

The legal environmental protection responsibility of extractive industries on attendant

waste: an analysis of international and Sierra Leone law.

by Aaron Mansa Conteh

LLM Capstone Thesis

SUPERVISOR: [Professor Tommaso Soave]

Central European University

© Central European University

[June 7, 2020]

ACKNOWLEDGEMENTS

I give my sincerest thanks to my Thesis Supervisors; Professor Jessica Lawrence and Professor Tommaso Soave who brought me into the light of academic legal writing.

I extend my profound gratitude to the Chair of International Business Law Program of CEU, Professor Tibor Tajti for his unwavering support throughout this Masters Program and for all the legal knowledge he inculcated into me.

I remain indebted to all my various Professors and all the other academic and technical staff of CEU who in diverse ways contributed to make my LLM academic journey a success.

TABLE OF CONTENT

ABSTRACT	iii
CHAPTER I- Introduction	- 1
CHAPTER II- Background	- 5
2.1. Information on Sierra Leone and its extractive industry;	- 5
2.2. Environmental risks and public perceptions relating to mining and attendant waste disposal	-7
CHAPTER III- Description of the regulatory framework applicable to mining and waste disposal operations in Sierra Leone	11
3.1. The evolution of environmental protection standards, the Stockholm conference, and the idea of sustainable development	11
3.2. Substantive obligations imposed on extractive and waste disposal activities and	
mechanisms to monitor and enforce compliance:	13
3.2.1. International Instrument(s)	13
3.2.2. Domestic Instruments	19
CHAPTER IV-Evaluation of Sierra Leone's environmental protection regulations on extractive industry waste	25
4.1. Are they consistent with Sierra Leone's international obligations?	25
4.2. Are they capable of minimizing the environmental hazards related to mining and was disposal in the country (while not undermining economic development)?	ste 27
CHAPTER V- Conclusion and Recommendations	30
BIBLIOGRAPHY:	34

ABSTRACT

The relevant provisions on extractive industry waste in the governing environmental laws of Sierra Leone and applicable international environmental law were appraised from the perspective of attaining sustainable development in the mining sector which is of high significance to the economic development of the State.

The study was carried out as a pure legal research on the pieces of Legislation and Regulations governing environmental law in Sierra Leone with a view of ascertaining their efficacy in respect of the environmental protection processes on extractive industry waste.

Further, applicable provisions relevant to extractive industry waste in the Basel Convention (which was identified as the germane piece of international law for the purpose of this research) were appraised.

The findings made were inclusive of the aspect that the domestic legislation and regulations met and reflected the intents of the Basel Convention on waste. Further, it was ascertained that the existing laws imposed viable environmental legal obligations on the extractive industry pertaining to its attendant waste.

The research revealed that the examined Laws proved to ensure accountability and enforceability for the fostering of environmental protection from extractive industry waste.

It was further concluded that the pertinent pieces of legislation relating to environmental waste management were relevant and were indeed needed for ensuring sustainable development. No glaring lacunae in the provisions for extractive industry waste regulations and the said laws were identified.

Recommendations were made to foster better applicability of the examined laws and to bolster the viability of the environmental protection legal framework in focus.

CHAPTER I- INTRODUCTION

Worldwide extractive industries are considered to have entered a new 21st century age of legal regulations. Further to enhancing and increasing the coverage of national legislation, mining activities have increasingly also been subjected to international law with more focused levels of imposed multi-national governmental and institutional legal obligations. In what has been established as the new international paradigm for sustainable development, the changes in the regulatory scene are the most significant challenges which the extractive industries are now faced with.¹

This thesis seeks to explore the international and domestic legal instruments governing the environmental responsibility of extractive industries on attendant waste in Sierra Leone. It is particularly concerned with analysing the current statutory framework and international legal obligations of Sierra Leone in tackling extractive industry waste through reliance on existing environmental protection laws.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, usually simply referred to as the Basel Convention (BC) and entered into force in 1992, will be of focus from the perspective of applicable international environmental law in Sierra Leone. Additionally, possible solutions to existing problems will be

¹ 'Developing an Environmental Model: Piecing Together the Growing Diversity of International Environmental Standards and Agendas Affecting Mining Companies | InforMEA' https://www.informea.org/fr/node/299969> accessed 6 June 2020.

recommended and proposed which will bolster the applicability of the existing pieces of Legislation governing environmental protection from extractive industry waste.

The research is important because in the Sierra Leone context there is limited or non-existent literature in this area. In essence, no published work was identified as domestic existing legal literature that had previously sought to evaluate or appraise environmental laws regulating extractive industry waste in Sierra Leone from a national standpoint. This thesis will therefore attempt to partly serve to fill this void in the existing literature.

The thesis is of further importance as it cuts across important areas of law in both environmental protection and investment/mining, the latter being an area of high economic significance for Sierra Leone.

Sierra Leone has been and remains economically heavily reliant on the extractive industries. The thesis will be directed on the problem of the industries' waste regarding whether the governing laws meet international best practice(s) and generally analysing their applicability.

The thesis serves to benefit future research and could be used for reference for further studies on analogous concerns. Its findings will be of use in libraries in Sierra Leone and other resource centres for interested individuals and mining companies to acquire first-hand information on the laws governing their respective institutions in relation to environmental obligations on extractive waste.

The research methodology will be based on a textual exegesis of the relevant legal sources. Legal contents analysis will be carried out on the sections deemed relevant to extractive industry waste in the existing two pieces of primary legislation (i.e. Acts of Parliament) governing environmental protection in Sierra Leone, to wit; The Environment Protection Agency Act 2008 and the Mines and Minerals Act of 2009. The analysis will shed light on the intents of the law makers from the perspective of establishing efficient legal mechanisms to guarantee an organized environmental compliant extractive waste process in Sierra Leone (if at all). Further, with a view of giving this study a more focused effect, the Environment Protection (Mines and Minerals) Regulations 2013 will be examined on its provisions of more detailed mechanisms and directives to be followed in the environmental protection regime.

The analysis will also encompass relevant literature on international environmental law and most importantly, the researcher's personal analysis of pieces of legislation germane to environmental protection from extractive industry waste.

Data was obtained from two main sources; Primary sources and Secondary sources. Primary data was obtained from the contents of extant pieces of environmental protection Legislation in Sierra Leone and from the applicable Basel Convention and secondary data was obtained from books, journals, publications, institution websites and the internet in general with focus on international environmental law.

The examination and analysis carried out in this research was focused on the following areas of the environmental protection legal regime governing the mining industry:

- (a) substantive legal obligations of the extractive industries on waste disposal;
- (b) mechanisms to monitor compliance with those substantive legal obligations; and
- (c) fines and other enforcement mechanisms.

Chapter II of this thesis will provide a brief background on Sierra Leone and on its extractive industry. It will also highlight the environmental risks and public perceptions relating to mining and its attendant waste disposal.

Chapter III will turn to description of the regulatory framework applicable to mining and waste disposal operations in Sierra Leone. This will encompass a brief introductory provision

of the evolution of environmental protection standards; the Stockholm conferencea and the idea of sustainable development etc. Substantive obligations imposed on extractive and waste disposal activities via international and domestic instruments will be examined. Also, the mechanisms to monitor and enforce compliance as provided for by these instruments will be inspected.

Chapter IV will be an evaluation of Sierra Leone's environmental protection regulations on extractive industry waste regarding consistency with its international obligations and as to its capability of minimizing the environmental hazards related to mining and waste disposal without undermining economic development.

Finally, Chapter V will be a conclusive summary and recommendations will be provided thereat.

CHAPTER II- BACKGROUND

2.1. Information on Sierra Leone and its extractive industry;

This research is focused on the country Sierra Leone which is located in the west coast of Africa. It has a population of about 7 million people according to recent statics. Sierra Leone is a country that was colonized by the British. In 1961 it gained its independence. The country has a checkered history wherein a civil war had ensued in the 1990's resulting to large scale destruction of lives and property. Sierra Leone was also recently hit by the Ebola scourge. It remains one of the poorest nations and the issue of its economic development from the perspective of sustainable and environment protection compliant mining as one of the vehicles in fostering such development, is a key implication and reason for this research.

For the purposes of this study, the phrase "the extractive industry" will be interchangeably used with "the mining industry" or "mining".

Sierra Leone's mining industry accounts for a minimal percent of the country's GDP but minerals have for a considerable period made up of over 70 percent of export revenue. Diamonds, rutile, bauxite, gold and iron ore are the predominantly mined minerals.²

Organised mining commenced in the 1920s when bauxite was discovered in the Northern Province.³ Diamonds were subsequently discovered in the 1930's for which the Sierra Leone Selection Trust (SLST) financed by Consolidated African Selection Trust Ltd (CAST), held the first monopoly. In 1970 the National Diamond Mining Corporation (NDMC) being the face of the new mining monopoly was formed as a joint venture between SLST and the

² Minerals Yearbook, 2008, V. 3, Area Reports, International, Africa and the Middle East (Government Printing Office 2010).

³ 'AN OVERVIEW OF KEY MINERALS' (28 July 2011)

 accessed 6 June 2020

government. Before the Civil War which commenced in 1991 in Kailahun in the eastern diamond rich province, 14% of labour in the State depended on mining activities. The

Nation's Civil war has ever since been inextricably linked with its then inequitable distribution of mineral wealth.⁴

Sierra Leone is a leading producer of rutile, the company Sierra Rutile Limited which was recently acquired by the Australian Iluka Resources had since the beginning of rutile extraction been the leading monopoly for this mineral. Also, gold mining in Sierra Leone has comparatively been on a smaller non-industrial scale. However Cluff Gold, a British company, made discoveries in the southern district and expressed plans to commence industrial level activities thereat.⁵

Diamonds are predominantly found around the drainage areas of rivers in the south-eastern Districts with over 1,700 artisanal mining licenses granted for operations thereat. However, revenue from diamond export as with other mining activities have been historically recorded as unsatisfactorily redistributed thus negatively affecting national benefit and poor economic development has been linked on this factor.⁶

For bauxite, Sierra Minerals Holdings is the sole national miner, and the second largest employer in the mining industry its activities significantly account for one percent of the total global production.⁷

For iron ore, the Company London Mining owns exploration license covering 319 km² of land inclusive of the domestically famous Marampa Mines.⁸ Also, the northern Tonkolili

⁴ Victoria Federico, 'The Curse of Natural Resources and Human Development' 51.

⁵ Peter Greenhalgh, West African Diamonds 1919-1983: An Economic History (Manchester University Press 1985).

⁶ Federico (n 4)

⁷ AN OVERVIEW OF KEY MINERALS (n 3)

region contains the largest iron ore deposit in Africa and the third largest in the world and was previously exploited by African Minerals though its stake in the Tonkolili Mine has now been acquired by Shandong Iron and Steel Group, a Chinese multinational.⁹

2.2. Environmental risks and public perceptions relating to mining and attendant waste disposal

On the aspect of the environmental hazards caused by mining waste, it has long been scientifically established that surface erosion through water or wind plus direct discharge of waste materials in rivers causes metal introduction in particulate form in aquatic ecosystems and their subsequent further movement via rovers etc results in extended contamination. Leaching time of sulphides from oxygenated spoils has been estimated to extend over decades.

Also, certain spoil dumps are extended sources of contamination emitting sulphide oxidation, resulting in degrading environmental conditions for many future years. Successive extractions on mine tailings has revealed that a relevant part of the total amount of metals convoyed in flotation basins were estimated to be in the bio-available fraction, i.e. potentially harmful to the aquatic ecosystems.¹⁰

⁸ Marampa Haematite Iron Ore Mine' (Mining Technology | Mining News and Views Updated Daily) <https://www.mining-technology.com/projects/marampamine/> accessed 6 June 2020.

⁹ 'African Minerals | The African Business Journal'

https://www.tabj.co.za/western_africa/african_minerals_mining_company.html accessed 6 June 2020. ¹⁰ Claudio Bini, 'Environmental Impact of Abandoned Mine Waste: A Review' [2012]

Mine wastes are a source of contamination to the environment, as heavy metals and acids are released in large amounts. Varying microorganisms are found in mine wastes and microbiological processes cause environmental hazard from these wastes.¹¹

Mine sites are characteristically complex industrial systems involving widespread rock handling for the extraction process of valuable metals or minerals. Mine sites are engaged in both extraction activities and ore processing. The usual reported mass of handled material indicates that the targeted minerals are extracted or concentrated near the site, whilst the wastes from the process are usually disposed close by. The specificity of mining waste has proven to demand the need of certain regional and/or global regulations and standards.

Studies have indicated that reliance upon standard industrial waste regulations by the mining sector has been assessed to result in economically impracticable requirements and inept solutions.¹² The environmental protection standards which are stipulated by Environmental Impact Assessment License will be considered an incumbrance to the profitability of Mining companies from their perspective as the added operational costs imposed will be assessed by them as additional unfavourable burdens to investment.

However, the necessity of protecting the environment from the hazards of mining waste and in general, evidently outweighs such capitalistic concerns as relevant environmental protection regulations have proliferated both internationally and in domestic legal contexts and they remain unchallenged in terms of mandate.

¹¹ M Ledin and K Pedersen, 'The Environmental Impact of Mine Wastes — Roles of Microorganisms and Their Significance in Treatment of Mine Wastes' (1996) 41 Earth Science Reviews 67.

¹² Alexandros Liakopoulos and others, 'Environmental Impacts of Unmanaged Solid Waste at a Former Base Metal Mining and Ore Processing Site (Kirki, Greece)': [2010] Waste Management & Research https://journals.sagepub.com/doi/10.1177/0734242X10375746 accessed 6 June 2020.

Mining waste from most sites have been categorized under three aspects: i) There is extraction waste constituting of rocks with different amounts of ore and other metals. These types of waste heaps become hazardous through acid mine drainage (AMD) and demand satisfactory water management. ii) There is also the final processing waste, or tailings, this comprises mainly of rock particles, with variable amounts of residual metals, and varying residues of processing reagents. Tailings comprise of bioavailable heavy metals and metalloids and can also be released in solid form towards surface water through tailings dam failure. It usually requires proper dam and water management; and also there is iii) Hazardous industrial waste, made up of unused leftover processing reagents, metal concentrates and extra ore processing waste.¹³

There are different environmental impacts from these types of wastes and different known environmental remedies for them also. Mine sites of heavy metals and metalloids are usually sources of pollution even years after closure. Geochemical developments such as acid mine drainage (AMD), acid rock drainage (ARD) add to these environmental impacts. Mitigation of such impacts has been identified to lie in the adequate provision of remediation measures during closure of these Mines. Further dangers have been identified proving that when such sites are abandoned and there is environmental exposure, impacts worsen. Additional unfavourable factors are evident by virtue of proximity to exposed resources, like groundwater, cultivated areas, urban settlements or seaside.¹⁴

¹³ Ibid

¹⁴ Ibid

Public perceptions and the aspect of sustainable development significantly influencing changes to international law relating to the extractive industry is a concept of high relevance which needs to be examined.

Environmental sensitization has now exposed mining as negatively impacting all aspects of the environment such as land, air, water, ecosystems, etc. Though a higher percentage of the environmental impact from the mining industry are considered to primarily affect local areas where operations are carried out, in some situations transboundary (multination) impact and waste arises and this is intertwined with global damage. The extraction stage (mine development and operation) in industry operations are known to create situations of significant land-form changes; comprising of acid mine drainage via adits and waste dumps, metals leaching through waste piles and toxic leaks and overflow through tailings dams and regeant ponds.¹⁵

¹⁵ Ibid

CHAPTER III- DESCRIPTION OF THE REGULATORY FRAMEWORK APPLICABLE TO MINING AND WASTE DISPOSAL OPERATIONS IN SIERRA LEONE

3.1. The evolution of environmental protection standards, the Stockholm conference, and the idea of sustainable development

From a Universal standpoint, environmental law (international and domestic) is a relatively modern area of the Law. It was the unavoidable pressing issue of protecting the environment from irreparable destruction that inspired the World's Nations in 1972 for the United Nations Conference on the Human Environment which was held in Stockholm, Sweden. This was the first global conference on the environment and the watershed moment for the subsequent establishment of a global environmental legal framework.

At the inception of the Stockholm Conference, the relationship between a healthy environment and economic development might have been considered to be ambiguous. However, the present situation entails the realization of States that economic development must be sustainable from an environmental protection standpoint. Policies have therefore been devised and laws enacted to ensure this needed reality of environmentally sustainable development.

The consumption and demand for resources and search for raw material for industrial purposes (such as extractive industry activities) are major causes for the change and degradation caused by humans on the environment.

Of relevance to the agenda of promoting environmental protection in juxtaposition with mining investment in Sierra Leone is the theory of the environmental Kuznets curve (EKC) which postulates an inverted-U relationship between pollution and economic development and highlights the likeness of the environmental protection problem to that of Kuznets's inverted-U relationship between income inequality and development.

The theory espouses that at the initial stages of industrialization, pollution in the EKC rapidly increases globally as higher interest is on financial gain than on environmental protection as LDCs concerned with the said early industrialization (and/or intense mining) cannot afford abatement and also usually have inept environmental regulations. The balance is said to shift in the EKC as incomes improve and advanced industrial sectors become more efficient in protecting the environment with better regulatory institutions. Pollution on the curve decreases in the middle-income range and flattens again in the developed world.¹⁶

Though this concept is hypothetical, LDCs like Sierra Leone will have affinity towards it as arguments have been made that the EKC exemplifies their inevitability to pollute (inclusive of extractive industry waste pollution etc).

Developed countries are financially and technologically better equipped to combat environmental problems as they have advanced in economic growth and are better placed to prioritize attaining environmental goals as their basic sustenance problems have already been addressed and they have transcended the developmental stages now faced by LDCs. Efficiently halting environmental pollution has the potential of undermining economic growth and competitiveness of LDCs as they are comparatively more dependent on natural resources with all the environmental problems exploitation of same entails.¹⁷

Sierra Leone like many sub-Saharan LDCs highly depend on natural resources for revenue and foreign exchange. To secure economic growth and facilitate its poverty reduction drive,

¹⁶ Susmita Dasgupta and others, 'Confronting the Environmental Kuznets Curve' (2002) 16 Journal of Economic Perspectives 147.

¹⁷ 'Environmental Pollution Is Inevitable in Developing Countries' (Breaking Energy)

< https://breakingenergy.com/2014/09/23/environmental-pollution-is-inevitable-in-developing-countries/>accessed 6 June 2020

mining activities will remain a dominant economic priority and the need for viable and upgraded environmental laws will always arise.

In focusing on the international environmental legal position of Sierra Leone regarding extractive industry waste, the pertinent convention to which the country is a party State is the Basel Convention (BC).

It has thus been established that "[b]ecause [international] environmental regulation is here to stay and bound to become more widely adopted, more stringent, and better enforced, the winners in the ... [minerals] markets will not be those ... that avoid environmental control (only later to be forced to internalise the high cost of having done so), but will be those ... that were ahead of the game, those that played a role in changing the industry's production parameters, and those that used their innovative capabilities to their competitive advantage."¹⁸

3.2. Substantive obligations imposed on extractive and waste disposal activities and mechanisms to monitor and enforce compliance:

3.2.1. International Instrument(s)

There is a recognizable increase in international environmental law seen in growing number of legal authorities at the multi-nation stage or multilateral institution level that sets regulations for the industry and facilitates the application of more viable national enactments. In understanding the international environmental regulatory framework pertinent to extractive industry waste, certain issues must be evaluated. These include significant legal trends affecting the mineral resources industry; all stages of mineral industrial processes from exploration to waste management are now being placed under more rigid governmental control through regulations.

¹⁸ InforMEA (n 1)

CEU eTD Collection

The concept of 'sustainable development' is now the established standard for regulations pertinent to mineral industries in general and specifically its waste management. Further, the public and regulatory perception of the extractive industry is changing. It is now being less viewed as a beneficial goods and service provider and more now as a chemical creating industry chiefly engaged in the creation of chemical wastes. The changing perception on the mining industry regarding the hazardous effects of its attendant waste has fostered more detailed and stricter environmental regulation. Though there are arguments that this situation is undermining the economic viability of mining in LDCs such as Sierra Leone, the paradigm of sustainable development is now entrenched and the priority of protecting the environment cannot be totally side-lined for economic gains. Harmonious compromises have to be made for both the needed economic development to be fostered and for environmental protection to also be maintained.

To an extent, mining is no longer considered the most desirable economic activity as was before in many LDCs due to all its attendant related problems and although environmental compliance of the extractive industry will mainly be regulated by national enactments, international law has gained unprecedented levels of prominence in this regard.¹⁹

The BC which was identified as the most relevant international environmental convention on extractive industry waste applicable to Sierra Leone, is in general the most all-inclusive global environmental treaty pertinent to extractive industry waste amongst other wastes. Currently, 170 member States have ratified this treaty in effecting their legal obligations of protecting the environment against the adverse effects resulting from the generation (with

¹⁹ Ibid

focus on extractive industry activities), management, transboundary movements and disposal of hazardous and other wastes.²⁰

The BC was negotiated through the United Nations Environment Programme in the late 1980s and subsequently entered into force on 5th May 1992. It was initially designed to decrease the movements of hazardous waste between States, and its inceptive emphasis was to curtail transfer of hazardous waste from developed countries to LDCs. Its initial target was the cross-border transportation of hazardous wastes which captivated the public's attention in the 1980's as more rigid environmental regulations in developed countries inspired unethical cheaper waste dealing solutions of shipment of hazardous wastes to LDCs in Africa, and other less developed regions. The negative effects upon these LDCs was spiralling and devastating as their now imported waste were indiscriminately dumped and their lacklustre management fostered catastrophic health problems with resultant fatalities coupled with immediate widespread degradation of the land, water and air which prolonged to future years.

Of more significance to the purpose of this paper, the BC is also fundamentally intended to diminish the amount and level of toxicity of generated wastes so that positive environmental management could be ensured and carried out as near as practicable to the source of generation, and to support LDCs with sound environmental management of the said hazardous wastes they generate.

With regards to the non-transboundary control aspect of the BC in mandating State Parties to efficiently manage and dispose hazardous wastes in an environmentally sound manner

²⁰ 'Basel Convention Home Page' accessed 6 June 2020">http://www.basel.int/> accessed 6 June 2020.

(ESM), stringent levels of control are imposed from generation of a hazardous waste to its storage, transport, treatment, reuse, recycling, recovery and final disposal.

Such fundamental primary mandate of the BC is identified to be for the protection of human health and the environment against the adverse effects of hazardous wastes. This is further narrowed down under one of the BC's key aims and objectives which is for the reduction of hazardous waste creation and the facilitation of efficient environmental management of hazardous wastes in all parts of the globe. This objective via certain general provisions requires States to observe the basic principles of environmentally sound waste management as espoused in Article 4 of the BC.

Sierra Leone acceded to the BC on the 1st of November 2016 and it has been in force since 30th January 2017. For the purpose of extractive industry waste, it is of importance to recognise that through Article 4 (2) a, b and c of the BC, Sierra Leone is by virtue of international law obliged to implement environmental protective extractive industry waste disposal measures as follows:

"2. Each Party shall take the appropriate measures to:

(a) Ensure that the generation of hazardous wastes and other wastes within it is reduced to a minimum, taking into account social, technological and economic aspects;

b) Ensure the availability of adequate disposal facilities, for the environmentally sound management of hazardous wastes and other wastes, that shall be located, to the extent possible, within it, whatever the place of their disposal;

(c) Ensure that persons involved in the management of hazardous wastes or other wastes within it take such steps as are necessary to prevent pollution due to hazardous wastes and other wastes arising from such management and, if such pollution occurs, to minimize the consequences thereof for human health and the environment; "21

It can be deduced that the foregoing paragraphs (a)-(c) make clearly spelt out provisions imposing obligations applicable to the reduction and control of extractive industry waste. The said paragraph (a) of Article 4 (2) highlights the importance of reliance upon technology and it recognizes the need for accounting for economic aspects. This can be considered recognition of the nexus of technology use to foster the paradigm of sustainable development. The subsequent paragraphs (b) and (c) prescribe the need for the implementation of certain best practices which can be seen to have been transcribed and implemented into the Sierra Leone domestic jurisdictions as prerequisite conditions for the issuing of industrial (mining) operating licences after prerequisite Environmental Impact Assessments (EIAs) are carried out.

The following paragraph (d) gives directive on the efficient management of transboundary aspect of wastes whilst (e) prohibits exports of such waste to other BC contracting parties which have sanctioned importation of waste and/or may be incapable of handling such environmentally hazardous burdens. Additionally, (f) highlights the importance of provision of information for any potential transboundary waste movement and implementation of awareness of its hazardous effects whilst (g) is a mirrored provision reflecting the aforementioned paragraph (e) on the opposite spectrum, for potential receiving countries of hazardous waste to impose bans on same. Also, paragraph (h) of the said article 4 (2) in focus, emphasizes the need for cooperation between contracting state parties and relevant

²¹ The Basel Convention

stake holders in increasing efficient management of hazardous wastes and curtailing its illegal trafficking.

Importantly, article 4 (3) of the BC increases the considered threshold of contravening the foregoing obligations as it stipulates illegal trafficking of hazardous wastes or other wastes to be recognized as criminal acts by contracting State parties.

Further, and as subsequently assessed in the Sierra Leonean legislative context, Article 4 (4) of the BC stipulates that *"Each Party shall take appropriate legal, administrative and other measures to implement and enforce the provisions of this Convention, including measures to prevent and punish conduct in contravention of the Convention"*²²

The amendment to the BC integrating Annex IX of category "B2 wastes containing principally inorganic constituents, which may contain metals and organic materials" provides for direct inclusion and categorization of extractive industry waste (<u>as hazardous</u>), to wit; "Wastes from mining operations in non-dispersible form: Natural graphite waste, Slate waste, whether or not roughly trimmed or merely cut, by sawing or otherwise, Mica waste, Leucite, nepheline and nepheline syenite waste, Feldspar waste, Fluorspar waste, Silica wastes in solid form excluding those used in foundry operations,... [and also]... Bauxite residue ("red mud") (pH moderated to less than 11.5)".²³

Although from a more rigid legal interpretation it can be argued that the foregoing provisions do not set out enforcement mechanisms but are rather substantive obligations applicable to the State parties to the BC, it is worthwhile to note that upon acceding to it, all the foregoing

²² Ibid

²³ Ibid

legal obligations stipulated therein are applicable international environmental law in Sierra Leone and must therefore be upheld and respected.

Further, the relevant domestic enactments as appraised in this thesis provide more practicable enforcement mechanisms for obligations stipulated in the BC which are consequently identically reflected in them (i.e in the domestic law).

3.2.2. Domestic Instruments

The increased level of regulations at all mining activity stages ranging from exploration to extraction has been reflected in respective national level legislation, as States have adopted environmental legal frameworks comprising of more detailed standards.

In Sierra Leone, enacted environmental protection laws are relatively new. For the purposes of extractive industry waste control, the following pieces of legislation are pertinent:

- The Environment Protection Agency Act 2008.

This is the primary environmental protection legislation of the State. It ensures the continued establishment of the Environmental Protection Agency as the regulatory body for oversight and enforcement of all environmental protection issues including extractive industry waste control. This Act further brought the country's environmental obligations up to globally recognized standards and it repealed and replaced the initial Environmental Protection Act 2000.

> The 2008 Act provides for the granting and operation of Environmental Impact Assessment License. Section 23(1) provides that "...no person shall undertake or cause to be undertaken any of the projects set out in the First Schedule unless he holds a valid licence in respect of such project."²⁴

The said first schedule lists under its categories f and g as follows:

"(f) extractive industries (e.g. mining, quarrying, extraction of sand, gravel, salt, peat, oil and gas);

(g) waste management and disposal (e.g. sewerage systems and treatment plants, landfills, treatment plants for household and hazardous waste)"²⁵

It can be interpreted from the foregoing provisions that both the extractive mineral process and the disposal of its attendant waste respectively require EIAs to ensure the continued lawful operation of mining companies regarding their site activities.

Section 23 (2) of the Act criminalizes contravention of the EIA stipulation in subsection (1) with "a fine not exceeding twenty five million leones in the case of a citizen of Sierra Leone and ten thousand United States dollars in the case of a non-citizen or to a term of imprisonment not exceeding two years or to both the fine and imprisonment."

Of further importance also, Part VI - Miscellaneous of the Act, section 58 subsections 2, 3 and 5 provides that:

"(2) The Agency shall take all necessary and appropriate measures to monitor, control and regulate the manufacture, sale, transportation, handling or disposal of toxic and hazardous substances, including toxic and hazardous wastes.

²⁴ Environment Protection Agency Act (2008)

²⁵ Ibid

(3) The introduction or importation of toxic or hazardous wastes into Sierra Leone for storage or disposal by any means whatsoever is prohibited.

(5) The discharge of any toxic and hazardous substance into the air or in, on or under the land and waters of Sierra Leone is prohibited.²⁶

Further, a penalty provision is stipulated in subsection 6 of Section 58 that: "Any person who contravenes subsection (3), (4) or (5) commits an offence and is liable on conviction to a fine not exceeding fifty million leones or to a term of imprisonment not exceeding two years or to both the fine and imprisonment."²⁷

It can thus be deduced that the primary national environmental Act of Sierra Leone reflects awareness of its law makers for the need of enforceability and provision of punitive mechanisms to coerce needed compliance.

Of additional significance also, Section 62 of the Act provides that "the Board may by statutory instrument make regulations for the implementation of the purposes of this Act". It was thus under this enabling provision that the 2013 Environment Protection (Mines and Minerals) Regulations was subsequently born.

- The Mines and Minerals Act of 2009.

This Act further contains distinct provisions for the protection of the environment from extractive industry operations. Though it was actually enacted to govern the economic aspects of the investment mining sector, this said aspect evidently cannot be divorced from environmental protection issues with which it is inextricably intertwined. In its short title/

²⁶ Ibid

²⁷ Ibid

purpose section, it provides inter alia, that this enactment is "to consolidate and amend the law on mines and minerals;<u>to introduce measures to reduce the harmful effects of mining</u> <u>activities on the environment and to provide for other related matters.</u>"²⁸

In the Mines and Minerals Act 2009, Part XV under the rubric "Protection of the Environment" contains Sections 131-137 which are all geared on the environmental protection theme. Section 132 subsection (1) provides for the "[G]eneral duty to protect environment and minimize pollution" and subsection 2 clarifies that all mineral rights holders within the republic are <u>"subject to all laws of the Republic concerning the protection of the environment.</u>"²⁹

Section 133 expressly recognizes and ratifies the Environmental Impact Assessment provisions of the Environmental Protection Agency At 2008 and gives further detailed direction of EIA obligations of mineral rights holders and mining licence applicants. Section 134 provides for monitoring which is relevant to industrial waste activities as it imposes upon mining companies the duty to periodically submit "Environmental Management Programme Report" to the Director of Mines.

 The Environment Protection (Mines and Minerals) Regulations, Statutory Instrument No.10 of 2013.

These Regulations contain further distinct and specific provisions for the protection of the environment against mining waste and as per its Part I, Section 1 (a) and (b), it applies to: (a) *"any person who wishes to undertake or cause to be undertaken any extractive industries*

²⁸ Mines and Minerals Act (2009)

²⁹ Ibid

project, including mining..." and, (b) "body corporates and individuals applying for or issued minerals rights under the Mines and Minerals Act 2009."³⁰

Under these 2013 Regulations, Part II (Principles and Accountability), Section 3 (2) (d) (iii) provides that "Every holder of a mineral right is legally obliged to keep emissions and effluents resulting from its operations under the maximum level of pollutant concentration permitted by these Regulations and <u>they shall manage and control residues, wastes, toxic substances and other contaminants in order to ensure that they will not cause adverse effects on the environment and public health."³¹</u>

These Regulations apparently contain only the minimal aforementioned reference/directions on <u>waste</u> which was previously unanticipated by the researcher to be the case. However, the said directions cannot be practicably relied upon or interpreted in isolation. A more holistic reading and approach to the provisions in these Regulations and the other referenced pieces of legislation on environmental protection will conjointly comprise the desirable environmental protection legal regime governing extractive industry waste.

Section 4 of Part III of the Regulations makes it mandatory for EIA License to be obtained before any mining project can be embarked on and Part V imposes further specific obligations on environmental license holders for the preparation of an environmental management plan to be annually updated and submitted along with annual environmental reports inter alia to the Director of Mines and Board (as established by the 2008 Environment Protection Agency Act). Section 27 of the Regulations further provide for performance monitoring as part of the said environmental management plan. These provisions can be

CEU eTD Collection

³⁰ Environment Protection (Mines and Minerals) Regulations (2013)

³¹ Ibid

understood as ensuring and promoting the control of activities having potential to negatively impact the environment; with mining waste being the point in issue herein.

The Regulations subsequently reemphasize the EIA License requirement for mining operations and provides under Part VIII (Monitoring and Inspection) (Sections 55-57), for adequate control and supervision of the mining companies' activities by a designated Executive Chairman or Authorized Officer. This later provision applies directly to the waste management processes which the mining companies must implement in their operation sites and can thus be utilized as a viable environmental protection mechanism.

Of further significance, Section 63 under Part IX (Enforcement) of the Regulations empowers the Executive Chairman or Authorized Officer as it re-echoes the initial provisions of Section 37 (3) of the 2008 Environmental Protection Agency Act providing unbridled search, entry, inspection and even arresting powers to the Agency on any industrial activity of concern thus governing all or any waste management processes of extractive companies.

Section 64 exemplifies an open and unrestricted mechanism which eliminates red tape for whistle-blowers, concerned parties or potential complainants who may suffer from effects of wrongful environmental waste management practices from any extractive company/entity. It gives locus to every individual in general, to address the Agency Board on these said issues or any other environmental issue generally.

24

CHAPTER IV-EVALUATION OF SIERRA LEONE'S ENVIRONMENTAL PROTECTION REGULATIONS ON EXTRACTIVE INDUSTRY WASTE

4.1. Are they consistent with Sierra Leone's international obligations?

A significant question to be addressed is; Whether there are viable mechanisms in the Sierra Leone legal framework for the implementation of the Basel Convention and international environmental best practices governing extractive industry waste?

Upon scrutiny, it can be discerned that the actual focus of the BC is on restricting, curtailing and outlawing transboundary waste. It can be agreed that Sierra Leone is underdeveloped by global economic standards and it will be highly unlikely for mining companies operating within its jurisdiction to embark on transboundary disposal of their waste as underdeveloped countries with characteristic weaker domestic law enforcement frameworks are naturally most times the victims of such waste disposal activities and not the exporting perpetrators.

However, it must be noted that even though the focus for the purposes of this thesis is on article 4 (2) a,b and c of the BC as earlier mentioned and emphasised in Chapter III b (i) herein, the prohibitory aspect of illicit transboundary movement of waste (which is the primary focus of the BC on its own standing), is also of importance in the Sierra Leone extractive industry context as it involves the operations of financially powerful multinational companies such as Sierra Rutile, London Mining, and Shandong Iron and Steel Group, which must all be subjected to clearly defined environmental obligations notwithstanding the general level of unlikeliness of the prohibited acts.

Although article 4 (2) a, b and c can be considered as broadly stated obligations to State parties and lacking desirable precise legal biting force, Sierra Leone as a member State can be considered to have met these obligations by virtue of its own domestic legislative proactiveness in establishing laws and regulations containing provisions which are specifically aimed at ensuring protection of the environment from extractive industry waste and consequently implementing the said provisions stipulated in the BC via domestic law. Upholding these said obligations can be considered to be reflected in the detailed provisions and directives for granting operation licences subject to EIAs as established in the detailed provisions of Part IV of the 2008 Environmental Protection Agency Act and re-echoed in Section 133 of the 2009 Mines and Minerals Act and reaffirmed in Section 4 of the 2013 Environment Protection (Mines and Minerals) Regulations.

Upon their respective and combined appraisal, it can be deduced that there is a harmonious overlap in the 2008 Environmental Protection Agency Act and the 2013 Environment Protection (Mines and Minerals) Regulations pertaining to the provision of EIA Licences which in essence embodies the State's international environmental obligation for monitoring and control of extractive industry waste disposal measures covered by Article 4 (2) a,b and c of the BC.

Additionally, Article 4 (4) of the BC can be considered to have been efficiently incorporated within the Sierra Leone legislative context by virtue of the penalty provision stipulated in subsection 6 of Section 58 of the 2008 Environmental Protection Agency Act which provides for *a "fine not exceeding fifty million leones or to a term of imprisonment not exceeding two years or to both the fine and imprisonment"* for acts in violation of its subsections 3, 4 and 5 which reflect the primary intents of the BC for curtailing transboundary movement of hazardous wastes.

4.2. Are they capable of minimizing the environmental hazards related to mining and waste disposal in the country (while not undermining economic development)?

Mining is in continuous increment as there has been constant growing worldwide demand levels for mineral resources. There has also been an increase in environmental concern awareness which pose a challenge to the maximization of profitability. Global demand is high for the sustainable development of all the aspects of mining processes inclusive of the management of mining waste.³²

There is no gainsaying that the mining process generates huge amounts of residue which have to be managed to combine economic efficiency with environmental sustainability needs. Environmental risks and the required technology to manage it must always be taken into account.³³

Since preceding decades, the 'polluter pays' principle had been firmly embedded in the policy paradigm and environmental regulations are now more rigid worldwide. Despite the existence of adversity between the agenda of attracting mining investment on the one hand and the need for environmental protection on the other, it is now evident that there can be symbiosis for both stringent environmental laws on mining waste with that of a favourable investment platform for mining in general on the other.³⁴

³² José A. Aznar-Sánchez, José J. García-Gómez, Juan F. Velasco-Muñoz ID and Anselmo Carretero-Gómez, 'Mining Waste and Its Sustainable Management: Advances in Worldwide Research' (2018) Department of Economics and Business, Research Centre CAESCG and CIAIMBITAL, University of Almería

³³ Sevket Durucan, Anna Korre and Gabriela Munoz-Melendez, 'Mining Life Cycle Modelling: A Cradle-to-Gate Approach to Environmental Management in the Minerals Industry' 14 Journal of Cleaner Production 1057.

³⁴ Managing sustainable development, A Sourcebook, UNDP Bangkok Regional Hub and Poverty-Environment Initiative Asia-Pacific of UNDP and UN Environment, April 2018

Customarily, governments have implemented prescriptive methods to environmental regulation which have been termed technology standards. Through these standards, there is the stipulation of the technologies to be used for pollution minimization. There are also non-traditional methods to such environmental control, like performance-based regulation which mandate targets for environmental performance and economic instruments and their use have increased in recent years. Utilization of these non-traditional forms of regulation can be added to incentivize companies to devise or make use of more innovative solutions and cleaner technologies for cost efficiency.

For Sierra Leone, a main tool for mitigating harmful environmental impact from mining waste can be seen in the use of EIA Licences as embedded in Section 23 (1) of the 2008 Environment Protection Agency Act and also the stipulated environmental quality standards to be maintained by mineral rights holders under Part VII of the 2013 Mines and Minerals Regulations.

It is my view that the established Laws and Regulations for the minimization of environmental hazards caused by mining waste disposal does not undermine economic development. Global awareness levels on the need for protecting the environment have transcended its embryonic stage and the aspect of whether a rigid dilemma exists in selecting economic development growth over the well-being of the environment can no longer be considered as the real existing conflict.

Sustainable development is now the established paradigm and with the irrefutable need for proper disposal of mining wastes, the focus of the extractive industry in dealing with environmental compliance costs lies in improving technology and implementing the best possible cost-efficient methods available for tackling the waste problem of the industry. Thus, the aspect of sacrificing protection of the environment at the behest of economic growth is no longer an option in full scale existence in the investment and economic growth equation.

CHAPTER V- CONCLUSION AND RECOMMENDATIONS

The research revealed that by the year 2000, the environmental laws governing extractive industry waste in Sierra Leone were not up to speed as in the current regime. There were only skeletal provisions in the form of the 2000 Environmental Protection Act which the 2008 Environmental Protection Agency Act replaced and repealed.

Sierra Leone (like most of Africa's) environmental protection obligations, had always been strenuous to uphold. The lack of robust legal and governance structures needed to curtail deleterious environmental impacts of mining activities had for many years been the status quo. Globalisation has united the scope for sharing commonalities in the complex investment arena of the extractive industry.³⁵

It is almost impossible for Sierra Leone as an LDC to avoid the exploitation of its natural mineral resources with all its attendant factors which contribute to environmental harm. This unavoidable end has been considered by experts to demand the unfettered application of the doctrine of sustainable development. Efficient legal control and management of extractive industry waste are needed mechanisms to ensure the protection of the environment from the varying hazards the said waste can inflict upon it.

There is the widespread view that the mineral resources of Sierra Leone if properly managed can provide sufficient national economic sustenance even with increased population growth. With an effective and well-structured environmental protection agency working efficiently and in harmony with the mineral sector, positive contribution will be made towards the

³⁵ Oyeniyi Abe, 'Extractives Industry Law in Africa' (2020) 38 Journal of Energy & Natural Resources Law 119.

overall drive to curtail the rate of poverty among Sierra Leoneans as well as to reduce the occurrences of environmental disasters.

A clean and safe environment conducive for the health of present and future generations is desirable from all developmental perspectives and can contribute to the boosting of other essential sectors of the country such as agriculture, tourism etc.

Sierra Leone can thus depend on its extractive industry to complement its drive towards its developmental aspirations and desired living standards for its citizenry without being donordriven as has been the case for decades.

It is humbly believed that the findings of this research can form part of a developmental guide to be considered for better environmental protection which is part of the needed equation for attainment of sustainable development whilst on the path of alleviating the country from ongoing and future environmental decadence.

Upon scrutiny, the governing environmental protection laws were considered to have provisions which ensured functionality of necessary mechanisms and needed enforceability to protect the environment from the hazardous impacts of extractive industry waste. Also, the research established that the pertinent pieces of legislation relating to environmental protection were relevant and had requisite foundations to ensure sustainable development.

No glaring lacunae in the governing provisions on extractive industry waste of the environmental laws of Sierra Leone were identified. The issue of undesirable low-level enforcement over the years (as deduced from the lack of any such data which was sought), can be assumed to be due to negligent performance of concerned authorities and/or the prevalence of national level corruption and not due to deficiency of the Laws as enacted.

In order to contribute towards national development of Sierra Leone, the below stated considered recommendations are made by the researcher with the hope that implementation will contribute towards increasing the level of efficiency of the governing environmental laws on extractive industry waste in Sierra Leone:

- The Government of Sierra Leone should increase its commitments to implement the environmental Laws and Regulations governing extractive industry waste. The reality is that for laws and governance policies to be viably implemented in Sierra Leone as with African LDCs in general, the political will and commitment to such end is the primary determining factor).
- 2. Government should increase budgetary support to the EPA. Scarcity of funding for allocation to regulatory bodies and even higher Ministries is an endemic incumbrance for functionality and efficient application of extant laws. Considering the overwhelming importance of environmental protection and the increased awareness levels, the EPA should be prioritized when government financial allocations are made.
- 3. The EPA should consistently publish a Manual which will be made available to the public on environmental obligations in general and on extractive industry waste to clarify and simplify environmental protection measures for the general increase of awareness levels.

32

- 4. A reward mechanism benefitting whistle blowers on environmental breaches relating to extractive industry waste should be implemented to encourage pro-active reporting upon detection of violations.
- The Government should make environmental protection education compulsory for EPA personnel and use environmental protection specialist recommendations for informed learning in educational institutions.
- 6. Specialists of environmental protection on extractive industry waste should make documentation of potential changes they consider will enhance the environment protection process and propose to the government how these outcomes will be achieved.
- 7. Fines and imprisonment terms should be increased for persons who deliberately commit violations of extractive industry environmental protection obligations despite their understanding of the negative environmental impacts of such actions.
- 8. Establishment of an independent statutory body tasked with examining situations of wrongful granting of Licences and compromised EIA findings by the EPA to investors to ensure a higher level of accountability of the Agency.

BIBLIOGRAPHY:

I Primary Sources - Hard Law;

- i. The Environment Protection Agency Act 2008
- ii. The Mines and Minerals Act of 2009.
- iii. The Environment Protection (Mines and Minerals) Regulations 2013
- The Basel Convention on the Control of Transboundary Movements of Hazardous
 Wastes and their Disposal 1992

II Secondary Sources;

- 'Developing an Environmental Model: Piecing Together the Growing Diversity of International Environmental Standards and Agendas Affecting Mining Companies | InforMEA' https://www.informea.org/fr/node/299969> accessed 6 June 2020.
- Minerals Yearbook, 2008, V. 3, Area Reports, International, Africa and the Middle East (Government Printing Office 2010)
- 3. 'AN OVERVIEW OF KEY MINERALS' (28 July 2011) <https://web.archive.org/web/20110728030648/http://www.slminerals.org/content/in dex.php?option=com_content&view=article&id=5&Itemid=9> accessed 6 June 2020
- 4. Victoria Federico, 'The Curse of Natural Resources and Human Development' 51.
- Peter Greenhalgh, West African Diamonds 1919-1983: An Economic History (Manchester University Press 1985).
- Marampa Haematite Iron Ore Mine' (Mining Technology | Mining News and Views Updated Daily) https://www.mining-technology.com/projects/marampamine/ accessed 6 June 2020.

- 7. 'African Minerals | The African Business Journal' <https://www.tabj.co.za/western_africa/african_minerals_mining_company.html> accessed 6 June 2020.
- 8. Claudio Bini, 'Environmental Impact of Abandoned Mine Waste: A Review' [2012]
- M Ledin and K Pedersen, 'The Environmental Impact of Mine Wastes Roles of Microorganisms and Their Significance in Treatment of Mine Wastes' (1996) 41 Earth Science Reviews 67.
- Alexandros Liakopoulos and others, 'Environmental Impacts of Unmanaged Solid Waste at a Former Base Metal Mining and Ore Processing Site (Kirki, Greece)':
 [2010] Waste Management & Research <https://journals.sagepub.com/doi/10.1177/0734242X10375746> accessed 6 June 2020.
- 11. Susmita Dasgupta and others, 'Confronting the Environmental Kuznets Curve' (2002) 16 Journal of Economic Perspectives 147.
- 12. 'Environmental Pollution Is Inevitable in Developing Countries' (Breaking Energy) https://breakingenergy.com/2014/09/23/environmental-pollution-is-inevitable-in-developing-countries/> accessed 6 June 2020
- 13. José A. Aznar-Sánchez, José J. García-Gómez, Juan F. Velasco-Muñoz ID and Anselmo Carretero-Gómez, 'Mining Waste and Its Sustainable Management: Advances in Worldwide Research' (2018) Department of Economics and Business, Research Centre CAESCG and CIAIMBITAL, University of Almería
- 14. Sevket Durucan, Anna Korre and Gabriela Munoz-Melendez, 'Mining Life Cycle Modelling: A Cradle-to-Gate Approach to Environmental Management in the Minerals Industry' 14 Journal of Cleaner Production 1057.

- 15. Managing sustainable development, A Sourcebook, UNDP Bangkok Regional Hub and Poverty-Environment Initiative Asia-Pacific of UNDP and UN Environment, April 2018
- Oyeniyi Abe, 'Extractives Industry Law in Africa' (2020) 38 Journal of Energy & Natural Resources Law 119.