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UNIVERSITY OF THE
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THE IMPACT OF THE DIAMOND MINING INDUSTRY ON ANGOLA'S SOCIO-ECONOMIC DEVELOPMENT

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A research report submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Science in Mining Engineering.

Johannesburg, 2024

DECLARATION

I declare that this research report is my own unaided work. It is being submitted for the degree of Master of Science in Mining Engineering at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination to any other university.

I have familiarised myself with the University of the Witwatersrand Student Academic Misconduct Policy (SAMP). I hereby declare that the work I am submitting for assessment is my original work. I affirm that I have not plagiarised, misrepresented, or colluded with any other person or source. I have properly acknowledged, cited, and referenced all the sources that I have used in my work. I also declare that where I have used artificial intelligence (AI) tools it has only been as a means of guidance. The ideas and arguments presented in my work are my original thoughts and interpretations. I acknowledge that any academic misconduct, such as plagiarism or collusion will result in serious consequences. According to the SAMP, these consequences may include a reduced grade, a fail mark, or disciplinary action. The Faculty of Mining Engineering and the University of the Witwatersrand have my consent to investigate any potential academic misconduct in my work. This investigation may include the use of similarity and AI detection software to check the originality of my work. I undertake to abide by the decision of any such investigation.



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(Signature of Candidate)

___27_____ day of _____August_____, _____2024_____

“An inspirational quote”

You can never cross the ocean until you have the courage to lose sight of the shore.

Quotation Author

Christopher Columbus

ABSTRACT

In 2018, the Angolan economy was ranked the third largest in sub-Saharan Africa, behind Nigeria and South Africa. This performance is mainly driven by oil production, which represents 50% of the country's Gross Domestic Product, 95% of its exports, and more than 70% of government revenue, while diamonds represent only 5% of Angola's exports.

The Angolan Government has already invested US$ 260 million into the National Geology Plan (PLANAGEO), which concluded the geophysical aerial survey of the country's mineral and geological potential in October 2023, putting the country in a better position for future investment.

According to the African Diamond Council, it was reported in the Kimberley Process Certification System Statistics in 2021 that the diamond industry in Angola represented almost 1.2 billion Euros, with the contribution to the Gross Domestic Products at 1.6%, making Angolan diamonds the second most important export commodity.

The socio-economic impact of the diamond sector has improved from 2016 to 2022, of which a value of US$ 29.58 million was contributed to the areas of education, health, sport, environment, culture, et cetera in local and surrounding communities through the Brilhante Foundation.

The diamond mining industry in Angola was regulated by the Diamond Law enacted in 1994. Presently, Angola's mining industry is subject to state regulation stipulated in the Angolan constitution—Law No. 31/11 of September 2011 (the Mining Code)—and various additional statutory and regulatory acts. In the past five years, under the newly appointed government of 2017, the 2018 Mining Code was amended.

This report aimed to investigate whether Angola had fully developed its diamond mining sector to maximise revenue from the industry while also

attracting more investors and generating socio-economic benefits for everyone, including its citizens.

The methodology used in this research was a qualitative research approach. This involved the collection of primary data by interviewing experts in the diamond mining industry, and secondary data that relied on desktop studies of published and unpublished data from books, journals, abstracts, statistical data, and reports from the government gazette.

The research findings unequivocally affirmed a positive response to this inquiry. The construction of the Saurimo Diamond Pole in the Lunda Sul Province—featuring seven fully operational polishing factories including Kothari, Stardiam, Kapu Gems, and the KGK factory—has generated employment opportunities and had a positive socio-economic impact within the region. The CEFOLAD Diamond training centre is currently equipping Angolan citizens with the necessary skills and tools to make meaningful contributions to the growth and sustainability of future generations.

Angola is the sixth-largest diamond producer globally and is known for its high-quality gemstones. The annual production of rough diamond exports in Angola was 9.396 million carats, with an average of US$ 163 per carat and a gross revenue of US$ 1.56 billion in 2023.

The Angola diamond industry employed 200 000 individuals in 2020. The Luele mine was inaugurated on November 10, 2023, in Lunda Sul Province, Angola, and it is expected to contribute an additional 5–7 million carats to the annual diamond sector. The mine currently employs 1 300 Angolan nationals. Based on the findings of this report, it is recommended that more geological investigation needs to be done in areas with visible geological potential in order to enhance and find new deposits which will eventually increase diamond production.

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TABLE OF CONTENTS

DECLARATION i

ABSTRACT iii

ACKNOWLEDGEMENTS v

LIST OF FIGURES ix

LIST OF TABLES x

APPENDIX xi

LIST OF ABBREVIATIONS xii

1 INTRODUCTION 1

1.1 Research Background and Context 3

1.2 Problem Statement 5

1.3 Justification for Research 6

1.4 Research Objectives 7

1.5 Structure of the Research Report 8

2 LITERATURE REVIEW 9

2.1 Introduction to the Angolan Mining Industry (Background) 9

2.2 Legislation of the Diamond Mining Industry in Angola 11

2.2.1 Angola Diamond Law in 1994 12

2.2.2 Foreign Investment Law for Diamonds in 1994 13

2.2.3 Diamond Trading in 1994 14

2.3 Angola Mining Code 2011 15

2.3.1 Foreign Investment Law for Diamond Mining Code 2011 17

2.3.2 Protection of Mining Rights 18

2.3.3 Taxes and Royalties in 2011 20

2.3.4 Diamond-Trading Model in Mining Code 2011 20

2.4 Exporting of Diamonds in Angola 22
2.5 Amendment of the Mining Code in 2018 22
2.5.1 Diamond-Trading Model 2018 23
2.5.2 Foreign Investment Law Amended in 2018 24
2.5.3 Agency National Mineral Resource (ANRM) 26
2.6 Kimberley Certificate in Angola 28
2.7 Overview of Angolan Economics 30
2.7.1 Gross Domestic Product Growth Rate in Angola 31
2.8 Social Projects' Contribution to the Diamond Mine Industry in Angola 32

3 RESEARCH APPROACH 35
3.1 Introduction to the Research Methods 35
3.2 Data Collection Process 35
3.3 Data Validation Process 39
3.4 Data Analysis Approach 40
3.5 Challenges and Limitations 41
3.6 Ethical Considerations 41
3.7 Research Validity and Reliability 41

4 DATA FOR THE STUDY 43
4.1 ENDIAMA E.P.'s Participation in Mining Projects in Angola 43
4.2 Angolan Exports of Rough Diamonds from the Mining Industry 46
4.3 Angolan Rough Diamonds' Contribution to the Government Revenue/Budget 49

5 ANALYSIS AND FINDINGS 52
5.1 Introduction 52
5.2 ENDIAMA E. P. Participation Results and Analysis 62

5.3 Contribution of Rough Diamonds in the Government Revenue/Budget Analysis and Overall GDP 62

6 CONCLUSIONS AND RECOMMENDATIONS 68

6.1 Introduction 68

6.2 Research Observations 69

6.3 Key Findings and Observations 72

6.4 Research Contributions 73

6.5 Recommendations for Future Research Work 73

REFERENCE LIST 74

APPENDIX A. INTERVIEWS 83

LIST OF FIGURES

Figure 1: Active kimberlite and alluvial diamond mines located in Lunda Norte and Lunda Sul Provinces in Angola..... 11
Figure 2: Site visit at the Saurimo Development Pole located in Lunda Sul Province, Angola, in 2022 38
Figure 3: The diamond fields in the Lunda Norte and Lunda Sul provinces in Angola..... 43
Figure 4: Diamond mines in Angola where ENDIAMA E.P. has shares, generated from Table 4..... 45
Figure 5: The number of national and foreign employees in the diamond mining industry, generated from Table 4 45
Figure 6: Average diamond mine production based on ENDIAMA E.P.'s official website, generated from Table 4..... 46
Figure 7: Angola's rough diamond production from 2004 to 2021 48
Figure 8: : Export revenue for rough diamonds from 2004 to 2020 49
Figure 9: Angolan diamond revenue in billions of US dollars from 2010 to 2020..... 51
Figure 10: Angola's Gross Domestic Product from 1980 to 2022..... 51
Figure 11: Diamond mining industry evolution stages in Angola 52
Figure 12: The population vs the annual growth rate of Angola..... 61
Figure 13: The Saurimo Diamond Pole illustrating the training facilities and the certification ceremony of CEFOLAD..... 66

LIST OF TABLES

Table 1: Kimberley Process Certificate (KPC) of rough diamonds exported from Angola..... 29
Table 2: Investments in social responsibility projects 2016/2017 34
Table 3: Investments in social responsibility projects 2018/2022 34
Table 4: ENDIAMA E.P.'s shareholding in the diamond mines in Angola.. 44
Table 5: Angola's annual rough diamond export summary..... 47
Table 6: Diamond revenue in Angola from 2010 to 2021 50

APPENDIX

Appendix A: Primary data of the interviews done in March 2023 with the experts in the Angolan diamond mining industry 83

LIST OF ABBREVIATIONS

Abbreviation:	Description:
ANRM	Agency National Resource Mineral
AIDC	Angola Diamond International Conference
CEFOLAD	The Diamond Cutting Training Centre
CEO	Chief Executive Officer
COVID-19	Coronavirus Disease of 2019
DIAMANG	Angolan Diamond Company
FNLA	National Front for Liberation of Angola
GASED	Strategic Superintendence Office of the Diamond Sector
GEPE	Department of Studies, Planning and Statistics
GDP	Gross Domestic Product
IGEO	Angolan Institute of Geology
IMF	International Monetary Fund
JORC	Joint Ore Reserves Code Committee
KP	Kimberley Process
KPCS	Kimberley Process Certification Scheme
LOM	Life of Mine
MPLA	Popular Movement for Liberation of Angola
MIREMPET	Ministry of Mineral Resources Petroleum and Gas
MIC	Mineral Investment Contract
NI 43 -101	National Instrument
PLANAGEO	National Geology Plan
SAMREC	South Africa Mineral Reporting Code
SISA	Inherited and Gift Tax
UNITA	National Union for Total Liberation of Angola

1 INTRODUCTION

Angola spans a vast territory, with an area of 1 246 700 square kilometres, and encompasses a long coastline and central plateau which crosses the interior of southern Africa, bordering the Republic of Congo and the Democratic Republic of the Congo in the North, Zambia to the East, and Namibia in the South. It is the sixth-largest economy in sub-Saharan Africa and is considered a lower-middle-income country with a Gross Domestic Product (GDP) of US$ 74 billion, a population of 33 million, and a per capita income estimate of US$ 3 300 at the end of 2022 (Instituto Nacional de Estatística, 2021).

The country embarked on a shift from a centralised economy to a market-led economy in 1992, but the consequences of Angola's devastating 27-year civil war, which only ended in 2002, still remain. In 2018, the Angolan economy ranked as the third largest in sub-Saharan Africa, behind those of Nigeria and South Africa (United Nations, 2021). This performance is driven by oil production, which represents 50% of the country's GDP, 95% of its exports, and more than 70% of government revenue (World Bank, 2021). Gross national income per capita stood at US$ 2 230 in 2020, having been on a continuous downward trend from a high of US$ 5 010 in 2014.

Currently, there is an existing social disparity along with a significant informal sector in Angola. By September 2020, the unemployment rate was 34% higher than in the same period in 2019 (Instituto Nacional de Estatística, 2020b). Of the 15.3 million people considered economically active, approximately 5.2 million were unemployed primarily due to job losses. The highest rate of unemployment was among the youth aged 15–24 years old, at an estimated 56.4% (Instituto Nacional de Estatística, 2021).

Diamonds are one of Angola's primary sources of wealth, with some of the diamond resources (secondary and alluvial deposits) found along the rivers,

as well as primary deposits (kimberlites). In the past, due to the 27-year-long civil war (1975–2002), the primary focus of exploration and extraction activities was on alluvial diamond deposits (Pearce, 2004). The continued depletion of alluvial resources requires that further prospecting and exploration studies are done in finding primary kimberlite deposits (Pedro, 2009).

Diamonds rank as Angola's second most important export after oil, accounting for 5% of exports and averaging US$ 700 million per year since 2000. Thus, development of the sector is a national priority (Banco Nacional de Angola, 2020a). According to the African Diamond Council, as reported in the Kimberley Process Certification System (KPCS) Statistics in 2021, the diamond industry in Angola represents nearly 1.2 billion Euros (Euronews, 2021).

Angola is the world's sixth-largest diamond producer and the third largest on the African continent. The Catoca mine, discovered in 1965 in Lunda Sul, is currently ranked as the fourth-largest diamond mine worldwide (Mining Technology, 2022). Presently, the Catoca mine employs over 2 000 workers and has expanded the associated village as a part of social investment projects' contribution, benefitting the workers and surrounding communities through housing, education, health, electricity, and water (Read & Janse, 2009). In 2012, the Catoca mine led to the exploration and discovery the Luele pipe, which has a projected lifespan of more than 50 years, an area of 105 hectares, and is projected to produce about 5.7 million carats in 2023 (Nyaungwa, 2021).

In 2016, a 404-carat diamond was unveiled to the world; the diamond was recovered from a Lulo Diamond Project mine in Lunda Norte Province, Angola. Subsequently, in July 2022, the largest pink diamond, known as Lulo Rose, with 170 carats and weighing 34 grams, was also discovered in the Lulo Mine. This remarkable 170-carat pink diamond is believed to be the largest diamond unearthed since the discovery of the 185-carat Daria I Noor

in India more than 300 years ago, thus making the Angolan diamond industry even more attractive (Specktor, 2022).

The Angolan Government has already invested US$ 260 million into the National Geology Plan (PLANAGEO), which concluded the geophysical aerial survey of the country's mineral and geological potential, putting the country in a better position for future investment (Lusa, 2021). However, despite the aforementioned statements, there is no clear, visible improvement in the socio-economic status of the Angolan people.

This poses the question of whether Angola is fully developing its diamond mining sector in order to maximise revenue, attract more investors, and create an industry with socio-economic benefits for everyone, including its citizens.

1.1 Research Background and Context

Diamond mining in Angola dates back to 1917, when a consortium of Belgian, English, and Portuguese investors established a company called Diamang (Chambel et al., 2013). In 1921, a contract for the consolidation of rights was negotiated between the company (Diamang) and the state (Portuguese Colonial at the time), with which both parties were forever associated, and which allowed for the demarcated concession of 1 025 600 square kilometres in Angolan territory. The state received 40% of the net profits and retained 5% of the shareholder position (Monteforte et al., 2003). In 1952, the first kimberlite pipe, Camafuca-Camazambo, was discovered in Angola. Catoca mine and Calonda formation were among those discoveries in the 1950s and 1960s.

Later, in 1961, a war for liberty and freedom against Portuguese Colonialism broke out in Angola. In 1975, Angola gained independence, and a new president was elected for the Republic. A 27-year-long civil war began in 1975 and ended in 2002, making the diamond mining environment secretive

and difficult to navigate, which in turn held it back (World Bank, 2020). ENDIAMA E.P., a state-owned diamond company, was established in the capital city of Luanda in 1981. SODIAM E.P. was then created in 1999 as a subsidiary of ENDIAMA E.P. in order to operate in the diamond-trading sector.

Angola joined the Kimberley Process Certification Scheme (KPCS) in 2002, and the Mining Code was established in 2011 as a replacement for the Diamond Law of 1994. From the end of the civil war to date, the diamond mining industry has entered into different cycles of events and leaderships. Between 2004 and 2012, the Angolan diamond export averaged between US$ 788 million and US$ 1 billion yearly. In 2013, Angolan diamond exports reached a peak of US$ 2.34 billion (Garside, 2020). Despite being the world's sixth-largest producer of diamonds, major international mining companies have largely shunned Angola due to its unattractive investment terms.

ENDIAMA E.P., as per Diamond law 1994 and Mining Code 2011, had the mining rights of all the concessions and would then partner in all projects or form a joint venture with other national or international companies. The diamond production in Angola was exclusively sold through the state-owned diamond-trading company SODIAM E.P., making the stones available to buyers of its choosing (Codigo Mineiro, 2011). This arrangement did not suit mining companies, as it prevented them from obtaining the best prices for their diamonds (Pearce, 2020).

Later, in 2017, a new president was elected, and the diamond-trading model was amended to create a more favourable and attractive environment for investors with the aim of growing the sector. According to the Presidential Decree No. 175/18 of 27 July 2018, a new policy on Diamond Marketing was approved and implemented. Mining companies could now sell up to 60% of their diamond production to a client of their choice (Codigo Mineiro, 2018).

1.2 Problem Statement

Angola is renowned for its quality diamonds and is a country developing extremely rapidly in the global environment (Euronews, 2021). Even with its abundant diamond resources, all efforts in policy and legislative initiatives do not appear to have had the desired socio-economic impact. Therefore, a review of all the policies and legislative framework is required in order to change the negative trajectory.

According to the Ministry of Mineral Resources, Petroleum, and Gas (MIREMPET), Angola produced 8 million carats of diamonds with a gross revenue of US$ 1.059 billion in 2020—a 15.4% decrease from 9.4 million carats in 2019 (Garside, 2022). The Luele pipe began production in the course of 2023, projecting 5.7 million carats to the sector. In 2021, the first Diamond Development Pole was opened in Lunda Sul (Saurimo), creating a new era in the diamond sector and adding to beneficiation (Xinhua, 2021). The Diamond Development Pole[1] currently has seven diamond polishing factories, and it is estimated that 20% of the total diamonds produced in Angola will be polished in the Lunda Sul Province, creating opportunities for the communities and changing the livelihoods of the Angolan people (Xinhua, 2021).

According to the World Bank in 2020, Angola is the third-largest economy in sub-Saharan Africa and is classified as a low-middle-income economy. The African Development Bank, as of 2019, indicated that the incidence of poverty in Angola based on a monetary measure of welfare (monthly food and non-food consumption expenditures per adult equivalent) is 32.3% of the national level. It is also over three times higher in rural areas (54.7%)

[1] The Diamond Development Pole is a development project with the primary aim of developing Angola's mineral resource value chain (World Bank, 2020).

than in urban areas (17.8%). The strong dichotomy in welfare between urban and rural areas in Angola highlighted the unequal differences in income groups. The Gini coefficient [2] in Angola is 0.51, making it one of the highest in Africa. The unemployment rate fell below 30% in Quarter Four in 2022, but youth unemployment remained above 50% (Instituto Nacional de Estatística, 2023).

As per the World Bank data in 2022, Angola's unemployment rate was at 8.5% of the labour force in 2021. Another challenge that Angola is currently facing is that the violence in the region of Kasai (Democratic Republic of the Congo) has provoked the arrival of more than 30 000 refugees in Angola, adding to the strain on the economy (World Bank, 2022).

In 2021, the contribution of the diamond mining industry to socio-economic development in Angola was a 1.6% share of the GDP. This emphasised the need for assessment of the mining policies and legal framework in order to determine how the government could increase the contribution of diamonds to the economy (World Bank, 2020).

1.3 Justification for Research

Diamonds are considered one of the most sought-after gemstones on Earth. They also have a high industrial value; because of their hardness, they are used in the production of cutting and grinding tools. Diamonds are used in jewellery, in the medical field, in cosmetics, and in engineering industries for machineries, drills bits, and tools (Field et al., 2008). The Angolan diamond mining industry, for the past few decades, was an industry that basically produced and exported most of the annual rough diamond production. The

[2] "The Gini coefficient is a mathematical method used to measure income inequality and the wealth inequality within a nation or a social group" (World Bank, 2020).

diamonds contribute 5% to Angola's exports and 1.6% of the GDP; therefore, understanding the sustainability and added value to the socio-economic development and wellbeing of its host communities and country is critical.

The key motivations for this research report are to assess diamond mining contributions to the socio-economic development of Angola. The development of the diamond industry can provide opportunities such employment creation (direct, indirect, and induced job position), education, access to healthcare, improvement of income, and new sources of revenue for local communities (e.g. increase in a tax base, income for land owners and land-based activities, local procurement, tax revenues, enhanced infrastructures, and clear energy at a low cost that can trigger economic development to the surrounding communities and country).

1.4 Research Objectives

The objectives of this study are as follows:

1. To understand the diamond mining sector, mining policies, and legal framework.
2. To understand if the diamond mining industry complies with the KPCS.
3. To assess the annual production and export of rough diamonds according to the KPCS and the impact thereof on the GDP.
4. To understand and assess if Angola has developed or adopted any mineral reporting international standards to assist in the development of the sector.
5. To understand the implementation of the Mining Code and whether mining companies are adhering to this code, subsequently having an impact on sustainable growth in the sector.
6. To understand the advantages and challenges of beneficiation and its potential to foster growth in the diamond mining sector in Angola.

7. To establish if any programme is being implemented by the Government for prospecting and exploration investigations into future mines.
8. To assess diamond mining contributions to the socio-economic development of the country, aiming to identify ways in which the government can increase these contributions.
9. Make recommendations of new strategies that can be implemented to foster growth in the mining sector and create a sustainable environment for future generations.

1.5 Structure of the Research Report

This report consists of six chapters in its entirety. Chapter 1 is the introduction and covers the background of the research topic, the problem statement, the justification for the research, and research objectives.

Chapter 2 is the literature review of the mining sector, reviewing all the legislation and policies researched from before colonial times to date. This chapter's focus is to give an overview of the diamond industry's evolution and growth in Angola and how far the country has come in terms of compliance, legal framework, and governance.

Chapters 3 and 4 focus on the methodology used to collect the data for this research.

Chapter 5 focuses on the results of the data collection and analysis.

Chapter 6 is the conclusion of this report and includes recommendations for some of the issues found during this research.

2 LITERATURE REVIEW

2.1 Introduction to the Angolan Mining Industry (Background)

On November 4th, 1907, while conducting research in the Kasaï river basin within the Mai Munene region, Janot, one of the Belgian *Forminiére's* prospectors, collected a small stone which was contained in the concentrate found in the Kalamba stream tributary of the Kasaï. However, it was not until 1909 that the analysis confirming the rock as a 0.10-carat diamond was conducted by Lancsweet in Brussels. This discovery also resulted in the discovery of diamonds in the north-eastern region of Angola in 1912 by the Belgian geologist (Monteforte et al., 2003).

Thereafter, a prospecting company for Angolan minerals was created in Lisbon in September 1912, whose main objective was to investigate the possible existence of diamondiferous deposits of economic importance in the Kasaï hydrographic basin. The results obtained gave rise, on October 16, 1917, to the constitution of the Angolan Diamond Company (DIAMANG), with the aim of discovering and exploring diamondiferous deposits in Angola (Chambel et al., 2013).

In 1952, the first kimberlite, Camafuca-Camazambo, was discovered, covering an area of 160 hectares. By the end of 1974, an additional 383 kimberlitic bodies were found, including the Catoca pipe. Kimberlite pipes discovered from the early 1900s to 1960s revealed a diamond content group between 0.10 and 0.40 Q/m^3. However, exploration of these kimberlites was contingent upon potential alterations in market conditions, considering the quality and granulometry of diamonds. The kimberlites of Camútuè, Caixepa, Camagico, Camatchia, and Catoca were among those studied, with the reserves fully or partially calculated, along with approximately 50% of the large diatreme of Camafuca-Camazambo (Chambel et al., 2013).

In 1961, a war for liberty and freedom broke out in Angola, and in 1975, Angola gained its independence. The civil war in Angola began three months after gaining independence and lasted until the death of the rebel leader in 2002. The main parties in contention for power were the National Liberation Front of Angola (FNLA), the Popular Movement for the Liberation of Angola (MPLA), and the National Union for the Total Independence of Angola (UNITA). The MPLA was in control of the capital, and UNITA and FNLA were rebel insurgents, but UNITA acted as the key opposition party (Stevens & Carment, 2005).

In 1981, ENDIAMA E.P., Angola's state-owned diamond company, was established in its capital, Luanda. SODIAM E.P. was a subsidiary of ENDIAMA E.P., created in 1999 to operate in the diamond-trading sector and as a replacement for the model that existed until the end of the 1990s, which was based on many operators, mostly being illegal intermediaries. In 2002, Angola joined the Kimberley Process Certification Scheme (KPCS) (Chambel et al., 2013).

Currently, the main diamond-producing regions in Angola are found in the Lunda Norte and Lunda Sul provinces. Among these are several world-class primary deposits, including Catoca (in production), Camafuca-Camazambo, and Camutue (Pedro, 2009). The Camatchia-Camagico mine in Luó is situated on two adjacent kimberlite pipes on a total surface area of 28 hectares, in which mining also recently began in 2007 (Read & Janse, 2009). Chitoto and Lulo are alluvial mines producing some of the largest stones in Angola (Figure 1).

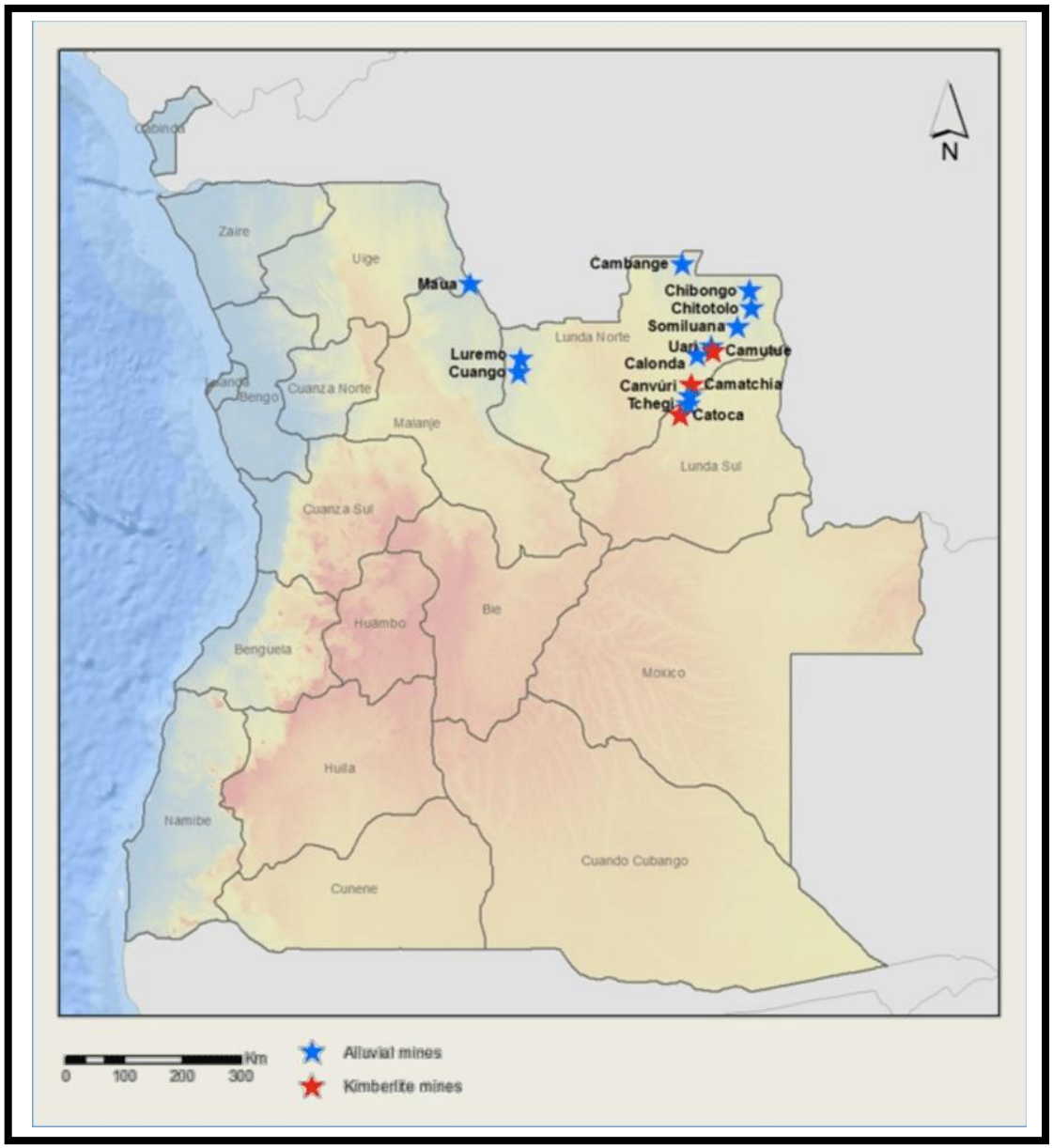


Figure 1: Active kimberlite and alluvial diamond mines located in Lunda Norte and Lunda Sul Provinces in Angola (Chambel et al., 2013).

2.2 Legislation of the Diamond Mining Industry in Angola

The diamond operations in the north-eastern side of the country had high-quality stones and provided a substantial income, but these fields were in the provinces that experienced intense fighting during the civil war era.

These fields were controlled by the opposition party (UNITA) from 1992 to 1994, and the stones were smuggled and used to buy weapons. In mid-1994, the Angolan Government gained control of those areas and tried to halt the activities of thousands of illegal diamond prospectors (Goncalves, 2010).

The challenges that the diamond industry had in the 1990s required a detailed analysis of the legislation, the functioning of the governmental institutions, the activities of mining companies, the socio-economic situation of the population, and the country in general. In 1994, there was evidence of increased diamond mining and theft within the concession areas, and the consequences of these actions included depletion of the richest diamond deposits, economic deterioration of the population, and outflow of foreign exchanges from the country. These actions also constituted a clear violation of the constitutional law; hence, the National Assembly approved the Angola Diamond Law under Article 89(m) of the constitutional law. Upon the implementation of the Diamond Law, the state gave the National Diamond Company (ENDIAMA E.P.) the sole rights over diamond mining in Angola (Diamond Law, 1994).

2.2.1 Angola Diamond Law in 1994

The Angola Diamond Law No. 16/94, approved on 7 October 1994, was based on Article 89(m) under the Angolan Constitutional Law: “Article 89(m) Definition of sectors reserved for the state in respect of the economy, and the basis for granting concessions for the exploitation of natural resources, and alienation and state property’’ (Constitutional Law, 1992).

This law applied to the activities of reconnaissance, prospecting, evaluation, mining, processing, and marketing of rough diamonds in the territory of the Republic of Angola. In relation to the mining rights which pertained to the continental shelf (seabed, subsoil, or mineral resources) and exclusive economic zone (the water column and its natural resources), these were granted exclusively to ENDIAMA E.P. or to the mixed companies in which it

participated, pursuant to Law No. 1/92. The rights could be exercised directly by ENDIAMA E.P. or by joint ventures in which it participated, again pursuant to Law No. 1/92, and they were allocated on a case-by-case basis, by concession contract, to be approved by decree of the Council of Ministers, in accordance with the same law. In the case of ENDIAMA E.P.'s own projects, the Council of Ministers could approve the project, and there would be no contract (Diamond Law, 1994)**.**

2.2.2 Foreign Investment Law for Diamonds in 1994

The Diamond Law of 1994 stated that foreign investments in the diamond sector would be governed by the provision of the following article and the applicable precepts of Law No. 1/92. Law No. 1/92, which was repealed, provided classification of mineral resources and related mineral reserves. It regulated national control bodies and procedure over mining and other activities but paid special attention to the environmental protection measures and licences for using explosives (Diamond Law, 1994).

The process relating to foreign investments was governed by the following rules: As a rule, in contracts pertaining to daily activities, the two-stage contract modality was to be employed when conducting the geological-mining research phase. When the first stage contract was applied to the geological-mining research phase, the potential investor would submit a declaration of investment intention to ENDIAMA E.P. defining the area and the work program, with the successive steps referred to in Law No. 1/92. When the second stage contract, pertaining to the exploration phase, was applied, the investor would submit the technical and economic feasibility study, which, once approved, would be an integral part of the mining rights concession contract (Diamond Law, 1994).

For diamond deposit projects with calculated reserves and other data enabling immediate preparation of technical and economic feasibility study, ENDIAMA E.P. would normally prefer to hold public or limited calls for tenders. This would then be agreed upon by the Ministry of Geology and

Mines, the Ministry of Finance, the National Bank of Angola, and the government of the province in which the investment is intended. The mining rights concessions were negotiated by ENDIAMA E.P., as it was the only interlocutor on the Angolan State (Diamond Law, 1994).

2.2.3 Diamond Trading in 1994

The marketing of diamonds was done exclusively by ENDIAMA E.P. or by an undertaking to be expressly constituted for the specific marketing function, taking care of the legitimate interests of producers. A commission, which did not exceed 2.5% of the value of the exported diamonds, was used to cover operation costs. The exports were licensed by the competent body of the Ministry of Commerce, with acknowledgement of the Ministry of Geology and Mines (Diamond Law, 1994).

As the mining industry evolved, and with the end of the civil war and peace returning to the country in 2002, diamond prospecting and mining projects had significantly grown, but it was also widely believed that the Angolan territory had a large and diversified mining potential; however, such beliefs lacked substantiation. Though, as a result of the execution of geological research work in Angola, the country was in fact considered worldwide as one of the countries that presented the most favourable prospects for the establishment of a flourishing mining industry which could play an important role in its economic and social development. A study that encompassed all minerals was necessary to realise Angola's full potential, and, hence, a need to create a code which included diamonds, and all other minerals (excluding oil) was then approved in 2011, in addition to the Angolan Mining Code (Diario da Republica, 2009).

The aim of the Mining Code was to provide the Angolan mining sector with a modern set of rules pertaining to exploration and vast mineral resources while simultaneously unifying, in a single document, a framework that was previously fragmented in numerous cumbersome and outdated statutes. The goals of the code were to establish a compromise between the

acquisition of rights for the exploration of mining resources by both national and foreign investors, the public interest, and the state-domain principle of natural resources (Diario da Republica, 2009).

2.3 Angola Mining Code 2011

The Mining Code was established in 2011, replacing Diamond Law 1/92 discussed above. The diamond legislation clarified the separate roles of ENDIAMA E.P. and the Ministry of Geology and Mines. Angola's diamond industry was a combination of state and private interests, with the state diamond company, ENDIAMA E.P., as the controlling company in the industry since 1986. The state, through ENDIAMA E.P., was a partner in all diamond ventures, with a majority shareholding of 51% in all kimberlite ventures, and the largest shareholding in all alluvial mines (Codigo Mineiro, 2011).

Therefore, Angola's Constitution and Law No. 31/11 of 23 September 2011 established that the state was the sole owner of all mineral resources found in the soil, subsoil, or water. It is further stipulated that the state determined the terms and conditions for concession, exploration, and mining, thereby giving them control over the granting of mining rights. Under the Mining Code, state-owned, mixed-ownership, or private companies could be granted mineral rights for exploration and mining (Codigo Mineiro, 2011).

The state is currently entitled to participate in mineral production, in consideration for the award of mining and marketing, through a state-owned company with at least a 10% shareholding to be set up for the mining stage, or a participation in kind (minerals produced) in a proportion to be defined (the proportion increases directly with the increase in the internal rate of return of the project).

Private entities wishing to invest in the mining sector can request access to mining data from the Ministry of Mineral Resources, Petroleum, and Gas

(MIREMPET) and the Angolan Institute of Geology (IGEO). However, it is important to note that there are no official databases available online. Awarded concession decrees are published in the Angolan Official Gazette, and there is also a public registry for mining companies (Diario da Republica, 2009).

The National Geology Plan (PLANAGEO) was established and officially approved in 2009 under Angola's Government resolution 85/09. The Government's strategic goal was to address the significant challenges associated with achieving sustainable development in Angola. The primary objective of PLANAGEO was to develop the geological infrastructure of the country, with the aim of obtaining high-quality and credible geological information. This information was essential for understanding and evaluating the actual mining potential of the national territory. The Angolan Government sought to prioritise the state's mineral resource reserves, facilitate actions related to the granting of mining rights, and engage in the planning of Angola's socio-economic development (Diario Da Republica, 2009).

The PLANAGEO for geological mapping and surveying of national mineral resources began in 2013 and was intended to be completed by the end of 2021. However, this did not transpire due to the COVID-19 pandemic, which resulted in the slight delay of the projects. As of October 2023, the PLANAGEO study was successfully completed, and the data is now accessible on the Institute's official website (Diario da Republica, 2009).

The Mining Code adopts a single-contract model for the entire mineral process. It divides mineral activities into three stages—reconnaissance and exploration, appraisal, and mining—and explicitly states that the rules, rights, and obligations for the three stages will be set forth in the relevant Mineral Investment Contract (MIC). According to the MIC, in order to carry out exploration activities, the investors are required to negotiate with MIREMPET and/or the national concessionaire (Codigo Mineiro, 2011).

Under the single-contract model, all mineral rights ranging from exploration to marketing, and including evaluation, reconnaissance, and mining, are formally granted from the outset pursuant to the MIC. However, the holder of the relevant mineral rights is required to obtain an exploration title, which is issued concurrently with the approval and gazetting of the MIC. Additionally, a mining title is required as a prerequisite for exercising the granted rights. The transition of a mineral project from the exploration stage to the mining stage is subject to the preparation and approval of a technical, economic, and financial viability study. The mining title is then issued after the study is approved, which must also include an environmental impact study. Following this, the holder of the relevant rights can exercise their mining and marketing rights (Codigo Mineiro, 2011).

The Mining Code favours public tenders for issuing mining rights, which can be either optional or compulsory, depending on the geological potential of the relevant area or the 'strategic' classification of the mineral in question. Strategic minerals are defined by their rarity, impact on economic relevance and development, demand on the international market, job creation, technological relevance, and use for strategic purposes or other specific technical mining aspects. Diamonds are expressly defined as strategic minerals in the Mining Code and were also defined as strategic minerals in Presidential Decree No. 231/16 of 8 December 2016 (Codigo Mineiro, 2018).

2.3.1 Foreign Investment Law for Diamond Mining Code 2011

As a rule, Angolan law does not require the participation of local partners in mineral concessions; therefore, both foreign and local mining companies (owned by Angolan nationals) may be awarded concessions and may engage in the exploration and mining of minerals. The national concessionaires (where applicable) may partner with local or foreign entities in connection with mineral projects as members of unincorporated joint

ventures set up for the exploration stage, and as shareholders of the companies incorporated for the mining stage (Codigo Mineiro, 2011).

The allocation of mineral mining and marketing rights entitles the state to participate in mining concessions. Besides this provision, there are no industry-specific rules or restrictions on corporate structures; nor are there mandatory participation or ownership interests reserved for national associates. However, preference is to be given to national partners or companies when establishing a business partnership (Codigo Mineiro, 2011).

Semi-industrial and artisanal mining of diamonds and construction minerals is the exception to the above rule. Only Angolan citizens are allowed to carry out diamond artisanal mining operations, and only Angolan citizens or legal persons whose share capital is majority held (two-thirds) by Angolan citizens may be awarded mineral rights for semi-industrial mining of diamonds, exploration and mining of construction minerals, and mining rights of mineral-rich waters (Codigo Mineiro, 2011).

2.3.2 Protection of Mining Rights

Under the protection of mining rights, investors are afforded the following broad legal guarantees:

- The unrestricted right to mine the mineral resources discovered during exploration, except as expressly provided for in the Mining Code or ancillary legislation.
- The right to freely dispose of and market the mining products.
- The right to recover investment expenses incurred during the reconnaissance, exploration, evaluation, and appraisal stage from the mining proceeds.

- The right to be compensated for any losses resulting from actions limiting the exercise of mineral rights under the law or the MIC (Codigo Mineiro, 2011).

In contrast with the former legal framework—which foresaw arbitration in Angola as the appropriate mechanism for resolving any disputes that could not be resolved amicably between the parties—the Mining Code is silent on the proper place to resolve disputes, leaving it up to the dispute resolution clauses of the MIC. Contracting parties commonly include arbitration clauses in their agreements; however, certain disputes—such as those arising from the termination of the concession contract, withdrawal of the concession title, overlapping areas, or compensation owed to land owners or possessors by the holders of mineral rights—are mandated to be resolved by national courts. Moreover, disputes concerning the determination of the significance or insignificance of minerals extracted during the reconnaissance, exploration, evaluation, and appraisal stage for the purpose of assessing the relevant tax must be adjudicated by the minister responsible for the mining sector (Codigo Mineiro, 2011).

It is noteworthy that Angola is a signatory to the Convention on the Recognition and Enforcement of Foreign Arbitral Awards of 1958; therefore, international arbitral awards are recognised and enforceable in Angola, provided they were issued in another contracting state. The convention was enforced in Angola on 4 June 2017. Angola made a reservation pursuant to which convention will only apply to the recognition and enforcement of awards issued in the territory of another contracting state (United Nations, 2017).

Arbitral awards are the final and binding decision made by a sole arbitrator or an arbitral tribunal which resolves, wholly or in part, the dispute submitted to its jurisdiction. The New York Convention is a widely recognised foundational instrument of international arbitration. With the economic growth that has occurred since 2002 and the attraction of foreign

investment, the adoption of arbitration became a necessity. Hence, the Angolan Government continuously made efforts to introduce more arbitration-friendly jurisdiction in 2016, and the Arbitration Act was then enacted as an assurance to investors that future claims would not be determined exclusively by Angolan state courts (United Nations, 2017).

2.3.3 Taxes and Royalties in 2011

The Mining Code provides for special rules on the taxation of mineral activities; the key rules are described below:

a) An industry-specific industrial tax rate of 25% (lower than the general industrial tax rate of 30%).
b) Several additional costs and expenses may be deductible to determine the taxable income, including all the authorised exploration, evaluation, and reconnaissance costs.
c) A surface fee (ranging from US$ 2 to US$ 40 per square kilometre). These figures are doubled if the exploration period is extended.
d) Royalties to be levied on the value of the extracted mineral resource for diamond industry is 5% (Emrich et al., 2020).

2.3.4 Diamond-Trading Model in Mining Code 2011

In Angola, there are currently two bodies acting directly in the diamond marketing process. One entity is the Strategic Superintendence Office of the Diamond Subsector (GASED), and the other entity is SODIAM E.P. The GASED was established in 1999 by Presidential Decree No. 154/17. It serves as a specialised agency with the primary objective of providing direct and immediate support to the Head of State. This institution monitors the policies of the diamond subsector, with the aim of enhancing efficiency in the implementation of government strategy for the geology and mines sector in diamonds (Diario da Republica, 2017).

The GASED's key responsibilities are also to monitor compliance with the Executive's policies for the diamond subsector by public companies. The GASED collaborates closely with the ministers responsible for the geological and mining sector. The public business sector receives and processes the monthly reports to be submitted by public companies, and it participates in the diamond subsector, referring them to the Presidency. This then technically assists the Presidency in the exercise of superintendence over public companies and countries in the diamond subsector (Diario da Republica, 2017).

SODIAM E.P., as explained above in section 2.1., is a governmental institution whose objective is the purchase and sale of diamonds, and it acts as a "Single-Marketing Channel" in accordance with Executive Decree No. 156/06 of the Ministry of Geology and Mines, which means that all diamonds in Angola have to be sold by SODIAM E.P. to their preferential buyers (Codigo Mineiro, 2011).

SODIAM E.P. promotes the sale of the producers' strategic minerals, performing the following functions:

- Organising the sales system, creating the rules of execution of the marketing systems in force, as well as guaranteeing the physical conditions for the efficient participation of buyers and sellers in the market.
- Ensuring the commercial interests of producers through an efficient marketing and sales promotion system.
- Ensuring transaction security by applying rules of conduct, business ethics, and fraud prevention.
- Ensuring that compliance is maintained through appropriate trade measures and off-price stability on the international market.
- Issuing certificates of origin of minerals for export.
- Producing, storing, and disseminating statistical data on the commercialisation of strategic minerals (Diario Da Republica, 2018).

2.4 Exporting of Diamonds in Angola

Exports of strategic minerals are licensed by the competent body of the Ministry of Commerce and the National Customs Service, and the MIREMPET is made aware of the process. The export of strategic minerals must be preceded by evaluation and classification of diamond evaluator experts. In cases where the circumstances or nature of the minerals necessitate it, an internationally renowned evaluator may be hired for this purpose (Codigo Mineiro, 2011). All diamond exports from Angola are required to be accompanied by a Kimberley Certificate, as Angola has been a member of the Kimberley Process (KP) since 2002.

2.5 Amendment of the Mining Code in 2018

In 2017, a new president was elected in Angola, and in a bid to attract more foreign investment and continue growing the diamond mining sector, the Mining Code was amended in 2018. The president unveiled plans in 2018 to reform Angola's diamond industry, aiming to increase production and generate higher revenues.

The reforms included overhauling the regulatory frameworks governing the sector, with a particular focus on the trading model of diamonds (SODIAM E.P.) and the creation of the National Agency for Mineral Resources (ANRM) which was tasked with regulating, inspecting, and promoting diamond mining (Eisenhammer, 2018). The re-organisation of the mineral resources sector in Angola appears necessary considering the need for sustainable management of the mineral resources and the urgency for diversifying the national economy through the increase in non-oil tax revenues in alignment with the National Development Plan 2018–2022 indicated by the government (Grey & Pedro, 2020).

2.5.1 Diamond-Trading Model 2018

As mentioned above, Angola has been implementing profound reform in the mineral resources sector since the appointed leadership post-2017. In this context, significant progress has been achieved in the stability of the regulatory framework and competitiveness from a taxation point of view, applicable to mining activity in the Republic of Angola. Notwithstanding these advances, the economic and financial impact of mining exploration on the life of operations, society, and the state remains unsatisfactory as there is still a lot to be done and improved upon in the diamond industry.

Thus, within the framework of the new political and economic cycle in the country, it was necessary to consolidate the progress achieved thus far by designing a trade policy created with the active and effective participation of the public and private actors of the sector. A detailed study of how the policies and guidelines were done in other countries of reference for diamond mining, trading, and cutting was also considered.

The rough-diamond-trading policy in Angola is referred to using the term “Single Channel”, as described in detail in section 2.3.4. The rough-diamond-trading system has been changed and approved by the minister, and some of the changes are described as follows:

- Mining producers’ companies are permitted to sell up to 60% of their rough diamond production to or from the companies specified in the quota. The remaining 40% will then be divided as follows: 20% to the polishing factory (beneficiation) and 15–20% will be sold to SODIAM E.P.
- Sale by the mining producers to customers with long-term contracts through planned marketing sessions or sight holders.
- Sale by mining producers to stone-cutting polishing factories built in Angola through custom trading sessions planned according to their

specific needs, in agreement with the respective contract and to the legal provision of supply of rough material to these companies.

- Sales by mining producers at public sales, particularly of precious stones, aimed at all interested parties that satisfy the established requirements (Codigo Mineiro, 2018).

Therefore, based on the statement above, it would be ideal that the Kimberley Process Commission should play an active role in promoting the image of Angolan diamonds by discouraging illegal practices such as money laundering, illicit trafficking in diamonds, financing of armed conflicts, and violation of human rights (SODIAM E.P., 2018). Another aspect of the Mining Code 2011 that underwent amendments pertains to foreign investment law in Angola. These changes are significant for the continued improvement of the sector and will be discussed in detail in the following section.

2.5.2 Foreign Investment Law Amended in 2018

It was published in the Gazette Law Order No. 13/20 on 29 May 2020 that the National Bank of Angola had established the foreign exchange regime applicable for the diamond sector, revoking Order No. 2/03 of 28 February 2003. The new regime applies to entities engaged in exploration, cutting, and/or any type of beneficiation from diamonds, as well as their diamond trading (Areias et al., 2020). The key highlights of these orders are as follows:

- Sales of diamonds to foreign non-resident entities, as well as services provided by national entities in the trade of diamonds to foreign entities, must be settled in foreign currency.

- The purchase and sale of diamonds in the national market, foreseen in the order, may be settled in national currency or in foreign currency if agreed upon by the parties involved. This includes transactions

such as purchases by the public trading body to the industrial, semi-industrial, and artisan producers; by the national cutting factories to the industrial producers and to the public trading body; and by the latter to the national cutting factories. However, purchase and sale by jewellery manufacturers to the national cutting factories, and by jewellery shops to jewellery manufacturers, must be settled in national currency (Emrich et al., 2020).

- National entities in the diamond sector may open bank accounts abroad, including escrow accounts for debt contracted abroad, provided that they are previously authorised by the National Bank of Angola.

- The entities in the diamond sector shall open accounts in both national and foreign currency with a bank domiciled in the country. The account in foreign currency may be used for making payments abroad, including those to foreign shareholders and others that are required to be in foreign currency.

- The licensing and liquidation of capital and goods operations are regulated by existing legislation. The contracting of financing abroad for projects with the intention of exportation is not subject to the authorisation of the National Bank of Angola.

- Payments of goods and services to national providers/suppliers must be settled in national currency.

- The trading and sale of foreign currency by industrial producers, the public diamond-trading body of Angola, and the national concessionaire must be carried out under the terms of Instruction No. 2/20 of 30 March 2020 (which establishes that the foreign currency transaction must be traded through Foreign Exchange Electronic

Trade Negotiation Platform [FXGO] or the Bloomberg trading platform) (Fialho & Viana, 2020).

Under the same law, for the purpose of granting exceptional tax and customs benefits to investment projects, the country was divided into development zones according to the 18 provinces. The zones selected aimed to incentivise investments throughout the country and are described below:

a) Zone A – Luanda Province and the headquarter municipalities of the Provinces of Benguela, Huíla, and the Municipality of Lobito.
b) Zone B – Provinces of Bié, Bengo, Cuanza Norte, Cuanza Sul, Huambo, Namibe, and other municipalities of the Provinces of Benguela and Huíla.
c) Zone C – Provinces of Cuando-Cubango, Cunene, Lunda Norte, Lunda Sul, Malange, Moxico, Uíge, and from Zaire.
d) Zone D – Province of Cabinda (Diario da Republica, 2018).

2.5.3 Agency National Mineral Resource (ANRM)

Angola has created a National Mineral Resource Agency (ANRM)—a public institution under the Presidential Decree No. 12/18 of 15 January 2018, based on a new vision of the mining sector. The agency is responsible for leading the mining sector governance paradigm to ensure that Angola complies with the international standards and guidelines. It is subjected to the supervision of the finance department, MIREMPET (Grey & Pedro, 2020).

This agency reflects the government's efforts to restructure the mining industry. The ANRM will, among other things, regulate the mining sector, monitor the mineral and geological activities, promote the Angolan Brand, negotiate contracts on behalf of the government, promote concessions tenders based on transparency, and oversee all mineral resources in the

country with the exception of hydrocarbons (Grey & Pedro, 2020). Another fundamental aspect of the ANRM is to ensure that the Mining Code and legal framework is implemented throughout the mining industry in Angola.

The Ministry of Finance shall ensure the initial allocation of the Budgetary Unit of the ANRM for its initial operation. In April 2020, the Council of Ministers approved the National Minerals Resources Agency, which now holds regulatory authority over the entire mining sector. The agency will also monitor the diamond industry and oversee licensing and regulation. ENDIAMA E.P. continues to play an important role in the diamond industry as a concessionaire, which is now limited to mining operations and no longer concessionaries. The role of ENDIAMA E.P. is as an operating mining company in Angola.

SODIAM E.P. becomes the public commercialisation body of the strategic minerals, and this function itself is a project which is contained in the new governance model. The creation of the ANRM removes the dual function of ENDIAMA E.P., and now there is a better structure of the functions of each institution. The role of the ministry begins to focus mainly on the development of policies, strategies, and coordination of the sector, while the agency begins to assume a regulatory and technical function of the granting of the mining licenses.

This has resolved some issues that were affecting the development of the mining sector, including conflicts of interest and state influence in the economy. Currently, ENDIAMA E.P. is undergoing a restructuring process and may be transformed into a public limited company (Grey & Pedro, 2020).

2.6 Kimberley Certificate in Angola

The Kimberley Process (KP) began when Southern African diamond-producing states met in Kimberley, South Africa, in May 2000. Discussions included ways to halt the trade in conflict diamonds and ensure that diamond purchases were not financing violence perpetrated by rebel movements and their allies aimed at undermining legitimate government (Kimberley Process, 2024).

In December 2000, the United Nations General Assembly adopted a landmark resolution supporting the creation of an international certification scheme for rough diamonds. By November 2002, negotiations between governments, the international diamond industry, and civil society organisations resulted in the creation of the Kimberley Process Certification Scheme (KPCS). The KPCS documents set out the requirements for controlling the production and trade of rough diamonds (Kimberley Process, 2024).

The KPCS was put into place in 2003 when participating countries like Angola began implementing its rules (Chambel et al., 2013). Table 1 below shows the amount of annual rough diamond certificates the KPCS issued during Angola's export of its mines' production, with a total of 2 741 certificates. The total amount of diamond production output that was exported from Angola from 2004 to 2020 was 154.1 million carats (Refer to Table 5).

Table 1: Kimberley Process Certificate (KPC) of rough diamonds exported from Angola (Kimberley Process [KP], 2024).

Year (Angola Mines)	Rough Export
2004	**120**
2005	**158**
2006	**175**
2007	**174**
2008	**185**
2009	**146**
2010	**137**
2011	**156**
2012	**153**
2013	**175**
2014	**206**
2015	**186**
2016	**148**
2017	**174**
2018	**142**
2019	**149**
2020	**157**
Total	**2741**

2.7 Overview of Angolan Economics

Angola was regarded as a crown jewel for the Portuguese Government during the colonial period. The economy grew rapidly in the 1970s, with commodities such as coffee, diamonds, and petroleum being the leading exports. The growth led to an unbalanced situation, as most of the profit was concentrated in the hands of the small settler class (the colonials), while most of the population was relegated to forced labour projects or compelled to sell their agricultural goods at low prices. This imbalance resulted in an inequality of income, and opportunity played a significant role in the rise of the nationalist movement (Goncalves, 2010).

After independence in 1975, the Angolan economy was crippled by the post-independence civil war between the MPLA and UNITA that lasted for 27 years. The civil war displaced much of the population, ruined vegetation, and disrupted transportation. The defence force in the late 1980s spent almost half of the national budget, while the annual rate inflation exceeded 900% in 1994 and more than 2 500% in 1995. One of the biggest impacts of the war was the shortage of food, which either needed to be imported or provided by foreign aid organisations from the mid-1980s to the end of the civil war in 2002 (De Boeck, 2001).

The petroleum industry was not nationalised or regulated and was protected from warfare. It managed to produce regular income and employed few locals. This industry managed to invest a little in the Angolan economy, of which most of the royalties went to the state.

As explained above in section 2.2, UNITA then retook some diamond regions in the mid- to late 1990s and controlled them until early 2002, when UNITA's leader was killed. One of the key phenomena that had caused great social strife was providing an important factor for integration. Vast numbers of displaced persons (some say as many as 4 million by the mid-1990s) experienced one of the greatest tragedies of the war that ensued after the 1992 elections. Community displacements were forced into greater contact and gave rise to a whole generation born far from ancestral

homelands. They also forced around two-thirds of the population to crowd into towns and suburbs (De Boeck, 2001).

2.7.1 Gross Domestic Product Growth Rate in Angola

Angola’s GDP growth rate in the early part of the 1990s did not fare well, but the economy picked up significantly at the beginning of 1995 due to Angola’s natural resource exports—oil revenues for 1996 exceeded US$ 4 billion, and diamond revenues exceeded US$ 850 million. However, the growth could not have made the poor rich enough unless public policy was pro-poor and unless peace prevailed. Angola's real annual GDP growth rate averaged 6.5% for 1995-1999, yet Angola's poor saw very few benefits because revenue was not spent on social services (Goncalves, 2010)

Angola’s unemployment rate throughout the 1990s was not documented, but it was likely very high given the fact that Angola was rated the poorest out of 14 countries in the Southern African region in 1998, with a poverty rate of 54.7%. Although there was substantial foreign direct investment in the oil and diamond sectors during this decade, these industries were often capital intensive, requiring few skilled personnel for their operation (Goncalves, 2010).

In Lunda Norte, the province known for diamond mines, men unable to find work became ‘*Garimpeiros*’, which were workers who searched for alluvial diamonds by sifting gravel by hand. This large informal working sector operated without the benefit of protective employment laws, resulting in persistent human rights violations and precarious economic conditions (De Boeck, 2001).

Economic growth accelerated from 2002, but in 2014, this positive trend was interrupted by the prolonged fall in world oil prices, generating high budget deficits and a shortage of foreign currency following the sharp depreciation of the domestic currency and upward pressure on the cost of living. Consequently, the economy recorded sustained negative real GDP growth,

from 4.8% in 2014 to -1.5% in 2019. In the years 2016, 2017, 2018, and 2019, GDP growth fell -2.6%, -0.2%, -1.2%, and -1.5% respectively. Inflation increased from 7.3% in 2014 to a peak of 30.7% in 2016, before dipping to 17.1% in 2019 (Instituto Nacional de Estatistica, 2020a). According to National Statistics Authority (INE) estimates, inflation in December 2020 was 25.1%, an 8.2 percentage point increase from December 2019 (Instituto Nacional de Estatistica, 2020d).

According to the International Monetary Fund (IMF), the overall fiscal balance worsened from 3.8% GDP in 2021 to 1.7% GDP in 2022, following higher-than-budgeted capital expenditure and higher-than-expected fuel subsidy costs, and it was also expected to be negative in 2023 (-0.4%). The public debt continued to drop from 86.4% GDP in 2021 to 56.6% GDP in 2022, and this reduction is expected to continue dropping until 2024 (World Bank, 2023).

The rate of inflation decreased from 25.8% in 2021 to 21.7% in 2022, and it is forecasted to further decline in 2023 and 2024 respectively. The 2023 budget reflected the commitment to prudent budget management in order to ensure inclusive growth, allocation for health and education, and a fight against poverty (World Bank, 2023).

2.8 Social Projects' Contribution to the Diamond Mine Industry in Angola

The Brilhante Foundation was established by ENDIAMA E.P. on October 24, 1990, under the name of the Mosala Foundation, with the name change being implemented on April 7, 2005. The foundation assumed the social face of the diamond subsector responsible for sustainable development of the communities surrounding the diamond companies. The aim of this foundation was to respond the challenge of the Angolan Executive's commitment to improving the standard of living conditions of its citizens (Fundacao Brilhante, 2024).

Since the creation of the Brilhante Foundation, the headquarters and management structure were based in Luanda—the capital city—which did not allow, in some circumstances, direct and closer consultation and monitoring of local communities, especially those surrounding mining areas. Hence, the communication with communities, organised civil society, local authorities, and others was inefficient, leading to redundancy of projects, dispersion of financial and human resources, as well as the absence of a systemic policy of prior studies (Fundacao Brillhante, 2024).

The Brilhante Foundation's social projects, until 2017, supported policy focused more on welfare and not on sustainable development and income generation actions for communities. On April 21, 2021, the Brilhante Foundation transferred its headquarters to the city of Dundo in the Lunda Norte province to be closer to the resident communities around most of the diamond exploration companies operating in the Angolan market. Simultaneously, a subsidiary has been opened in the Lunda Sul Province (Saurimo), while projection to expand into other provinces are currently underway in the Moxico province (Relatorio Interno, 2022).

Investments in social responsibility projects done within the diamond mining industry are illustrated in Table 2, demonstrating the areas of intervention (health, education, economic development, environment, culture, and sport) and the amount spent each year.

Table 2: Investments in social responsibility projects 2016/2017 (Relatorio Interno, 2022)

Area of Intervention	2016	2017
Health	436 450,800	875 531,97
Education	892670,540	540 072,61
Economic development	256 700,90	629 012,80
Environment		79 246,18
Culture	140 434,76	1 667,00
Sport	68 300,09	178 481,12
Total Geral (USD)	**1 794 557,090**	**2 304 011,68**

In 2018, because of the Executive's new strategy, and perhaps the changes and adjustment of the new Strategic Plan for the diamond subsector, it was noted that there was a mismatch between the Brilhante Foundation's policy and methodology of action and the alignment of the Executive's guidelines. Thereafter, a Restructuring Committee of the Brilhante Foundation was constituted, which involved the participation of companies operating in the diamond subsector, namely Sociedade Mineira de Catoca, Sociedade Mineira do Cuango, Sociedaded Mineira Chitotolo, Clínica Sagrada Esperança, ALFA 5, and Enditrade. Table 3 summarises the expenditure in the main actions and activities in the fields of education, health, sports, community development, culture, literature, and punctual assistance (Fundacao Brilhante, 2024).

Table 3: Investments in social responsibility projects 2018/2022 (Relatorio Interno, 2022)

Area of Intervention	2018	2019	2020	2021	2022 (In Trimestre)	TOTAL
Health	319 740,85	164 518,28	16 779 419,84	878 400,10		17 263 678,97
Education	1 294 754,02	1 157 556,43	666 672,81	571 021,26	85 653,18	3 118 983,26
Economic development	395 764,81	963 578,32	640 125,22	399 749,84	180 000,00	1 999 468,35
Culture	371 747,76	1 390 012,17	281 192,62	145 200,00		2 042 952,55
Sport	439 665,32	405 981,12	211 200,00	135 125,90		1 056 846,44
Total Geral (USD)	**2 821 672,76**	**4 081 646,32**	**18 578 610,49**			**25 481 929,57**

3 RESEARCH APPROACH

3.1 Introduction to the Research Methods

The methodology used in this research was a qualitative approach. This approach involved data derived from primary and secondary sources. The primary data included interviews with the chief executive officers of governmental institutions such ANRM, a consultant of SODIAM E.P., the head of the personnel management and labor litigation department of ENDIAMA E.P., and directors and managers from different diamond mines in Angola. The secondary data sources were yielded from desktop studies and analysis of the current data available, including books, journals, abstracts, reports from government gazettes and the Geological Institute of Angola (IGEO), and data from multiple databases and websites available for public use.

3.2 Data Collection Process

By collecting data from both primary and secondary sources, the author was able to develop a comprehensive and well-rounded understanding of the diamond mining sector, mining policies, and legal framework in Angola. The other key aspect was to assess the contribution of diamond mining to socio-economic development in the country. The details of the methodologies are as follows:

- Desktop studies and analyses of the diamond industry legislation data available from the relevant institutions were initially conducted by the author.
- A comprehensive literature review was conducted, encompassing published and unpublished data from secondary sources, including books, journals, abstracts, and reports from the government gazette.

- The Kimberley Process (KP) website's statistical data was collected by the author to gather information on the export of rough diamonds that Angola had produced since joining the institution in 2003.
- Statistical information on the number of projects, mines, and employee data was also collected from the official website of ENDIAMA E.P. in 2023. Different graphs from the statistical data collected from the ENDIAMA E.P. website were then formulated by the author (Refer to section 4.1.1).
- The primary data were collected in two different phases. Phase one entailed the conducting of interviews by the author with different representatives from governmental institutions and the private diamond sector. The interviews were conducted from 2022 to 2024 in Luanda, Angola. The interviewees were the Chief Executive Officer (CEO) of ANRM , directors for production of Catoca Mine, chief geologist of Catoca Mine, the head of the personnel management and labor litigation department of ENDIAMA E.P., a consultant of SODIAM, and a director from Solo Crustal diamond mine in Angola. A total of 10 people were interviewed, but only six interviewees were documented in this report.
- A pre-approval and a consent form from the University of the Witwatersrand was signed by each interviewee, and they gave consent to use the information shared in the report. Each interview was one hour long, and the transcripts are provided in Appendix 1.

- The second phase of data collection entailed a site visit by the author in July 2022 of Catoca mine, Luele pipe, and the Saurimo Diamond Pole at Lunda Sul Province in Angola. During these visits, the author had the opportunity to visit operating mines (e.g. Catoca Mine) and the Saurimo Development Pole—which had five operating polishing factories—and observe the ongoing construction of other factories (Figure 2).

The sampling method used in this project was purposive sampling. This type of sampling involved the author's expertise in selecting a sample that is most useful to the purpose of the project. Therefore, this methodology helped in ensuring that a quality sample was selected, thereby increasing the reliability and trustworthiness of the findings (Nyimbili & Nyimbili, 2024).

The sampling methodology described above was selected because it was important to understand and analyse the different aspects and strategies that those governmental and private institutions had regarding the diamond subsector. These institutions have made a considerable socio-economic contribution within the sector in Angola for many years.

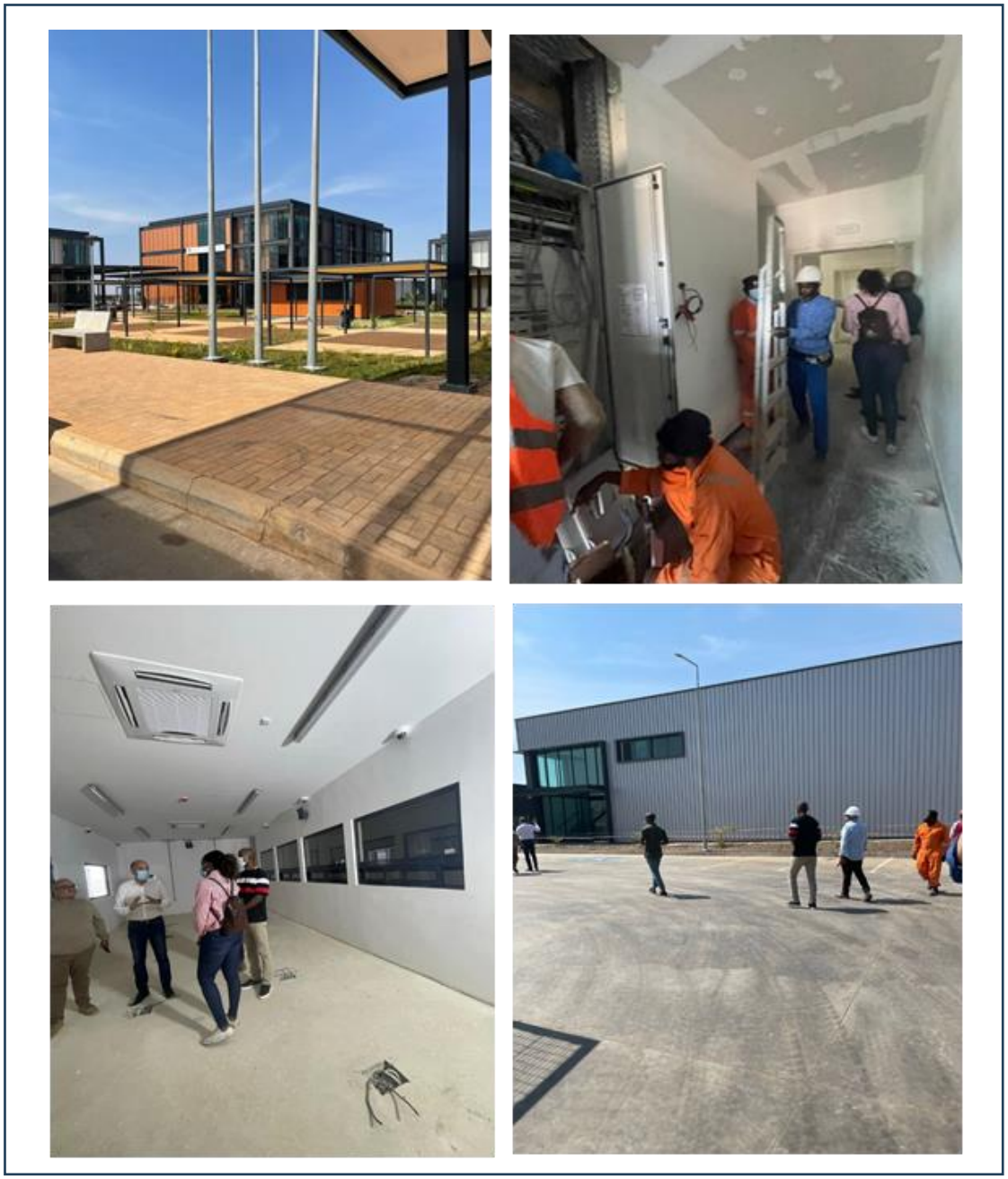


Figure 2: Site visit at the Saurimo Development Pole located in Lunda Sul Province, Angola, in 2022.

3.3 Data Validation Process

Data validation is the process of checking the accuracy and quality of source data before using, importing, or otherwise processing the data for a given purpose or study. This process ensures that data is accurate and of a high quality by guaranteeing that the plausibility of data input and storage is accomplished by, in turn, performing numerous checks into the program or report (Van der Loo & De Jonge, 2020).

The data validation process for this project was conducted in three different ways, and is described below:

- The questionnaire was done by the author using Microsoft Word after an in-depth study on the literature review of the Angolan diamond mining industry.
- The interviewees were questioned in Angola, and some of the interviews were recorded using a smartphone recorder. The data collected was then transferred into an Excel spreadsheet, in which there were ‘question’ and ‘answer’ columns (Refer to Appendix 1).
- The statistics regarding the number of national and foreign employees and participation of ENDIAMA E.P. in the mines, the Kimberley Certificate (KC), and Gross Domestic Product (GDP) were sourced from their respective official websites. Thereafter, data collected from the websites were transferred to an Excel spreadsheet, creating tables (refer to Tables 1, 4, & 5) and graphs (refer to Figures 4, 5, 6, 7, 8, 9, & 10) that were used by the author for the analyses of the Angola subsector.

  The journal and gazette decree data used in this report were all official government documents. The statistical data used in this report was all collected from the governmental institutions’ official websites. All the data used in this report was validated by the author throughout

the report-writing process by engaging with the institution to make sure that all the information shared in this report is accurate.

3.4 Data Analysis Approach

The data analysis approach in the report was based on the data collected from primary and secondary sources, as described in subsections 3.2. and 3.3. The first phase was done based on data review of secondary sources (e.g., literature of journals, cabinet gazettes, published legal governmental documents, etc). The mining policies and legal framework of the Angolan diamond mining sector was analysed in detail. A diagram of different phases of the diamond subsector was generated to showcase and understand mining policies and legal framework evolution of the diamond mining sector since the discovery of the first diamond in Angola (Refer to Figure 11).

The author also reviewed aspects, in the literature review, of the impact of the diamond industry on socio-economic contribution in the surrounding communities and country. In the communities, the approach was contribution of diamonds in terms of monetary value in health, education, economic development, culture, and sport, as described in detail in sections 2.7 and 2.8. Graphs were generated, as described in subsection 3.2, and a comparative analysis of the annual rough diamond export and revenue percentage of the diamond industry to the government budget was done for different years to assess the impact on the GDP.

In the second phase, the author based the analysis on the interviews done with members of the relevant private and governmental institutions, reviewing the challenges of the diamond subsector and a comparison of where the industry is heading. The author also visited the different diamond mines and factories to make sure that the interviewees' answers reflected the reality on the ground. This information gave an insight into

understanding the advantages and challenges of beneficiation and growth in the subsector.

3.5 Challenges and Limitations

The limitations and challenges encountered during the writing of this report was access to some of the statistical data within the governmental institutions. Hence, some of the data used was taken from the official websites. The site visits were costly, as there was a need for the interviews to be done in person, one-on-one, and the author had to travel to Angola to conduct them as such. Another challenge faced by the author was the availability of the CEO of the governmental institution at the time of the interview. Therefore, some of this interview data will be not shared in the report, as there was no consent obtained to do so.

The author assumes that all the data is accurate but acknowledges that some of the data may be outdated. The author attempted to obtain information directly from the different institutions without success.

3.6 Ethical Considerations

The report was done using a non-biased, objective approach. A pre-approval and consent form was signed by every interviewee to ensure that the information shared was accurate and that they were aware of the report's intention and purpose. The Ethics Certificate number for this project is EMINN/2022/46.

3.7 Research Validity and Reliability

Reliability and validity are concepts used to evaluate the quality of research. They indicate how well a method, technique, or test measures something. Reliability refers to the consistency of a measure, and validity refers to the accuracy of a measure. Reliability and validity are conceptualised as

trustworthiness, rigor, and quality in a qualitative paradigm (Golafshani, 2003).

It was important for data in the research findings to be reliable and valid. Group meetings and sample bias were avoided to ensure the reliability and validity of the sample. The study applied a qualitative approach analysis to assess the data. A Microsoft Excel package was used to produce the data collected from the various websites and generate the graphs to eliminate human error and ensure validity. Two questionnaires that were completed incorrectly or that were not pre-approved were discarded. Statistical data taken from the World Bank, ENDIAMA E.P., and KPCS websites were used in the analysis of the study.

4 DATA FOR THE STUDY

4.1 ENDIAMA E.P.'s Participation in Mining Projects in Angola

The Lunda Norte and Lunda Sul provinces are known as the diamond fields in Angola (Figure 3). The primary kimberlite pipe mines and alluvial mines are all being explored, and ENDIAMA E.P. has shareholding on each project, in addition to some mines where they have 100% ownership.

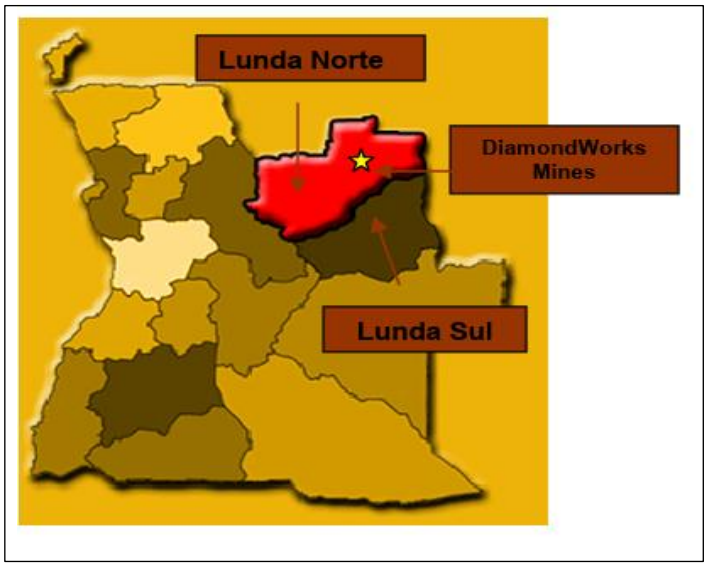


Figure 3: The diamond fields in the Lunda Norte and Lunda Sul provinces in Angola (ENDIAMA, 2023).

The participation of ENDIAMA E. P. in the diamond mine projects in Angola is illustrated in Table 4. The data showed 19 mining projects, of which 14 are alluvial mines (namely Chitotolo, Cuango, Luminas, Somiluana, Calonda, Uari Calonda, Lulo, Luachimo, Tchegi, Mucuanza, Furi, Sangamina, Luachimba, and Luembe), and five are kimberlite mines (namely Sociedade minera do Catoca, Camutue, Lunhinga, Luele, and Cassango) (Refer to Figure 1). The data also showed a total of 9 515 employees and a mixture of national and foreign workers, alongside the average carats per month produced by the mines (Figure 4 and Figure 5). It is noticeable in the data that Catoca mine is the biggest employer out of

the mines in Angola, with close 2 152 workers (Refer to Table 4). Another critical piece of information from the data is that Luele mine has already produced 1 million carats and has employed 1 541 workers.

Table 4: ENDIAMA E.P.'s shareholding in the diamond mines in Angola (ENDIAMA, 2023).

Name	Location	Type of Mine	Human Capital	Participation of ENDIAMA	Average Production
Sociedade M	Lunda Sul-Sa	Kimberlite	National: 2152	41%	600.000 Carats
do Catoca			Foreigners: 192		
Camutué	Lunda Norte-	Kimberlite	National: 564	25%	6000 Carats
			Foreigners: 103		
Chitotolo	Lunda Norte	Alluvial	National: 791	45%	20.000 Carats
			Foreigners: 131		
Cuango	Lunda Norte	Alluvial	National: 788	41%	18.000 Carats
			Foreigners: 126		
Luminas	Lunda Norte	Alluvial	National: 280	47%	132.150 Carats
			Foreigners: 10		
Somiluana	Lunda Norte	Alluvial	National: 613	39%	12.000 Carats
			Foreigners: 42		
Calonda	Lunda Norte	Alluvial	National: 84	50%	1500 Carats
			Foreigners: 12		
Uari Cambar	Lunda Norte-	Alluvial	National: 302	51%	4000 Carats
	Lucapa		Foreigners: 07		
Lulo	Lunda Norte	Alluvial	National: 261	32%	1500 Carats
			Foreigners: 44		
Luachimo	Lunda Norte	Alluvial	National: 351	20%	4000 Carats
			Foreigners: 22		
Tchegi	Lunda Norte	Alluvial	National: 86	25%	350 Carats
			Foreigners: 1		
Lunhinga	Lunda Norte	Kimberlite	371	92,50%	162.751,00 Carats
Luaxe	Saurimo - Lu	Kimberlite	1541	13%	1.000.000 Carats
Mucuanza (C	Cuanza Sul/M	Alluvial	------	33%	------
Furi	Lunda Norte	Alluvial	230	20%	6800 Carats
Cassango (K	Xá Muteba -	Kimberlite	------	50%	------
Sangamina	Lunda-Norte	Alluvial	14	92,50%	455.243,46 Carats
Luachimba	Lunda-Norte	Alluvial	7	100%	455.243,46 Carats
Luembe	Lunda-Norte	Alluvial	390	51,67%	138.064 Carats

Figure 4 below illustrates the percentage of ENDIAMA E.P.'s participation in the diamond mine industry, and those percentages range from 20% to 92%. It is important to note that this data might be outdated and does not represent the entire spectrum of the mines in the country. Nevertheless, it constitutes a substantial and considerate number of operating mines. The factors that determine the percentage share were based on negotiations

that the partners of these mines had and agreed upon at the time according to the relevant legislation (Refer to section 2.2 in the report).

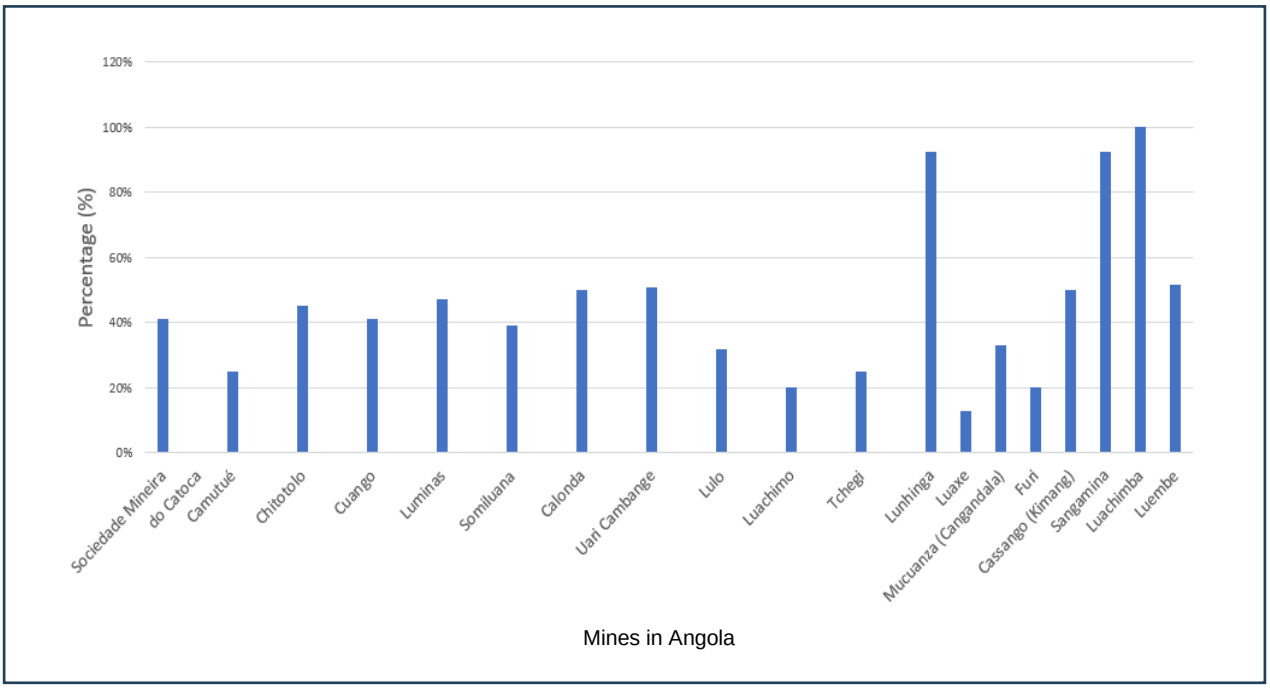


Figure 4: Diamond mines in Angola where ENDIAMA E.P. has shares, generated from Table 4 (ENDIAMA, 2023).

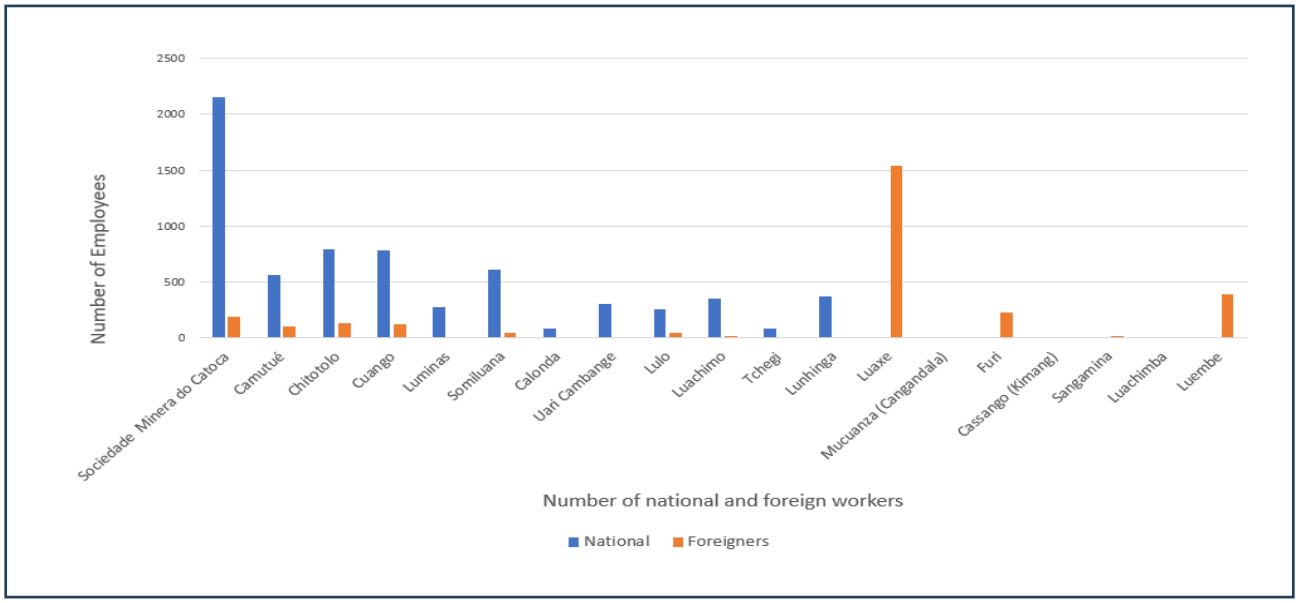


Figure 5: The number of national and foreign employees in the diamond mining industry, generated from Table 4 (ENDIAMA, 2023).

It is critical to note that from the available data described above, Furi and Catoca mines are producing approximately 6 000 carats per month, followed by Furi Luachimo and Uari with 4 000 carats, and Lulo with 1 500 carats per month. Furthermore, it is important to highlight that the new mine, Luele pipe, founded by Catoca, has already produced 1 million carats to date. Chitotolo, Luo, and others are smaller producers, but they are equally important to the sector (Figure 6).

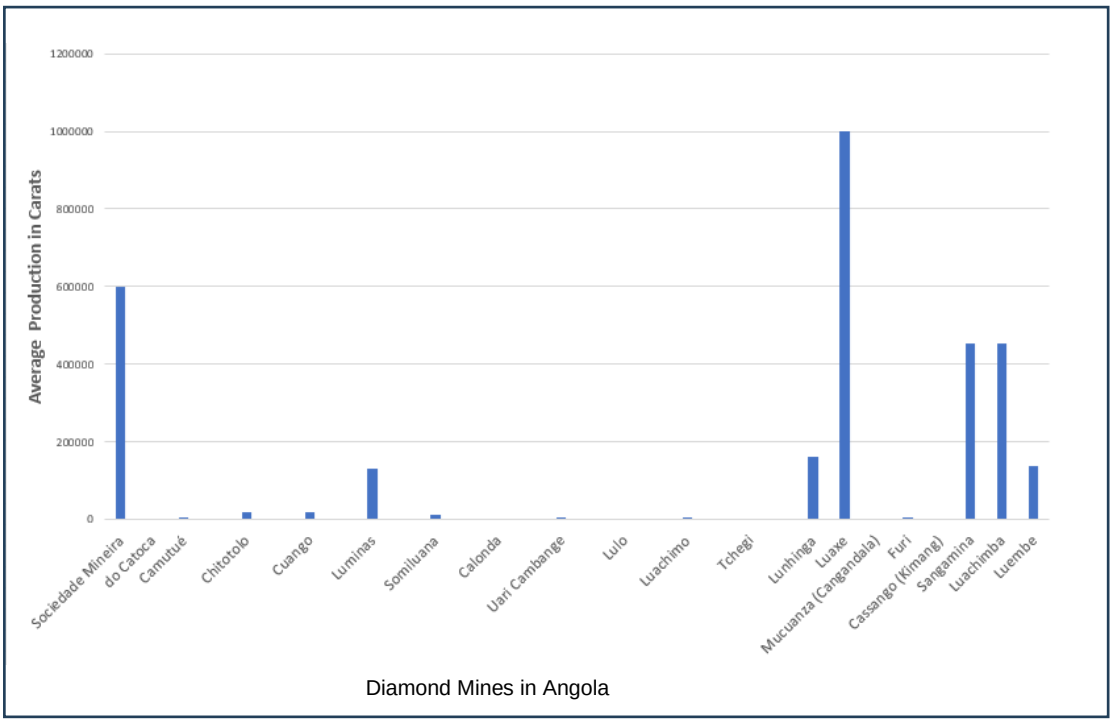


Figure 6: Average diamond mine production based on ENDIAMA E. P's. official website, generated from Table 4 (ENDIAMA, 2023).

4.2 Angolan Exports of Rough Diamonds from the Mining Industry

Data pertaining to the Angolan exports of rough diamonds, illustrated in Table 5 below, was collected from the official KPCS website. The data presents annual statistics for rough diamond export production and export revenue from 2004 to 2020 (Figure 8), and 2004 to 2021 (Figure 7). The data reveals consistent production ranging from 6–8 million carats

throughout the years. However, based on the data, in 2015, Angola achieved its highest export production, even though it only produced approximately 9.1 million carats annually, as indicated in the statistics (Figure 7).

Table 5: Angola's annual rough diamond export summary (Kimberley Process, 2024)

Year	Volume (cts)	Value (USD)	USD/ct
2004	6 146 361,19	$788 138 694,08	$128,23
2005	7 079 120,65	$1 089 170 955,67	$153,86
2006	9 175 060,73	$1 132 478 825,77	$123,43
2007	8 520 485,75	$1 129 774 806,55	$132,60
2008	7 389 133,63	$995 408 419,35	$134,71
2009	9 709 105,65	$791 100 316,60	$81,48
2010	7 170 727,93	$824 376 765,41	$114,96
2011	8 563 568,33	$1 149 702 849,86	$134,26
2012	9 198 716,42	$1 145 738 754,14	$124,55
2013	12 461 834,32	$2 234 813 337,20	$179,33
2014	9 028 493,10	$1 319 323 314,92	$146,13
2015	15 857 938,86	$1 296 728 287,10	$81,77
2016	8 552 423,60	$1 034 602 768,36	$120,97

2017	7 993 438,25	$1 151 925 761,75	$144,11
2018	10 186 477,05	$1 176 287 229,69	$115,48
2019	8 534 632,52	$1 214 791 162,89	$142,34
2020	8 533 041,27	$1 059 374 090,31	$124,15
Total	**154100559,3**	**$19 533 736 339,65**	**$128,24**

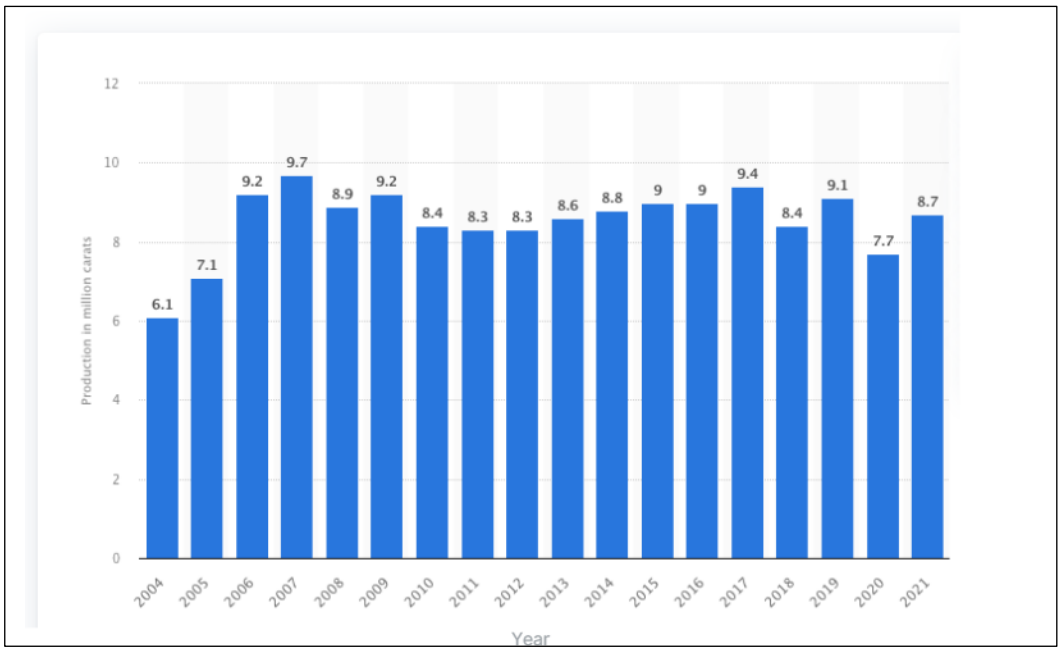


Figure 7: Angola's rough diamond production from 2004 to 2021 (World Bank, 2022)

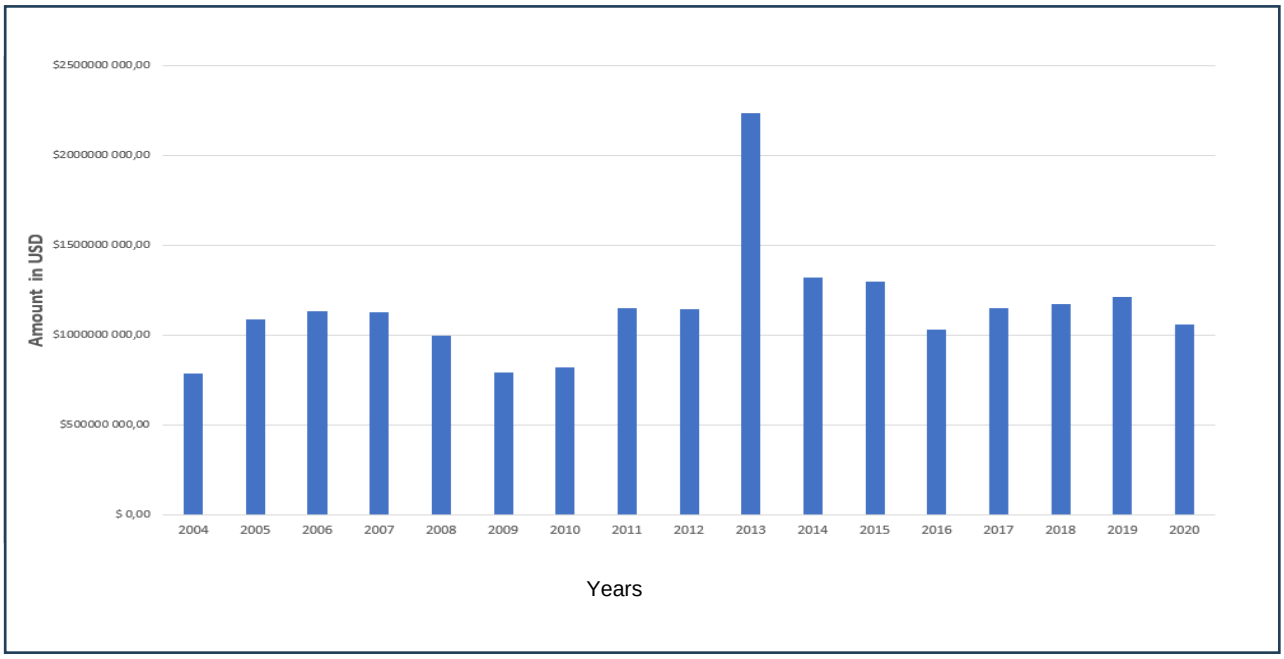


Figure 8: Export revenue for rough diamonds from 2004 to 2020 (World Bank, 2021).

4.3 Angolan Rough Diamonds' Contribution to the Government Revenue/Budget

Angolan rough diamonds' export value contribution to the GDP annually is illustrated below in Table 6. Unfortunately, due to the limited information available, the annual budgeted contribution of the diamond mining sector on the GDP is only from the years 2010 to 2021 (Figure 9). Figure 9 shows the upward trend of the diamond mining sector's contribution from 2010 to 2011, after which there was a decrease but a still stable revenue for the past nine years.

There is also information on the GDP for the past 40 years, which was collected from the International Monetary Fund's (IMF) website (Figure 10). This figure shows the annual GDP percentage profit of Angola for the past 40 years.

Table 6: Diamond revenue in Angola from 2010 to 2021 (ENDIAMA, 2023).

Year	Diamond Revenue (in billions of USD)	% of Total Government Revenue	% of Total Government Budget
2010	2.8	18.7	11.5
2011	3.3	19.3	11.1
2012	1.3	5.5	2.9
2013	1.4	5.3	3.3
2014	1.3	4.7	3.0
2015	1.1	4.4	2.8
2016	1.1	4.6	2.8
2017	1.2	4.6	2.9
2018	1.3	5.6	3.3
2019	1.3	8.6	5.0
2020	0.8	5.6	2.9
2021	1.2	8.0	4.0
2022	N/A*	N/A*	N/A*

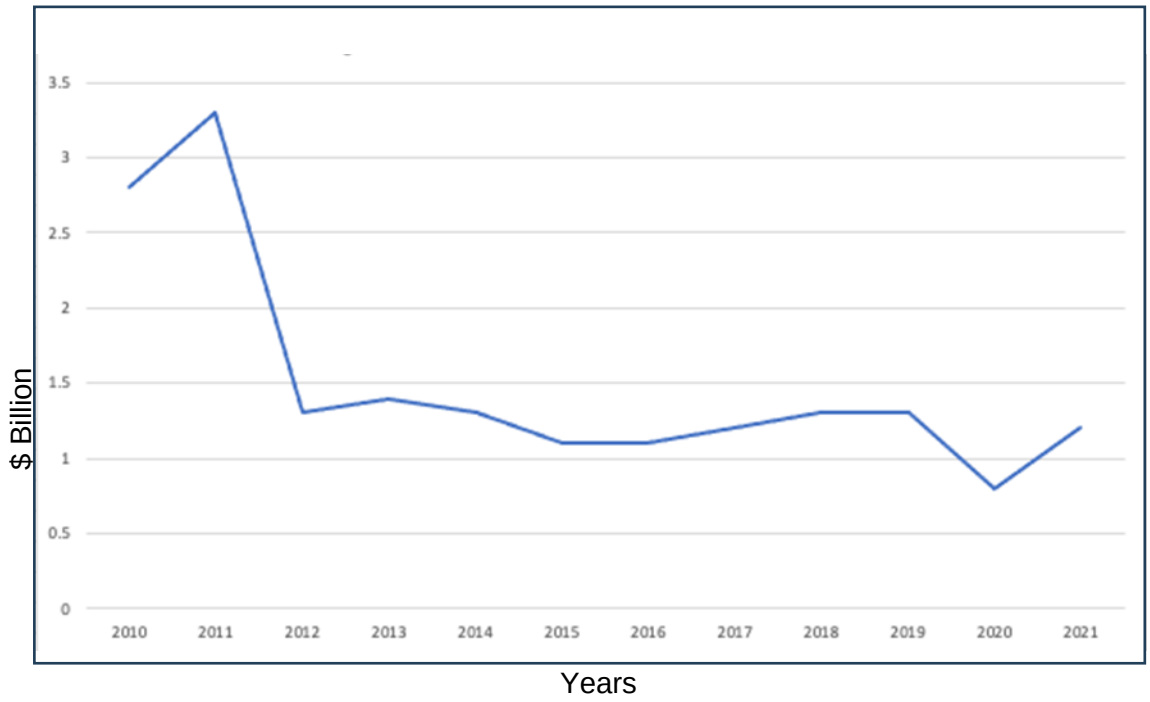


Figure 9: Angolan diamond revenue in billions of US dollars from 2010 to 2020 (World Bank, 2020).

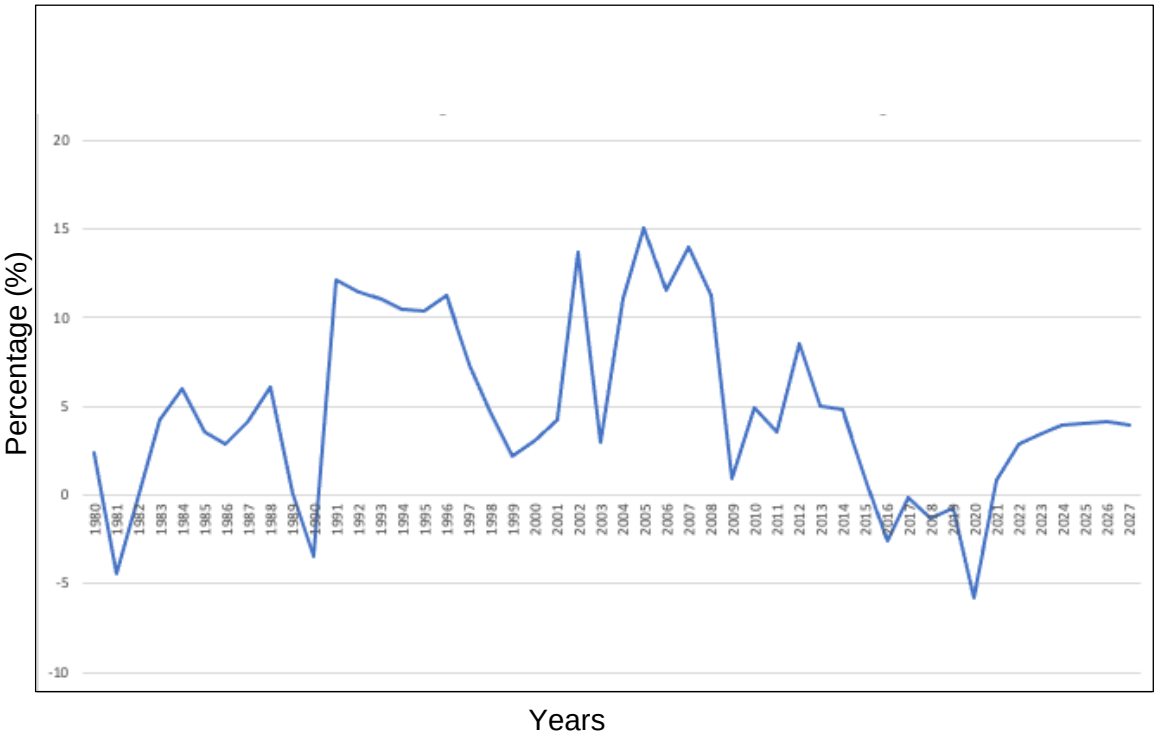


Figure 10: Angola's Gross Domestic Product from 1980 to 2022 (World Bank, 2020).

5 ANALYSIS AND FINDINGS

5.1 Introduction

From the literature review, interviews, and statistical data collected, it is evident that there has been an evolution in the mining legislation from the colonial era to the present day. From this study, it is evident that there are four critical stages in the Angolan diamond mining industry that have had a significant impact on the country's socio-economic status. Below is a diagram that the author developed from this study (Figure 11). The stages are described as follows:

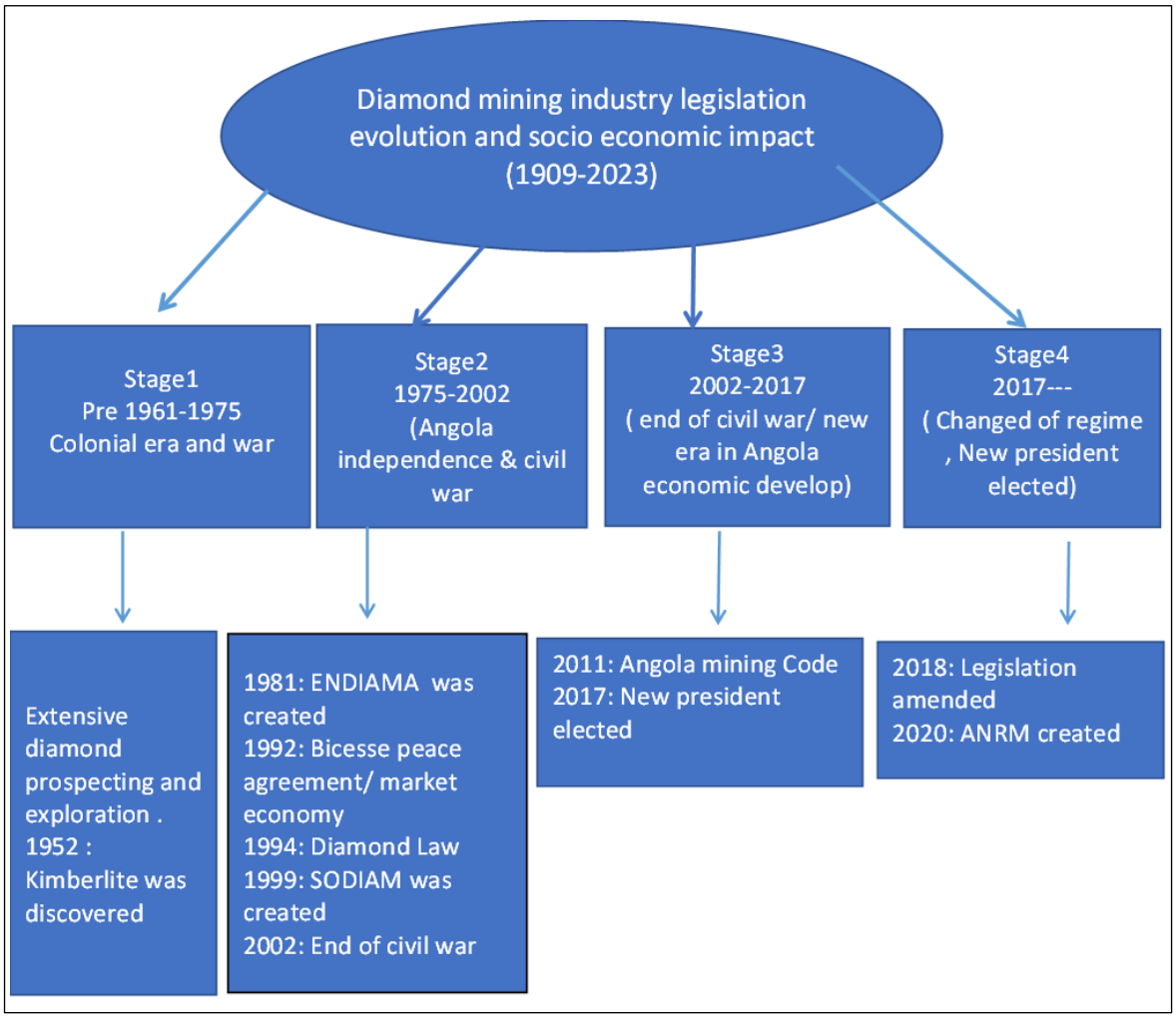


Figure 11: Diamond mining industry evolution stages in Angola

Stage 1: Evolution of the legislation of the diamond mining industry before 1961–1975

- 1909–1917: Discovery of diamonds in Angola and the prospecting and exploration done by Belgium during colonial times.

- 1917: The constitution of the Angolan Diamond Company (DIAMANG), with the aim of discovering and exploring diamantiferous deposits in Angola.

- 1921: A contract for the consolidation of rights was negotiated between the company and the state, permanently associating both parties. This arrangement allowed for the demarcated concession of 1 025 600 square kilometres of Angolan territory. The state received 40% of the net profits and retained 5% of the shareholder position.

- 1952: The first kimberlite, Camafuca-Camazambo, was discovered.

- 1961: The fight for independence broke out in Angola against the Portuguese colonial rule.

- 1973–1974: At that time, DIAMANG, with 12 geologists, discovered another 383 kimberlitic bodies in the Lufete hydrographic basin, of which 104 kimberlitic locations were discovered due to the alluvial prospecting work done in 1973.

- 1975: Angola gained independence.

In stage 1, Angola was a Portuguese overseas territory for almost 400 years, until 1975 when it became an independent state. During this period, the legal framework in Angola, including arbitration, was the same one in place in Portugal. Angola experienced a significant socio-economic impact stemming from the discovery of the first diamond sample,

leading to the identification of various kimberlite pipe mines (such as Catoca, Camafuca-Camazambo, Sangamina, et cetera) and the development of infrastructure and roads (Chambel et al., 2013). During the colonial era, Angola held strategic importance for the colonisers due to its considerable mineral potential. Although development was advanced in Angola at the time, it is important to note that the native population may not have directly reaped the social benefits (Goncalves, 2010). Scientific investigations were fundamental during that period, and to this day, most of the geological studies and discoveries of kimberlitic bodies, now identified as the Catoca mine, were made in the early 1900s. Unfortunately, there is limited information available in the literature regarding the legislation framework of that time.

Stage 2: Evolution of the legislation of the diamond mining industry from 1975–2002

- 1975: Angola gained independence, and the civil war began among different political parties, namely the Popular Movement for Liberation of Angola (MPLA), National Union for Total Independence of Angola (UNITA), and National Front for the Liberation of Angola (FNLA).

- 1979: A president was elected.

- 1981: ENDIAMA E.P., Angola's state-owned diamond company, was set up and based in Luanda, the Angolan capital.

- 1991: The first free election in the history of Angola led to the victory of the MPLA.

- 1992: The Bicesse peace agreement occurred, and the change from a centralised economy to a market-led economy was made, opening

up the country to the private sector and investors. However, the government maintained strict control of the diamond mining industry.

- 1994: The Diamond Law was implemented using Article 89(m). This decision was prompted by the presence of illegal activities, including illegal trading and illicit diamond trafficking that was happening within the country's diamond sector. ENDIAMA E.P. was then appointed to represent the government in all the projects, as well as concessionary of diamond licenses in the country.

- 1999–2000: The SODIAM E.P. company was created with the policy of single-channel marketing (Canal Unico). This system allowed SODIAM E.P. to market and sell all the diamonds in Angola. The institution was created to enable government control over the diamond industry and ensure compliance with the international standards.

- 2002: The end of the civil war and the beginning of a new era in Angola.

In stage 2, after gaining independence, Angola relied on the legislation enacted during the Portuguese colonial era for several years. As such, until the enactment of the Angolan Arbitration Act, the country was governed by the provisions of the old Code of Civil Procedure, which subjected arbitration to the review of state courts (United Nations, 2017).

In this stage, the majority of the legislative framework for the diamond mining industry in Angola was established. This period stands as a pivotal era in the country's history, characterised by the creation of entities such as ENDIAMA E.P. and SODIAM E.P. The situation in which the Angolan diamond industry found itself in the 1990s required a detailed analysis of the legislation, the functioning of the governmental institutions, the activities of mining companies, the socio-economic situation of the population, and

the country in general. In 1994, the results of the analysis revealed an extremely accelerated process of increased diamond mining and theft within the concession areas. The consequences thereof included the uncontrolled depletion of the richest deposits, the social and economic deterioration of populations, the inevitable outflow of extraordinary amounts of foreign exchange from the country, and great difficulties for concessionaires. Hence, the Diamond Law was implemented with the aim of addressing issues regarding illegal mining (Diamond Law, 1994).

Unfortunately, the socio-economic impact of these developments remained largely unseen by the citizens of Angola due to the civil war. During this time, lots of people migrated from the diamond field area to the capital city Luanda, as there were intensive fights in those provinces and significant portions of the diamonds were either sold by the ruling regime or its counterparts, with the generated revenue being utilised by both sides to purchase military equipment (Gonvalves, 2008).

However, measures were introduced to ensure that the government began to benefit from the sector's resources through the collection of taxes and royalties. In summary, the industry became more controlled and regulated due to its significance, and this wealth demanded careful and technically sound management coupled with political sensitivity, as it was an industry under state control that was meant to benefit the entire nation.

Stage 3: Evolution of the legislation of the diamond mining industry from 2002–2017

- 2002: The death of leader of the opposition party (UNITA) and the end of the civil war.

- 2003: Angola's first arbitration act was enacted in 2003 through Law No. 16/2003 of 25 July (Angolan Arbitration Act).

- 2011: The Angola Mining Code was approved and implemented.

- 2014: The start of the PLANAGEO (geological plan for Angola) project approved by Resolution 85/09 of 24 September.

- 2017: A new president was elected, and more changes were made in the legislation with a new perspective.

In Stage 3, Angola entered a new era both economically and socially following the end of the civil war. However, it was important to address and overcome the heavy burden of destruction caused by the war. With Angola's exponential economic growth since 2000, and the attraction of foreign investment, the adoption of arbitration became a necessity. The Angolan Arbitration Act was then enacted as an assurance to investors that future claims would not be determined exclusively by Angolan state courts (United Nations, 2017).

In 2011, the Diamond Law was replaced by the Mining Code, which opened a broader spectrum of the industry and provided more room for foreign investment. In 2014, PLANAGEO studies were initiated with the aim of increasing the level of geological data information to support the growth of the mining industry. Unfortunately, the financial planning of the previous regime for this project did not yield the desired results necessary to attract additional investment into the country, though it remains a work in progress (Diario da Republica, 2009).

Angola has continuously made efforts to become a more arbitration-friendly jurisdiction, and in 2016, it finally became a signatory to the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards (United Nations, 2017). In 2017, a new president was elected, marking the end of an era of leadership that had persisted in Angola for 38 years.

On the socio-economic aspect, Angola experienced sustained economic growth in most years, until 2014 when a drop in international oil prices triggered large macroeconomic imbalances due to Angola's oil dependency. Fuelled by high oil production and oil prices, Angola's GDP per capita doubled from US$ 2 079 in 2002 to US$ 4 164 in 2014, establishing Angola as the third-largest economy in Sub-Saharan Africa and the second-largest oil producer in Africa.

However, the 2008 and 2014 commodity price shocks revealed the structural weaknesses of the economy due to a lack of economic diversification and the fiscal dependency on oil. Since 2014, a structurally low oil price interrupted Angola's growth momentum and created large macroeconomic imbalances, and despite the GDP growth of the early 2000s, large inequalities across the population remained, with a Gini coefficient increase from 0.43 in 2008 to 0.47 in 2014 (World Bank, 2023).

During the period from 2004 to 2016, the economic performance of Angolan rough diamond exports according to the KPCS was 118 852 970,16 carats with a total value of US$ 114 931 358 095.01 (Refer to Table 5). The average price sold for the production was US$ 127 per carat. The contribution in terms of revenue to the government budget from 2010 to 2016 ranged from 19.3% in 2011 to 4.6% in 2016 (Refer to Table 6).

Stage 4: Evolution of the legislation of the diamond mining industry from 2017–present

- 2017: A new president was elected and was committed to reforming the diamond mining industry.

- 2018: The Mining Code was amended. SODIAM E.P. continued to be the sole channel for marketing and selling diamonds. However, the mining industry was allowed to sell 60% of their production to their clients, creating space for competitiveness and fairness in the

pricing of the rough diamonds, while 20% was for beneficiation and 15–20% was to be sold to SODIAM E.P. The single-channel marketing idea continued to supervise and monitor the selling process. Currently, mines are still allowed to sell their production through SODIAM E.P., fostering ongoing competitiveness and fairness in the industry.

- Beneficiation was implemented in 2005, giving rise to the construction of the Diamond Harbour in Lunda Sul in 2021, which currently houses seven diamond polishing factories. This development has had a positive impact in the local community and broader social economy.

- Foreign law of investment was also amended in 2018 and created different zones within Angola, classified from A to D according to their level of development, and each offering some tax benefits.

- 2020: An ANMR was created. ENDIAMA E.P.'s role is concentrated on their existing mining projects, and subsequently they can do more prospecting work and open new mines in Angola.

In stage 4, Angola is under a new president. The Mining Code has been amended with a focus on changing the diamond-trading model and creating more transparency within the mining industry sector. These policy changes instilled greater confidence in investors and fostered a conducive environment for investment.

Currently, the mining industry in Angola is regulated at state level by the Angolan Constitution, Law No. 31/11 of September 2011, Mining Code additional statutory, and regulation acts. Notable amendments introduced include the following:

- Presidential Decree 161/20 of 5 June, which established the ANRM.
- BNA Order 13/20 of 29 May 2020, approving the foreign exchange regime applicable to the diamond subsector.
- Presidential Decree 85/19 of 21 March 2019, which approved the regulation of semi-industrial diamonds.
- Presidential Decree 35/19 of 31 January 2019, which approved the technical regulation for marketing the rough diamonds.
- Presidential Decree 175/18 of 27 July 2018, which approved the new policy for marketing rough diamonds.
- Law 10/2018 of 26 June 2018, which approved the Private Investment Law, as amended by Law 10/21 of 22 April 2021 (Podowski et al., 2021).

In summary, as described above, the Angolan diamond mining industry started in 1909, and it has gone through different stages of legislation, some of which are still being amended today, as per subsection 2.5. In terms of the socio-economic factors, Angola's annual growth rate is decreasing in comparison to its population growth, which, in the long term, will have a negative economic impact on the country (Figure 12). The unemployment rate is still very high given that Angola is a nation where the population is extremely young.

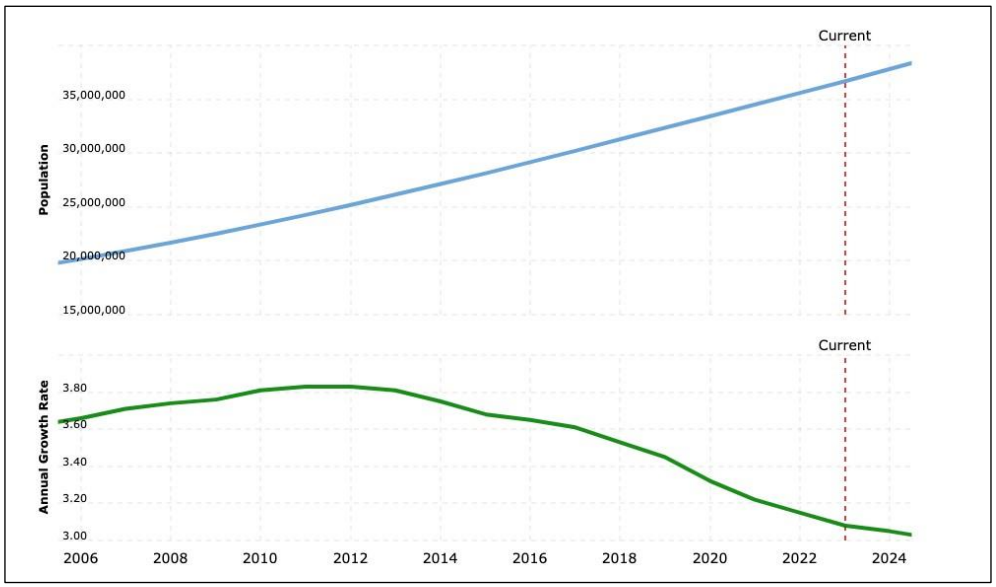


Figure 12: The population vs the annual growth rate of Angola (Instituto Nacional de Estatística, 2021)

As per the literature review and data analyses, the Brilhante Foundation's contribution to the social projects in the local or surrounding communities are in the areas of health, education, environment, economic development, environment, culture, and sport. From 2016 to 2017, the contribution was a total value of US$ 4 million (Refer to Table 2 in section 2.8), of which the biggest contribution went to the fields of education and health. It is important to note that until 2017, the foundation supported policies that were focused on welfare and not on sustainable development and income generation actions for communities (Relatorio, 2022).

Thereafter, from 2018 to 2023, the subsector invested a total of US$ 25.48 million into the communities in the fields described above; 2020 saw the biggest contribution to date of US$ 18.58 million (Refer to Table 3 in section 2.8). The reason for the shift in these contributions is due to the fact that in 2018, Executive's new strategy—or adjustment of the new Strategic Plan for the diamond subsector—changed, and restructuring of the foundation was done. Thereafter, operating diamond mine companies (Refer to Figure 1) were participating in the Brillhante Foundation (Relatorio, 2022).

5.2 ENDIAMA E. P. Participation Results and Analysis

Based on the available data, ENDIAMA E.P. is in partnership with all the diamond projects in Angola, with the percentage of ownership ranging from 13% to 92.5%. ENDIAMA E.P. has the responsibility to ensure that the projects or mines adhere to the Angola Mining Code and comply with the international standards. According to the KPCS reports, Angola complies with the international standards, as per subsection 2.6. Regarding the social impact of mining, Catoca mine is still the highest employer, with 2 152 workers, followed by Luele (the new pipe) and the Chitotolo, Cuango, and Camutue mines.

It is worth noting that more than 90% of the annual export of rough diamonds comes from Catoca mine, averaging about 7 000 carats per year, followed by Furi, Uari, Camutue, Lulo, Cuango, and Chitotolo. Luo is a small operating mine with 305 employees. The mine has an alluvial deposit concentrated on a 50-kilometre span of the Cacuilo River, but it is worth noting that this mine also discovered the 404-carat diamonds unveiled in 2016 (Specktor, 2022).

The Angolan population is 33 million, and the 2 152 workers from Catoca mine constitute less than 0.01% of the population. This indicates that the mining industry must continually make efforts to expand prospecting and exploration to open new mines and generate additional employment.

5.3 Contribution of Rough Diamonds in the Government Revenue/Budget Analysis and Overall GDP

According to the data available in Table 5, annual rough diamond exports in Angola from 2004 to 2020 have been consistent. Angola exports roughly 8–9 million carats annually, which generated US$ 19 533 736 339.65 in gross revenue. The contribution of diamond revenue to the government budget ranges from 4–11%. The data presented in Table 6 shows that 2010 and 2011 had the highest percentage contribution of diamonds in the

government’s revenue (around 18–19.6%), with 11–12% being used in the government budget. Subsequently, and over the years, this contribution has decreased, although the KPCS report suggests that diamond production has remained constant. The cause of this decrease may be due to the fact that some of the revenue is being used to re-invest in diamond exploration projects.

Meanwhile, during the years of 2011 to 2017, there was a decrease in the revenue percentage from 4–8% in government's revenue and 2–4% into the government budget. The average dollar per carat remained quite constant throughout the years, however, averaging at US$ 128.24 per carat.

Significantly, in 2019, due to COVID-19, the world effectively shut down, resulting in slow economic growth. During this period, mines were operating at only 40% capacity. Despite this, the production of rough diamonds remained consistent with previous years but saw a slightly higher contribution to the government’s revenue (reaching 8%), as well as a slightly improved contribution to the government budget (ranging from 2–5%). It is important to note that this phase belongs to stage 4, where amendments in the legislation of the Mining Code have been made, and the country has shifted its strategy to obtain more private and foreign investments.

In terms of the GDP, the IMF reported in 2020 that the Angolan diamond mine contribution was 1.6% of the industry overall, which is still relatively low when compared to countries like Botswana, where the diamond industry contributes around 35% of the GDP (World Bank, 2020). Furthermore, there is a new mine (Luele mine, described earlier in this report) that, according to the data of ENDIAMA E.P., is projected to add 5 million carats to the market, positioning Angola as one of the world’s top diamond producers.

Based on the data analysis conducted, it is evident that the changes in legislation are fostering a more favourable environment for investors to consider Angola. This marks a new era in terms of governance and

transparency within the systems. Despite the fact that the diamond mining industry's legislation has improved over the years, the annual export of rough diamonds has remained constant or the same. Therefore, in the long term, it will not be sustainable as most of these operating mines' resources are depleting, and exploration needs to become a priority. The other aspect that has to be considered based on the different interviews that were conducted (Appendix 1) is the understanding that even though the industry has evolved since the 1900s to date, and has dealt with other key issues ranging from illegal miners (as per Section 2.2.1) and legislative legal framework aspects of the mining code (as per Section 2.3), there is still a need to address the problems within the subsector.

With the opening of the new mine, Luele pipe, which will produce 5 million carats, it is estimated that Angola's rough diamond export production will increase to 15 million carats per annum. The various diamond polishing factories operating in the Saurimo Diamond Pole harbour—namely the Kothari diamond cutting factory, Stardiam, Kapu Gems, and the KGK factory, alongside a few others still under construction (Figure 2)—are set to add more value to the Angolan diamond value chain and the GDP overall. In March 2023, the Minister of Mineral Resources Petroleum and Gas, Dr.Diamantino Azevedo, awarded certificates to 114 Angolan trainees at the Diamond Cutting Training Centre (CEFOLAD) within the Saurimo Diamond Pole (Figure 13). The construction of the Diamond Pole marks a positive contribution to the surrounding communities and the economy.

The Saurimo Diamond Pole was established within an economic zone falling under Zone C, as discussed in Chapter 2, subsection 2.5.2. This clearly indicates that the current policies of foreign investment law, or Order No. 13/20 on 29 May and legal frameworks implemented in Angola, are yielding significant social economic impacts with construction of roads and infrastructure, health centres, facilities, and access to clean water, providing investors with a conducive environment to invest in the country.

The advantage of investing or developing projects in Zone C is that there are tax incentive benefits, such as reduction of the rate by 75% for the ownership of real estate intended for the office and establishment of investment for a period of eight years in urban property tax. There is a reduction of the rate by 85% for the acquisition of real estate intended for the office and establishment of the investment in Inheritance and Gift Tax (SISA), and a reduction of the final settlement fee and the provisional settlement fee by 80% for a period of eight years. The additional benefits are increased amortisation and reinstatement rates by 50% for industrial tax, and reduction of the tax on the distribution of profits and dividends at 80% for a period of eight years for Capital Investment Taxes (Diario da República, 2018).



Figure 13: The Saurimo Diamond Pole illustrating the training facilities and the certification ceremony of CEFOLAD (Governo de Angola, 2023).

As discussed above, but not dependent on the diamond industry as a whole, there are a few indications of growth in the economy, which are reflecting on the livelihoods of Angolan citizens.

In summary, Angola is considered one of the most promising countries for diamond prospecting or exploration wherein a mine will eventually be discovered. With the opening of the Luele mine, Angola is projected to increase its annual production to 15–17 million carats of rough diamonds. The issue of illegal miners is something that Angola's diamond industry has dealt with since the 1970s until today, hence the implementation of the Diamond Law in 1994 aimed at stopping illegal miners, which eventually became the Angola Mining Code in 2011. Nevertheless, the implementation of cooperative miners also helps the subsector to deal with this issue.

One of the key questions is the impact of the diamond pole in the surrounding communities, bearing in mind that the diamond mine association contributes to the Brilhante Foundation for social projects in different fields. Since the 1990s, the contribution was focused on welfare, even though it was never felt that it was adding value to the communities until 2021, as explained in section 2.8. The construction of the diamond pole is a step in the right direction, especially for the surrounding communities and Angola as a whole, the reason being that it has created jobs, infrastructure, and roads for the local communities, and it has improved the economy as well as the health and livelihoods of Angolan citizens.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

At the beginning of this report, the question posed was whether Angola was developing the diamond mining sector to its full capacity in order to maximise revenue from the industry, attract more investors, and create an industry that had socio-economic benefits for everyone, including its citizens. The answer is quite clear that the Angolan Government has indeed evolved the diamond mining sector by guaranteeing that the environment is attractive for any investor and/or company wishing to invest in the country, as well as creating a proper environment so that the investors can have a return on their investment. At the same time, the government created policies of beneficiation that will have, and already had, a positive impact on the socio-economic status of the surrounding communities and Angola as a whole. This can be seen in the contribution that the sector has already made towards the government's revenue and budget (Table 6).

By amending the Mining Code in 2018, the diamond-trading model is more flexible, thereby creating opportunities for a more competitive market and fair selling of products, allowing future investors to be accountable for 60% of their own production, and creating a transparent environment for investors in which they know that they will maximise their profit and the country will benefit from it.

It is also critical to mention that the creation of the Agency of Mineral Resources adds another layer to the industry because it will provide opportunities to ENDIAMA E.P. to focus solely on their core business, which is to grow their current mine production and add new mines to Angola, while the agency focuses on creating and monitoring a healthier environment for mining, regardless of the minerals. The PLANAGEO project was an indication from the government to enhance geological information, which consequentially adds value to the country in terms of investments.

Angola is certainly one of the most promising countries for diamonds worldwide, and the creation of a favourable operating environment has increased the level of confidence on the part of major players such as De Beers, Rio Tinto, Lucapa Diamond, et cetera for the prospection of diamonds in either primary or secondary deposits in the country.

The socio-economic impact of the diamond sector has improved from 2016 to 2022, of which a value of US$ 29.58 million was contributed to the areas of education, health, sport, environment, culture, et cetera in local and surrounding communities through the Brilhante Foundation. The benefit of the construction of the Saurimo Pole in the Lunda Sul province is that it has created jobs, infrastructure development (roads, buildings, health facilities), and access to water and electricity for the population. There is still a lot that needs to be done, but the trajectory of the implementation of these projects is quite positive.

6.2 Research Observations

The research observations from this report are as follows:

- It is noted that most of the mines that are currently producing diamonds were discovered in the colonial era, which implies a need for more prospecting exploration campaigns to be executed in the country.

- Catoca mine is responsible for more than 90% of the annual rough diamonds that are exported, playing a crucial role in the country's revenue and annual budget. Therefore, further studies need to be done, as Catoca's Life of Mine (LOM) is decreasing by the day.

- It is observed that despite the government having made financial resources available with the PLANAGEO project to assist in adding additional geological information, it may not yield the expected

results due to a lack of data readily available online, necessitating a re-evaluation.

- It is observed that the legislation of the diamond mine industry has evolved over the years and continues to do so, making the industry a suitable, reliable, and attractive environment for investors.

- It is evident that Angola is moving in the right direction in terms of policies, governance, and legal frameworks, and it will become one of the biggest players in the diamond industry worldwide.

- It is evident that the production of diamonds continued consistently throughout the years, apart from 2015 (potentially an anomaly or stockpile or artisanal production), but the potential for increased production is reflected, considering the LOM.

- It is observed that despite significant changes in the legislation, the effect of diamond mining on the country's socio-economic status on a macro level, in the author's opinion, will be felt in the next five to ten years. Nevertheless, on a micro level, with the implementation of beneficiation and open-market trading, it is substantially evident that the socio-economic conditions had a positive impact, with the construction of seven polishing diamond factories creating more jobs.

- It is observed that the GDP exhibits a continuous positive trend according to International Monetary Fund (IMF), which will increase gradually and, based on diamond industry data, contribute 1% to the GDP. This is considerably low, with room for improvement.

- It is observed that there is a new pipe/mine called Luele, which is projected to add another 5 million carats annually into the diamond industry, resulting in a positive socio-economic impact throughout the

mine value chain. As per the data, Luele mine has already produced 1 million carats.

- It is observed that the Government has terminated ENDIAMA E.P.'s dual role of being a player and the judge by establishing the ANRM, thereby demonstrating transparency in the process.

- It is observed that the opening of the single-channel market allows mine producers to sell to their own clients through the same single channel, providing opportunity for better diamond prices, increased production, higher revenue, and a positive social impact in communities and the country.

- The country is moving in the right direction in terms of attracting policies and creating a better environment for investors to invest in. Angola has made significant progress, overcoming challenges from its colonial past, civil war, and governance issues. It is evident that the reforms implemented by the current government are yielding positive results on both a macro and especially a micro level.

Based on the findings of this report, it is recommended that more geological investigation be done throughout the country, especially in the areas with visible geological potential to enhance and find new deposits. The Catoca mine should have more prospecting plans to continue finding new deposits, as at the Luele mines. At present, the Catoca pipe is becoming deeper, and LOM is decreasing by the day. The Catoca mine will eventually close if more deposits are not found, and eventually the contribution of rough diamonds to the annual budget will decrease even more.

ENDIAMA E.P. should develop more prospecting and exploration research or studies to find new deposits, since it has been proven that Angola does have the potential. In addition, beneficiation should be created on the full spectrum of the diamond value chain (e.g. polishing factories, et cetera).

Angola should develop or adopt mineral-reporting international standards as South Africa Mineral Report Code (SAMREC), Joint Ore Reserve Committee (JORC), National Instrument 43-101 (NI 43-101) to assist in the compliance and international guidelines aspect in reporting and giving confidence to anyone that would like to invest. The conclusion is that the government should continue to send clear messages to investors that Angola is attractive to investment while implementing strategies beneficial to the Angolan people, including factors such as job creation, increased infrastructure, and access to water and electricity.

6.3 Key Findings and Observations

The Angolan mining sector has been benefitting from significant regeneration under the current political environment, marked by a more “investor-friendly” approach from the government and the national concessionaires. As a result, leading mining companies have begun increasing their activities in the country. The recently enacted rough diamond marketing policy is expected to cause a huge impact on the sale of rough diamonds extracted from the country, and on the establishment of local diamond cutting and jewellery industries. The Private Investment Law underwent a change, the most significant being the reduction of industrial tax on the net income from mining activity from 35% to 25%. The new policy of marketing rough diamonds has brought many advantages to producers who already sell 60% of their production on the market to buyers of their choice.

6.4 Research Contributions

This project gave good insight into understanding mining policies, legal frameworks, and the diamond mining sector. There was an opportunity to assess annual diamond mine production as well as the socio-economic impact thereof on the GDP. It is pivotal from the information gathered in this project that more work needs to be done in order to grow and expand the subsector into new endeavours. It is clear that the industry, in terms of its policies, has evolved considerably over the past few decades, but there is still a need to focus strategies on developing prospecting and exploration projects throughout the country and unveiling the resources that are hidden, which eventually will lead to the opening of new mines.

6.5 Recommendations for Future Research Work

The recommendation for future research is continued analysis of the evolution of the diamond mining industry with all the transformations and the government's unwavering implementations. It would be greatly beneficial to be able to record the socio-economic impact on the macro level over the next five to ten years.

REFERENCE LIST

Areias, R., Andrade, L. & Ramos, R. (2020). *Angola – Foreign exchange regime for the Diamond Sector.* [Online]. Available at: https://www.pwc.com/ao/en/services/tax/corporate-regulatory-services/regulatory-flashes/angola-foreign-exchange-regime-for-the-diamond-sector.html [Accessed 3 March 2024].

Banco Nacional de Angola. (2020a). *Relatórios de Análise de Conjuntura Económica e Financeira - II Trimestre 2020.* Luanda: Banco Nacional de Angola. [Online]. Available at: https://www.bna.ao/uploads/%7Bd78d18ef-27ec-48c8-ad1f-c802c5b719cc%7D.pdf [Accessed 9 May 2022].

Codigo Mineiro. (2011). *Parte I Regime Jurídico Comum. Livro I Dos Direitos Mineiros em Geral.* [Online]. Available at: Codigo_Mineiro_Angolano_Mining_L.pdf. / [Accessed 9 June 2022].

Codigo Mineiro. (2018). *Decreto Presidencial n. 175/18 - Aprova a Politica de Comercialização de Diamantes.* [Online]. Available at: https://www.fao.org/faolex/results/details/en/c/LEX-FAOC183851/ [Accessed 25 June 2022].

Constitutional Law. (1992). Constitutional Law of the Republic of Angola page 21. Pdf. [Online]. Available at: https://constitutionnet.org/sites/default/files/Angola%20Constitution.pdf [Accessed 24 July 2024].

Chambel, L., Caetano, L. & Reis, M. (2013). *One Century of Angolan Diamonds.* [Online]. Available at: https://www.researchgate.net/profile/LuisChambel/publication/311789388_One_century_of_Angolan_diamonds/links/587fa29da6fdc

cc5f784a14d/One-century-of-Angolan-diamonds.pdf [Accessed 24 August 2022].

De Boeck, F. (2001). Garimpeiro worlds: Digging, dying and 'hunting' for diamonds in Angola. *Review of African Political Economy*. [Online] 28 (90), pp. 549-562. Available at: https://www.researchgate.net/publication/238317353_Garimpeiro_worlds_Digging_dying_and_'hunting'_for_diamonds_in_Angola. [Accessed 28 July 2024].

Diamond Law. (1994). *Legislacao Mineira ssembleia Nacional Lei n. 16/94 de Outubro - Aprova a lei dos diamantes.* [Accessed 25 June 2022].

Diario da República. (2009). *Orgao oficial da República de Angola Resolucao 85/09 aprova o PLANAGEO.* [Accessed 25 October 2023].

Diario da República. (2017). *Decreto Presidencial n. 154/17 de 17 Julho 2017.* [Online]. Available at: https://lex.ao/docs/presidente-da-republica/2017/decreto-presidencial-n-o-154-17-de-04-de-julho/ [Accessed 25 October 2023].

Diario da República. (2018). Orgao oficial da República*.Lei aprovada 10/18 aos 17 Maio 2018.* [Online]. Available at: https://www.irdp.gov.ao/images/leis/Lei_10_18.pdf. [Assessed 25 October 2023].

Eisenhammer, S. (2018). *Exclusive - Angola's top diamond mine says underpricing has cost it almost $500 million.* [Online]. Available at: https://www.reuters.com/article/idUSKBN1J7276/ [Accessed 18 May 2022].

Euronews. (2021). *The mining industry in Angola, no longer a diamond in the rough*. [Online]. Available at: https://www.euronews.com/2021/03/17/the-mining-industry-in-angola-no-longer-a-diamond-in-the-rough. [Accessed 24 May 2022].

ENDIAMA. (2023). *Mining Activities - Endiama*. [Online]. Available at: https://www.endiama.co.ao/actividades-mineiras/ [Accessed 3 January 2022].

Emrich, A. & Holland & Hart LLP. (2020). *Mining Law 2020: A practical cross-border insight into mining law.* London: Global Legal Group, pp. 14-18. [Accessed 3 January 2022].

Fialho, J. A. & Viana, A. (2020). *Angola- New foreign exchange regime for the diamond sector*. [Online]. Available at: https://www.lexology.com/library/detail.aspx?g=4ebd4973-2756-47f4- a64f-b837f0f411e7 [Accessed 3 March 2024].

Field, M., Stiefenhofer, J., Robey, J. & Kurszlaukis, S. (2008). Kimberlite-hosted diamond deposits of southern Africa: A review. *Ore Geology Reviews* [Online] 34(1-2), pp. 33-75. Available at: www.lsevier.com/locate/oregeorev [Accessed 2 March 2024].

Fundacao Brilhante. (2024). *Quem Somos – Fundação Brilhante* [Online]. Available at: https://www.fundacaobrilhante.ao/quem-somos/ [Accessed 20 February 2024].

Garside, M. (2020). *Diamond industry - statistics & facts* | *Statista.* [Online]. Available at: https://www.statista.com [Accessed 18 May 2022].

Garside, M. (2022). *Diamond industry - statistics & facts* | *Statista.* [Online].

Available at: https://www.statista.com [Accessed 20 June 2022].

Grey, J. & Pedro, J. (2020). *O novo regulador Mineiro*. [Online]. Available at: www.bumbarmining.com [Accessed 22 September 2022].

Graue, C. (2015). Qualitative data analysis*. International Journal of Sales, Retailing & Marketing*. [Online] 4(9), pp. 5-14. Available at: https://www.circleinternational.co.uk/wp-content/uploads/2021/01/IJSRM4-9.pdf#page=9 [Accessed 06 November 2023].

Gordon, C., Ahmimed, C., Gizenga Ngolo, D. & Smillie, I. (2004). *Diamond Industry Annual Review. Republic of Angola 2005*. [Accessed 19 August 2022].

Governo de Angola. (2023). *Ministry of Mineral Resources, Petroleum and Gas.* [Online]. Available at: http//www.mirempet.gov.ao [Accessed 30 October 2023].

Goncalves, J. (2010). The economy of Angola: From independence to the 2008 worldwide crisis. *The Perspective of the World Review* [Online] . Available at: https://repositorio.ipea.gov.br/bitstream/11058/6357/1/PWR_v2_n3_Economy.pdf [Accessed 24 February 2024].

Golafshani, N. (2003). Understanding Reliability and Validity in Qualitative Research. *The Qualitative Report.* [Online] 8(4). Available at: http://www.nova.edu/ssss/QR/QR8-4/golafshani.pdf [Accessed 30 July 2024].

Instituto Nacional de Estatística (2020a). *Conjuntura Económica às Empresas - IV Trimestre 2020. Folha de Informação Rápida. Instituto Nacional de Estatística (INE). Luanda, Angola*. [Online]. Available at:

https://www.ine.gov.ao/Arquivos/arquivosCarregados//Carregados/Publicacao_637515173007572287.PDF/ [Accessed 19 September 2022].

Instituto Nacional de Estatística (2020b). *Inquérito Sobre Despesas, Receitas e Emprego em Angola - IDREA 2018-2019. Quadros de Resultados No. Volume II. Instituto Nacional de Estatística (INE). Volume II. Instituto Nacional de Estatística (INE). Luanda, Angola*. [Online]. Available at: https://www.ine.gov.ao/Arquivos/arquivosCarregados//Carregados/Publicacao_637494434197630178.pdf [Accessed 19 September 2022].

Instituto Nacional de Estatística (2020d). *Índice de Preços no Consumidor Nacional. IPCN No. 12. Instituto Nacional de Estatística (INE). Luanda, Angola.* [Online]. Available at : https://www.ine.gov.ao/Arquivos/arquivosCarregados//Carregados/Publicacao_637510980548545829.pdf [Accessed 19 September 2022].

Instituto Nacional de Estatística (2021). *Inquérito à Produção Industrial - IPI, Anual- 2020. Folha de Informação Rápida. Instituto Nacional de Estatística (INE). Luanda, Angola.* [Online]. Available at https://www.ine.gov.ao/Arquivos/arquivosCarregados//Carregados/Publicacao_637580757086834599.pdf [Accessed 19 September 2022].

Instituto Nacional de Estatística (2023). *Inquérito à Produção Industrial - IPI, Anual- 2020. Folha de Informação Rápida. Instituto Nacional de Estatística (INE). Luanda, Angola.* [Online]. Available at https://www.ine.gov.ao/Arquivos/arquivosCarregados//Carregados/Publicacao_637580757086834599.pdf [Accessed 19 February

2024].

International Trade Administration. (2021). *Angola country commercial guide: Oil and Gas.* [Online]. Available at: https://www.trade.gov/country-commercial-guides/angola-oil-and-gas [Accessed 09 May 2022].

Kamer, L. (2022). *Angola: Share of GDP by economic activity 2021*. [Online]. Available at: https://www.statista.com/statistics/1139303/share-of-gdp-in-angola-by-economic-activity/ [Accessed 18 March 2023].

Kimberley Process. (2024). *Angola*. [Online]. Available at: https://www.kimberleyprocess.com/en/angola [Acessed 24 January 2022].

Mining Technology. (2022). *The world's ten largest diamond mines in 2021*. [Online]. Available at: https://www.mining-technology.com/marketdata/ten-largest-diamonds-mines/?cf-view [Accessed 9 May 2022].

Monteforte, A., Perreira, E. & Reis, B. (2003). Contributo Da Diamang Para A Avaliacao Dos Recuros Diamantiferos, Em Angola. A Geologia De Engenhario E Os Recursos Geologicos, 209-216.

Nyaungwa, M. (2021). *Editor in Chief of the African Bureau, Rough & Polish*. [Online]. Available at: https://www.rough-polished.com. [Accessed 9 May 2022].

Nyimbili, F. & Nyimbili, L. (2024). Types of Purposive Sampling Techniques with Their Examples and Application in Qualitative Research Studies. [Online]. Available at: https://doi.org/10.37745/bjmas.2022.0419 [Accessed 26 August 2024].

Pearce, J. (2004). War, Peace and Diamonds in Angola: Popular Perceptions of the Diamond Industry in the Lundas. *African Security Review* [Online] 13(2), pp. 51-64. Available at: https://www.tandfonline.com/doi/abs/10.1080/10246029.2004.9627284 [Accessed 07 May 2022].

Pedro, M. (2009). Distribution and age of the Kimberlite clusters in the NE Angola Johannesburg. [Accessed 08 May 2022].

Podowski, D., Dominique, B., Manhas, B. & White, L. (2021). *Mining*. [Online]. Available at: https://www.lexology.com/gtdt [Accessed 28 October 2023].

Read, G. H. & Janse, A. J. A. (2009). Diamonds: Exploration, mines, and marketing. *Lithos* [Online] 112(1), pp. 1-9. Available at: https://www.sciencedirect.com/science/article/abs/pii/S002449370900098X [Accessed 25 February 2022]

Relatorio Interno (2022). Dados Complementares_Investimentos em projectos de responsabilidade social.pdf Available at: https://www.fundacaobrilhante.ao/quem-somos/ [Accessed 20 February 2024].

SODIAM E.P. (2018). Angolan Rough Trading Legislation.

Specktor, B. (2022). *Miners just discovered the largest pink diamond in more than 300 years.* [Online]. Available at: https://www.livescience.com/lulo-rose-pink-diamond-angola [Accessed 22 September 2022].

Thornton, J. K. & Clarence-Smith, W. G. (2009). *Angola - Oil, Diamonds, Agriculture* [Online]. Available at: https://www.britannica.com/place/Angola/Resources-and-power

[Accessed 26 February 2024].

Stevens, A. & Carment, D. (2005). *Commerce & Conflict: Angola & DiamondWorks.* Ottawa: The Norman Paterson School of International Affairs, Carleton University. [Online]. Available at: https://carleton.ca/cifp/wp-content/uploads/1055-1.pdf [Accessed 26 February 2024]

United Nations. (2017). *Angola in the path to becoming a New York Convention Contracting State.* [Online]. Available at: https://newyorkconvention1958.org/index.php?search_type_asked=extended_search&onglet_persopac=1&limitsearch=1&opac_view=-1&menu=489 [Accessed 28 October 2023].

United Nations. (2021). *Economic and social impact and effect of COVID-19 in Angola*. [Online]. Available at: https://unctad.org/system/files/official-document/aldcinf2021d6_en.pdf [Accessed 22 September 2022].

Ver Angola. (2021). *Angola has already invested 260 million dollars in the national geology plan*. [Online]. Available at: https://www.verangola.net/va/en/022021/RawMaterials/24229/Angola-has-already-invested-260-million-dollars-in-the-national-geology-plan.htm#:~:text=Raw%20Materials-,Angola%20has%20already%20invested%20260%20million%20dollars%20in%20the%20national,absorbed%20almost%20260%20million%20dollars [Accessed 7 May 2022].

Van der Loo, M. P. J. & De Jonge, E. (2020) Data Validation. [Online]. Available at: https://onlinelibrary.wiley.com/doi/10.1002/9781118445112.stat08

[Accessed 25 August 25, 2024].

World Bank. (2020). *Angola Poverty Assessment*. [Online]. Available at: https://openknowledge.worldbank.org/handle/10986/34057 [Accessed 2 June 2022].

World Bank. (2021). *Angola Poverty Assessment*. [Online]. Available at: https://openknowledge.worldbank.org/handle/10986/34057 [Accessed 2 June 2022].

World Bank. (2022). *Angola Poverty Assessment*. [Online]. Available at: https://openknowledge.worldbank.org/handle/10986/34057 [Accessed 2 March 2024].

World Bank. (2023). *Angola Poverty Assessment*. [Online]. Available at: https://openknowledge.worldbank.org/handle/10986/34057 [Accessed 19 March 2024].

Xinhua. (2021). *Angola's new diamond development pole to boost cutting capacities.* [Online]. Available at: http://www.news.cn/english/africa/2021-08/28/c_1310154294.htm [Accessed 24 August 2022].

APPENDIX A. INTERVIEWS

Appendix A: Primary data of the interviews done in March 2023 with the experts in the Angolan diamond mining industry.

Question	**Ans: (Interviewee one, Catoca Mine)**	**Ans: (Interviewee two, SODIAM**	**Ans: (Interviewee three, ENDIAMA**	**Ans: (Interviewee four, Catoca**	**Ans: (Interviewee five, Crustal Solo Mine**
How important is the diamond mining sector in Angola and its contribution to the GDP?	Angola is one of the most promising countries for diamonds worldwide and the consistent reforms underway by the government have provided a more stable operating environment,	The diamond mining sector in Angola is significant. Historically, diamonds have been a major export product, contributing substantially to Angola's GDP and providing crucial	The diamond mining sector plays a significant role in the Angolan economy, contributing around 4% to the GDP in 2022. Angola is the fourth largest producer of diamonds in Africa by volume, and the	The mining sector in Angola has a great positive impact from a socio-economic point of view as it employs a large number of workers and from the point of view of its contribution to GDP it is still very small.	Diamond mining has been contributing to about 4% of the Angola GDP. In urban areas, hotels and bigger hospitals have been built by mining companies providing direct jobs to

	increasing Angola's attractiveness as a business and investment destination. As for its contribution to the gross domestic product (GDP), given the current market situation at international level, it is still in the order of 1%.	foreign exchange earnings.	ninth largest in the world. The sector employs over 100,000 people directly and indirectly and is a major source of government revenue.	According to international expert Anton Lof of RMG Consulting, the contribution of diamonds to GDP is 0.75%. (Source: Jornal Expansão – Angola International Diamond Conference (AIDC). With the entry of new mines into operation, it is estimated that the contribution of diamonds to GDP will increase significantly.	the youth of the country. However, it is in the remote rural areas where diamond mining companies are having a major impact on the lives of the poorest, not only by providing direct jobs but also by building roads and bridges where there was no access either by vehicles, motorbikes, or even bicycles, allowing small businesses and

					agriculture to flourishes. Hospitals, schools, and clean water points were and continue to be built for the benefit of the surrounding communities for the first time ever by mining companies as well as providing a monthly financial allowance to the elderly. The mining sector has been providing assistance to sports, social, and cultural

					activities as well attract businesses in the poor communities.
How many carats does ENDIAMA – E.P. produce annually?	With the entry into production of new mines, the trend will be to go from an average of 9 million carats to 17.5 million annually.	ENDIAMA's average annual diamond production is around 9 million carats. ENDIAMA produced 10.5 million carats of diamonds in 2022 and are expecting to increase their production to 12 million carats.	Angola produces an average of 9 million carats of diamonds per year. In 2022, the country produced 9.3 million carats, a 5% increase from the previous year.	According to the Director of GEPE (Department of Studies, Planning and statistics), in 2022, Angola produced 8.75 million carats, of which 8.71 million came from industrial production, and 46.311 carats, resulting from semi-industrial production.	

				(Source: Jornal de Angola).	
How does ENDIAMA – E.P. deal will illegal miners and how does it affect the diamond industry?	With the restructuring in the diamond sector, the Angolan Government has significantly reduced illegal diamond mining with the integration of cooperatives miners into diamond production, as well as the organisation of these cooperatives into	ENDIAMA has taken measures against illegal mining by collaborating with national security forces, increasing monitoring, and through community awareness programs as illegal mining undermines the industry by affecting the revenues, encouraging unregulated	Illegal artisanal mining is a major problem in Angola, and it has a negative impact on the diamond industry. The government has taken a number of steps to address the problem, including increasing patrols in mining areas, confiscating equipment from illegal miners, and providing training and support	This issue is pertinent to the extent that illegal miners have squandered diamond reserves to the detriment of the state, selling this mineral to illegal foreign buyers as well. From this point of view, as we can see, it affects Angola's economy to a great extent, as these diamonds leave Angola for the outside	ENDIAMA E-P, the government arm who owned the concessions, exploration, and mining rights, has been taken out of those rights by law, and it is in the process of being fully privatized. Prospect or expansion for future diamond mines relies solely

	semi-industrial production companies.	environmental practices, and deterring legitimate investment.	for artisanal miners to operate legally.	of the legal circuit. Because of this, the Angolan State has and is carrying out campaigns to combat illegal mining, sensitizing them to form cooperatives and comply with all legal requirements, selling production exclusively to the State, through a control previously established through related official bodies that imply this matter. In many cases, those who resist this form of cooperation with the State are organized	from now on to the plans or work programs of private companies operating in Angolan

				operations in these areas of illegal mining through the Armed Forces and the National Police, where the equipment and all the material are seized and the illegal miners are expelled from these locations or detained. Despite these operations, which are mostly sporadic, there is still much to be done in order to combat this phenomenon with the	

				efficiency that is required.	
Does the Angola diamond pole harbour have an impact on the surrounding communities?	Yes, given the fact that the Pole is focused on: In the installation of the cutting industry that already has the presence of more than three stonecutters enhancing the job market for young people in the region.	The Angola diamond pole harbour is intended to stimulate local economic development. This infrastructure often brings employment opportunities and boosts local businesses, thereby positively impacting surrounding communities. Advantages of beneficiation in the	The Angola Diamond Development Hub is a major project that is expected to have a significant impact on surrounding communities. The project is expected to create jobs, improve infrastructure, and provide access to education and healthcare. However,	In my opinion, the Angolan Diamond Development Pole is still in its infancy, although it has already trained a few hundred technicians. Most of the graduates are local young people from neighbouring provinces and from other parts of Angola.	

	The existence of a Vocational Training Centre that has provided technical courses for the diamond industry to young people, especially those from the east and other workers of mining projects.	mining sector include value addition to raw minerals, creation of employment, and stimulation of downstream industries. Disadvantages include high initial investment costs, potential technical challenges, and the need for skilled labour and potential misalignment with global market demands.	there are also concerns about the project's environmental impact and the potential for social displacement.		