Clearly, cost of commodities influences the trade relations existing between Ghana and China. The present results affirm a study by Frimpong and Nubuor (2013) and Khan et al (2009). Frimpong and Nubuor (2013:8) contend that the "rising share of Ghana's imports from China and the more diversified imports relative to falling market share of other countries can be traced partly to the competitiveness of China's imports compared with other traditional sources of Ghana's imports".

In terms of exports, respondents explained that China offered Ghana an alternative to traditional trade partners (Europe and America). As indicated earlier, China's economic development and growth are fueled by growing industries that demand more energy and raw materials. It became clear from the interviews that

Africa was seen as a continent which could provide oil and other raw materials for the growing Chinese manufacturing industry at a competitive price. For instance, the responses from the officials of the MOTI generally suggested that Ghana had become one of the major trading partners to China on the continent.

An officer from the MOTI stated, “the demand for more energy and raw materials has strengthened GCT relations. Ghana is a vital trading partner of China. Over the past decade, China has bought cocoa, timber and oil from Ghana”. This study supports the work of Baah and Jauch (2009) who indicate that, Angola, South Africa, Congo, Equatorial Guinea, and Ghana are the main African exporters to China. Minerals, petroleum, and timber are Africa's main exports to China, with relatively limited processing on the continent. Africa's imports from China consist mainly of capital and consumer goods. Similarly, the MOTI (2018) and World Bank (2019) reports indicate that China is among the top two leading export destinations of Ghana. Export to China is \$2.38 million representing 16.59% of total exports.

It must be noted that trade between Ghana and Europe dates back to the pre-colonial era when Portuguese merchants arrived in Africa. Europeans monopolised trade in Africa and almost all of Ghana's export commodities were sent to Europe and America (Idun-Arkhurst, 2008). According to an official of the MOTI, this monopoly and lack of competing markets led to the exploitation of Ghana and other African States. In the words of a respondent from MOTI, “trading with China has been a good thing for Ghana and also Africa generally, due to the increasing economic ties with China. The situation has raised market prices of some

commodities, leading to additional revenue and economic growth for African states”. Another respondent from the MOTI stated that Ghana has had relatively good prices for its gold, timber and cocoa from exports to China.

The respondent added “we have good prices for our gold, timber, oil and cocoa because of the presence of China”. The respondent further attributed the situation to competing markets available to Ghana now unlike in the past where Europe and America were the only export destinations. The study therefore, confirms the neoliberal theory which sees IT as desirable instrument for development. To authenticate responses from interviews on Ghana-China trade, documentary sources were also analysed. Budget statements, Ghana Immigration Service reports, trade data from the MOTI and World Bank reports were analysed. Trade volume between the two states has increased from less than \$100 million in 2000 to \$6.7 billion in 2017 (UN COMTRADE, 2019; World Bank, 2018). This was largely due to the competitiveness of Chinese manufacturing products.

The findings corroborate a study by Ado and Su (2016) and Baah and Jauch (2009). Ado and Su (2016) indicate that China has turned to Africa because it is seen as a continent which can provide energy and raw materials at a competitive price for China’s economic development and growth fueled by growing manufacturing industries. Baah and Jauch (2009) note that South Africa, Egypt, Nigeria, and Algeria are the major African export destinations for China. Angola, South Africa, Congo, Equatorial Guinea, and Ghana are the main African exporters to China.

Chinese Development aid and loan

From the conceptual framework, the Chinese government continues to provide development assistance to Ghana. As observed by Cohen (2011), the Chinese government owned bank, Exim Bank, is the world's largest export credit agency. Cohen (2011) adds that low-interest loan agreements have been used by China to build strong economic ties with Africa and to aid the latter's development. Documentary reviews and results from interviews conducted in this study revealed that major loan and development agreements between Ghana and China had come with the export of raw materials from the former to the latter state. For example, the 2007 Bui Power Dam Agreement, the MFA signed in 2011 and the 2018 MPSA have led to the supply of cocoa, oil and bauxite/alumina respectively from Ghana to China.

The discussions above indicate that Chinese development assistance and loans to Ghana have contributed to increased trade between the two states. Respondents from the MOTI commented that although Ghana continued to trade with its traditional trading partners (the West), Chinese credit to Ghana has influenced trade between the two states and it continues to shape Ghana's import and export decisions. One respondent said, "over the last two decades, China has shown commitment in offering huge credit to Ghana for the purposes of infrastructural finance at low interest rates". An official of the MOTI stated, "the credit China offers to Ghana comes with limited conditionalities as compared with loans from the IMF/World Bank and other International Financial Institutions".

In the estimation of one respondent from the MOTI, “Ghana receives aid from China. The government has thus, become comfortable in forging close ties with China especially in the area of trade and diplomacy”. In effect, development assistance and loans have generally increased trade relations between Ghana and China. The findings on Chinese development aid/loan corroborate studies by Schoeman (2007), Opoku-Mensah (2010) and Haroz (2011). According to Schoeman (2007), in the past, Africa had difficulties in attracting finance for infrastructural development but now China is deeply involved in providing this finance.

Haroz (2011) extends the argument by asserting that in 2005, Chinese assistance, including concessional loans to Africa was \$800 million. This has increased to a commitment of \$10 billion between 2009 and 2012. Opoku-Mensah (2010 cited in Frimpong & Nubour, 2013), states that, unlike Western development assistance, which comes mainly in the form of outright transfers of cash, material and are often concentrated around institutional and policy frameworks. Chinese assistance consists mostly of export credits and loans which are fast and flexible. They come with low or no interest and largely without conditions for infrastructure projects. Plate 1 presents a photograph of the Cape Coast Stadium, an example of Chinese development aid.



Plate 1: Front view of the Cape Coast Stadium built by the Chinese as part of its development aid programmes in Ghana.

Photo credit: Fieldwork, 2021

Foreign Direct Investment

Foreign Direct Investment is critical to nations' development. Thus, the study further looked at FDI as a critical factor in China's economic interest in Africa generally, and Ghana specifically. Interviews with officials at the MOTI showed that in the last few decades, China had bought and started a number of businesses in Ghana. Unlike the West which saw Africa as producers of raw materials and had few strategic investments in Africa, the Chinese has various investments in Ghana. It was found that GCT relations had promoted Chinese investment in the area of mining, agriculture and wholesale of industrial equipment and machinery. An official of GIS commented,

“Chinese were among the lead investors in Ghana. They are involved in manufacturing, mining, agriculture, sale of heavy duty machines among others. In fact, the Chinese lead in general trade in Ghana. In every region of Ghana today, you will find Chinese investment(s). They also operate gold and bauxite mining firms in the country” (March 15, 2021).

In support of the interview results, documentary analysis corroborates the fact that China continues to be one of the lead investment countries in Ghana. The Chinese government and private sector have invested in cities such as Accra, Tema, Takoradi, Kumasi, Awaso, Tamale and other areas in Ghana (GIPC, 2020). Indeed, documentary reviews on investment records from 2017 to 2020 obtained from the Ghana Investment Promotion Council quarterly reports validated responses from the interviews. From the reviews, China, in the last few years, has become the leading source of FDI in manufacturing and general trade sectors in Ghana. For example, even in the mist of Coronavirus (COVID-19), in the first quarter of 2020, China was the lead investment country in Ghana with 12 projects (GIPC, 2020).

The results of this study are in agreement with previous studies of (Marafa, 2007; Sautman, 2007). Sautman (2007) posits that in 2004 Chinese companies invested about \$135m in Africa. In the first ten months of 2005, \$175m came to Africa as investment. In support of Sautman’s claim, Marafa (2007) submits that about 10,000 Chinese companies are believed to have set up shops in Africa, employing several million Africans. In recent years, Africa has thus become a significant FDI destination for Chinese companies (Marafa, 2007).

Chinese Migration to Ghana

Although Chinese migrants travelling to Ghana is not a new phenomenon. The influx of Chinese workers and illegal miners to the country in recent years has attracted much public and academic discussion generally. The study first sought to understand the enormity of Chinese migration to Ghana. Four (4) officials from the Ghana Immigration Service (GIS) drawn from the Headquarters, Kotoka International Airport, the Aflao Border and the Amansie South District were interviewed. Officials from the GIS interviewed for this study said that like trade relations, Chinese migrants in Ghana continued to increase. An official at the Ghana Immigration Service in the ASDA disclosed that there was a large presence of Chinese migrants in the district. When asked to provide data on the number of Chinese migrants in the district, the official admitted that their office did not have data on the number of Chinese migrants in the district.

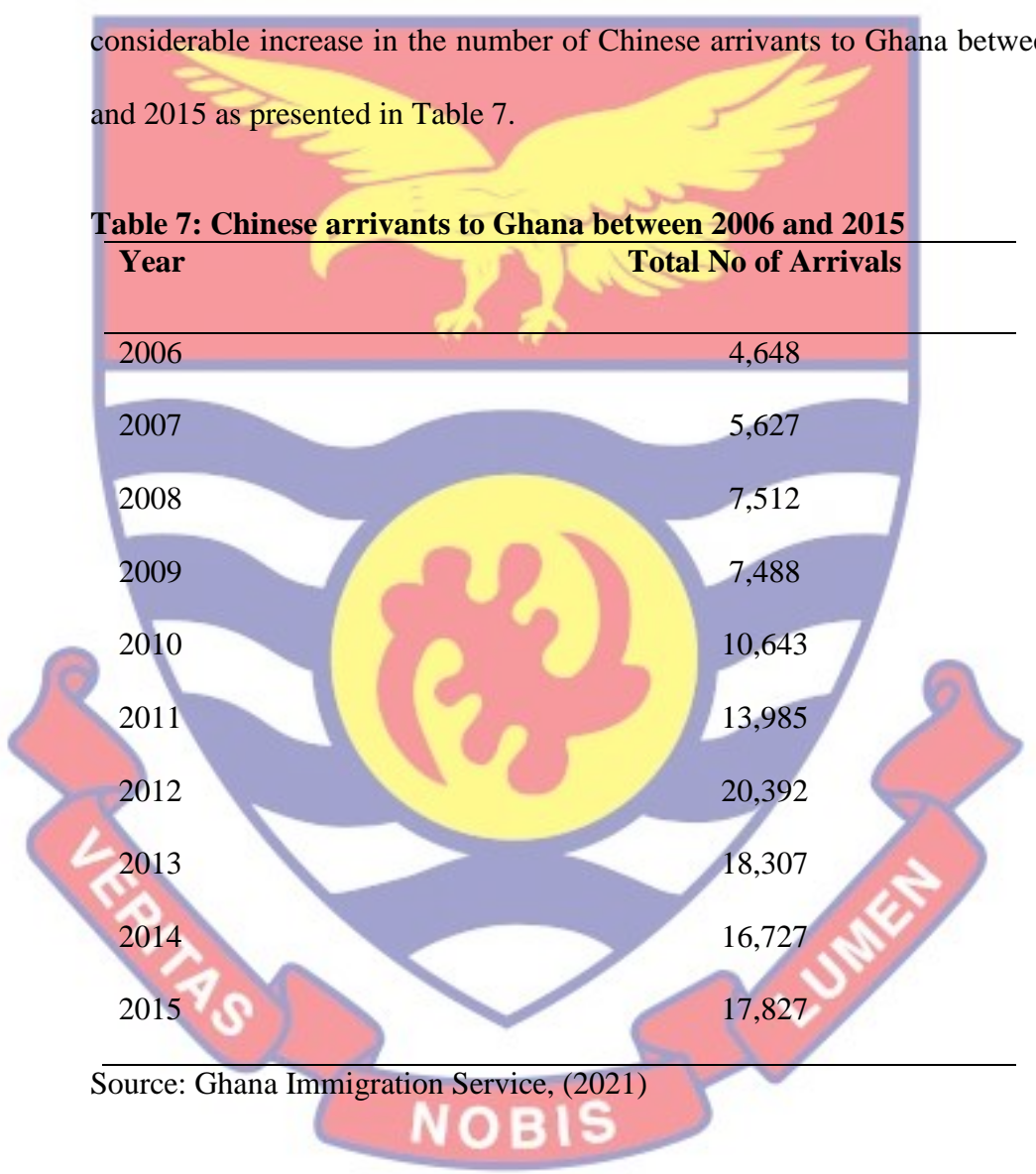
With regard to the reasons why the office did not have data on the number of Chinese migrants in the district, the official explained further that the Chinese miners in the area were mostly involved in illegal activities, thus, did not come to the office to register. In the words of the official,

we don't have data on the number of Chinese in the district because they don't have permanent places to stay. Today, they are in this community and the next day they have moved on. Some of them are here to look for gold, once they don't find any, they move out. Indeed, because they know they are

involved in illegal activities, they don't come to register at the immigration office (March 15, 2021).

The researcher also contacted the Head Office of GIS for data on Chinese arrivals to Ghana. Although the data shows fluctuations, there has been a considerable increase in the number of Chinese arrivals to Ghana between 2006 and 2015 as presented in Table 7.

Table 7: Chinese arrivals to Ghana between 2006 and 2015



Year	Total No of Arrivals
2006	4,648
2007	5,627
2008	7,512
2009	7,488
2010	10,643
2011	13,985
2012	20,392
2013	18,307
2014	16,727
2015	17,827

Source: Ghana Immigration Service, (2021)

When asked why there was an influx of Chinese migrants to Ghana, respondents noted that the migrants come to the country for different reasons. The officers indicated that some of the Chinese migrants come to Ghana for investment

purposes, to work on Chinese funded projects, and also to operate micro, small and medium scale businesses. Other reasons include the fact that some were engineers or technicians who come to repair machines procured from China, and tourists'/visitors.

Investors

The study found that Chinese workers in Ghana operated different kinds of small and medium scale businesses in different sectors. The respondents from MOTI and GIS indicated that they were engaged in the wholesale of textiles, clothing, sale of heavy duty equipment, mining activities and general trading. They explained further that Chinese workers in Ghana undertake business activities such as restaurant, petty trade, manufacturing, medical services, and beauty salons, among others. A respondent from the GIS remarked, “Chinese in the country had investments in different sectors of the economy, especially import and export”. Another respondent from the MOTI intimated, “some of them are importers of Chinese manufacturing products to Ghana. Others are involved in petty trade, medical supplies, and even export of goods.”

With respect to the issue of Chinese migration and investment in Ghana, an official of the GIS indicated that beyond activities such as manufacturing, general trade and medical services among others, some Chinese visitors came to Ghana to invest in SSM (which is illegal for foreigners) whilst others engaged in IGM. An official of the GIS commented,

I can tell you that some of them come to Ghana to operate IGM even though the law does not permit. Just look at the number of Chinese involved in this illegal activity, the introduction of sophisticated machines used and funding for IGM in recent times. Very few of them are into legal mining; most of them are the ones behind major galamsey operations in Ghana (March 17, 2021).

It is important to note that SSM according to the Minerals and Mining Act 2006 (Act 703) as amended in 2019 (Act 995) is reserved for Ghanaians. It prohibits the involvement of foreign nationals and prevents them from the provision of mining support services to small scale miners. Thus, the involvement of foreigners in SSM in any, form makes it an illegal venture. The findings from the study affirm the work of Crawford and Botchwey (2017) and Lu (2017). Crawford and Botchwey (2017) posit that more recently, Chinese come to Ghana to work on construction of roads, buildings, and also engage in agriculture, general trading and small-scale gold mining. Others are involved in supplying funding and heavy machinery to local miners in both legal and illegal mining. According Lu (2017), gold price hikes in 2008 triggered a rush of foreign miners to Ghana, primarily from China.

Contract workers

The study found that there were Chinese migrants in Ghana who were contract workers. For example, interviews with officials from the MOTI revealed that one of the reasons for Chinese influx in Ghana was as a result of Chinese funded projects in the country. In the estimation of one official, “a number of

Chinese were here in Ghana as a result of Chinese funded projects in the country”. The officials generally admitted that projects under each of the key cooperation and loan agreements between Ghana and China such as MFA and MPSA had come with at least 60% of contracts going to Chinese companies.

According to some Chinese workers interviewed for the study, they were in Ghana to work on Chinese funded projects. One Chinese asserted, “I am an engineer and I came to Ghana to assist Aviation Industry Corporation of China Limited (AVIC) to install laboratory and workshop equipment in technical universities and institutes”. Generally, the results from the documentary reviews obtained from development agreements and Parliamentary Hansard support the views expressed above. For instance, the reviews suggest that between 60-70% of contracts under the Bui Dam Project (2007), MFA (2011), construction of workshops and laboratories in the ten technical universities and selected technical institutes (2017), MPSA (2018) among others were awarded to Chinese companies. An official of the MOTI disclosed that Chinese companies had also exported engineers and labourers from China. These engineers and workers come to Ghana to work on projects awarded to Chinese contractors. Plate 2 shows a Chinese engineer working on a Chinese government funded project in Ghana.

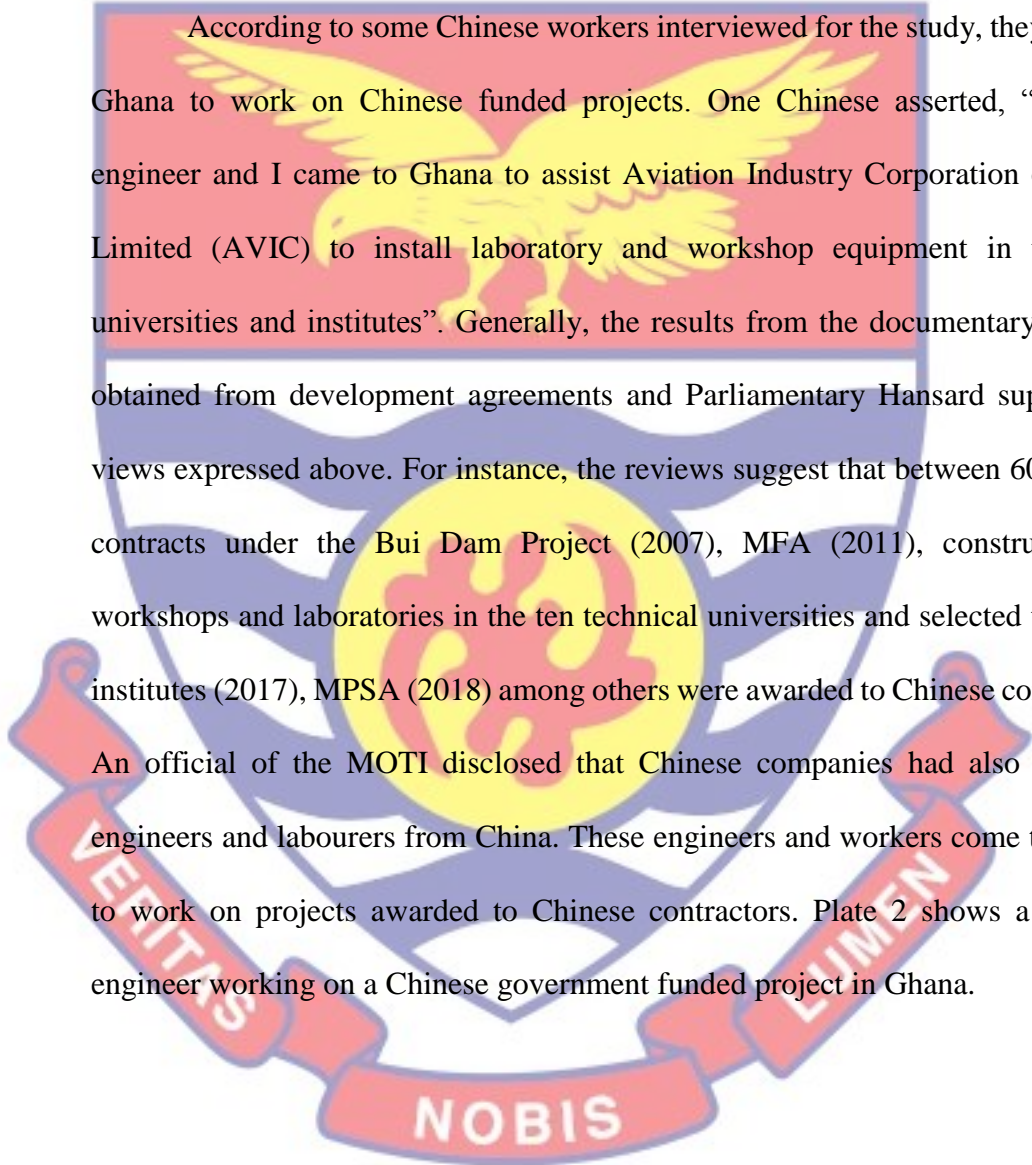




Plate 2: Chinese engineer installing AVIC laboratory and workshop equipment at Cape Coast Technical University.

Photo credit: Fieldwork, 2021

An official of MOTI remarked:

The influx of Chinese workers into Ghana was not surprising because over the last few years, we have been going to China for loans. We must understand that each loan agreement with China promoted the export of Chinese to Ghana. This was because as part of loan agreements, at least 60% of contracts are awarded to companies from China. Once Chinese companies were involved, you have to expect that their citizens would be working on those projects (March 19, 2021).

An Immigration Officer interviewed for this study, established that some Chinese migrants who came to work on contracts a few years ago had settled in Ghana. The

officer added that these Chinese migrants had eventually started one business or the other. The officer mentioned:

When they come to Ghana and make money, they begin to invest in the private sector by doing small businesses. Some of them have become importers of Chinese manufacturing products to Ghana. There are others who have found their way into mining areas and are directly and indirectly involved in illegal activities such as mining, and logging. Others are also involved in illegal retailing of Chinese products (March 15, 2021).

The above findings show that development cooperation and agreements between Ghana and China have contributed to Chinese migration to Ghana. As indicated earlier, these agreements have come with contracts going to Chinese companies. Therefore, Chinese workers come to Ghana to work on these projects. The findings on the rationale behind the influx of Chinese migrant workers in Ghana support a study by Botchwey et al. (2018) and Crawford and Botchwey (2017). According to Botchwey et al. (2018), Chinese migrants come to Ghana to work on government projects financed by China through an infrastructure-for-resources loan. They add that, in the past, Chinese migrants came to Ghana to work on projects such as the construction of arterial roads, the Bui dam, and facilities related to the oil and gas industry.

Engineers/Technicians who come to work on heavy duty machines

Increased trade between Ghana and China has come with the influx of Chinese workers into Ghana. The procurement of heavy duty manufacturing equipment from China has come with the invitation to Chinese engineers to come to Ghana. Interviews with some key informants from the MOTI revealed that Ghana did not have the expertise to service some of the heavy equipment procured from China. In the words of an official of the MOTI, “we did not have the expertise in Ghana to service and repair some of the heavy equipment procured from China”. In effect, because Ghana did not have certain critical expertise to service and repair some machines, when they were faulty or their servicing periods were due, Chinese engineers and technicians were invited to come and service them. Ghana is dependent on China for technology, a confirmation of the dependency theory.

According to some of the respondents, it was therefore not surprising to see the Chinese in mining sites, whether legal or illegal. This is because they had sold these equipment and they go to mining sites to repair them. A respondent from the MOTI indicated:

There had been a general shift from buying equipment from India and the US to China, which means that we needed Chinese engineers to come and service them. Let me give you an example, Everpure, a water producing company, buys most of its equipment from China. Once in a while, they bring Chinese engineers to come and service them. It is a standard practice to bring engineers from the country where machines

are procured to repair it, hence the Chinese engineers (March 19, 2021).

Another respondent from GIS remarked,

These days, you will only see few Chinese workers at mining sites. Most of them come to mining sites when the machines are broken down and they were servicing. Ghanaian collaborators didn't have the expertise to repair them so normally; it is Chinese migrants who come to do this work (February 28, 2021).

It is instructive to note that Ghana relied on the USA, Germany, Japan and India for the import of heavy machines in the past. Like the current arrangement with China, engineers from these states came to Ghana to provide different services to the nation without provisions for technology transfer. One would have thought that current arrangements with China would have come with technology transfer. So that with time, Ghana technicians and engineers will take over but that has not been the case as it stands now. The only difference is that engineers/technicians from the West unlike the Chinese did not engage in IGM.

Tourists and Family Visitors

The study also found that Chinese tourists and migrants visiting their family members in Ghana contribute to the increased number of Chinese arrivals in Ghana. The close ties between these two states had promoted free movement of persons in both Ghana and China. As a result, there were large numbers of Chinese visitors. Some of them are tourists who visit famous attraction sites in Ghana. Chinese residents in Ghana also had family members visiting them. It must be noted that it is not difficult for Chinese nationals to secure travelling visa to Ghana unlike Ghanaians travelling to China. As a result, a number of Chinese have come to Ghana over the last few years as indicated in Table 7. An official from the Immigration Service indicated, “over the last few years, there had been more Chinese visiting Ghana for tourism and family and friends”.

Another respondent from the GIS added, “every now and then, we see Chinese arriving in Ghana for different reasons”. Respondents further indicated that some of the tourists, upon visiting Ghana, did not go back to China, with some of them setting up businesses with their families. These findings support the work of Botchwey et al (2018). Botchwey et al (2018) state that the number of Chinese migrant workers in Ghana has increased as a result of increased government projects financed by China government.

Diplomatic Relations as an Impediment to the Fight against IGM

This study found that Ghana’s diplomatic relations with China affects law enforcement in the fight against illegal Chinese miners. Over the years,

prosecutions of illegal Chinese miners had been unsuccessful with most of them being deported. For example, how some Chinese illegal miners who were arrested escaped prosecutions and the manner in which they were deported was difficult to explain. Responses from interviews show that Ghana had not demonstrated commitment in dealing with Chinese illegal miners even though such illegal miners continued to destroy Ghana's forest reserves. An official of the MOTI indicated that Ghana had relaxed its laws on IGM, especially enforcement, against Chinese illegal miners. This is because there had not been any serious attempt to deal with CIIM.

According to the MOTI official, at least if Ghana were committed to dealing with CIIM, it would have been seen in how Chinese illegal miners are handled upon arrest. It must be noted that the WTO seeks to use trade to promote sustainable development (WTO, 2018). Therefore, nation states have the right to enact laws to govern trade insofar as it protects the environment. Such laws are not deemed as barriers to trade. The official from the MOTI explained:

Diplomatic ties with China play a role in the lack of enforcement of the laws. Though I may not be able to prove it, it is believed that we go for so much assistance from Chinese government. It is, therefore, very difficult to enforce the laws against their nationals. Instead of enforcing the laws and prosecuting Chinese illegal miners, government tries to use diplomacy in solving the issue (March 19, 2021).

Contributing to the issue of diplomatic relations as an impediment to the fight against CIIM, a respondent from the Forestry Commission stated:

Look, not too long ago, we all heard what a Senior Member of Government said about the deportation of Chinese illegal mining kingpin, Aisha Huan. Do you think that this would have happened if there were no diplomatic implications of prosecuting the lady? She could have been easily prosecuted but for the fact that we had a certain duty to keep the relationship we have with China. The situation seems very dicey for Ghana, but I believe something could be done about it (March 30, 2021).

An official from the MOTI also indicated that diplomatic relations influence law enforcement. He added, Chinese loans contribute to Ghana's development initiatives. He added that in recent decades, the Chinese government had provided loans to fund key infrastructural projects in Ghana. These include Bui Hydro Dam, the Western Corridor Gas Commercialisation Project, the ongoing Engineering Workshops by AVIC and the ongoing Sinohydro Projects. These investments tended to invariably impose a heavy duty on Ghana when it comes to the strict enforcement of the laws where Chinese workers were involved. Generally, the respondents agreed that any deliberate attempts to seriously apply the laws against Chinese migrants might affect Ghana's relations with China. Hence, the disregard of Ghanaian laws by the Chinese. An official of ASDA asserted:

As we are aware, Chinese loans are used to fund key development projects in this country. Thus, it would be very costly for Ghana to seek to apply its laws fully especially in cases where Chinese were involved. It is gradually becoming a norm for even some police officers to relax law enforcement regimes where Chinese were involved in illegal mining. They know a key state official will call for the release of such nationals who were arrested. Oh yes, it is like we want to keep our relationship with them and ensure that it is not harmed (February 24, 2021).

Additionally, interviews with Chiefs/Opinion leaders, Officials of Amansie South District Assembly and Assembly Members found that, there may be something between China and the Government of Ghana in both past and present which made the fight against Chinese illegal miners extremely difficult. One Assembly member bemoaned, “Chinese involvement in ‘galamsey’ did not start today. We have been demonstrating against them and caused the arrest of some of them but they won’t stop”. Another Assembly member said, “even when government announced the ban on IGM, we still had some Chinese secretly moving into our forest reserves to do mining. Sadly, some of them were protected by the military. One cannot tell whether this was a private arrangement or official”.

Respondents further indicated that Chinese illegal miners who were arrested were just released without prosecution. This act, in the views of the respondents, largely explained why they believe that diplomatic relations between Ghana and China had affected law enforcement and sanctioning regimes. A Chief averred:

Some time ago, we arrested some Chinese miners for their involvement in illegal mining. We were made to transfer the case to Kumasi for prosecution. We followed-up the case but to no avail. We spent our resources to protect the nation but nobody seemed to be ready to support this cause. Finally, we had to abandon pursuing the case because there were no commitments from prosecutors (February 26, 2021).

In addition, interviews with most respondents revealed that some mining sites of illegal Chinese miners and their Ghanaian collaborators in the ASDA and other areas in the entire Amansie enclave were protected by armed military personnel. These armed personnel, according to respondents, made sure that Chinese illegal miners received the best of protection from residents of the mining communities who might want to protest against illegal mining in the forest reserves.

In the view of an illegal miner:

My brother, let me tell you something, the Chinese illegal miners were protected by our own military. They made sure that local residents did not come to the mining sites to disturb them. Sometimes, we are made to believe that they were protecting the forest from illegal miners but the fact is that they rather protected illegal Chinese miners to mine. Ironically, this same military dealt ruthlessly with Ghanaians who might be found engaging in illegal mining activities within the same enclave. It

is a very sad situation we have here in Ghana. And this has been happening for well over a decade (February 27, 2021).

Again, an officer from the Forestry Commission who was involved in this study corroborated the above responses. He declared:

It is very obvious that diplomatic relations come into play when dealing with Chinese illegal miners. Generally, it is always difficult in dealing with foreign nationals involved in illegal activities because it has diplomatic undertones which I think is not overt. However, the situation seems very bizarre when Chinese nationals are involved. My brother, are you very surprised why Chinese illegal miners were normally treated with kids' gloves? Oh no! Don't be surprised at all! (March 30, 2021)

Unfortunately, all the Chinese nationals interviewed for this study declined to comment on CIIM. Instead, they disclosed that generally Ghanaians are hospitable towards them. To one respondent, “all that I can say is that we enjoy good treatment in Ghana and we love working with the people”. Most of the respondents for this study agreed that diplomatic relations influenced efforts in dealing with illegal Chinese miners. The study found that Chinese illegal miners were sometimes protected by armed military personnel. Also, it was found that Chinese illegal miners who were arrested were all deported. It must be noted that Ghana does not have an extradition treaty with China and could prosecute Chinese illegal miners in the country. However, the government of Ghana chose deportation. For example,

Boafo et al (2019), note that in 2013, over 4500 illegal Chinese miners were arrested in Ghana and deported.

This act supports the notion that diplomatic relations between Ghana and China undermine government efforts in dealing with Chinese illegal miners in Ghana. The results of the present study mirror the observation made by Boafo et al. (2019) and Debrah and Asante (2019). Boafo et al. (2019) note that Chinese miners continue to destroy Ghana's forest but for fear of ruining diplomatic and economic relations, successive governments in Ghana have failed to enforce the laws. Debrah and Asante (2019) also state that Beijing lean on its diplomatic relations with Ghana as a strategy to handle the CIIM. Debrah and Asante (2019:17) add that "the Chinese Embassy in Accra reminded the Government of Ghana to deal with the Chinese illegal miners within the spirit of Sino-Ghana relations. China also decided to alter the ground rules for granting future loans to Ghana by including a soft condition that enjoins the Government of Ghana to resolve Chinese illegal miners' issue within Sino-Ghana diplomatic rules of engagement".

Chapter Summary

This chapter discussed the factors influencing Ghana-China trade relations and the reasons for Chinese migration to Ghana. It also analysed how diplomatic relations affected law enforcement efforts by government in dealing with Chinese illegal miners. The study found that Ghana and China trade had increased considerably because of cheap cost of imports, and development assistance, among others. It was also found that the complicity between Ghanaian officials and

Chinese investors and diplomatic relations conspired to impede programmes put in place to deal with CIIM.



CHAPTER SIX

ENVIRONMENTAL IMPACT OF ILLEGAL GOLD MINING IN GHANA AND ANALYSIS OF PROGRAMMES FAILURE

Introduction

This chapter discusses the data obtained from the fieldwork for objectives four and five. The goal of the chapter is to explore the environmental impacts of SSM/IGM in Ghana. It also analyses the failure of programmes put in place to deal with it. Objective four sought to explore the environmental impacts of CIIM. The fifth objective aimed to analyse legal and institutional arrangements guiding SSM in Ghana. It also analyses the failure of programmes put in place to deal with IGM. The discussion is categorised into five parts. The first section discusses CIIM. The second part looks at the environmental impacts of IGM. The third category looks at legal and institutional framework guiding SSM. The fourth objective analyses the failure of programmes put in place to deal with IGM. The last segment focuses on the challenges to the fight against IGM.

The chapter relied on responses from interviews with Chiefs/Opinion leaders, Officials of Amansie South District Assembly, Assembly Members, and the Forestry Commission. Others include officials of MOTI, Minerals Commission, Illegal Miners, and Former Members of the Taskforce. Observations of mining sites and forest reserves were also done to validate responses from the interviews.

Chinese Involvement in Illegal Mining (CIIM)

From literature and conceptual framework, IGM is one of the major threats to environmental protection and forest management. The IGM menace could derail the attainment of UN SDGs one, two, three, twelve, thirteen, fourteen and fifteen.

There are reports that CIIM has exacerbated the destruction of the natural environment especially forest resources. In exploring the CIIM, a question on which nationals are involved in IGM was asked. Participants in the interview generally indicated that Ghanaians, Chinese, Indians, Russians and ECOWAS citizens were the nationals who were mostly involved in IGM in the ASDA.

The study found that most of the foreign nationals who were involved in IGM in the district were Chinese. An official of the GIS submitted, “about ninety eight percent (98%) of foreign nationals involved in illegal mining were the Chinese”. Another respondent from the GIS said, “though other nationals are into illegal mining in this district, the majority of the operators of illegal mining were Chinese”. It was also found that the Chinese had been mining gold in the Amansie South District for more than a decade. Furthermore, it was found that CIIM took different forms. This includes financial, technical, managerial and marketing of gold. An official of ASDA remarked:

The Chinese play strategic roles in IGM in the district. They provide funding support to miners for gold, hiring of excavators and other machinery to local miners. They also provide other support services such as maintenance of equipment/machinery and purchase of gold from local miners. If you cast your mind

back, Ghanaian small-scale miners were artisanal miners until the Chinese introduced heavy machines which improved productivity. This prompted local artisanal miners to form partnership with the Chinese to mine gold. Oh yes, I can tell you that our own people have formed various partnerships with Chinese as far as the illegal mining business is concerned (February 25, 2021).

The above claim was further supported by a small-scale miner who asserted:

The Chinese have made serious investments in small scale/illegal mining in Ghana. Apart from assisting illegal miners with machines such as excavators, bulldozers, and trench drills, Chinese also pump huge sums of money to support the operation of illegal miners. You see, mining is an expensive business so some of the local miners partner the Chinese who have the resources and are willing to engage in the business of illegal mining (February 27, 2021).

However, interviews further showed that IGM operations had contributed to the destruction of the natural environment. The respondents generally contended that it constituted a major threat to the protection of the forests and water bodies. They added that there had been situations where some community members had to resist the illegal miners from engaging in such activities. In the words of an Assembly Member, “not all community members support these illegal mining activities. There were times community members fought the miners and even

destroyed the machines and sites of illegal miners”. Further observations done by the researcher showed that indeed, there were instances some community members fought the illegal miners. Plate 3 shows an alleged Chinese illegal mining site being destroyed by community members at Aboaboso.



Plate 3: An alleged Chinese IGM site being destroyed by community members at Aboaboso.

Photo credit: Fieldwork, 2021

In an attempt to help provide a good account of the CIIM, a respondent from the Forestry Commission remarked:

Obviously, Chinese citizens are involved in illegal mining. You cannot deny this fact. Even though they are involved in illegal mining, few of them are seen at mining sites. We all know they

are seriously into illegal mining just that our local people normally front for them. You normally see them during the period of prospecting and servicing of broken or faulty machines. The Chinese feel comfortable in bringing their compatriots to service faulty mining equipment mostly imported from China. There are times they will provide the funds and other resources for illegal mining whilst the local people will go to the site to do the actual mining. These guys are smart! (March 30, 2021).

From the foregoing, it is clear that the Chinese were involved in IGM in the ASDA. They invested in capital, heavy equipment and provided technical assistance to their Ghanaian collaborators. The study found that although IGM activities had become a source of livelihood to most people in the mining areas of Ghana, the operations constitute a major threat to the protection of the natural environment. It also undermines Ghana's efforts towards the attainment of the SDGs, especially SDG 15. The results from the study on CIIM corroborate the works of Crawford and Botchwey (2017) and Bofo et al. (2019). Crawford and Botchwey (2017) observe that CIIM is a major issue in Ghana.

They contend that Chinese illegal miners use heavy equipment such as excavators, bulldozers, and trench drills, among others which served as an incentive for local miners to partner with Chinese investors. The authors explain that the situation was causing serious damage to Ghana's forest and water resources. For their part, Bofo et al. (2019) submit that traditionally, small-scale/illegal miners

used simple tools such as pick-axes, shovel and so on in mining. According to Boafo et al. (2019), Chinese illegal miners use of heavy machines in SSM which comes with high revenue was causing the destruction of forest and water resources in Ghana. Beyond, sustainable management of water resources and forests are critical in the context of SDGs 6 and 15.

Environmental Impact of Chinese Involvement in Illegal Gold Mining

This section of the study seeks to explore the environmental impacts of CIIM activities in Ghana. The study found that CIIM was causing serious devastation to the natural environment, especially the destruction of water and forest resources. Based on interviews and observations conducted for this study in the Amansie South District, a number of impacts of IGM activities were identified. Notable among the impacts of IGM activities on the natural environmental include: deforestation, loss of biodiversity, impacts on land resource and water bodies.

Deforestation

The study found that IGM contributed to the destruction of forest resources through excavation works. Trees, plants and topsoil in the Amansie South District have been cleared from mining areas and this had caused destruction to the natural environment and forest resources. Plate 4 shows degradation of forest reserve by illegal miners at Manso Adubia.



Plate 4: Degradation of forest reserve by illegal miners at Manso Adubia

Photo credit: Fieldwork, 2021

The results from the interviews conducted for this study showed that illegal mining had caused destruction to portions of the rainforest in the district. It was also revealed that various tools used by illegal miners for their operations tended to destroy the rainforest. An Assembly Member stated, “the use of excavators in gold mining contributes significantly to the loss of forest resources in the district”. An official of ASDA stated:

CIIM activities in Amansie has destroyed our forest reserves. Some plant and animal species are extinct. Chinese miners and their collaborators use excavators and other heavy equipment in carrying out their operations. This equipment have contributed to the loss of forest area in Odaho, and Aboaboso Forest Reserves. These forest reserves used to be no-go areas for even local hunters but now illegal miners go there,

sometimes in the night to carry out their operations. If care is not taken, we will lose all our forest reserves in less than ten years (February 24, 2021).

In order to validate the findings from interviews conducted for this study, observations were done in Odaho, Apanprama and Aboaboso Forest Reserves. It revealed that large areas of forest lands had been cleared for IGM by Chinese and Ghanaian illegal miners as shown in Plate 4. Parts of forest reserves in Odaho and Aboaboso had been rendered bare through excavation of the land by illegal miners. The findings of this study are a departure from the tenets of green theory. This theory sees the protection of the environment as critical for the attainment of the SDGs.

Impact of Illegal Gold Mining on Land Resource

IGM in the Amansie South District has resulted in substantial damage to the landscape and vegetation cover. Considerable areas of land and vegetation in communities such as Manso Adubia, Agoroyesum, Aboaboso and many others had been excavated by illegal miners. Respondents in this study indicated that IGM affected the ASDA by contributing to the degradation of agricultural land. This ultimately affected agricultural productivity. IGM activities in ASDA were destroying forest reserves. This affected the livelihood of forest dependent communities. Agricultural lands had not only been degraded, but there was loss of land for farming activities as shown in Plate 5.



Plate 5: Illegal gold mining site at Aboaboso Forest Reserve

Photo Credit: Fieldwork, 2021

Furthermore, responses from Assembly Members, Chiefs and Officials of ASDA revealed that there was a drastic change in drainage patterns within the mining communities as a result of the destruction to forest lands. Most of these communities tended to experience flooding anytime there was a heavy downpour of rain. What is more, erosion was also on the increase, leading to siltation and increased sediment loads in rivers. A Chief remarked:

Illegal mining has destroyed our farmlands. We used to have large tracts of cocoa farms but illegal miners have destroyed them. Our land was good for rice farming and we used to have maize and plantain farms but today we do not produce these products in quantities. We now have to rely on foodstuffs from other communities. Oh yes, now we get most of our foodstuffs

from the Denkyira areas because our farmlands have been destroyed. If care is not taken, there will be famine in the next decade (February 26, 2021).

Interviews and observations done for this study show that illegal mining, especially the introduction of machines by Chinese miners, have caused devastation to land resources in the ASDA. Mining activities had also led to the release of toxic substances into water bodies. Surface water was also contaminated by the washing of mineral laden soil in water bodies. There had been the destruction of aquatic organisms because water bodies had become inhabitable to such aquatic animals.

These findings support studies by (Boafo et al, 2019; Crawford & Botchwey, 2017). According to them, mechanisation of illegal mining is causing devastation to land resources. Here, large areas of land are dug and excavated in few days because of the use of modern machines and capital. Thus, the threat of illegal mining in the district if not checked, would affect government's efforts in achieving SDG 15. Failure to attain SDG 15 would be detrimental for climate change mitigation (SDG 13) action and the entire global goals (Agenda 2030).

Effects of IGM activities on water bodies

The results from the interviews and observations indicated that water sources had been destroyed by the influx of illegal small scale miners in the district. The study found that the Amansie South District Assembly had been investing in the construction of boreholes in the communities as an alternative source of water for domestic and commercial use. According to respondents from the district who took part in the study, before the advent of the use of heavy machines in SSM in

the district, the main sources of water for the communities were largely streams and rivers. Communities relied on streams and rivers for water for domestic purposes such as cooking, brewing and drinking.

An Assembly Member stated, “illegal mining activities had really destroyed our sources of water. Today, we rely mostly on water from boreholes because the streams and rivers are now unsafe for domestic use”. An Official of Assembly added, “the colour of the water has changed; our streams and rivers now taste very bad, and smell bad. I can tell you that the prevailing situation is too bad”. Further, a Chief stated that illegal mining activities had led to drying up of water bodies, with some streams becoming muddy. The Chief explained:

Illegal mining has destroyed our main water bodies. We have river Offin and Oda in this district. These rivers were our main sources of water for domestic purposes. Now we cannot rely on these rivers for water. I can tell you that today; illegal mining activities in the district have impacted negatively on these river bodies (February 26, 2021).

An official of ASDA mentioned:

Illegal mining constitutes a major threat to our sources of water. Illegal miners are very much aware of the danger their activities pose to our water bodies but they seem not to care about the situation. Now because the water bodies are unsafe for drinking we have to spend more money to buy bottled water to drink. How many people can afford to buy pure water each time they want to

drink water? This is an unfortunate situation for most of our communities (February 25, 2021).

The state of some of the water bodies in the district can be shown in Plates 6 and 7.



Plate 6: Pollution of River Offin due to IGM activities

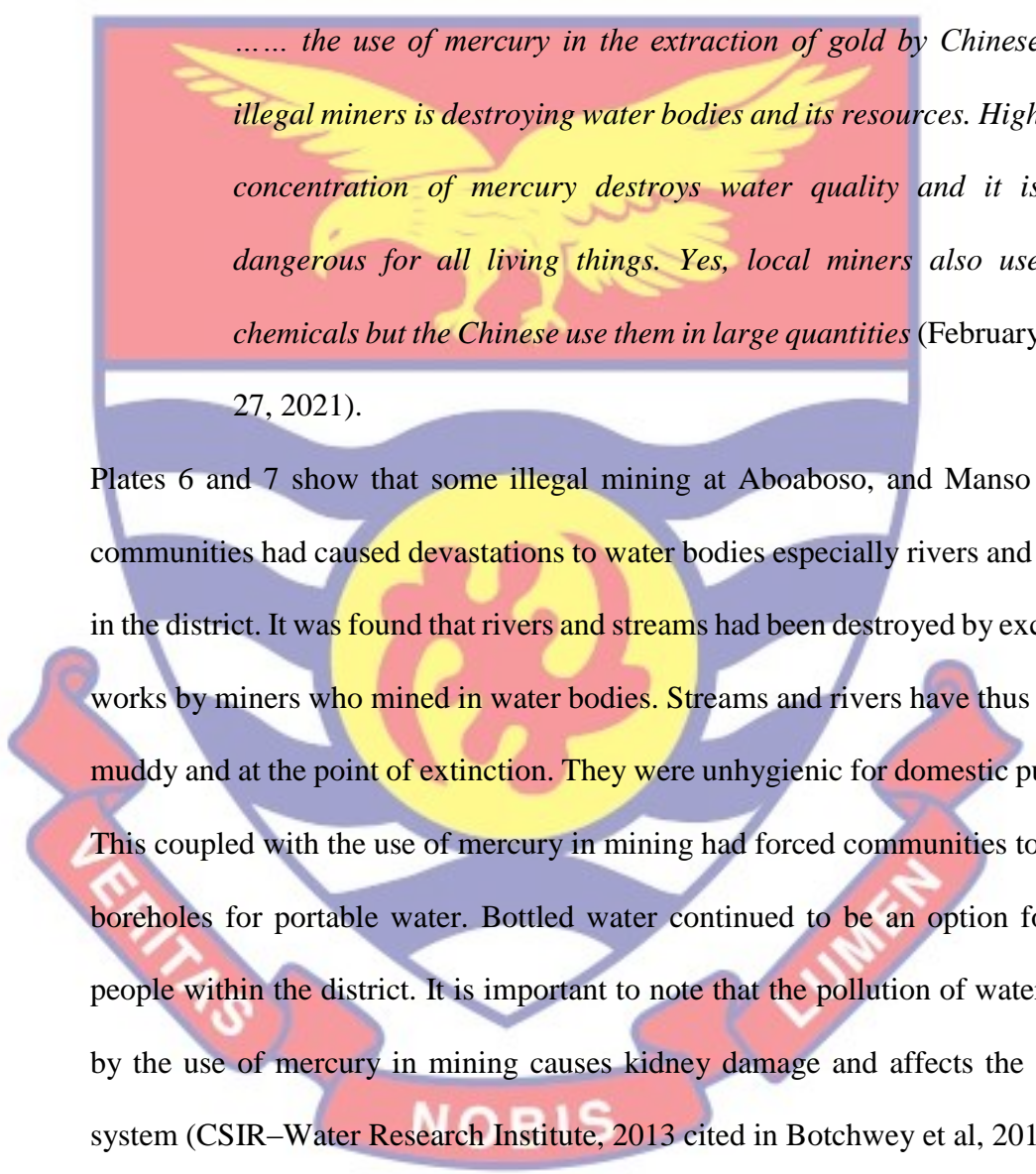
Source: Fieldwork, 2021



Plate 7: Impact of IGM on a stream at Manso Adubia

Photo credit: Fieldwork, 2021

To further prove the extent of harm illegal mining posed to the water bodies in the district, a research participant who was also an illegal miner remarked:



..... the use of mercury in the extraction of gold by Chinese illegal miners is destroying water bodies and its resources. High concentration of mercury destroys water quality and it is dangerous for all living things. Yes, local miners also use chemicals but the Chinese use them in large quantities (February 27, 2021).

Plates 6 and 7 show that some illegal mining at Aboaboso, and Manso Adubia communities had caused devastations to water bodies especially rivers and streams in the district. It was found that rivers and streams had been destroyed by excavation works by miners who mined in water bodies. Streams and rivers have thus become muddy and at the point of extinction. They were unhygienic for domestic purposes. This coupled with the use of mercury in mining had forced communities to rely on boreholes for portable water. Bottled water continued to be an option for some people within the district. It is important to note that the pollution of water bodies by the use of mercury in mining causes kidney damage and affects the nervous system (CSIR–Water Research Institute, 2013 cited in Botchwey et al, 2018).

The findings from this study therefore affirm the work of Botchwey et al, (2018). They explained that small- scale alluvial mining and, in particular, illegal mining activities have caused serious environmental problems including

destruction to water bodies in Ghana. The CSIR–Water Research Institute (2013 cited in Botchwey et al, 2018) adds that mercury for processing gold is one of the causes of pollution to water bodies. This has become a serious health threat for the majority of the population living in these areas (Botchwey et al, 2018). The current situation of water bodies calls for the need to step up programmes to protect them in order to achieve SDG 6.

Loss of Biodiversity

IGM can have a devastating impact on the biodiversity of the mining area. This is because illegal mining leads to a massive habitat loss for diversity of flora and fauna ranging from soil microorganisms to large mammals. In the views of the respondents, endemic species were most severely affected because the slightest disruptions in their habitat results in extinction or puts them at high risk of being wiped out. Also, respondents indicated that chemicals released through illegal mining activities could wipe out entire populations of sensitive species.

Responses from the interviews revealed that forest reserves that had been untouched by humans were now invaded by illegal miners. This has led to biodiversity loss since many animals and plants had lost their natural habitats. An officer from the Forestry Commission complained, “animals are forced to move from their habitat and some even die. Plants species are destroyed by illegal mining activities”. Another respondent from the Forestry Commission bemoaned, “we are losing precious species as a result of illegal mining. This is very dangerous for both

present and future generations”. Plate 8 presents a picture of degradation caused by IGM in the district.



Plate 8: Degradation due to IGM at Manso Adubia

Photo credit: Fieldwork, 2021

The findings on biodiversity loss affirm the work of Owusu-Nimo et al (2018). They argue that Chinese involvement in unregulated small scale and IGM has resulted in environmental degradation, water pollution and biodiversity loss. The situation in Ghana presents a huge challenge to the realisation of SDG 15. A key component of SDG 15 is the need to ensure availability and sustainable management of water.

Analysis of Programmes to Deal with IGM

According to the World Bank (2019), the impacts of environmental degradation are not only local but global. In view of this, governments all over the

world have committed to the SDGs and initiated programmes to deal with activities that undermine the natural environment and the livelihood of the people. The UN SDGs underscore the importance of climate change mitigation, the protection of forests and water resources. In Ghana, one of the threats to the protection of the environment is IGM which has direct impacts on the attainment of the SDGs. Government and intergovernmental organisations continue to make efforts to end IGM in Ghana. Several programmes have therefore, been put in place to end IGM at both the local and national levels.

Responses for this study revealed that although government has put in place institutions and several programmes to deal with this menace, the state continues to battle with CIIM. An official of the Forestry Commission remarked:

Despite all the programmes put in place by the state, we continue to battle with CIIM. This is causing devastation to the natural environment and water bodies. Governments upon governments have tried without any success (March 30, 2021).

Also, respondents indicated that in actualising the noble intention of government, the Amansie South District Assembly had constituted a 'District Mining Taskforce' to compliment central government efforts. According to officers from the Forestry Commission interviewed for this study, even though the Commission did not have special programmes to deal with illegal mining, it undertook routine patrols to protect the forest from illegal entry (Operation Halt). Respondents added that in addition to the District Mining Taskforce, the Assembly had benefited from national programmes aimed at dealing with illegal mining such

as Operation Vanguard, Galamstop and the Inter Ministerial Taskforce against illegal mining. These programmes are discussed below:


District Mining Taskforce, 2019

The study found that the ASDA had set up a Mining Taskforce. This was because the MINCOM did not have an office in the district. The Taskforce was responsible for regulating SSM and also to prevent the activities of IGM in the district. Even though there was a Mining Taskforce in place, IGM continued in the district. Respondents explained that the fight against illegal mining in the district was impeded by factors such as poor road networks, and community members aiding illegal miners to operate in deep forests. Also, inadequate security personnel such as Police and Immigration Officers to deal with illegal Chinese miners, and inadequate logistics/vehicles hampered the operations. A respondent from ASDA remarked:

We have the Mining Taskforce which is responsible for regulating mining in the district. They make sure that mining companies in the district are licensed and work within the law. It is the duty of the Taskforce to ensure that companies undertake reclamation of land. The Taskforce also prevents illegal entry into the forest. However, because most of our roads are very poor it makes it very difficult for the Taskforce to move quickly to arrest miners when they get the hints about their operations. Again, because our community members aid illegal

miners to operate in deep forest it makes the fight very difficult for the Taskforce (February 25, 2021).

Despite the formation of the District Mining Taskforce, IGM continued in the district. An official of the District Assembly noted:

The watermark is the official crest of the University of Cape Coast. It features a shield with a yellow eagle with outstretched wings at the top. Below the eagle is a yellow circle containing a red stylized figure. The shield is flanked by two red banners with white text: 'VERITAS' on the left and 'QUIEN' on the right. At the bottom of the shield is a red banner with the word 'NOBIS' in white. The entire crest is semi-transparent and overlaid on the text.

The Taskforce has been responsible for protecting our forest reserves from illegal mining activities. However, the problem is that we do not have the needed resources to be able to deal with illegal Chinese miners. Local residents do not volunteer information about these miners but collaborate with them to mine the forest (February 25, 2021).

Operation Halt, 2018

The study further discovered that one measure to fight the IGM menace was the formation of Operation Halt group. This group was announced in 2018 by the Forestry Commission to prevent illegal entry into forest reserves. According to an official of the Commission, this was a joint military and forestry Taskforce aimed at bringing to an end IGM and logging activities in Ghana's forest reserves. An officer of GIS noted that about 700 foreign nationals including Chinese, ECOWAS citizens, Indians and Russians were arrested and repatriated under the Operation Halt programme in the then Amansie West District which is now divided into Amansie West and South Districts. Out of these repatriated illegal miners, about 70% of them were Chinese. This measure seemed to be yielding results as the

number of Chinese illegal miners in the ASDA had declined. A respondent from the Forestry Commission indicated:

Operation Halt has been fruitful. I can tell you that it helped in reducing the number of miners, including Chinese miners in the district. Now you do not see many of them at mining sites. In the past, they were all over the district and caused serious problems to our forest reserves (March 30, 2021).

Contrary to the assertion that Operation Halt had reduced Chinese illegal miners in the district, some respondents intimated that members of the Taskforce and other military men provided protection for Ghanaian illegal miners and their Chinese collaborators. According to respondents, there had been times that clashes erupted between community members and other anti-illegal mining Taskforces. An Assembly Member commented:

Sometimes you will go into the forest and realise that some of the military men are around protecting it. You may think that these men are protecting it from illegal miners. The sad truth is that these men are rather protecting Chinese illegal miners to mine the forest reserves. Oh yes, the Chinese do this illegal activity with overt connivance of Ghanaians who may own the concessions (February 28, 2021).

Inter-Ministerial Taskforce against IGM, 2017

Respondents indicated that the Amansie South District benefited from the 2017 inter-ministerial Taskforce also known as “Operation Vanguard”, which was

aimed at dealing with IGM in Ghana. This was a Joint Military Police Taskforce comprised of 400 military and police personnel tasked with combating illegal SSM. Similarly, in 2019, the MESTI also set up a 64 member Galamstop Taskforce to support the Operation Vanguard team in fighting illegal mining. Interviews with respondents revealed that this operation was fraught with allegations of bribery and corruption. A Chief remarked

Illegal miners, whose excavators were seized, were made to pay huge sums of money after which the excavators were released back to them. Also, illegal Chinese miners who were arrested were never prosecuted. Even though we were made to understand that those illegal miners arrested were going to be prosecuted we never heard of their prosecution. However, we later saw that those who were arrested were freed (February 26, 2021).

Inter-Ministerial Taskforce against Illegal Mining, 2013

From the field interviews, respondents revealed that, prior to the launch of the above programmes, in 2013, the government set up the Inter-Ministerial Taskforce aimed to clamp down on illegal SSM. Among other things, the Taskforce was entrusted with the responsibility to arrest and prosecute both Ghanaians and foreigners engaged in illegal SSM. They were to seize equipment used by illegal miners, and deport all non-Ghanaians involved in the practice. Also, Ghanaians who had sub-leased their concessions to foreigners should have their licenses

revoked. According to an official from GIS, arrests of illegal miners who were mainly made up of Chinese, and ECOWAS citizens were made. The officer stated:

Apart from the arrest, hundreds of temporary shelters of illegal miners were also destroyed, along with the confiscation and burning of mining equipment. We were told that foreign illegal miners were going to be deported but we do not know whether this is true or not. This is because, though the total number of Chinese in our district seems to have reduced since the launch of Operation Vanguard, we still see Chinese in this area. Even some Chinese who were once arrested are still walking around (February 28, 2021).

An official of MINCOM added that “the operation was a welcoming programme which halted illegal mining activities. The unfortunate thing was the reports that some miners with legal documentations were affected, which should not be the case”.

A highly placed official of ASDA interviewed for the study indicated that the MINCOM was not actively involved in programmes to fight illegal mining in the district. However, the officer was quick to add:

... in fact, we don't see them involved, we don't see the kind of work they do in this district. I want to put on record that we don't have MINCOM office in the district. The officer in charge of our mother district, Amansie West has an oversight responsibility here. I don't know whether this affects the work of MINCOM in

the district. This is why we have put in place a Mining Taskforce to take care of regulating mining activities in the district. Management has also appointed a staff as the ASDA Mining Desk Officer who co-ordinates the work of the Taskforce (May 17, 2021).

From the discussion above, despite the fact that the crackdown seemed to have reduced the number of illegal Chinese miners at the Amansie South District, the Taskforce was unable to completely stop illegal mining, especially among the Chinese. The study found that it might be due to so many challenges such as lack of political will, lack of stakeholder involvement and consultations, inadequate logistics, difficult access to mining sites, bribery and corruption, among others.

Challenges to the Fight against CIIM

As noted earlier, programmes aimed at dealing with illegal mining have been unsuccessful because of a myriad of problems. The involvement of Chinese and weak legal/institutional framework contribute significantly to the failure. This section attempts to discuss legal and institutional arrangements guiding SSM in Ghana. Some of the challenges to the fight against CIIM as gathered during interviews for the study and observations are also discussed.

Weak Legal and Institutional Framework

As noted earlier, the MINCOM has the legal responsibility to lead the regulation and monitoring of all mining activities in Ghana. The Environmental Protection Agency, and the Forestry Commission, are institutions that support the protection of the environment especially forest and water resources. These

institutions work to promote mining as a source of livelihood for the people and also reduce environmental impact of gold mining. Unfortunately, despite these laws and institutions to deal with IGM, the state continues to struggle with enforcement of mining regulations as a result of weak institutions.

Interviews conducted for this study found that the MINCOM did not have enough staff in the district to carry out routine inspection of mining sites to assess the work of mining companies and concession owners. They lacked the capacity to stop illegal mining. An official of the MINCOM stated that they did not have enough staff to carry out monitoring of mining sites. In terms of enforcement, the official said that they did not carry out enforcement but reported all illegal mining activities to the security agencies. The respondent from MINCOM stated:

...we have been carrying out strict enforcement of mining laws and regulations with the help of law enforcement agencies to ensure that mining is done legally. What we do is to report all illegal mining activities to the security agencies to halt their operations. We don't make arrest or stop illegal miners but report to security agencies because there are records of attack by these miners on our staff. The District Security Committees are given this information which is verifiable. The problem we have is that response from the security services is sometimes slow because of inadequate logistics (June 1, 2021).

A respondent from the Forestry Commission indicated that weak institutional arrangement account for Chinese involvement in illegal mining. He added, “we should not blame Ghana’s failure to enforce mining laws on its diplomatic ties or trade relations with China only but weak institutions’’. Political interference in the prosecution of both local and foreigners and inadequate logistics affect enforcement efforts.

Ghanaians were the owners of all concessions and operated it together with the Chinese and other foreign nationals. The Chinese provided funding or support services such as sale of machinery to Ghanaian miners both legal and illegal. This collaboration makes it difficult to arrest Chinese illegal miners.

These findings confirm the work of Mcquilken and Hilson (2016) and Hilson and Maconachie (2020). Mcquilken and Hilson (2016) explain that inadequate financial, personnel and logistical capacity of state regulators have deepened the enforcement problem. Hilson and Maconachie (2020) also posit that state interventions to combat SSIM failed to combat IGM partly due to weak institutions.

Lack of political will

Responses from interviews with Chiefs/Opinion leaders, Officials of Amansie South District Assembly, MINCOM, and Assembly Members revealed that successive governments lacked the political will needed to fight illegal mining in Ghana. Respondents explained further that politicians were deeply involved in

illegal mining. In view of this, prosecutions of both local and Chinese miners had been unsuccessful. Respondents added that whenever these illegal miners were arrested, there were influential local people with political connections who fought for their release. One Chief declared, “Once arrest was made, there was political interference from government official(s) or some members of the governing party”. An official of the MINCOM corroborated this point by stating that political interference was an impediment to the fight against illegal mining.

Officials of ASDA, and Assembly Members said, “some Ghanaian officials have been using their positions in the government and party to assist illegal Chinese miners to get away with the illegalities”. Some of the respondents revealed that there were some politicians and government officials who were also into these illegal mining operations. An official from the Forestry Commission explained:

Over the years, law enforcement has been weak because some politicians own mining concessions and they operate them with the Chinese. When these Chinese miners are arrested, officials intervene and they are set free (March 30, 2021).

According to one Chief at Manso Adubia in the district, the state was unable to deal with Chinese illegal miners. He commented,

..... not too long ago, the Chiefs had information that some illegal miners including both Ghanaians and the Chinese were operating in the Aboaboso forest reserves. We went there and made arrest of some Chinese and local illegal miners. The case was transferred to Kumasi on the premise that it was an order

from above. Initially, we had hopes of successful prosecutions but now some of us are no more interested in pursuing the case. This is because, we have been following the case but it is obvious that there is no motivation on the part of state authorities to prosecute Chinese illegal miners (February 26, 2021).

Bribery and corruption

The study also found that the incidence of bribery and corruption was an impediment to the fight against CIIM in Ghana. Respondents alleged that the Chinese and their local collaborators paid huge sums of money to members of the illegal mining Taskforce to compromise their activities. Interviews with respondents revealed that members of the anti-illegal mining Taskforce had been extorting monies from illegal miners and had left them to operate when they were supposed to arrest them and seize their equipment. In view of this, illegal miners continued to operate with impunity. In the words of an Assembly Member, “why won’t they continue engaging in these illegalities? After all, the farthest authorities could go is to collect monies from them”.

Interviews reviewed that local miners realising that the Taskforce had been compromised by Chinese miners, formed partnerships with the Chinese to operate illegal mining activities in the Amansie South District. These illegal miners did not take anti-illegal mining Taskforce operations serious. A Chief remarked:

I can tell you that the people who were charged to fight illegal mining took bribes from illegal miners and allowed them to

operate. Those who were arrested or had their machinery/equipment seized were the ones who failed to pay bribes. Community members have realised this phenomenon and have decided to rather partner Chinese illegal miners. They pay bribes to officials whenever they are arrested. Oh yes, it makes virtually no sense for community members to work hard in dealing with the canker when state officials mandated to halt this unsafe situation continue to compromise their work (February 26, 2021).

In an effort to affirm the above allusions, a former member of Operation Vanguard revealed:

My brother, dealing with Chinese miners is a difficult and complex task. There are so many forces working against the desire to end illegal mining because we are not honest to ourselves. People who are supposed to lead in dealing with CIIM tend to compromise their activities for selfish gains. We all know those who are involved but we always go to chase mining equipment (March 28, 2021).

The study also found that since 1989, the state had put out several legislations and programmes such as District Mining Taskforce, Operation Halt, Operation Vanguard, Galamstop and the Inter Ministerial Taskforce to end illegal mining. Despite these efforts by the state, it continues to battle with the involvement of Chinese in illegal mining and its devastating impacts on the natural environment

because of weak institutions. This finding supports the work of Boafo et al, (2019), Hausermann and Ferring (2018) and Shinn (2016). Boafo et al, (2019) allege that the protection of Chinese miners by Ghanaian political actors and their Chinese counterparts has bolstered the Chinese in galamsey operations.

Hausermann and Ferring (2018) indicate that programmes to combat illegal mining failed because some corrupt members of the security task forces and others who were under the control of “big men” with political power provided support to foreigners engaged in illegal operations for personal gains. Shinn (2016) adds that Chinese replicate in Africa, poor environmental practices and attitudes they had routinely adopted at home because of weak enforcement of laws and institutions.

Inadequate consultations and planning with stakeholders

The study found that all the national programmes put in place to deal with illegal mining lacked proper consultations with key stakeholders, including community members, opinion leaders, chiefs and other local leaders. The respondents indicated that once these key stakeholders were not involved, there was very little they could do to support the fight against illegal mining. Also, respondents indicated that the various Taskforces had always disregarded suggestions offered them by local leaders. Besides, some community leaders felt unconcerned because they had sold land to the Chinese to engage in mining. Others also had also formed partnerships with the Chinese to operate mining in the district.

An Assembly Member complained:

We are not informed nor involved in discussions and programmes by the government to fight illegal mining. We only hear of them when they are announced in the media. When the Taskforce comes there is no collaboration with community leaders. There are times we try to engage them on how we can work collaboratively to achieve results but they don't seem to be ready to listen to our inputs (February 28, 2021).

A Chief confirmed the above statements by indicating:

I remember in 2019, we suggested to members of Operation Vanguard that when they arrest these illegal miners, they should supervise them to reclaim the land before the machines were taken out of the mining sites. This we believed could have helped in reclaiming the land for future farming activities. Unfortunately, they did not agree and took the machines out of site. If we had been involved they would have seen us as partners, and they would not have rejected our suggestions (February 26, 2021).

Also, in support of the above statements, a former member of the Inter Ministerial Committee (Operation Vanguard) remarked:

The Inter-Ministerial Committee (Operation Vanguard) did not listen to any suggestion from the local people. One day I met the Committee, in fact I was a member of the Committee, and I suggested to them that when we arrest illegal miners and seize their machines, they should bring the machines to the district.

From there, we make sure that they use the machines to reclaim the land before they were transported outside the district but they said no! (March 8, 2021).

Respondents further indicated that programmes to deal with CIIM lacked proper planning. The study found that even though government programmes to deal with illegal mining were good, they failed because they lacked proper planning. A respondent from ASDA noted:

Over the years, government has come up with some good programmes to fight the CIIM but all of them failed. This is because, the programmes were 'knee jerk' reactions to the problem. As a result, people who were put in charge of these programmes exploited the weaknesses that came with lack of proper planning (February 24, 2021).

The study found that lack of consultations with stakeholders especially chiefs had affected programmes put in place to deal with CIIM. For example, it was revealed that the Minerals Commission which is mandated to regulate mining activities were not involved in programmes aimed at fighting illegal miners. These findings corroborate the work of Bofo et al (2019) who argue that despite the fact that programmes put in place to deal with illegal mining decreased the number of illegal Chinese miners, the Taskforce was unable to completely eliminate illegal mining by foreigners. This is possibly due to the fact that the Taskforce was made up entirely of state actors, with little input from the Minerals Commission and

conventional land owners such as chiefs, who negotiate directly with miners through permits and land transactions respectively.

Inadequate funds and logistics

The fight against IGM demands adequate resources and logistics such as vehicles and security personnel. Most IGM sites are located in remote areas with poor road networks. Inadequate personnel, including police, immigration and military officers and logistics derailed programmes to deal with IGM at the local level. Responses from interviews proved that inadequate logistics hampered the fight. They explained that in the Amansie South District, most roads leading to mining sites were not passable. Thus, when officials received information about the activities of IGM, before security personnel who are deployed reach these mining sites, illegal miners may have left the sites. An official of the ASDA stated:

Hmmmm! Let me tell you... the truth is that the Assembly does not have funds and enough logistics to deal with CIIM. Our roads are also poor so we are unable to come to speed with the rate at which Chinese miners operate. They use excavators, bulldozers, trench drills and other sophisticated machines in mining. So within few hours they have caused serious damage to forest and water resources even before we get to the site

(February 26, 2021).

Plate 9 shows an excavator and other heavy machines at an alleged illegal mining site belonging to the Chinese at Aboaboso in the ASDA.



Plate 9: Heavy machines for mining at an alleged illegal Chinese mining site

Photo credit: Fieldwork, 2021

Collaboration between Chinese miners and their Ghanaian collaborators

One of the challenges to the fight against CIIM, according to respondents was the collaboration between Ghanaian SSM and Chinese workers. Responses from interviews found that it was Ghanaians who normally led the Chinese to mining communities and provided them with accommodation in some instances.

An official of the Amansie District Assembly disclosed:

.... the collaboration between local people and the Chinese has made the fight against illegal mining difficult. The local people know where there is gold so they host the Chinese and, lead them to the forest. In view of this, they do not volunteer information about Chinese illegal miners and before we get the information, they have destroyed the forest (February 25, 2021).

In support of the above assertion, a Chief stated:

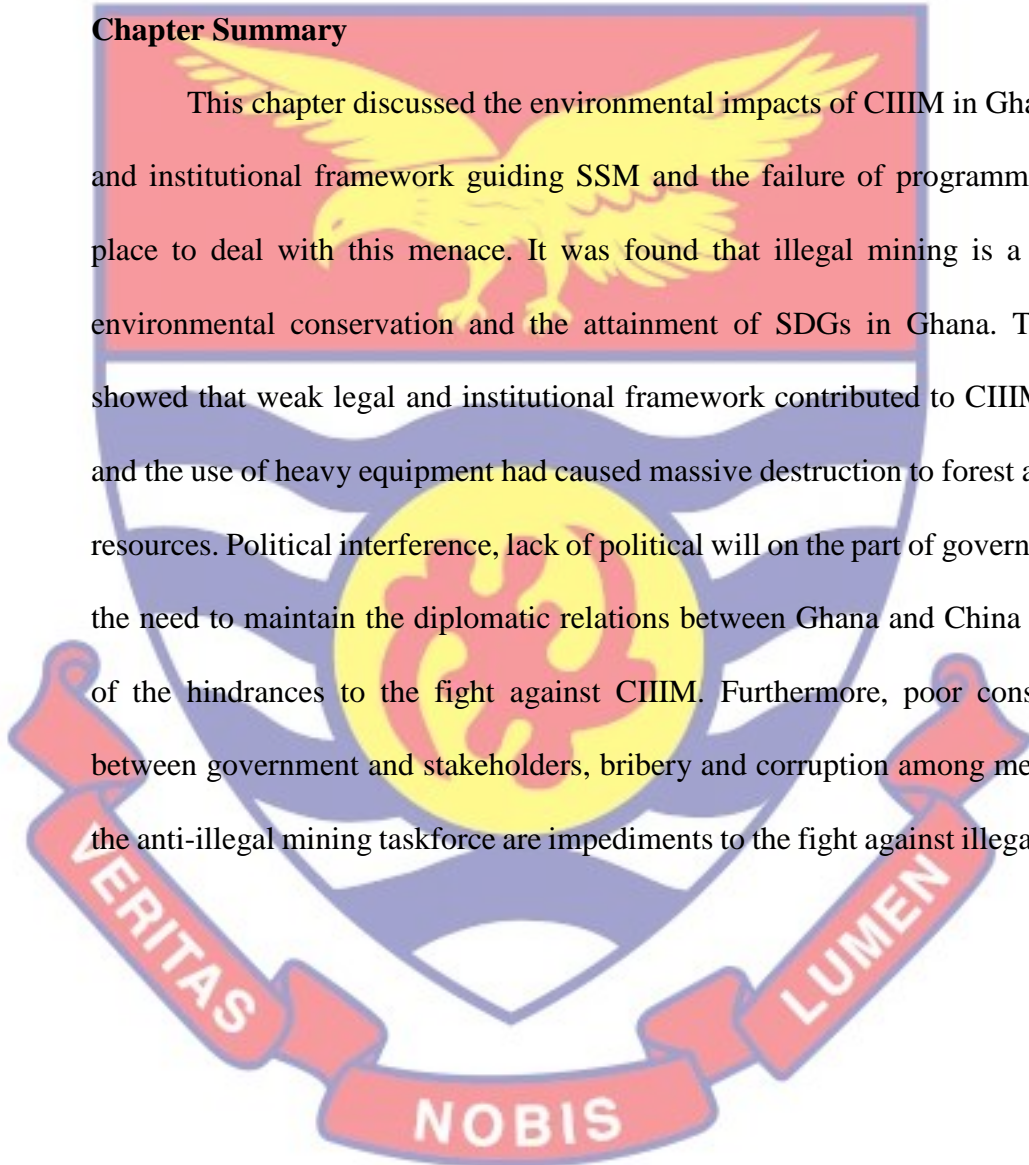
Our people have formed partnership with the Chinese because they have the money and machines to make money from gold mining. Some of our people collect heavy monies from the Chinese and take them to their family lands which have gold deposits to mine. Apart from the local people collaborating with the Chinese to mine our forest, there is another group, Ghanaian concession owners. These Ghanaians apply for concessions and partner with the Chinese to mine our gold. Sometimes, they only front for the Chinese in the acquisition of concession and entry permits because the law does not permit foreigners in SSM. To be frank, this prevailing situation makes fighting illegal mining difficult (February 26, 2021).

This study found that one of the key challenges in dealing with CIIM in Ghana is the collaboration between local miners and their Chinese collaborators. The study noted that Ghanaians applied for concession, mining permits and formed partnerships with Chinese investors/miners. This corroborates previous studies (Crawford et al, 2015; Lu, 2017). These studies generally established that Ghanaian miners apply for mining licenses from the Minerals Commission and other state institutions but form partnerships with Chinese investors and miners. Crawford et al (2015) indicate that the scale of Chinese citizens' involvement in informal gold mining in Ghana had grown to such proportions with, increasingly, instances of

local conflict. Similarly, Lu (2017) posits that despite the fact that in many cases, Ghanaians have the mining permits to operate SSM and legally own small-scale mines; the mines are controlled by Chinese investors.

Chapter Summary

This chapter discussed the environmental impacts of CIIM in Ghana, legal and institutional framework guiding SSM and the failure of programmes put in place to deal with this menace. It was found that illegal mining is a threat to environmental conservation and the attainment of SDGs in Ghana. The study showed that weak legal and institutional framework contributed to CIIM. CIIM and the use of heavy equipment had caused massive destruction to forest and water resources. Political interference, lack of political will on the part of government and the need to maintain the diplomatic relations between Ghana and China are some of the hindrances to the fight against CIIM. Furthermore, poor consultations between government and stakeholders, bribery and corruption among members of the anti-illegal mining taskforce are impediments to the fight against illegal mining.



CHAPTER SEVEN

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The chapter summarises the study, presents the key findings of the study, and conclusions. It also presents the recommendations based on the findings and offers some direction to guide future research. This chapter is divided into six sections. The section begins with the presentation of summary of the study. The second section looks at the key findings from the study. This is followed by discussions of the conclusions. The fourth section discusses the study recommendations. The next section presents the contributions of this study to knowledge. The final section deals with areas for future research.

Summary of the Study

This study sought to understand the influence of GCT relations on Chinese migration to Ghana. It also interrogates the environmental impacts of CIIM and how diplomatic relations conspire or combine to impede programmes put in place to deal with IGM, thereby resulting in environmental destruction in Ghana. To achieve this, five specific objectives were set out. Objective one examined the factors influencing GCT relations. The second objective investigated the reasons for Chinese migration to Ghana. The third objective evaluated the influence of diplomatic relations in dealing with Chinese illegal miners in Ghana. The fourth objective explored the environmental impacts of Chinese involvement in IGM in Ghana. The last objective analysed legal and institutional framework guiding SSM. The failure of programmes put in place to deal with IGM, a major threat to

environmental conservation is also discussed. The researcher adopted the qualitative research approach. Data was obtained from a total of 26 individuals through interviews. Documentary reviews and observations were also used to obtain data. Interviews were conducted using the unstructured interview guide, with thematic analysis as the analytical tool. The next section presents summary of key findings of the study.

Summary of Key Findings

The main findings of the study revealed that diplomatic relations between Ghana and China conspired to impede programmes put in place to deal with illegal mining. Also, the study found that the complicity and uneasy cooperation between some Ghanaian officials/illegal miners and Chinese investors caused destruction to forest and water resources. This undermines Ghana's efforts in the realisation of SDG 15 regarding the preservation of the natural environment.

Based on the first objective of this study, it was found that trade between the two states had increased considerably. This is because of cheap cost of imports/alternative trade, development assistance, access to infrastructure finance, loan and FDI from China. Also, the study found that there is no specific trade agreement between Ghana and China which may have impediments to trade between the two states.

Regarding the second objective of the study, it was established that Chinese influx in Ghana is as a result of trade and Chinese funded projects in Ghana. Projects under each of the key loan and development agreements between Ghana

and China have come with at least 60% of contracts going to Chinese companies. Also, there is considerable arrival of Chinese engineers and workers to Ghana.

The study also revealed that Ghana's diplomatic relations with China affected law enforcement regimes in the fight against Chinese illegal miners. It was observed that prosecutions of many illegal Chinese miners have been unsuccessful. Furthermore, the study established that the protection of illegal Chinese miners and their Ghanaian collaborators by armed military and security personnel gives credence to the generally held belief that Ghana-China diplomatic relations affected law enforcement regimes. These impede efforts to deal with the involvement of Chinese in illegal mining.

In respect to objective four, the study found that IGM was one of the threats to environmental protection and forest management in Ghana. The study demonstrated that CIIM has exacerbated the destruction of the natural environment, especially forest resources through excavation works. Trees, plants and topsoil had been cleared by illegal miners in mining areas. This has caused destruction of agricultural land. Furthermore, the study revealed that the use of machinery by Chinese illegal miners has caused large-scale environmental devastation, destruction of forests and farmlands, and pollution of water bodies. Particularly, rivers that served as sources of potable water for communities in the ASDA had been polluted as a result of IGM by Chinese nationals. Furthermore, the study found that there was a loss of biodiversity and drastic change in drainage patterns within the mining communities with most of these communities experiencing flooding anytime there was heavy downpour.

Finally, the study revealed that weak legal and institutional arrangement affected law enforcement regimes. Inadequate staff and lack of enforcement of laws were some of the institutional weaknesses in dealing with illegal mining. These weaknesses were exploited by Chinese illegal miners. Also, programmes put in place to deal with CIIM failed as a result of lack of political will on the part of government and the need to maintain the diplomatic relations between Ghana and China. Moreover, bribery and corruption among members of the anti-illegal mining Taskforce constituted a major hindrance to the fight against IGM. The study also found that poor consultations between government, local chiefs and other stakeholders affected the fight against IGM. This is because there was no cooperation between local chiefs and members of the various Taskforce charged to clamp down the activities of illegal miners.

Furthermore, the study also revealed that inadequate funds and resources both human and logistics hampered the various initiatives by the government of Ghana to end CIIM. The study found that most of the programmes to deal with IGM were not properly planned. They were ‘knee jerk’ reactions by political actors in response to public and media campaigns. Finally, it was found that the collaboration between Ghanaian small-scale miners and the Chinese investors was a threat to the success of the government’s fight against illegal mining.

Conclusions

Based on the findings of this study, the following conclusions have been drawn:

Trade between Ghana and China has increased considerably because of cheap cost of imports, development assistance, access to infrastructure finance, loan and FDI. Unlike other countries, China also offers competitive prices for Ghana's exports. However, despite the longstanding relations between Ghana and China, no specific documented trade agreement exist between the two countries to serve as a framework for their operations.

Again, Chinese development assistance and loans (have conditionalities attached) have promoted Chinese migration to Ghana. For example, China's loans to Ghana have always come with about 60-70% of the contracts going to Chinese companies and workers. Chinese migrant workers as a result come to Ghana to work. Some of these migrant workers operate small and medium scale businesses. Others invest heavily in IGM causing destruction to the natural environment. It is important to note that even though Chinese development assistance and loans come with conditionalities, it is different from IMF/World Bank conditionalities which come in the form of economic reforms.

Weak legal and institutional arrangements affect law enforcement regimes. Minerals and Forestry Commissions did not have adequate staff to carry out their mandates. Chinese illegal miners therefore exploited these weaknesses. Ghana's diplomatic relations with China poses a major threat to rule of law in the country. Law enforcement agencies are unable to decisively deal with Chinese illegal miners owing to the fear of destroying the diplomatic relations between Ghana and China.

There is an obvious failure to prosecute illegal Chinese miners who are deported upon arrests. In some cases, offenders of the law rather receive protection from armed military and security personnel of the state.

Chinese involvement in IGM contributes significantly to the destruction of the natural environment. Specifically, there is the destruction of the natural environment especially forest resources, water bodies and biodiversity through excavation works. The use of machinery by Chinese illegal miners and their Ghanaian collaborators has caused large-scale devastation to the natural environment, degradation of farmlands, and pollution of water bodies, particularly rivers that serve as sources of potable water for communities in the Amansie South District.

Political interference and lack of political will to deal with Ghanaian politicians and their Chinese collaborators thwart efforts to clampdown IGM in the country thereby causing destruction to forest and water resources. In addition, poor stakeholder management, lack of planning, low consultation between government, Minerals Commission and local chiefs affect programmes put in place to deal with IGM in the country. Also, collaboration between Ghanaian small-scale miners and Chinese migrant workers contributes to the failure of programmes to deal with CIIM.

Recommendations

1. Government, through the Ministry of Foreign Affairs and Regional Integration, should elevate its cooperation with China to a 'comprehensive strategic partnership' with a Joint Inter-Ministerial Working Group

(JIMWG). This is aimed at identifying and working through obstacles to the implementation of bilateral commitments.

2. Government should insist on putting clauses in purchasing agreements/contracts signed with the Chinese for building or procurement of equipment. This will help the training of local technicians by Chinese engineers to promote technology transfer which will reduce the influx of Chinese workers into the country. Technology centres in mining areas should also be built to provide technical assistance to small scale miners.
3. Government, through the MLNR, should involve the Minerals Commission, consult stakeholders and properly plan future programmes that aim to deal with CIIM. For example, government should engage all relevant stakeholders including chiefs, local authorities, opinion leaders and community members before the formulation and implementation of any programme aimed at fighting CIIM. It is important to note that, when Chiefs and district assemblies are involved in initiatives aimed at fighting CIIM, there will be more local commitment to the fight.
4. Minerals Commission and the Forestry Commission should be well resourced to carry out their mandate and deal with illegal miners.
5. Government should provide cheap source of funding to small scale miners to prevent Ghanaian concession owners from partnering with Chinese investors who currently provide funding and equipment/machines to support local miners.

6. ASDA should make sure that illegal miners who use excavators when arrested are made to reclaim land before excavators are transported out of illegal mining sites. They should be encouraged to start reforestation and afforestation programmes and form community watchdogs to protect illegal entry into forests.

Implications for Policy

- Diplomatic relations between Ghana and China has serious implications on programmes put in place to deal with CIIM in Ghana. This calls for a newer approach and framework to guide diplomatic relations between Ghana and China.
- This study can serve as a guide to the formulation and implementation of policies and programmes with respect to dealing with CIIM in Ghana.
- Some of the assumptions of the Beijing Consensus failed to be true in the context of Ghana-China loan agreements. This study found that Chinese loans come with conditionalities such as awarding between 60-70% of the contract under the loan agreements to Chinese companies. Also, the Chinese government has a say in the projects undertaken under key loan agreements.
- Chinese involvement in illegal mining constitutes a threat to the realisation of the SDG 15. Therefore, the study reinforces the need to take a second look at programmes aimed at fighting CIIM with a closer look at their relevance to the SDGs.

Contribution to Knowledge

The contributions of this research to knowledge come from empirical and theoretical points of view. Empirically, most studies on Sino-Africa relations looked at the textile industry, investments, Chinese migrants, gold/mining sector and GCR. This study on the other hand, looked at the environmental impacts of CIIM and how diplomatic relations conspire to impede programmes put in place to deal with Chinese illegal miners. It also looked at factors contributing to the failure of programmes put in place to deal with CIIM. Thus, this study, may serve as a road map to other future related studies by providing empirical literature for such studies. The revelation that Chinese loans and aid come with conditionalities affirms the widely held notion that advanced nations attach stringent conditionalities to the assistance they give to the developing nations.

Theoretically, the study relied on the dependency, neoliberal and green theories. To start with, interviews with key informants for this study revealed that Ghana-China relations and trade follow a classic North-South model. Ghana exports mainly primary commodities, while importing from China a wide range of manufactured goods. This suggests that GCR are no different from past engagements with Europe and America which is in line with the dependency theory. Implicit in the dependency theory is the concern that the relationships which have existed between developed and developing nations and their consequences have underpinned the under-development of the latter. Thus, the existing arrangements between Ghana and China seem to prove the practical relevance of the dependency

theory as Ghana seems to be on the periphery whilst China is at the centre on the basis of the existing trade arrangements between the two nations.

Also, Chinese loans and development aid to Ghana have come with conditionalities with at least 60% of all contracts going to Chinese contractors.

Chinese contractors also bring workers from China to come and work on the projects. Chinese employers do not hire many Ghanaians to work on most of their projects. Even if they do, they hire people with low skills. Ordinarily, few Africans with middle to high level manpower skills have the chance to work with the Chinese firms working in Africa. Again, the present study strengthens the practical relevance of the dependency theory. The theory posits that the economic set-up between developed and less developed nations tends to advantage the former as they are always in control of how the market operates. The less developed nations always have to kowtow to the dictates of the more powerful nations.

Furthermore, the study observed that the core aim of Ghana-China relations is to advance development among the two states. It was realised that China has funded key infrastructural and development projects in Ghana. For example, the Bui Power Dam, Western Corridor Gas Commercialisation Project, some road and rail projects, and rehabilitation of the Kpong Water Works. Others include the Cape Coast Stadium and the ongoing AVIC technical laboratories and workshops in technical institutions among others. This affirms the position of neoliberal theorists who argue that trade promotes development among states (Adams, Dee, Gali, & McGuire, 2003). This also supports the Accommodation perspective in the Sino-Africa relations that there is no alternative the West and China. However, the

revelation that GCR especially trade do not pay attention to environmental issues but short term economic development exposes the apparent weakness associated with the neoliberal theory.

Clearly, the theory failed to recognise that the usefulness of trade in promoting development can only be realised if adequate measures are put in place to lessen the harmful impacts of trade on the environment. Crucially, the prevailing situation between Ghana and China poses a challenge to the practical manifestation of the green theory. Environmental protection and conservation constitute key aspects of green theory. However, Ghana and China have so far not paid much attention to environmental protection and conservation in Ghana, a situation which departs from the tenets of green theory.

According to SD, the protection of the natural environment in terms of long-term ecological values should be pursued alongside economic development as shown in the conceptual framework. Thus, to achieve environmental protection, Ghanaian laws on illegal mining must be enforced. Chinese illegal miners who are arrested should be prosecuted. This is important because the conservation of the natural environment promotes sustainable development.

Suggestions for Future Studies

Based on the findings of this study, further research could be conducted to assess the benefits of Chinese loans and aid to Ghana and the cost of their activities on the environment. Further studies could also be done on the nature and the extent of partnerships and collaborations existing between Ghana and Chinese illegal miners and the threat they pose to the protection of natural resources.

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APPENDIX A

UNIVERSITY OF CAPE COAST

CENTRE FOR AFRICAN AND INTERNATIONAL STUDIES

INTERVIEW GUIDE FOR OFFICIALS OF THE MINISTRIES OF TRADE, FOREIGN AFFAIRS, LANDS AND NATURAL RESOURCES, MINERALS COMMISSION, GHANA IMMIGRATION SERVICE AND FORESTRY COMMISSION

Welcome and thank you for participating.

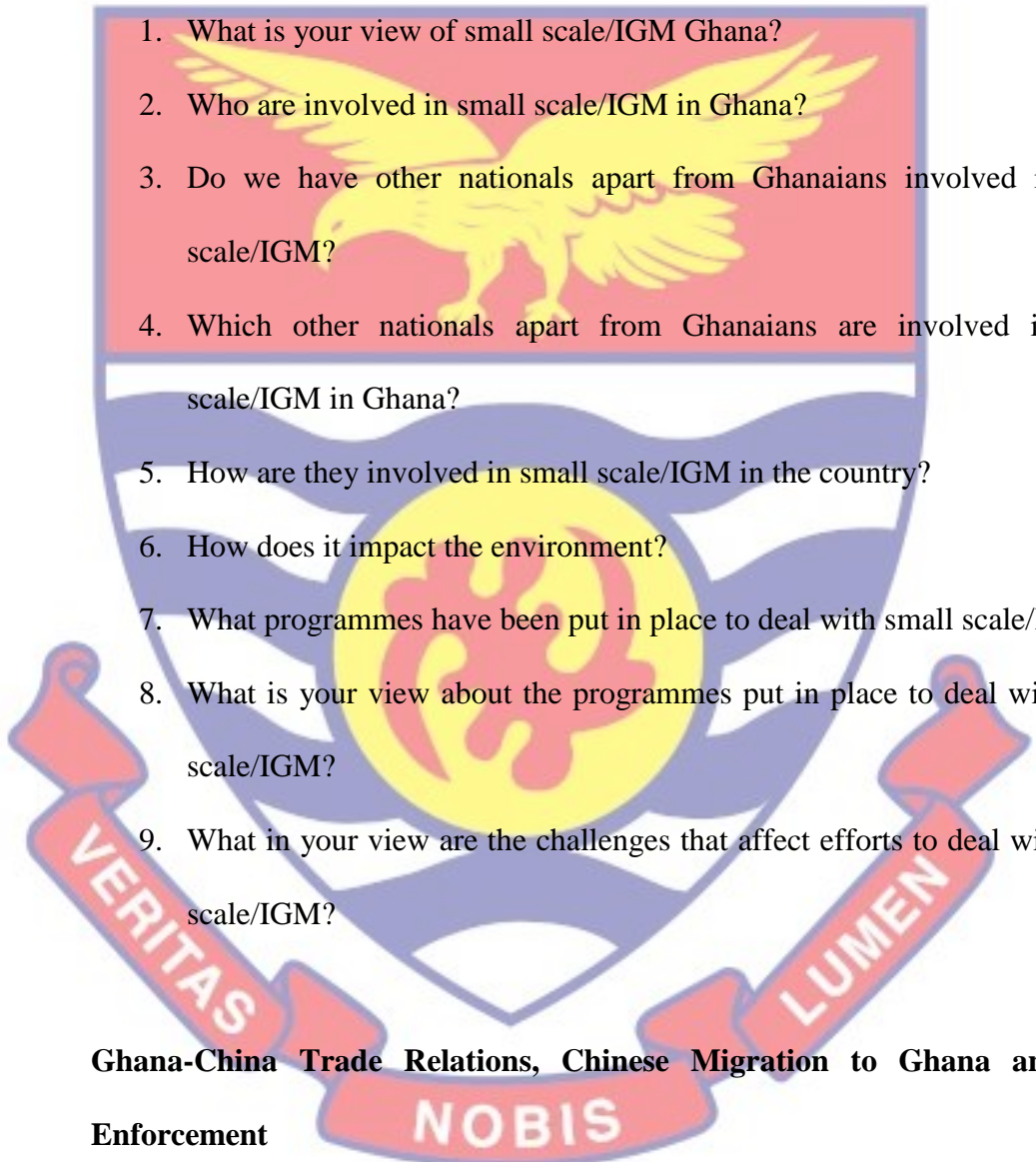
My name is Richmond Yeboah, a Doctor of Philosophy Degree (PhD) Candidate in International Studies from the University of Cape Coast. As part of my programme, I intend to gather data on the topic “Interrogating the environmental impacts of GCT Relations from an Environmental Perspective: A study of Amansie South District”. This is purely for academic work and so you are assured of confidentiality and anonymity regarding the information you provide. As a result, I implore you to be as honest as possible when answering the questions. I will be recording the session in order to write my report but will not share the tape with anyone.

Ground Rules:

Be honest; your individual statements will be kept confidential but will be compiled into a report. If you grant me permission, I will record the session in order to write my report but will not share the tape with anyone.

Introductions: Please tell us your role, and how long have you worked as Chief/Opinion Leader/Assemblyman/woman in this Community/District?

Environmental impacts of small-scale/IGM in Ghana.

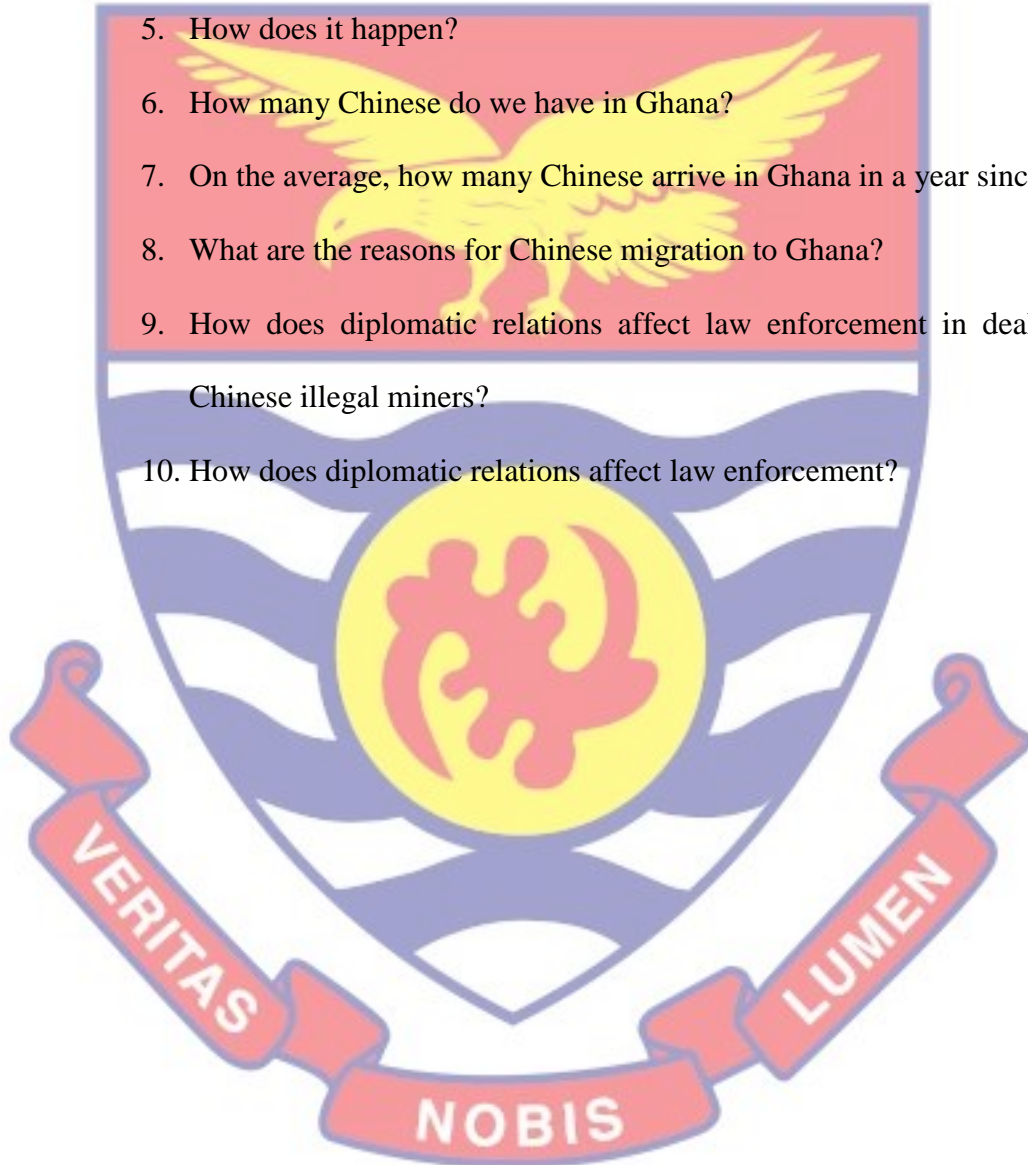
- 
1. What is your view of small scale/IGM Ghana?
 2. Who are involved in small scale/IGM in Ghana?
 3. Do we have other nationals apart from Ghanaians involved in small scale/IGM?
 4. Which other nationals apart from Ghanaians are involved in small scale/IGM in Ghana?
 5. How are they involved in small scale/IGM in the country?
 6. How does it impact the environment?
 7. What programmes have been put in place to deal with small scale/IGM?
 8. What is your view about the programmes put in place to deal with small scale/IGM?
 9. What in your view are the challenges that affect efforts to deal with small scale/IGM?

Ghana-China Trade Relations, Chinese Migration to Ghana and Law Enforcement

1. What is your view about trade/loan/development agreements between Ghana and China?
2. What are the factors influencing Ghana-China trade relations?

3. Does trade/loan/development agreements influence the trend of IGM in Ghana?
4. Does trade/loan/development agreements affect measures put in place to deal with small scale/IGM?

5. How does it happen?
6. How many Chinese do we have in Ghana?
7. On the average, how many Chinese arrive in Ghana in a year since 2008?
8. What are the reasons for Chinese migration to Ghana?
9. How does diplomatic relations affect law enforcement in dealing with Chinese illegal miners?
10. How does diplomatic relations affect law enforcement?



APPENDIX B

UNIVERSITY OF CAPE COAST

CENTRE FOR AFRICAN AND INTERNATIONAL STUDIES

INTERVIEW GUIDE FOR CHIEFS, OPINION LEADERS, ASSEMBLY MEMBERS, SMALL-SCALE MINERS AND OFFICIALS OF AMANSIE

SOUTH DISTRICT ASSEMBLY

Welcome and thank you for participating.

My name is Richmond Yeboah, a Doctor of Philosophy Degree (PhD) Candidate in International Studies from the University of Cape Coast. As part of my programme, I intend to gather data on the topic “Interrogating the environmental impacts of Ghana-China Trade Relations from an Environmental Perspective: A study of Amansie South District”. This is purely for academic work and so you are assured of confidentiality and anonymity regarding the information you provide. As a result, I implore you to be as honest as possible when answering the questions. I will be recording the session in order to write my report but will not share the tape with anyone.

Ground Rules:

Be honest; your individual statements will be kept confidential but will be compiled into a report. If you grant me permission, I will record the session in order to write my report but will not share the tape with anyone.

Introductions: Please tell us your role, and how long have you worked as Chief/Opinion Leader/Assemblyman/woman in this Community/District?

Environmental impacts of small-scale/IGM in Ghana.

1. Do we have small scale/IGM in the district?
2. What is your view of small scale/IGM in the district?
3. Who are involved in small scale/IGM in the district?
4. Do we have other nationals apart from Ghanaians involved in small scale/IGM?
5. Which nationals are involved in small scale/IGM in the district?
6. How are they involved in small scale/illegal mining in the district?
7. How does it impact the environment in the district?

Programmes put in place to deal with IGM

8. What programmes have been put in place to deal with small scale/illegal mining in the district?
9. What is your view about the programmes put in place to deal with small scale/IGM in the district?
10. What in your view are the challenges that affect efforts to deal with small scale/IGM in the district?

APPENDIX C

UNIVERSITY OF CAPE COAST

CENTRE FOR AFRICAN AND INTERNATIONAL STUDIES

INTERVIEW GUIDE FOR CHINESE DIPLOMATS AND INDUSTRY

REPRESENTATIVES

Welcome and thank you for participating.

My name is Richmond Yeboah, a Doctor of Philosophy Degree (PhD in International Studies) Candidate from the University of Cape Coast. As part of my programme, I intend to gather data on the topic “Interrogating the environmental impacts of Ghana-China Trade Relations from an Environmental Perspective: A study of Amansie South District”. This is purely for academic work and so you are assured of confidentiality and anonymity regarding the information you provide. As a result, I implore you to be as honest as possible when answering the questions. I will be recording the session in order to write my report but will not share the tape with anyone.

Ground Rules:

Be honest; your individual statements will be kept confidential but will be compiled into a report. If you grant me permission, I will record the session in order to write my report but will not share the tape with anyone.

Ghana-China Trade Relations, Chinese Migration to Ghana and Law Enforcement

1. What is the nature of Ghana-China relations?
2. What are the factors influencing Ghana-China relations?
3. What is the nature of Ghana-China trade relations?
4. What is your view about trade/loan/development agreements between Ghana and China?
5. What are the reasons for Chinese migration to Ghana?
6. How many Chinese do we have in Ghana?
7. On the average, how many Chinese arrive in Ghana in a year since 2008?
8. What are the reasons for Chinese migration to Ghana?

Environmental impacts of small-scale/IGM in Ghana.

9. What is your view of small scale/illegal mining in Ghana?
10. Do you have information about Chinese involvement in small scale/illegal mining in Ghana?
11. How does perception/report of Chinese in small scale/IGM affect your relationship with Ghana?
12. Do you think the involvement of Chinese in illegal mining is as a result of trade agreements?
13. Please explain
14. How do you think the menace of CIIM can be managed?

APPENDIX D

UNIVERSITY OF CAPE COAST

CENTRE FOR AFRICAN AND INTERNATIONAL STUDIES

DOCUMENTARY REVIEW CHECKLIST FOR GHANA-CHINA TRADE

AGREEMENTS

1. What is the nature of Ghana-China relations?
2. What are the push factors of Ghana-China relations?
3. What is the nature of Ghana-China trade relations?
4. What factors influence Ghana-China trade relations?
5. What factors account for Chinese migration to Ghana?
6. Does trade/loan/development agreements influence Chinese participation in illegal mining?
7. Does trade/loan/development agreements affect measures put in place to deal with small scale/illegal mining?
8. How does Ghana-China trade relations influence Chinese migration to Ghana?
9. Does trade agreement between Ghana and China promote conservation of the environment?

APPENDIX E

UNIVERSITY OF CAPE COAST

CENTRE FOR AFRICAN AND INTERNATIONAL STUDIES

OBSERVATION CHECKLIST

1. Do we have small scale/illegal mining in the District?
2. Who are involved in small scale/illegal mining in the District?
3. Are Chinese nationals involved in small scale/illegal mining in the District?
4. How are they involved in small scale/illegal mining in the District?
5. What types of equipment are used at mining sites?
6. How does it impact the environment in the District?
7. What programmes have been put in place to deal with small scale/illegal mining?
8. Are programmes put in place to deal with small scale/illegal mining working?

