NATURAL RESOURCE EXPLOITATION AND NATIONAL SECURITY: A CASE STUDY OF ILLEGAL MINING IN GHANA

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE
General Studies

by

DANIEL ATOBRAH BONDAH, MAJOR, GHANA ARMY
BA (Hons), University of Ghana, Legon, Accra, 2013
MSc, Ghana Armed Forces Command and Staff College, Teshie, Accra, 2017

Fort Leavenworth, Kansas
2020

Approved for public release; distribution is unlimited. United States Fair Use determination or copyright permission has been obtained for the use of pictures, maps, graphics, and any other works incorporated into the manuscript. This author may be protected by more restrictions in their home countries, in which case further publication or sale of copyrighted images is not permissible.
## 12. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for Public Release; Distribution is Unlimited

## 14. ABSTRACT
Illegal gold mining is an acute problem in Ghana. Activities of illegal miners threaten the environmental and social unity of the country. This research, however, highlights illegal mining threats to the national security of Ghana. Economically, the Government of Ghana is losing revenue from the gold mining sector because illegally mined gold is smuggled out of the country. Illegal miners are destroying cocoa farms, the critical cash crop that generates foreign exchange for the country. Illegal mining has destroyed several forest reserves and farms, and also resulted in the pollution of rivers which serve as sources of potable water. Ghana’s physical security is under threat as illegal miners acquire firearms to defend their activities. The study concludes that, like the Democratic Republic of Congo, illegal mining is fueled by unemployment and poverty. Hence, in order to minimize illegal mining and protect the national security of Ghana, there is the need for government, civil society and other stakeholders to find alternative sources of livelihood for the illegal miners and also educate them about the national security implications of their actions.

## 15. SUBJECT TERMS
Artisanal and Small-Scale Mining, Illegal Mining, Galamsey, National Security, Ghana, The Democratic Republic of Congo

## 16. SECURITY CLASSIFICATION OF:
a. REPORT (U)  b. ABSTRACT (U)  c. THIS PAGE (U)
Name of Candidate: Major Daniel Atobrah Bondah

Thesis Title: Natural Resource Exploitation and National Security: A Case Study of Illegal Mining in Ghana

Approved by:

__________________________________________, Thesis Committee Chair
Lieutenant Colonel Barry G. Mulligan, MMS

__________________________________________, Member
O. Shawn Cupp, Ph.D.

__________________________________________, Member
Daniel C. Honken, M.S.

Accepted this 12th day of June 2020 by:

__________________________________________, Acting Director, Office of Degree Programs
Prisco R. Hernandez, Ph.D.

The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)
ABSTRACT

NATURAL RESOURCE EXPLOITATION AND NATIONAL SECURITY: A CASE STUDY OF ILLEGAL MINING IN GHANA, by Major Daniel Atobrah Bondah, 84 pages.

Illegal gold mining is an acute problem in Ghana. Activities of illegal miners threaten the environmental and social unity of the country. This research, however, highlights illegal mining threats to the national security of Ghana. Economically, the Government of Ghana is losing revenue from the gold mining sector because illegally mined gold is smuggled out of the country. Illegal miners are destroying cocoa farms, the critical cash crop that generates foreign exchange for the country. Illegal mining has destroyed several forest reserves and farms, and also resulted in the pollution of rivers which serve as sources of potable water. Ghana’s physical security is under threat as illegal miners acquire firearms to defend their activities. The study concludes that, like the Democratic Republic of Congo, illegal mining is fueled by unemployment and poverty. Hence, in order to minimize illegal mining and protect the national security of Ghana, there is the need for government, civil society and other stakeholders to find alternative sources of livelihood for the illegal miners and also educate them about the national security implications of their actions.
ACKNOWLEDGMENTS

I thank the Almighty God for giving me life to complete this thesis. Without God, I can do nothing. I am grateful to all the researchers and writers whose works served as the academic foundation for my thesis. I especially thank the members of my Thesis Committee, LTC Barry G. Mulligan, Dr. O. Shawn Cupp, and Mr. Daniel C. Honken for their time, motivation, and guidance in ensuring the successful completion of this work.

I dedicate this work to my wife, Emelia Eshun Cobbina, whose unflinching support, and prayers have brought me this far. Additionally, this work is dedicated to Leading Seaman Obeng Obed Mensah, and Able Seaman Nkyi Moses Yaw who lost their lives in the Pra River in 2013 during an anti-illegal mining operation in the Western Region of Ghana. I am optimistic that, the price they paid in the fight against illegal mining will not be in vain.
TABLE OF CONTENTS

Page

MASTER OF MILITARY ART AND SCIENCE THESIS APPROVAL PAGE ........ iii

ABSTRACT ................................................................................................................................ iv

ACKNOWLEDGMENTS ........................................................................................................... v

TABLE OF CONTENTS ........................................................................................................ vi

ACRONYMS ........................................................................................................................ ix

ILLUSTRATIONS .................................................................................................................. x

TABLES .................................................................................................................................... xi

CHAPTER 1 INTRODUCTION ................................................................................................. 1
   Background .......................................................................................................................... 1
   Purpose of the Study ........................................................................................................... 5
   Problem Statement ............................................................................................................ 5
   Research Questions .......................................................................................................... 6
   Assumptions ....................................................................................................................... 6
   Definition of Terms .......................................................................................................... 6
   Limitations ......................................................................................................................... 9
   Delimitations and Scope .................................................................................................. 10
   Significance of the Study ................................................................................................ 11
   Summary ........................................................................................................................... 11

CHAPTER 2 LITERATURE REVIEW ..................................................................................... 13
   Introduction ....................................................................................................................... 13
   Defining National Security ............................................................................................... 14
   Historical Overview of Gold Mining in Ghana ............................................................... 16
      Pre-independence Era ................................................................................................. 17
      Post-independence Era ............................................................................................... 18
   Illegal Mining Activities in Ghana .................................................................................. 19
   Causes of Illegal Mining in Ghana .................................................................................. 19
      Politicization of Galamsey ............................................................................................ 20
      Corruption ....................................................................................................................... 20
      Poverty ........................................................................................................................... 21
      Unemployment ............................................................................................................ 22
   National Security Threats of Illegal Mining to Ghana .................................................... 22
      Environmental Security ............................................................................................... 23
# Table of Contents

Food and Water Security ................................................................. 24
Physical Security ................................................................................. 25
Economic Security ................................................................................. 26
Interventions to Curb Illegal Mining in Ghana .................................................. 26
Illegal Mining in the Ashanti Region ......................................................... 27
Illegal Mining in the Western Region ......................................................... 29
Illegal Mining in the Democratic Republic of Congo .................................. 31
Summary ................................................................................................. 34

**CHAPTER 3 RESEARCH METHODOLOGY** .............................................35

Introduction ......................................................................................... 35
Research Design .................................................................................. 36
Data Collection and Sources .................................................................. 37
Data Analysis and Presentation .............................................................. 38
Reliability and Validity of Data .............................................................. 41
Summary ................................................................................................. 41

**CHAPTER 4 ANALYSIS** ......................................................................43

Introduction ......................................................................................... 43
Variables and Cases for Causes and Benefits of Illegal Mining in Ghana .......... 44
  Analysis of Causes and Benefits of Illegal Mining in Ashanti Region .............. 45
  Analysis of Causes and Benefits of Illegal Mining in Western Region .............. 46
  Analysis of Causes and Benefits of Illegal Mining in the Democratic Republic of Congo ................................................................. 47
Variables and Cases for National Security Threats of Illegal Mining to Ghana .... 48
  Analysis of National Security Threats of Illegal Mining in Ashanti Region ...... 49
  Analysis of National Security Threats of Illegal Mining in Western Region ...... 50
  Analysis of National Security Threats of Illegal Mining in the Democratic Republic of Congo ................................................................. 51
Summary ................................................................................................. 52

**CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS** .......................54

Introduction ......................................................................................... 54
Findings ............................................................................................... 55
  Findings on Causes and Benefits of Illegal Mining in Ghana .......................... 55
  Findings on National Security Threats of Illegal Mining in Ghana ................. 56
  Actors Functions Relationships and Tensions in Illegal Mining ..................... 58
Conclusions ........................................................................................ 59
Recommendations ................................................................................. 61
  Strategy to Halt Illegal Mining in Ghana ...................................................... 62
Areas for Further Study ................................................................. 63
Summary ............................................................................................... 63
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASM</td>
<td>Artisanal and Small-scale Mining</td>
</tr>
<tr>
<td>DRC</td>
<td>Democratic Republic of Congo</td>
</tr>
<tr>
<td>GoG</td>
<td>Government of Ghana</td>
</tr>
<tr>
<td>JTF</td>
<td>Joint Task Force</td>
</tr>
<tr>
<td>PNDC</td>
<td>Peoples National Defence Council</td>
</tr>
<tr>
<td>SALW</td>
<td>Small Arms and Light Weapons</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
</tr>
</tbody>
</table>
ILLUSTRATIONS

Figure 1. Map of Ghana Showing Locations of Some Natural Resources in the Country ..1
Figure 2. Diagram of Actors Connected to Illegal Mining in Ghana.................................58
Figure 3. Design of Strategy to Combat Illegal Mining Activities in Ghana.......................61
TABLES

Table 1. Variables and Cases for Causes and Benefits of Illegal Mining in Ghana ........39
Table 2. Variables and Cases for National Security Threats of Illegal Mining ............40
Table 3. Analysis of the Causes and Benefits of Illegal Mining ..............................44
Table 4. Analysis of the National Security Threats of Illegal Mining .........................48
CHAPTER 1
INTRODUCTION

Background

Ghana’s future prosperity, and its national security, is intrinsically linked to the gold industry. Ghana is a resource rich country with sizable timber, diamond, manganese, bauxite, gold and crude oil deposits as shown in figure 1.

Figure 1. Map of Ghana Showing Locations of Some Natural Resources in the Country

Source: (Ikpe 2016)
Ghana’s natural resources serve as the primary source of domestic revenue for the country (Ghana Chamber of Mines 2018, 10). Gold, principal among all the resources, generates the highest revenue for the country’s economy. Gold contributed over 95 per cent of Ghana’s mineral revenue in 2015 (Ghana Chamber of Mines 2016). The mining sector accounted for 15.8 per cent of Ghana’s domestic revenue in 2016 and approximately 2.16 billion of the country’s gross domestic product (GDP) in 2017 (Ghana Chamber of Mines 2018, 10).

Ghana’s gold mining sector is multi-dimensional, made up of large-scale multinational mining companies as well as artisanal and small-scale mining (ASM) groups. Large-scale mining is a capital-intensive venture, well-regulated, and conducted by multinational companies who employ sophisticated mining techniques in their operations (Guenther 2018, 3). The Government of Ghana (GoG) is required by law to acquire not less than 10 per cent interests in the rights and obligations of the mining lease of large-scale mining operations (Guenther 2018, 3). ASM on the other hand is a poorly regulated sector which employs unskilled labor and cheap primitive mining techniques in its operations (De Theije and Salman 2018, 262). Even though ASM is a legal activity in Ghana, most of the people in the sector do not have mining permits from the Minerals Commission to engage in mining activities (Akabzaa and Darimani 2001, 26). Hence, the sector is bedeviled with illegal miners commonly known in Ghanaian parlance as galamsey operators. Galamsey is a pidgin name derived from the English words “gather and sell” (Mantey et al. 2017, 12).
Galamsey activities are prevalent in almost every region in Ghana. Over one million galamsey operators were employed in the ASM sector in 2014 compared to 12,300 workers in the large-scale mining sector (Guenther 2018, 3; Temurçin et al. 2016, 174). In the rural parts of Ghana, ASM is a major source of employment and livelihood for most people due to high rates of illiteracy, unemployment, and poverty in those areas (Al-Hassan and Amoako 2014, 149). According to Agyei, as of 2015, about 95 per cent of miners within the ASM sector were operating illegally (Agyei 2016, 21). The large number of illegal miners is a consequence of high unemployment, the high demand for gold and the profitability of the world gold market between 2012 and 2016. These root causes made illegal mining an attractive business for both local and international actors, especially the Chinese (Afriyie et al. 2016, 499-501). Chinese miners have invested heavily into the ASM sector which was the impetus for large numbers of unemployed youth to commence galamsey operations. Consequently, and ironically, the gold industry is destroying Ghana’s future.

Illegal ASM and galamsey mining is the proximate cause of Ghana’s mining related national security concerns (Akabzaa and Darimani 2001). Illegal mining is not just a socio-economic issue as some scholars would suggest. First, if a nation is to be secured, its people must be secured. As Peleri relates in his book, “National Security Imperatives and Challenges”, the safety of the state is intrinsically linked to the safety of the individual identified by Abraham Maslow in his hierarchy of needs (Peleri 2008, 30-36). Second, a country’s economic strength is one of the driving forces for its development. Ghana is losing important revenue which could be directed towards national objectives, through illegal mining. Third, the Government is forced to fight
internal instability associated with galamsey. This reduces availability of military assets for tasks such as border protection and contributions to the global rules-based order. The availability of military assets, as Mearsheimer argues in his “False Promise of International Institutions,” is important because the anarchy of the international system requires states to constantly ensure that they have sufficient power to defend themselves, and advance their material interests necessary for survival (Mearsheimer 1995). Fourth, Chinese business groups have contributed to mass mechanization of galamsey which has accelerated the environmental destruction (Crawford 2017, 120). Chinese illegal miners have introduced heavy earth moving equipment and river dredging machines which have been catalysts for the large-scale destruction of farms and forest reserves as well as the pollution of rivers and streams with mercury, cyanide and other dangerous chemicals (Al-Hassan and Amoako 2014, 150). This pollution in turn threatens the food, economic, and environmental security of the country. The Ashanti, Eastern, and Western Regions of Ghana are the worst affected by the environmental degradation associated with illegal mining (Guenther 2018, 7-11). Fifth, conflicts between both local miners, Chinese galamsey operators and local communities over concessional rights and water pollution are becoming more violent. This escalation is linked to the proliferation of illegal firearms and increasing profitability of galamsey mining (Al-Hassan and Amoako 2014, 150). Sixth, reports of firefights with rival galamsey groups raises the specter of border security, illegal firearms sales, and procurement which all undermine the Ghana Government’s efforts to oppose galamsey activities (Crawford 2017). These conflicts, and the gargantuan destruction of the environment by illegal miners, compelled the
Government of Ghana (GoG) to deploy a joint security task force made up of police and military personnel in 2013 to halt galamsey activities in the country.

The aforementioned information illustrates illegal mining’s potential implications for Ghana’s national security. A thorough study of illegal mining activities in Ghana is, therefore, key in identifying the national security threats associated with galamsey. It is against this backdrop that this study seeks to build on the evidence above and illuminate the nexus between illegal mining and the national security of Ghana.

**Purpose of the Study**

The purpose of this case study is to understand how illegal mining activities threaten the national security of Ghana in order to proffer solutions to safeguard the country.

**Problem Statement**

Illegal mining is a national security threat to Ghana. Galamsey is threatening Ghana’s economic, environmental, food, water, and physical security. Economically, the country is losing revenue from the gold mining sector due to gold smuggling by illegal miners (Burrows and Bird 2017). Environmentally, the country’s forest reserves and farmlands are being destroyed. Rivers which serve as sources of potable water are also being polluted (Botchwey et al. 2018). The physical security of Ghana is also at risk due to the intervention of armed foreign nationals in galamsey activities (Crawford 2017). An understanding of the nexus between illegal mining and the national security of Ghana is, therefore, key to identifying how to address these wicked problems to safeguard the country’s future.
Research Questions

The primary question the research seeks to answer is, what are the national security threats associated with illegal mining in Ghana? Aside from this, the secondary questions the research seeks to answer are as follows:

1. What are the causes of illegal mining in Ghana?
2. What are the benefits of illegal mining?

Assumptions

It is assumed that activities of large-scale mining companies in Ghana are well regulated and, therefore, do not pose the same level of threat to the country’s national security as illegal mining does. It is also assumed that the socio-economic causes of illegal mining and the threat the activity poses to national security in the selected regions for this study are similar to what pertains in other galamsey affected regions in the country.

Definition of Terms

The following terms and definitions are of importance to subsequent analysis regarding illegal mining in Ghana.

National Security. National security is a complex subject with different definitions by various schools of thought. Mearsheimer (1995) defines national security as the sufficient use of power by a state to defend itself and advance its material interests necessary for survival. Makinda (1998) also defines national security as “the ability of a state to cater for the protection and defense of its citizenry”. This thesis, however, adopts a definition from the works of Peléri and Snow who perceive national security as the
ability of a state to protect its territory and wellbeing of its citizens from physical and psychological threats (Peleri 2008; Snow 2017).

**Threat.** Threat is any economic, environmental and social or human activity that has the probability to cause immense harm to the life of an individual or a group of people (Abbott and Stivachtis 1999). A threat is also any combination of actors, entities, or forces that have the capability and intent to harm a state’s national interests (Headquarters Department of the Army Publication 1-02 2018, 1-98).

**Environmental Security.** Environmental security “in an object sense aims to evaluate the level of threats to acquire and sustain ecosystem values in terms of ecosystem goods and services at multiple scales and, in a subject sense, represents the level of fear that such values will be attacked and possibly lost” (Zurlini and Müller 2008, 1353).

**Food Security.** Food security “exist when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (Food and Agriculture Organization 2006, 1).

**Water Security.** Water security is “the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection water-borne pollution and water-related disaster, and for preserving ecosystems in a climate of peace and political stability” (United Nations-Water 2013, 1).
**Economic Security.** Economic security exists when a state is able to develop its economic viability with adequate capital for businesses to make profit, create jobs and expand the tax base to generate revenue for national development (Ronis 2011, viii). Economic security is also the ability of a state to protect or advance its economic interests in the face of foreign or domestic events, developments or actions that may threaten or block those interests (Neu and Wolf 1994, vii-xii).

**Physical Security.** Physical security is that aspect of security concerned with active and passive measures designed to deter intruders, prevent unauthorized access, including theft and damage to personnel, equipment, installations, materials, and information. It encompasses all efforts to safeguard people and assets against threats such as espionage, sabotage, terrorism, damage, and criminal activity (Center for Development of Security Excellence 2017, 2-1; Headquarters Department of the Army Publication 1-02 2018, 1-75).

**Mining.** Mining includes all activities geared towards “winning, treating or preparing minerals, obtaining or extracting a mineral or metal by a mode or method or for the purpose of dressing mineral ores, and includes a quarry where building minerals are mined” (Minerals and Mining Act 2006, 56).

**Illegal Mining.** Illegal mining is any small-scale surface or underground mining operation that is done without land rights, mining license, exploration or mineral transportation permit or any document from a legitimate authority (Alhassan 2014, 48). Illegal mining, also referred to in Ghanaian parlance as *galamsey* is, therefore, unregistered and unregulated gold mining activity by an individual or a group of people.
Artisanal and Small-Scale Mining. Artisanal and small-scale mining (ASM) is a less mechanized form of mining by individuals, groups, families, or cooperatives within the informal sector of the market (Hentschel et al. 2003, 5).

Joint Task Force. The United States (US) Armed Forces Joint Publication 1 defines a joint task force (JTF) as a joint force that is constituted and so designated by the Secretary of Defense, a combatant commander, a subordinate unified commander, or an existing JTF commander for a specific limited objective that does not require overall centralized control of logistics (Joint Chiefs of Staff Publication 1 2017, IV-10). In this research, a JTF is a combined anti-illegal mining force consisting of personnel from the military, police, immigration service and other government agencies.

Limitations

This study was conducted in ten months. Consequently, a field trip to the study areas and interviews with stakeholders were not feasible. The research was, therefore, restricted to secondary data from written sources available at the U.S Army Command and General Staff College and other online sources. Additionally, the researcher’s past field experience as a commander of an anti-illegal mining joint task force in the Western Region of Ghana could have a biased effect on the conclusion of the research. Critical thinking and analytical tools by Crowe et al. (2011, 7-8) were, however, employed throughout the research to ensure that objectivity and transparency are maintained. In this regard, the research achieved transparency by providing a detailed and systematic description of the cases and how data was collected from multiple sources and interpreted before conclusions were reached.
Delimitations and Scope

Illegal mining takes place in most parts of Ghana; however, this study will be confined to galamsey activities within the Ashanti and Western Regions of Ghana because the two regions are among the worst affected regions by galamsey activities (Guenther 2018, 7-11). The Democratic Republic of Congo (DRC) will be a case study for this research in order to understand how a state’s national security can be compromised by illegal mining activities and to predict what might happen if Ghana does not minimize illegal mining. Analysis of information for the research will be restricted to illegal mining activities in Ghana within the past ten years in order to unearth contemporary developments in the illegal mining business and their consequent threats to the national security of Ghana.

The study will be organized into five chapters. Chapter 1 is the introduction and background of the research. The chapter outlines the purpose of the study and defines the basic terminologies associated with illegal mining and national security. Chapter 2 reviews available literature on national security and illegal mining in Ghana. It also addresses the historical overview of gold mining in Ghana with emphasis on the activities of illegal miners in the Ashanti and Western Regions and the DRC. Chapter 3 focuses on the research methodology highlighting on the case study approach of a qualitative research methodology. Chapter 4 analyzes the causes, benefits, and national security threats of illegal mining in Ghana while Chapter 5 provides a summary of key findings, conclusions and recommendations made.
Significance of the Study

This study will add to the debate regarding illegal mining activities in Ghana. The study will fill a perceived gap in the scholarly literature by going beyond the socio-economic challenges of illegal mining in Ghana to address the national security threats associated with the activity. The research will also expose the weaknesses within the security architecture of Ghana for which reason galamsey activities seem to be out of control and proffer solutions to help address this issue. The research is of significance to the Government of Ghana as it addresses this wicked problem. This study will also assist military personnel, security professionals and scholars to appreciate the national security implications of illegal mining.

Summary

Gold mining is an important economic venture for the people and the Government of Ghana. Whilst the population sees gold mining as a source of employment, the government perceives the venture as a source of revenue. Youth unemployment, poverty, the high price of gold and demand have been catalysts for increased illegal mining activities in the country. Consequently, Ghana’s national security is being undermined. Lands, waterways, and forest reserves have been destroyed. Rivers and streams have been polluted with dangerous chemicals from the illegal mining activities. Conflicts have occurred between illegal miners and the communities where they operate. Alarmingly, these conflicts have become deadly with the use of firearms. The aforementioned pressures are imminent threats to the environment and economic security of Ghana. A thorough study of illegal mining activities and their effects on the national security of
Ghana is, therefore, necessary to establish pragmatic ways to address this wicked problem.
CHAPTER 2
LITERATURE REVIEW

Introduction

The aim of this chapter is to use academic literature to demonstrate how illegal mining activities threaten the national security of Ghana. The primary research question for this study is what are the national security threats associated with illegal mining in Ghana? and the secondary questions are what are the causes and benefits of illegal mining in Ghana? In order to find answers to the primary and secondary research questions, it is important to examine relevant literature on the concept of national security, and illegal mining in Ghana. This chapter discusses literature on the concept of national security in order to put the definition of the concept into perspective for the study.

Additionally, the chapter reviews academic works and information on mining activities in Ghana and the Democratic Republic of Congo (DRC) with emphasis on the causes of illegal mining, also known in Ghanaian parlance as *galamsey*, and the national security threats associated with the menace. In Ghana, the literature focuses on illegal mining activities in the Ashanti and Western Regions because they are among the worst affected regions with regards to illegal mining (Guenther 2018, 7-11). Literature on illegal mining in the DRC will also be reviewed because the DRC is one of the most natural resource endowed and politically unstable countries in Africa (World Bank 2019). The case of the DRC is, therefore, relevant to understand how illegal mining activities can compromise a state’s national security.
Defining National Security

A good understanding of the concept of national security is important to appreciate the parameters of this research with regards to national security. Realism, also known as political realism, classical realism or realpolitik is recognized to be the traditional theory of security which has dominated security studies for a long time (Bossman 2016, 31-36). Realism is also a theory of international politics that can be associated with issues which threaten national security. Realists such as Thucydides, Niccolo Machiavelli and Hans Morgenthau assert that states are the dominant actors in the international environment (Bossman 2016). To them, the international system is defined by anarchy due to the absence of a central authority (Waltz 1979). Power is, therefore, essential for states to defend themselves against threats to their survival. Realists understand power in a variety of ways including military, economic, and diplomatic but ultimately emphasizes the distribution of coercive material capacity as the determinant of international politics (Mearsheimer 1995, 5-49).

Realists assume that states are rational actors (Mearsheimer 1995). This means, given the goal of survival, states will act as best as they can to maximize their likelihood of survival. Realists also assume that politics determines economics and the economic strength of a country is important as long as it enhances military might and national interests (Bossman 2016, 35). From the perspective of self-interest, states make many decisions based on how best to secure themselves. Realism is, however, criticized for labelling man as uncooperative and greedy without considering the cooperativeness in human nature. Advocates of liberalism accuse classical realists for not recognizing the importance of non-state actors such as ethnic or tribal groups and organizations such as

Taking into consideration the activities of illegal miners in Ghana, realism as a security theory provides an understanding into the reason why states ensure national security with policies and laws that regulate economic activities such as mining. While the state perceives mining activities as a means of generating revenue for its economic security and survival, illegal miners also see mining as an economic venture for their survival. Although realism does not emphasize the role of non-state actors in national security matters, the central themes of power struggle and survival at the state level can be used to explain the reason why individuals and groups engage in illegal mining activities.

In “National Security Imperatives and Challenges”, Peleri avers that national security includes military protection as well as the physiological, mental, and emotional wellbeing of the people of a nation-state (Peleri 2008, 58-59). Peleri’s argument is supported by Donald Snow who asserts that national security includes the physical security of the state and the psychological safety of its people (Snow 2017, 26-28). Snow addresses the psychological perspective of security as being safe from things like poverty that makes one feel insecure (Snow 2017). Snow’s assertion is further espoused by Makinda (1998) who defines national security as “the ability of a state to cater for the protection and defense of its citizenry”.

15
Considering Peleri and Snow’s assertion of a paradigm shift in the definition of national security from military security to include non-military aspects of security, this research will emphasize on the non-military elements of national security which include environmental, food and economic security (Osisanya 2014). Hence, in this research, national security is defined as the ability of a state to protect its territory and the wellbeing of its nationals against psychological and physical threats. National security is thus a combination of efforts by the state to ensure that its citizens enjoy a good standard of living and social cohesion that discourages disaffection and armed conflicts.

**Historical Overview of Gold Mining in Ghana**

Gold mining is an important economic activity for the people and Government of Ghana (GoG). While some literature suggests that gold mining in Ghana dates back to the Fourth Century (Gbireh et al. 2007), others trace the activity to the Sixth Century (Afriyie et al. 2016). It is, however, evident that during the colonial era, the British were compelled to name the territory Gold Coast due to the rich deposit of gold ore in the country. According to Dzibgodzi and Bansa cited by Afriyie et al (2016, 497), most of Ghana’s territory forms part of the mineral rich Birimian and Tarkwain geological formations. These geological formations are within the West African Craton which stabilized during the early Proterozoic Period some 2 billion years ago (Afriyie et al. 2016, 497). Large deposits of alluvial gold can, therefore, be found in the country along flood plains and riverbeds of several major rivers such as Pra, Birim, Offin and Ankobra.
Pre-independence Era

Between 1493 and 1600, Ghana accounted for 36 per cent of total gold production in the world (Tsikata 1997). It is estimated that since 1943 when the first documentation of gold mining in the then Gold Coast was made till 1997, Ghana produced approximately 2,488 metric tons (8 million ounces) of gold (Amponsah-Tawiah and Dartey-Baah 2011, 62; Ghana Chamber of mines 2018). Throughout the colonial period until the early parts of 1960, gold mining in Ghana was an activity by native artisanal and small-scale mining (ASM) groups and private British mining companies who mined for their livelihood and the economic interest of Britain respectively (Gbireh et al. 2007). During this period, native Ghanaians preferred to engage in ASM under their own terms rather than to work for the mining companies of the colonial masters.

The attitude of the natives compelled the colonial administration to pass the 1932 Mercury Ordinance Act which criminalized the use of mercury in mining activities by the natives (Akabzaa and Darimani 2001, 8). While native Ghanaians in the ASM sector suffered economically from the new law, European mining companies in the country benefitted from the abundant cheap labor which shifted from the ASM sector to the European owned mines. The 1932 Mercury Ordinance marked the beginning of criminalization of ASM activities in Ghana (Akabzaa and Darimani 2001, 8). Criminalization of ASM was for the political and economic benefit of the British and not because of environmental pollution or any negative social effect associated with the activity. This explains the reason why attempts by post independent governments to use legal regimes to maintain the criminal status of galamsey activities have always been met with resistance by some communities and individuals (Afriyie et al. 2016, 499).
Post-independence Era

After Ghana’s independence from British colonial rule in 1957, gold production continued to play a major role in the generation of revenue for the government. In 1986, the GoG formalized ASM activities for the first time in the country (Gbireh et al. 2007, 1). The government passed the Small-Scale Gold Mining Law (PNDC Law 218), the Mercury Law (PNDC Law 217), and the Precious Minerals Marketing Corporation Law (PNDC Law 219) to regularize and control ASM activities in the country (Minerals and Mining Policy of Ghana 2014, 10). The regularization of ASM activities in the country was an economic and a political strategy that generated revenue and created political support for the government (Akabzaa and Darimani 2001, 14).

Liberalization of the mining laws and the recognition of ASM as a legal activity also created employment in the mining sector. Between 1987 and 1995, the labor force in the gold mining sector increased from 15,069 to 22,500 (Akabzaa and Darimani 2001, 15). Economically, the combined effort of the ASM sector and the private large-scale mining companies resulted in an exponential growth in the country’s gold production. Between 1987 and 1998, gold production increased from 328,926 ounces to 2,481,635 ounces (Akabzaa and Darimani 2001, 15). The ASM sector contributed substantially to the total gold output of Ghana between 1990 and 1997. Revenue derived from ASM operations increased from US$6,257,000 in 1990 to US$33,094,000 in 1997 (Hilson 2001, 7).
Illegal Mining Activities in Ghana

Over the years, whiles the ASM sector has proven to be a good source of revenue for the government, it has also been associated with negative effects on the environment and society which threaten national security. The relatively high rate of unemployment in the country coupled with favorable gold prices on the international market from the late 1980s to early 2000s attracted numerous people in the rural areas to ASM. As of 1998, there were approximately 400 registered ASM companies and thousands of illegal miners locally referred to as galamsey operators in the country (Hilson 2001, 7). In the mid-1990s, the ASM sector generated a large number of unregistered (illegal) miners which drew the public’s attention to the government’s inability to regulate the sector. The general public became conscious of the environmental degradation and various social vices associated with galamsey activities (Hilson 2002). Agyapong (1998) asserts that in Tarkwa alone, there were over 6,000 illegal miners and 117 registered ASM as of 1998. As at the later parts of the 1990s, it was estimated that illegal mining alone caused the deforestation of approximately 15,000 hectares of land in Ghana, and also destroyed the topsoil of deforested lands with abandoned mining pits (Hilson 2002, 159; Guenther 2018, 7). According to Boadi et al. (2016), there were about 300,000 to 500,000 illegal miners operating in the Ashanti, Eastern and Western Regions of Ghana as of 2016.

Causes of Illegal Mining in Ghana

The large number of illegal miners in Ghana could be attributed to diverse political and socio-economic factors. In almost all the regions where illegal mining activities are conducted, a combination of the socio-economic causal factors exists (Boadi et al. 2016) The political cause of galamsey is the politicization of the activity by
Politicians (Abdulai 2017). On the socio-economic front, Crawford and Loubere (2017, 120) identified corruption as a proximate cause of galamsey in Ghana. In addition to corruption, Afriyie et al. (2016, 493-508) and Temurçin et al. (2016, 183) avow that poverty and unemployment are remote causes of galamsey in the country.

Politicization of Galamsey

Politically, Abdulai (2017) avers that the politicization of galamsey by the two major political parties in Ghana, the National Democratic Congress (NDC) and the New Patriotic Party (NPP) is a proximate cause of illegal mining in the country. Both the NDC and NPP are guilty of sympathizing with illegal miners for their votes when they are in opposition (Abdulai 2017). As a result of the sympathy from the political parties, the galamsey operators exploit the parties with their votes during election years. According to Abdulai (2017), some corrupt members of parliament, ministers of state, chiefs, and assemblymen have been compromised by galamsey activities and that has made the illegal activity an albatross to deal with.

Corruption

Corruption within Ghana’s public sector is a proximate cause of illegal mining activities in the country (Mantey et al. 2017, 12). Some government officials who are elected or hired to enforce the laws and regulations prohibiting illegal mining activities have become corrupt, and are involved in the same menace they are to fight against (Africa Investigates 2011). As a result of corruption, artisanal and small-scale miners find it difficult to obtain mining licenses due to high cost and cumbersome procedures (Obara and Jenkins 2006, 15). The miners are, therefore, compelled to operate illegally. In 2018
and 2019, Ghana scored 41 per cent on the corruption perception index of Transparency International. The country’s score was below the global average of 43 per cent and was, therefore, ranked 78 and 80 respectively out of 180 countries (Transparency International 2020). This reflects a relatively high level of corruption within the public sector and confirms the reason why Crawford and Loubere (2017) maintain that corruption and poverty “feeds into” galamsey.

Poverty

Poverty is one of the remote factors that pushes people into galamsey activities. Tschakert and Singha (2007) avers that ASM is a poverty-driven activity. In Ghana, mining communities are generally located in remote areas where some of the people are either illiterate peasant farmers or traders with low incomes. About 38.2 per cent of the rural population in the country are poor as compared to 10.4 per cent of the people in the urban centers (Human Rights Council 2018, 5). This makes illegal mining an attractive venture for most people in the rural communities to escape from poverty (Afriyie et al. 2016, 493-508). In the Bekwai Municipality in the Ashanti Region for example, illegal mining is generally more lucrative than farming, and the poor and unemployed youth engage in it for income to pay school fees and improve their social status (Asamoah and Osei-Kojo 2016, 9).
Unemployment

Aside from poverty, unemployment especially among the youth is another remote cause of illegal mining in Ghana (Temurçin et al. 2016, 184). Youth unemployment rates in Ghana have been on the ascendancy for the past ten years. According to the World Bank, youth unemployment in the country increased from 11.2 per cent in 2010 to 13.7 per cent in 2018 representing a 2.5 per cent increment within the period (World Bank Data 2019). The high level of unemployment in the country makes the youth susceptible to illegal activities including galamsey in order to earn a living. Considering the fact that galamsey activities are labor intensive, the youth are generally the major workforce in the menace. In Abosso in the Western Region of Ghana, the youth engage in galamsey activities to avoid the social marginalization associated with being unemployed (Andrews 2015, 5).

National Security Threats of Illegal Mining to Ghana

Even though illegal mining provides employment for the poor and unemployed in Ghana, its devastating effects on the environment undermine national security. In Maria Constantinescu’s “Sustainable Exploitation of Natural Resources and National Security”, she established a link between the exploitation of natural resources, corruption, and conflicts which threaten national security (Maria Constantinescu 2015). She opined that the environment serves as a source of livelihood for people in mining communities and thus its destruction poses a threat to national security (Maria Constantinescu 2015). Similarly, Parthemore and Rogers (2010, 5) also assert that, in contemporary times, the security of nations will depend on the security of scares natural resources such as potable water, minerals, and arable lands. Constantinescu and Parthemore’s assertions clearly
support the central thesis and highlight the environmental, food, water, physical, and economic security threats which are confronting Ghana as a result of galamsey activities.

Environmental Security

The environment is vital for the survival of Ghanaians and their economy. The environment provides food, water, shelter, medicine, clothing and employment, and the vegetation within the environment helps to provide oxygen which is essential for the population’s survival. Unfortunately, the activities of illegal miners have resulted in the destruction of some forests and threatened the basic needs of survival for some communities within the country. The Offin Shelter Belt Forest Reserve, for example, has lost substantial portions of its vegetation due to galamsey activities (Boadi et al. 2016). The illegal miners indiscriminately cut down the trees in the forests before they dig for gold. After retrieving the gold, they do not reclaim the mined areas or replant trees to restore the forest as required by law (Republic of Ghana 2001, 10-22). This eventually results in the destruction of farmlands and deforestation which are catalysts for climate change, erosion, famine, and drought (Temurçin et al. 2016, 178). Activities of illegal miners also destroy the ecosystem of endangered plants and animals which are essential for maintaining balance within the environment.
Food and Water Security

In addition to environmental security, the importance of food and water security for the people of Ghana cannot be overemphasized. During the 1996 World Food Summit, food security was said to “exist when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (Food and Agriculture Organization 2006, 1). In Ghana, farmlands in mining communities which hitherto were being used to grow food crops to feed the population have now become illegal mining fields. According to Ocansey (2013), the destruction of arable lands by galamsey activities has the effect of reducing food production which will lead to an increase in the prices of foodstuffs and high cost of living. In addition to the destroyed lands, water bodies such as the Ankobra and Pra as well as the Offin rivers which serve as sources of potable water for the people in the Western and Ashanti Regions respectively have also been polluted with mercury and cyanide from illegal mining activities (Arthur-Mensah 2016). In 2017, the Ghana Water Company Limited warned that if nothing is done to stop the pollution of water bodies with mercury and cyanide by illegal miners, the country risked importing potable water by 2020 (Abdulai 2017).

Edem Srem maintained in his “Trading Ghana's Water for Gold” documentary, that as farmlands and water bodies are destroyed by galamsey activities, there is a high risk of famine and drought in the near future (Srem 2014). The accumulation of heavy metals in the soil is a threat to food produced from mining communities since the metals could contaminate food crops, and cause health problems such as cancer, liver and kidney diseases (CSIR 2017, 3). When food and water which are necessary for the basic
survival of every human being are in short supply, people are most likely to resort to conflicts in order to meet their needs with the available limited food and water. Such conflicts will be a threat to the physical security of the country.

Physical Security

The physical security of Ghana is under threat due to the proliferation of illegal small arms and light weapons (SALW) in the country. Between July and October 2017, a joint military and police task force against illegal mining activities in the country seized 30 assault rifles from illegal miners in the Ashanti, Eastern and Western regions (Graphic News 2017). Out of the 30 rifles only 2 were registered. The joint task force (JTF) also arrested 442 illegal miners including 377 Ghanaians, 61 Chinese, 2 Togolese, a Burkinabe and a Nigerian (Graphic News 2017). Chinese illegal miners have been specifically identified to be the major culprits operating with SALW in Ghana (Ohemeng 2013). In December 2018 for example, 16 Chinese illegal miners were arrested in the Krobo Forest in the Ashanti Region with 14 unregistered pump action guns and an M16 assault rifle. The influx of illegal firearms and foreigners in the country raises concerns about the porousness of the country’s borders and the imminent physical security threat to the state. Temurçin et al. (2016, 187) maintain that “gold is a political object that attracts political struggle and conflict in its exploration and extraction between local communities and the government”. Hence, the proliferation of illegal firearms into the country could lead to armed robberies and armed violence which could compromise the country’s economic security.
Economic Security

A physically secured environment creates conditions for economic security as it promotes the economic viability of a state with capital for national development (Ronis 2011, viii). Revenue from gold production plays a significant role in the economy of Ghana. Gold contributed over 95 per cent of Ghana’s mineral revenue in 2015 (Ghana Chamber of Mines 2016). In 1990 and 1997, revenue derived from ASM operations increased from US $6,257,000 to US $33,094,000 respectively (Hilson 2001, 7). In 2016, an estimated US $2.3 billion worth of gold were smuggled out of Ghana through galamsey activities (Burrows and Bird 2017). This highlights government’s loss of revenue in taxes from the smuggled gold. Gold revenue lost from galamsey activities will, therefore, affect the economic security of the country. Without revenue, the GoG cannot build the necessary infrastructure to create jobs, create wealth and get taxes to build the capacity of the military and other state security agencies in the country (Ronis 2011, viii). Without economic security, Ghana’s political and social stability will be in jeopardy (Ronis 2011, ix). Hence, the GoG must step up its intervention efforts to halt galamsey activities and safeguard the country’s national security.

Interventions to Curb Illegal Mining in Ghana

Having identified galamsey as a national security threat, the Government of Ghana (GoG) has, over the years, tried to curb galamsey activities in the country. In May 2013, the GoG inaugurated a JTF made up of the Military, Police, Immigration Service and Minerals Commission and charged them to halt illegal mining in the country (Botchwey et al. 2018, 5). The JTF made some gains with the arrest of many galamsey operators including expatriates from Niger, Togo, Italy, Mali, Germany, Russia and
China (Alhassan 2014, 48). About 4,592 Chinese illegal miners were arrested and deported to China (Botchwey et al. 2018). Several pieces of mining equipment including excavators were also confiscated by the JTF but that did not completely halt illegal mining activities in the country. There were still galamsey activities in parts of the Ashanti, Central, Eastern and Western Regions.

In July 2017, the GoG composed another joint police and military task force known as Operation Vanguard to combat illegal mining activities in the affected regions (Ghanaian Journal 2017). As of May 2018, over 1,200 illegal miners including Chinese nationals had been arrested by Operation Vanguard personnel. About 111 firearms, 2,347 pieces of ammunitions and 6,000 mining equipment including excavators, water pumping machines and dredging machines popularly known as changfa machines had also been seized (Dotsey 2018). Despite these achievements, galamsey activities are still prevalent in the Ashanti and Western Regions due to the lack of political will to fight the menace and corruption by government officials, traditional rulers, and state security officials (MyJoyOnline 2017).

Illegal Mining in the Ashanti Region

The Ashanti Region of Ghana is noted for galamsey activities due to large deposits of gold ore in the Adansi and Amenfi districts of the region (Ghana Chamber of Mines 2019). The region is also noted for its forest resources and food production. Farming and mining are alternative ancient economic sources of livelihood for most people in the Ashanti region (Andrews 2015). With regards to mining, galamsey activities are popular in areas such as Obuasi and Subreso where large-scale mining companies operate and thus, most people rely on mining as a source of livelihood. As of
2008, there were approximately 10,000 illegal miners in Obuasi (Kpodo 2018). Guenther (2018, 1) observed that in most mining communities in the Ashanti Region where a significant number of the people are poor, an additional artisanal mine increases nearby household per-capita income by 0.2 per cent excluding income from agricultural sources. Irrespective of the economic benefits of mining to the people in the region, in Subreso for example, galamsey has become a dangerous activity as most of the miners have acquired “heavy weaponry” to secure their operations (Andrews 2015, 15).

Politicians, chiefs, and high-ranking members of society are alleged to be involved in the illegal mining activity thereby retarding efforts to combat the menace. As of 2012, the member of parliament for Subreso was said to be a galamsey operator (Andrews 2015). Kpodo (2008) records that the government, for fear of becoming unpopular, and losing votes from galamsey operators in an election year, is usually reluctant to flush out illegal miners in the Obuasi municipality. In addition to the political gains in galamsey, activities of the illegal miners in the Atwima Mponua, Atwima and Amansie West districts have resulted in the destruction of cocoa farms and mixed vegetation lands. Between 1986 and 2002, and 2002 and 2016, approximately 552.24 and 4,029.21 hectares of mixed vegetation lands were respectively destroyed as a result of galamsey activities (Asamoah et al. 2017, 11). In Ataso and Nnwerem, illegal mining activities degraded an estimated forest area of 2.5 km² out of a total area of 56.67 km² in the Offin Shelterbelt Forest Reserve between 2009 and 2014 (Boadi et al. 2016, 117). The degraded forest represents an annual loss of 0.88 per cent of the forest cover in the area as a result of galamsey activities (Boadi et al. 2016, 117). As of January 2020, illegal
mining activities had destroyed 7 hectares of the 16,000 hectares of the Oda River Forest Reserve in the Amansie Central District (MyJoyOnline 2020).

Additionally, illegal mining has resulted in the destruction of cocoa, plantain, maize, cocoyam and cassava farms in Agyareago where farmlands have been turned into mining pits (Farmerline 2016). In 2014, the Ashanti Regional Minister bemoaned the destructive effects of illegal mining on farms and water bodies in the Antwuma Mponua District where the people had to depend on imported food stuffs and sachet water for their daily survival (Dapatem 2014). Aside from the environmental effects of illegal mining, robbery and illegal possession of firearms are also linked to galamsey activities in the Ashanti Region. In 2017, a total of 91 illegal miners were arrested in the region as against 39 in 2016 (Ghana Police 2017). In addition to the increase in the number of arrested illegal miners, the number of people arrested with unauthorized firearms also increased from 19 in 2016 to 23 in 2017 (Ghana Police 2017). At the same time, robbery cases in the region increased from 103 to 132 with most of the robbery taking place around galamsey towns and sites (Ghana Police 2017). This situation is a security threat which demands an urgent intervention to prevent an escalation into other regions.

**Illegal Mining in the Western Region**

The Western Region has the highest gold reserve and largest concentration of large-scale mining companies and illegal miners in Ghana (Mantey et al. 2017, 14). In the Western Region, illegal mining is prevalent in Tarkwa Nsuaem, Prestea Huni-Valley, Bibiani and the Wassa Amenfi East and West Districts. As of 2003, there were 168 ASM concessions in the Wassa West District with about 20,000 miners out of which 90 per cent were galamsey operators (Tetteh et al. 2010, 636). In February 2017, there were
approximately 276, 223 illegal miners and 153 galamsey sites in the Tarkwa Nsuaem, Amenfi East and Prestea Huni-Valley Districts respectively (International Growth Center 2017, 3). Galamsey is seen as an important economic activity which employs a substantial number of people in the region (Serfor-Armah et al. 2004). Writing on illegal mining activities in the Western Region, Serfor-Armah et al. (2004) assert that people engage in galamsey because of the financial benefits it gives them. Afriyie et al. (2016, 506) allude to this assertion as they identified poverty, unemployment, and landlessness as the main causes of illegal mining in the region. Unemployment in the form of inadequate alternative sources of livelihood and shortage of arable farmlands are primary causes of galamsey in the region (Temurçin et al. 2016, 185).

Galamsey has resulted in the pollution of the Ankobra, Bonsa and Pra rivers, and also destroyed lands for the cultivation of cocoa, rubber and oil palm which are essential cash crops for Ghana’s economy (Daily Guide 2013). The top soil in most mining communities in the region have been contaminated with high concentrations of mercury and as a result, the production of food crops such as plantain, cassava, maize and cocoyam have reduced (Tetteh et al. 2010, 642; Kutah and Mastui 2018, 2). The region requires at least $100 million to reclaim lands and forests destroyed by galamsey activities (Kutah and Mastui 2018, 2). Furthermore, the activities of illegal miners in the Western Region have been associated with the proliferation of SALW, robbery and violence in most mining communities (Daily Guide 2013). Adonteng-Kissi and Adonteng-Kissi (2017, 200) have identified environmental pollution and land use as the major sources and causes of violent conflicts between illegal miners and large-scale mining companies within the Prestea general area.
In September 2019, Operation Vanguard personnel in the Western Region arrested 20 Chinese illegal miners with 4 pump action guns in Prestea (MyJoyOnline 2019). Reports from the Criminal Investigations Department of the Ghana Police Service suggest that the number of arrested illegal miners in the Western Region increased from 51 in 2016 to 93 in 2017 (Ghana Police 2017). Within the same period, people who were arrested for possessing unauthorized firearms increased from 21 to 37 (Ghana Police 2017). Even though the police report does not provide details on crimes in mining areas, it notes that most robberies in the region occur in galamsey sites and their adjoining communities (Ghana Police 2017). Despite the crimes and conflicts associated with galamsey, the activity continues to serve as an important economic venture that sustains towns such as Prestea, Tarkwa and Wass-Akropong (International Growth Center 2017, 3).

**Illegal Mining in the Democratic Republic of Congo**

The DRC is a good example of a state whose national security is threatened by the exploitation of natural resources. The DRC is one of the most natural resource endowed and politically unstable countries in Africa (World Bank 2019). The country has large deposits of minerals including cobalt, copper, tin, coltan, diamond and gold (Vlassenroot and Romkema 2002, 1). The quest to control these resources for financial gains by ethnic groups, warring factions and the government is believed to be a contributing factor to the country’s civil war which has lingered for decades (Dorner et al 2012). The Kivu and Katanga provinces are among the worst affected areas by illegal mining activities and conflicts in DRC (Vlassenroot and Romkema 2002, 2). The two main warring parties, which benefit from illegal mining in the DRC are the Forces Armées de la République du
Congo (FARDC; Congolese national army) and the Forces Démocratiques de Libération du Rwanda (FDLR). The FDLR gets up to 75 per cent of its income from gold mining and trading. The Congrès National pour la Défence du Peuple (CNDP), another warring party, earns up to 15 per cent of its revenue from the mineral trade, and the FARDC earns up to 95 per cent (Garrett and Mitchell 2009). Although natural resources are not the root cause of the Congolese civil war, the control of natural resources provide revenue for the belligerents to acquire arms and ammunitions in pursuit of their war interests (Hayse and Perks 2012, 533). In the Shabunda territory in Eastern Congo for example, Chinese mining companies supply arms and ammunitions to armed groups in exchange for gold (Global Witness 2016). According to Constantinescu (2015), conflicts like the DRC civil war do not occur because of the presence of natural resources in a country but rather because of the continuous dependence on those resources by belligerents for revenue.

Coltan, cobalt and gold have been identified as the most lucrative minerals in DRC which are mined by illegal ASM groups. There are over 2 million illegal miners in the DRC including 400,000 women most of whom are bread winners in their families (Mallo 2012, 4717; Hayse and Perks 2012, 534). Illegal mining is a vibrant economic activity that financially supports between 16 to 20 per cent of the population of DRC (Hayse and Perks 2012). Bafilemba et al (2014, 1) and Hayse and Perks (2012, 533) avers that, illegal gold mining is a major source of revenue for commanders of armed militia and rebel groups as well as corrupt Congolese Army commanders and government officials. The 2002 Mining Code and the 2003 Mining Regulations are legal regimes which seek to regulate ASM and the use of dangerous chemicals such as mercury by illegal miners in the DRC (Hayse and Perks 2012). However, almost all ASM activities in
the country are conducted illegally because of corruption on the part of government
officials who fail to properly regulate the sector. About 98 per cent of gold produced by
illegal miners in DRC are smuggled out of the country (Bafilemba and Lezhnev 2015, 1).
As of 2014, it was estimated that mineral resources provided an annual revenue of
approximately $185 million to the Congolese Army and armed groups including foreign
militia (Bafilemba et al 2014, 1; Hayse and Perks 2012, 533). This is revenue which
could have gone to the government for national development if the mining sector was
well regulated and controlled. Aside from the financial benefits illegal mining provides to
armed groups, it also serves as a source of employment for the poor local population and
ex-combatants most of whom earn between US $1 to US $5 a day from illegal mining
(Garrett, 2008, 16).

Politically, illegal mining is used as a bargaining chip by politicians and
commanders of armed groups to gain the allegiance of influential people in society.
Former President Laurent Kabila is on record to have encouraged illegal mining not only
to create employment but also to gain the loyalty of influential people who benefitted
from the illegal activity (Rubbers 2007). The politicization of illegal mining makes it
difficult to combat the menace despite the security threats it poses to national security. In
the DRC, the current political and economic benefits of illegal mining are short term.
Since illegal mining is polluting water bodies and destroying wooded areas and land
which are essential for survival; once the minerals are exhausted, there is the likelihood
for the activity to aggravate local poverty in the long run (Hayse and Perks 2012).
Excessive poverty will threaten the national security of the country if people find solace
in armed violence to earn a living.
Summary

Illegal mining is a threat to the national security of Ghana. From precolonial days to contemporary times, mining has played a vital role in the economy of Ghana and the lives of individual miners within mining communities. Illegal mining informally employs a substantial number of people due to poverty and unemployment. Corrupt practices by government officials who refuse to enforce mining laws also serves as a pull factor for people to engage in illegal mining. As a result of the increasing activities of illegal miners and the government’s inability to control the ASM sector, galamsey has become a national security threat. This is because of the environmental destruction and economic loss of revenue associated with the activity. Hence, Ghana’s environmental, food, water, physical and economic security are under threat by galamsey. Despite government’s intervention to stop illegal mining activities in the country, the Ashanti and Western regions continue to record galamsey activities due to political interests, corruption, unemployment, and poverty. The situation in the Ashanti and Western Regions of Ghana are no different from illegal mining activities in the DRC. The exception between the situation in Ghana and DRC is that, there is no civil war in Ghana. Even though illegal mining is not the root cause of the civil war in the DRC, the exploitation of cobalt, coltan and gold by armed elements in the country is funding and prolonging the war which is a major threat to national security.
CHAPTER 3

RESEARCH METHODOLOGY

Introduction

This research seeks to establish the relationship between natural resource exploitation and national security by studying how illegal gold mining activities affect the national security of Ghana. Hence, the primary question the research seeks to answer is, what are the national security threats associated with illegal mining in Ghana? In addition to this, the secondary questions the research seeks to answer are; what are the causes and benefits of illegal mining in Ghana? Chapter one provided a general background of the study and identified the problem as well as the significance of the study. Chapter 2 reviewed literature on national security in general and mining activities in Ghana and the Democratic Republic of Congo (DRC) with emphasis on illegal mining or galamsey as it is known in Ghanaian parlance, and how the activity threatens the national security of Ghana. The chapter identified some actors and variables within the illegal mining business in Ghana which will assist in later analysis of the problem. This section of the study entails the entire approach to the research process. It covers the research design and details about the sources of data, data analysis and presentation as well as data reliability and validity.
Research Design

The case study design with a qualitative methodology was used for this research. According to Creswell (2007, 41), there is no universally accepted structure for the design of a qualitative study; however, the study must follow methods of scientific research. In a scientific format, the steps in qualitative methodology start with a problem statement, an examination of literature relevant to the problem, questions posed by the researcher, gathering of data and data analysis, and a written report (Creswell 2007, 41-42). The aforementioned steps by Creswell were utilized in this study to examine the causes and benefits of illegal mining and the associated national security threats of the activity to Ghana. All information for the research were drawn from existing written and audiovisual literature on national security and illegal mining activities in the Ashanti and Western Regions of Ghana and the DRC. The study begins with a problem statement, and a review of literature on the concept of national security, causes of illegal mining and the national security threats of illegal mining to Ghana. Patton (2002, 54) asserts that, qualitative research provides a comprehensive understanding of everyday events and social processes in order for one to appreciate how everyday life is influenced by social structure and order.

The aim of all qualitative research is to understand the phenomenon being explored (Creswell 2007, 3) which in this study is illegal mining. As posited by Patton (2002, 55), the qualitative case study enables the researcher to conduct a holistic and in-depth description of the unit of analysis which can be a person, an event, a time period, a critical incident or a community. Creswell also asserts that, the case study research allows the researcher to study a case or cases over a period of time through comprehensive and
in-depth data collection from multiple sources of information (Creswell 2007, 73). This assertion is supported by Robert Yin who defines a case study as an in-depth empirical investigation of a contemporary phenomenon within its real-world context (Yin 2018, 15). From Patton, Creswell and Yin’s claim, the qualitative case study enables a researcher to conduct an elaborate investigation with existing empirical information in order to unearth vital concepts with regards to contemporary issues such as illegal mining. The choice of the qualitative case study approach for this research was, therefore, ideal because of the researcher’s inability to conduct field studies in Ghana due to time constraints. The researcher, however, ensured that data for the study was collected from multiple sources in order avoid any biased judgement.

**Data Collection and Sources**

In this qualitative research, data on illegal mining activities in Ghana and DRC were collected from secondary sources including books, journals, videos, reports, and previous studies on the subject. Creswell (2007) acknowledges that there are various forms of qualitative data, but he groups all the forms of data into four main types of information. These are observations (participant and nonparticipant), interviews, documents and audiovisual materials (Creswell 2007, 129). Information from observations and interviews are generally referred to as primary sources of data due to the direct contact the researcher needs to have with human subjects in the collection of data. Documents, and audiovisuals on the other hand are secondary sources of data because they are information which are already available or have already been collected by other researchers, individuals or organizations for one reason or the other (Kumar 2011). Secondary data was used for this research because of time limitations for the research and
the inability of the researcher to conduct a field study in Ghana. Irrespective of the fact that using only secondary data does not provide the researcher with firsthand information as primary data does to augment facts on a study, the secondary data for this research were critically examined to ensure that objectivity and transparency are maintained as posited by Crowe et al. (2011, 7-8).

Data Analysis and Presentation

In qualitative research, data analysis entails preparing and organizing the data for analysis, reducing the data into themes and representing the data in figures, tables or discussions (Creswell 2007, 148). This research employed content thematic analysis on existing literature on illegal mining in Ghana and the DRC. In accordance with data drawn from the literature in Chapter 2, the main themes for data analysis in Chapter 4 are political, economic and social causes and benefits of illegal mining; as well as environmental, economic, food, water, and physical security threats of illegal mining to the national security of Ghana. The cases for this research are the Ashanti and Western Regions of Ghana because they are among the worst affected regions with regards to illegal mining in Ghana (Guenther 2018, 7-11). The DRC will serve as an external case study in order to understand how a state’s national security can be compromised by illegal mining activities and to estimate what might happen if Ghana does not minimize illegal mining.

The thematic variables to address the causes and benefits of illegal mining in Ghana are political, economic, and social factors. The variables for the analysis of national security threats of illegal mining are environmental, economic, food, water, and physical security threats. All the thematic variables were derived from meaningful
segments of the literature as suggested by Creswell (2007, 148) and are relevant to this
study because they provide the appropriate framework that answers the research
questions. In analyzing the national security threats associated with illegal mining in
Ghana, environmental security, economic security, food and water security, and physical
security provide broad themes which are suitable for examining the physiological and
psychological aspects of national security espoused by Peleri (2008, 58) and Snow (2017,
26-28). A positive (+), negative (–) or neutral (0) valuation based on the analysis of the
data will be used to measure the thematic variables for this research. Positive affirms an
influence of the variable, negative denies any influence whiles neutral represents
inadequate evidence of an influence by the variable. A description of the variables against
which the three cases for this research will be analyzed in order to answer the primary
and secondary questions are as shown in tables 1 and 2 below.

<table>
<thead>
<tr>
<th>Causes and Benefits</th>
<th>Ashanti</th>
<th>Western</th>
<th>DRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political</td>
<td>Measuring reported cases of support and involvement of politicians and people in authority in illegal mining activities as well as reports of government’s reluctance to confront illegal mining activities for fear of losing votes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td>Measuring the number of people employed in illegal mining activities as well as revenue generated by government from illegal mining activities in the region.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td>Measuring the social status of illegal miners with regards to poverty and influence in their families and mining communities within the region.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source:* Created by author.
### Table 2. Variables and Cases for National Security Threats of Illegal Mining

<table>
<thead>
<tr>
<th>Region</th>
<th>Ashanti</th>
<th>Western</th>
<th>DRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Security</td>
<td>Environmental security aims to evaluate the level of threats to acquire and sustain ecosystem values in terms of ecosystem goods and services and the level of fear that such values will be attacked and possibly lost (Zurlini and Müller 2008, 1353). This study measures the level of destruction to forest reserves as a result of illegal mining activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic Security</td>
<td>Economic security exists when a state is able to develop its economic viability with adequate capital for businesses to make profit, create jobs and expand the tax base to generate revenue for national development in the face of domestic or foreign threats against its economic interests (Ronis 2011, viii; Neu and Wolf 1994, vi-xii). This study measures revenue lost to government through smuggling or environmental reclamation programs as a result of illegal mining activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food and Water Security</td>
<td>Food security exist when “people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (Food and Agriculture Organization 2006, 1). Water security is “the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, (United Nations-Water 2013, 1). This study measures reported food crop farms being destroyed and water bodies being polluted by illegal mining activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Security</td>
<td>Physical security is that aspect of security concerned with active and passive measures designed to deter intruders, prevent unauthorized access, including theft and damage to personnel, equipment, installations, materials and information (Center for Development of Security Excellence 2017, 2-1). This study measures seized firearms from illegal miners and the presence of armed groups operating at the mining sites.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Source*: Created by author.
Reliability and Validity of Data

The quality of a research depends on the reliability and validity of data that was identified and used during the research design (Yin 2018). According to Yin (2018), a qualitative research needs to satisfy construct validity, internal validity, external validity, and reliability. Creswell explains these validity requirements by linking construct validity to getting the research design properly framed. He also identifies internal and external validity as well as reliability with the ability of researchers to objectively understand the phenomenon under study and information from other sources as well as proper documentation of the process for other readers (Creswell 2007, 206). Although this study relies primarily on secondary data, the choice of multiple sources of data on illegal mining activities from different regions in Ghana presents reliable information to understand and analyze the common national security themes of the research. The proper accreditation of the various sources of data also authenticates the research.

Summary

This qualitative case study is designed to explain the concept of national security and how illegal mining threatens the national security of Ghana. Data for the research were collected from secondary sources. Secondary data were used to identify common themes from the information collected in order to analyze the data. Different sources of information on illegal mining were, therefore, consulted from the Ashanti and Western Regions of Ghana as well as the DRC to ensure the validity and reliability of data for the research. The research will use thematic variables to analyze the causes and benefits of illegal mining as well as the national security threats of illegal mining to Ghana. The variables for the causes and benefits of illegal mining are political, economic, and social
factors; and the variables for the national security threats of illegal mining are environmental, economic, food, water, and physical security threats.
CHAPTER 4

ANALYSIS

Introduction

This study seeks to understand how illegal mining activities threaten the national security of Ghana in order to proffer solutions to safeguard the country. In this chapter, data from the literature in Chapter 2 will be analyzed to find answers to the primary and secondary research questions posed in Chapter One. The primary question for this research is, what are the national security threats associated with illegal mining in Ghana? In addition to the primary question, the secondary research questions are what are the causes and benefits of illegal mining in Ghana? The research is a qualitative case study which emphasizes on illegal mining activities in the Ashanti and Western Regions of Ghana in comparison with illegal mining activities in the Democratic Republic of Congo (DRC). The three cases were selected for the study because the Ashanti and Western Regions are among the worst affected regions with regards to illegal mining also known locally in Ghana as galamsey (Guenther 2018, 7-11).

The Democratic Republic of Congo (DRC) is used as a case study for this research because it is one of the most natural resource endowed and politically unstable countries in Africa (World Bank 2019). The case of the DRC will, therefore, be reviewed to understand how a state’s national security can be compromised by illegal mining activities and to estimate what might happen if Ghana does not minimize illegal mining. The thematic variables for analyzing the causes and benefits of illegal mining will be political, economic and social factors. Political, economic, and social causes and benefits of illegal mining incorporate the poverty, unemployment, corruption, and status
dimensions of galamsey outlined by Afriyie et al. (2016, 493-508) and Temurçin et al. (2016, 183). The national security threats of illegal mining to Ghana will, however, be analyzed with threats associated with environmental, economic, food, water, and physical security.

The thematic variables were derived from meaningful segments of the literature as suggested by Creswell (2007, 148) and are, therefore, relevant to this study because they provide the appropriate framework that answers the research questions. A positive (+), negative (–) or neutral (0) valuation based on the subjective analysis of the data will be used to measure the thematic variables for this research. A positive (+) valuation affirms an influence of the variable, negative (–) denies any influence whiles neutral (0) represents inadequate evidence of an influence by the variable. The analysis in this chapter will determine the findings, conclusions, and recommendations of this research.

**Variables and Cases for Causes and Benefits of Illegal Mining in Ghana**

<table>
<thead>
<tr>
<th>Region</th>
<th>Ashanti</th>
<th>Western</th>
<th>DRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political</td>
<td>+</td>
<td>–</td>
<td>+</td>
</tr>
<tr>
<td>Economic</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Social</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

*Source: Created by author.*
Table 3 explains the causes and benefits of illegal mining in the Ashanti and Western Regions of Ghana as well as the DRC. All the cases recorded a positive influence of political, economic, and social factors on the causes and benefits of illegal mining except the Western Region which showed a negative political influence on the causes and benefits of illegal mining. Analysis of the cases are as outlined in subsequent paragraphs.

Analysis of Causes and Benefits of Illegal Mining in Ashanti Region

The Ashanti Region records a positive (+) influence of political, economic, and social causes and benefits of illegal mining. Politically, the research measured reported cases of support and involvement of politicians and people in authority in illegal mining activities as well as reports of government’s reluctance to confront illegal mining activities for fear of losing votes. Andrews (2015) reports that, as of 2012, the member of parliament for Subreso in the Ashanti Region was known to be a galamsey operator. Kpodo (2008) also records that the government is usually reluctant to combat illegal mining activities in the Obuasi municipality for fear of becoming unpopular and losing votes from galamsey operators during an election year.

Economically, the study measured the number of people employed in illegal mining activities as well as revenue generated by government from illegal mining activities in the region. In Obuasi alone, it is estimated that 10,000 people are employed in galamsey activities (Kpodo 2008). The study did not find any record on the amount of revenue generated by the government with regards to galamsey activities in the region.
However, Hilson (2001, 7) opined that, in 1997, ASM activities in the country generated US $33,094,000 for the GoG.

Socially, the study measured the status of illegal miners with regards to poverty and influence in their families and mining communities within the region. Guenther (2018) observed that in most mining communities in the Ashanti Region where a significant number of people are poor, artisanal mining increases household per-capita income by 0.2 per cent thereby raising the status of the household relatively above the poor class. Additionally, in most mining communities in the Ashanti Region, illegal mining provides employment which generates revenue for the poor to pay school fees and improve their social status (Asamoah and Osei-Kojo 2016; Guenther 2018).

Analysis of Causes and Benefits of Illegal Mining in Western Region

In the Western Region, the political cause and benefit of illegal mining was negative (−) whiles, the economic and social causes were positive (+). Politically, even though Abdulai (2017) avers that some members of parliament, ministers and chiefs have been compromised by galamsey activities, this research could not find adequate evidence of political support for galamsey activities in the Western Region. Additionally, the study did not find any record of government’s reluctance to confront illegal mining in order not to lose votes in the region.

Economically and socially, illegal mining employs approximately 20,000 people in the Wassa West District (Tetteh et al. 2010, 636) and 276,223 people in the Tarkwa Nswaem, Amenfi East and Prestea Huni-Valley Districts (International Growth Center 2017, 3). With regards to the amount of revenue generated by the government from
galamsey activities in the region, this study did not find any record to that effect. Socially, Afriyie et al. (2016, 506) perceive galamsey as an avenue for people to escape from poverty and improve on their social status in the region. According to them, galamsey provides jobs to the unemployed which helps to reduce poverty in the mining communities within the region (Afriyie et al. 2016, 506). People in the region also engage in galamsey activities to evade the social marginalization associated with being unemployed (Andrews 2015, 5).

Analysis of Causes and Benefits of Illegal Mining in the Democratic Republic of Congo

The DRC recorded a positive (+) influence of political, economic, and social causes and benefits of illegal mining. Politically, former President Laurent Kabila is reported to have encouraged illegal mining in order to perpetuate his stay in political power by gaining the loyalty of influential people in the society (Rubbers 2007). Military commanders and commanders of armed groups are also reported to be involved in illegal mining activities in the country (Bafilemba et al 2014, 1; Hayse and Perks 2012, 533).

Economically and socially, illegal mining employs over 2 million people in the DRC (Mallo 2012, 4717). It is estimated that in 2014, mineral resources from illegal mining provided an annual revenue of approximately $185 million to the Congolese Army and other armed groups including foreign militia (Bafilemba et al 2014, 1; Hayse and Perks 2012, 533). Socially, Garrett (2008, 16) records that illegal mining alleviates poverty as people earn between US $1 to US $5 a day through the activity. Additionally, Mallo (2012) as well as Hayse and Perks (2012, 534) identify the significant role illegal
mining plays in employing 400,000 women in order to improve their status in terms of poverty.

Variables and Cases for National Security Threats of Illegal Mining to Ghana

Table 4. Analysis of the National Security Threats of Illegal Mining

<table>
<thead>
<tr>
<th>Region</th>
<th>Ashanti</th>
<th>Western</th>
<th>DRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Security</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Economic Security</td>
<td>0</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Food and Water Security</td>
<td>+</td>
<td>+</td>
<td>0</td>
</tr>
<tr>
<td>Physical Security</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Source: Created by author.

Table 4 explains the national security threats of illegal mining in the Ashanti and Western Regions of Ghana as well as the DRC. Environmental and physical security threats are prevalent in the Ashanti Region, Western Region and the DRC. With the exception of the Western Region which shows a positive influence of environmental, economic, food and water and physical security threats, the Ashanti Region records a neutral economic security threat whiles the DRC records a neutral food and water security threats to national security.
Analysis of National Security Threats of Illegal Mining in Ashanti Region

The Ashanti Region records a neutral (0) influence of economic security and a positive (+) influence of environmental, food and water, and physical security threats on the national security of Ghana. On environmental security, the research measured the level of destruction to forest reserves as a result of illegal mining activities. Asamoah et al. (2017) assert that between 1986 and 2002, and 2002 and 2016, approximately 552.24 and 4,029.21 hectors of mixed vegetation lands were respectively destroyed as a result of galamsey activities in the Ashanti Region. Boadi et al. (2016) also avers that between 2009 and 2014, illegal mining activities degraded an estimated forest area of 2.5 km² out of a total area of 56.67 km² in the Offin Shelterbelt within Ataso and Nnwerem.

With regards to economic security, the study measured revenue lost to government through smuggling or environmental reclamation programs as a result of illegal mining activities. According to Burrows and Bird (2017), Ghana lost approximately $2.3 billion in 2016 as a result of gold smuggled out of the country through galamsey activities. This study, however, could not find adequate evidence of revenue loss through smuggling or environmental reclamation programs in the Ashanti Region.

On food and water security, the research focused on destroyed food crop farms and polluted water bodies as a result of illegal mining activities. In Agyareago in the Ashanti Region, illegal mining has resulted in the destruction of cocoa, plantain, maize, cocoyam and cassava farms (Farmerline 2016; Ocansey 2013). The Offin River has also been polluted by illegal mining activities (Arthur-Mensah 2016; Dapatem 2014).
On physical security, the study measured seized fire arms from illegal miners and the presence of armed groups operating at the mining sites within the region. According to Adogla-Bessa (2018), in December 2018, 16 Chinese illegal miners were arrested in the Krobo forest in the Ashanti Region with 14 unregistered pump action guns and an M16 assault rifle. Andrews (2015, 15) acknowledges that illegal miners in the region have procured guns which are used to protect their mining operations against rival illegal miners and thieves. Irrespective of this, the region does not have any armed group operating in galamsey sites within the communities.

Analysis of National Security Threats of Illegal Mining in Western Region

In the Western Region, environmental, economic, food and water, and physical security threats recorded a positive (+) influence on the national security of Ghana. On environmental security, the Daily Guide (2013) as well as Kutah and Mastui (2018) assert that galamsey activities have destroyed some forests and farmlands in the region. Although not specific to the Western Region, Hilson (2002, 159) and Guenther (2018, 7) are also of the view that, as of the later parts of the 1990s, illegal mining alone caused the deforestation of approximately 15,000 hectares of land and also destroyed the topsoil of deforested lands with abandoned mining pits in the country.

On economic security, the study could not find adequate evidence of revenue loss through smuggling in the Western Region. It was, however, observed that the region requires $100 million to reclaim destroyed forests and farmlands resulting from galamsey activities (Kutah and Mastui 2018, 2). With regards to food and water security, Tetteh et al. (2010, 642), and Kutah and Mastui (2018, 2) assert that, the top soil in most mining
communities in the region have been contaminated with high concentrations of mercury, and as result, the production of food crops such as plantain, cassava, maize and cocoyam have reduced. Galamsey activities have also polluted the Ankobra, Bonsa, and Pra Rivers (Daily Guide 2013; Arthur-Mensah 2016; Srem 2017).

On physical security, in September 2019, Operation Vanguard personnel arrested 20 Chinese illegal miners with 4 pump action guns in Prestea (MyJoyOnline 2019). Additionally, between July and October 2017, a joint military and police task force against illegal mining activities in the country seized 30 assault rifles from illegal miners in the Ashanti, Eastern and Western regions (Graphic News 2017). There are, however, no armed groups operating in galamsey sites within the region.

Analysis of National Security Threats of Illegal Mining in the Democratic Republic of Congo

The DRC records a neutral (0) influence of food and water security and a positive (+) influence of environmental, economic, and physical security threats on the country’s national security. On environmental security, Hayse and Perks (2012) affirm that illegal mining is destroying wooded lands in the DRC. With regards to economic security, it is estimated that as of 2014, the Congolese government lost approximately $185 million to the Congolese Army and armed groups including foreign militia as a result of smuggled mineral resources from the country (Bafilemba et al 2014, 1; Hayse and Perks 2012, 533).

With reference to food and water security, the study could not find adequate evidence on reported food crop farms and water bodies being destroyed by illegal mining activities in the DRC. The physical security of the country is, however, threatened by the
presence of armed elements who control illegal mining business in order to raise revenue for their war efforts. According to Bafilemba et al (2014, 1) and Hayse and Perks (2012, 533), illegal gold mining is a major source of revenue for commanders of armed militia and rebel groups in the DRC. In the Shabunda territory in Eastern Congo, Chinese mining companies supply arms and ammunitions to armed groups in exchange for gold (Global Witness 2016). The Forces Armées de la République du Congo (FARDC; Congolese national army), Forces Démocratiques de Libération du Rwanda (FDLR), and the Congrès National pour la Défense du Peuple (CNDP) are among the armed groups which benefit from revenue from illegal mining in their respective controlled areas (Garrett and Mitchell, 2009).

Summary

This chapter analyzed data on the causes and benefits of illegal mining as well as the national security threats of illegal mining in the Ashanti and Western Regions of Ghana in comparison with the DRC. With regards to the causes and benefits of illegal mining, the study measured political, economic, and social variables. The Ashanti Region and DRC recorded a positive (+) influence of all three variables as causes and benefits of illegal mining. The Western Region also recorded a positive (+) influence of economic and social causes and benefits but a negative (−) influence with regards to political causes and benefits. With respect to the threats illegal mining poses to national security, the study focused on environmental security, economic security, food and water security, and physical security as variables for the analysis. The Western Region showed a positive (+) influence by all four variables. However, the Ashanti Region and the DRC showed neutral (0) influences in economic and food and water security, respectively.
An analysis of the data presented indicates that, economic and social factors push people into illegal mining. Politically, the support and involvement of politicians and people in authority for illegal mining encourages the activity. Additionally, the case of DRC indicates that government’s reluctance to halt illegal mining activities for fear of losing votes promotes illegal mining activities. Irrespective of the political, economic, and social benefits of illegal mining, the activity poses significant environmental, economic, food, water, and physical security threats to Ghana’s national security as it does to the national security of the DRC.
CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

Introduction
This chapter presents a summary of the findings, conclusions, and recommendations of the research. The purpose of the study is to understand how illegal mining activities threaten the national security of Ghana in order to proffer solutions to safeguard the country. Hence, the primary question the study seeks to answer is, what are the national security threats associated with illegal mining in Ghana? In addition to the primary question, the secondary questions for the research are, what are the causes and benefits of illegal mining in Ghana? The case study design with a qualitative methodology was used in this study in order to answer the research questions. Illegal mining activities in the Ashanti and Western Regions of Ghana as well as the Democratic Republic of Congo (DRC) were the three cases which were investigated in this research. An analysis of the data from the three cases indicate strong economic and social causes and benefits of illegal mining activities in Ghana and the DRC. Additionally, illegal mining has a significant effect on the environmental, economic, food, water, and physical security of Ghana as outlined in the findings and conclusions.
Findings

The research reveals illegal mining is an economically lucrative venture with domestic and international interests as well as implications on national security. Politicians, traditional rulers, the Government of Ghana (GoG) and its agencies have a responsibility towards the safety and wellbeing of Ghanaians with regards to illegal mining or *galamsey* as it is locally called. However, corruption on the part of government officials is undermining the enforcement of mining laws, thereby, encouraging the local population and foreign nationals to engage in illegal mining.

Findings on Causes and Benefits of Illegal Mining in Ghana

Economically, unemployment and poverty are the remote causes and benefits of illegal mining in Ghana as pertains to the DRC. The large number of people employed in illegal mining activities for financial gains is indicative of the push factor associated with unemployment and poverty. Socially, people engage in galamsey activities to earn money in order to provide for their families and gain the respect of society by not being labeled as lazy but responsible. This social expectation with regards to status further highlights the role of poverty and unemployment as causes of illegal mining. The research acknowledges that political support for galamsey activities encourage the conduct of illegal mining but does not qualify as a remote cause of the activity. Illegal mining provides short term economic, social and political benefits to people, but it also has dire national security consequences in the long term.
Findings on National Security Threats of Illegal Mining in Ghana

In the long term, the study identifies illegal mining as a threat to the national security of Ghana as is being witnessed in the DRC. Ghana’s environmental, economic, food, water, and physical security are in danger. Environmentally, Ghana is losing significant portions of its forest reserves through galamsey activities. This situation is a challenge to the sustenance of the country’s ecosystem for future generations. Deforestation as a result of illegal mining has a second and third order effect on flora and fauna, erosion and the existence of the people of Ghana.

Economically, Ghana like the DRC is losing essential revenue from the gold mining sector and that is a threat to the country’s economic security. Aside from the fact that most of the gold produced by the illegal miners are smuggled out of the country, illegal miners are depleting the country’s gold reserves. Additionally, the government requires a lot of money to combat illegal mining activities and reclaim destroyed forests and lands to their natural state. These expenses by the government amounts to financial losses to the state because they could have been avoided if a good supervisory regime on mining activities in the country had been maintained. Finally, on economic security, the study revealed that illegal mining is destroying cocoa farms in the country. This is a worrying situation since cocoa is the main cash crop foreign exchange earner for Ghana. The destruction of cocoa farms will, therefore, reduce the production of cocoa beans in the country and further reduce government revenue from the cocoa sector.

Aside from the economic security risk, Ghana faces food and water security threats because of galamsey activities. Food production has reduced in illegal mining communities because farms have been transformed into mining sites. The topsoil of most
mining communities has also been contaminated with residues of cyanide and mercury from galamsey activities, thereby, making them dangerous for crop production. This situation could lead to low food production and famine in the near future. Furthermore, illegal mining activities have polluted several water bodies including the Ankobra, Offin, and Pra Rivers which are sources of potable water in the Western and Ashanti Regions of the country. The government has resorted to spending a significant amount of money to treat these water bodies for the consumption of the people, and that is a drain on the country’s financial resources.

On the physical security threats of illegal mining, the study did not find any armed group associated with illegal mining activities in Ghana as it is the case in the DRC. The study, however, observed that galamsey operators in the Western and Ashanti Regions of Ghana are arming themselves with illegal firearms. Chinese illegal miners in particular are the worst offenders. A similar situation exists in the DRC where Chinese mining companies are noted to be exchanging weapons for gold from armed groups. This situation makes illegal mining a venture that is promoting the proliferation of illegal small arms and light weapons (SALW) into the country. In the DRC, it was observed that illegal mining provides revenue for armed groups to acquire weapons for their war efforts. What this suggest is that, galamsey operators could metamorphose into armed groups who use proceeds from the activity to acquire weapons in order to protect their economic interest against government actions to halt their activities. Such a situation will destabilize the peace in Ghana because it will result in armed conflicts over the control of mining sites.
Actors Functions Relationships and Tensions in Illegal Mining

In addition to the findings on the causes and benefits of illegal mining and the national security threats associated with the menace, the study identified a web of actors who make galamsey a complex problem that threatens the national security of Ghana. An understanding of the functions, relationships and tensions of the actors is key to finding a realistic solution to the national security threats associated with galamsey. Figure 2 depicts the various actors who are connected to illegal mining activities in Ghana.

Figure 2. Diagram of Actors Connected to Illegal Mining in Ghana

Source: Created by author.

The information in figure 2 shows the various actors connected to illegal mining in Ghana. The GoG functions as the primary agent responsible for the country’s mineral
resources (Minerals and Mining Policy of Ghana 2014) and national security. Hence, the
GoG is responsible for enacting, promulgating and enforcing laws against national
security threats such as illegal mining. The government regulates mining activities
through the combined effort of state agencies such as the Minerals Commission,
Environmental Protection Agency and the state security and law enforcement agencies in
order to generate revenue from the sector. The local population is another actor which
directly or indirectly benefit economically from illegal mining activities or suffer from
the social and environmental effects associated with the activity. The international
community, foreign nationals, gold buyers, and miners’ profit from the high prices of
gold on the international market and may not be bothered about how the gold is obtained.
High gold prices increase the demand for gold which promotes illegal mining.
Additionally, politicians and traditional rulers are the local authorities who have the
power to positively or negatively influence illegal mining activities in their areas of
jurisdiction. The Forestry Commission, media and the Ghana Water Company Limited
are agencies which are basically concerned about the environmental effects of illegal
mining activities in the country. Unfortunately, corruption on the part of some
government officials and local authorities is negatively influencing illegal mining
activities and impeding efforts to combat the menace.

Conclusions

There is a nexus between illegal mining and the national security of Ghana. Illegal
mining serves as a source of livelihood for a substantial number of people who see the
activity as a source of employment and an opportunity to escape from poverty. As long as
unemployment and poverty rates in mining communities remain relatively high, people
will resort to illegal mining to earn a living. Unemployment and poverty are thus the main causes of galamsey in Ghana. In addition to unemployment and poverty, corruption by government officials and the support from politicians and traditional rulers for illegal mining contribute to the continuous practice of the activity which poses diverse threats to Ghana’s national security. The environment which provides the basic needs of life is being destroyed with impunity by the illegal miners who are destroying forests and farms, and polluting water bodies which serve as sources of potable water in parts of the country. This situation is worrisome since it could lead to food shortages and waterborne diseases in the near future. Ghana’s environmental, food and water security are under threat because of illegal mining. Additionally, the country’s economic and physical security are also affected by galamsey activities and has attracted the government’s intervention.

Even though the GoG has deployed security personnel under Operation Vanguard to stop illegal mining activities in the country, corrupt practices by some government officials and traditional rulers are hindering the fight against galamsey. This situation calls for pragmatic measures by the government, local authorities, civil society, and other stakeholders to halt the galamsey menace. To this end, there is the need for the GoG to exercise the utmost political will in order to combat galamsey activities and safeguard the country from security threats associated with the menace. The government could partner with civil society and the private sector to provide alternative livelihood programs in galamsey communities. Such programs will provide jobs to the unemployed and alleviate poverty in those areas. The government could also consider the inclusion of traditional rulers in its early warning mechanism in the fight against illegal mining activities. A
move in this direction will make traditional rulers equally responsible for the environmental and physical security of their communities.

**Recommendations**

Having examined the causes, benefits and national security threats associated with illegal mining in Ghana, there is the need to highlight some measures to protect the country against galamsey. The complex nature of galamsey activities demands a comprehensive approach by government and its agencies, civil society, traditional rulers, and the media to tackle the menace as shown in figure 3.

---

**Figure 3.** Design of Strategy to Combat Illegal Mining Activities in Ghana

*Source:* Created by author.
Strategy to Halt Illegal Mining in Ghana

Figure 3 illustrates a possible strategy to secure the national security of Ghana from threats posed by illegal mining activities. The government, civil society including the private sector, security and regulatory agencies, traditional rulers and the media should work simultaneously and collaboratively to stop illegal mining in Ghana. Firstly, the government in collaboration with the civil society and private sector should create alternative jobs for the illegal miners. For example, alternative jobs in agribusiness could be exploited by the government. The government should also demarcate specific areas for legal ASM. This will ensure that ASM is confined to areas where mining activities can be properly regulated by the appropriate regulatory agencies. The government should also maintain Operation Vanguard activities, and ensure that corrupt officials involved in the illegal mining menace are prosecuted without fear or favor. Secondly, whiles the civil society supports the government to create alternative livelihood programs for the illegal miners, it should report corrupt officials and also partner with traditional rulers and the media to educate people about the dangers of illegal mining to national security. Thirdly, security and regulatory agencies should continue to use Operation Vanguard to enforce the country’s mining laws, arrest illegal miners and secure the country’s borders against the proliferation of SALW into the country. Finally, traditional rulers should be included in the government’s early warning mechanism against galamsey. In this regard, the rulers should report illegal mining activities in their communities to the appropriate government agency for immediate remedial action.
Areas for Further Study

In addition to the proposed solutions to the illegal mining menace, some areas for future research were identified in this study. An aspect of the study which demands future investigations is how illegal mining activities contribute to the proliferation of SALW. A thorough research in this direction will help to explain the connection between illegal mining and the proliferation of SALW which have national security implications.

Additionally, further research could be conducted on the impact of politicization of illegal mining on national security. Partisan politics seem to play a clandestine role in illegal mining which needs to be exposed. A study in this direction will provide substantial evidence on the influence of political factors on illegal mining and their effects on national security.

In line with the politicization of illegal mining, another possible area for future research is the role of illegal mining in funding political activities in Ghana. The use of proceeds from illegal mining to fund partisan politics could be a dangerous practice which will not only impede efforts to halt illegal mining but also contribute to the formation of armed groups as is the case in the DRC. A study along this line could further establish the political causes and benefits of illegal mining activities.

Summary

The study establishes that illegal mining is an unemployment and poverty driven activity with negative effects on the national security of Ghana. In the short term, illegal mining provides economic, social, and political benefits to the people who are engaged in it. However, in the long term, the activity has disastrous consequences on the environmental, economic, food, water, and physical security of Ghana. Illegal mining is
causing deforestation, and contaminating farmlands and rivers with harmful chemicals and also promoting the use of illegal firearms by galamsey operators. These developments are national security concerns because they threaten the physiological and psychological well-being of Ghanaians as well as the stability of the state. Hence, the situation requires a comprehensive intervention effort by government and its agencies, civil society including the private sector, traditional rulers, and the media to curb galamsey activities in the country. Significant among the intervention efforts to solve the galamsey menace is the need for alternative sources of livelihood for the illegal miners and education about the national security implications of their actions. These intervention efforts among others will have to be implemented within the shortest possible time, otherwise in the long run, people will no longer feel safe to live in Ghana.
REFERENCE LIST


Boadi, Samuel, Collins Ayine Nsor, Osei Owusu Antobre, and Emmanuel Acquah. “An Analysis of Illegal Mining on the Offin Shelterbelt Forest Reserve, Ghana: Implications on Community Livelihood.” *Journal of Sustainable Mining* 15, no. 3


