



Promoting Accountability of Public Resources

PERFORMANCE AUDIT REPORT



On the Regulation of River Sand Mining Activities in Liberia

For the Periods July 1, 2016 to June 30, 2021

December 2022

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Auditor General, R.L.**

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Acronyms and abbreviations	
MME	Ministry of Mines and Energy
MA	Mining Agency
INTOSAI	International Organization of Supreme Audit Institutions
ISSAI	International Standards of Supreme Audit Institutions
EPA	Environmental Protection Agency
DM	Director of Mines
ADM	Assistant Director of Mines
BM	Bureau of Mines
LMP	Liberia Minerals Policy
IG	Inspector General
NMML	New Minerals and Mining Law of Liberia
RCL	Revenue Code of Liberia
AMM	Assistant Minister for Mines
GOL	Government of Liberia

	Definition of Key Terminologies
License	Is the rights given to an entity to explore for or mine sand in the Republic granted by the Minister of MME.
Mining Law	Is the branch of law relating to the legal requirements affecting minerals and mining.
Illicit Mining	Is mining activity that is undertaken without state permission, in particular in absence of land rights, mining licenses, and exploration or mineral transportation permits.
Bureau of Mines	Is the Division responsible to collect data about mining and minerals and to oversee mine safety.
Project Community	A community in which a sand mining company is operating.
PPE	Personal Protective Equipment



TRANSMITTAL LETTER

The Honorable Speaker of the House of Representatives and Honorable President Pro-Tempore of the House of Senate.

We have undertaken a Performance Audit on the Regulation of River Sand Mining Activities in Liberia for the fiscal years 2016 to 2021. This audit was conducted in line with the Auditor General's statutory mandate as enshrined under Section 2.1.3 of the GAC Act of 2014.

The audit was conducted in accordance with the International Organization of Supreme Audit Institutions (INTOSAI), Performance Auditing Standards and Guidelines as enshrined in the Performance Audit Manual. The Act that created the Ministry of Mines and Energy was also used as a baseline for the evaluation of the performance of the Ministry.

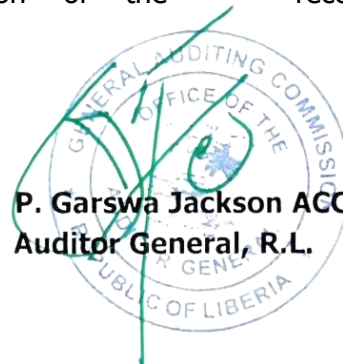
As indicated in the methodology segment of this report, all findings conveyed in the report were formally communicated to the Management of the Ministry of Mines and Energy for their responses. Where responses were provided, they were evaluated and incorporated in this report. We are therefore thankful to the auditee (MME) for assisting us in completing the audit.

The GAC will conduct **Follow-Up** at an appropriate time in the future regarding actions taken in relation to the recommendations in this report.

We ask that you pay particular attention to the issues raised in this report that if implemented, will significantly improve the regulation of sand mining activities in the country.

Given the significance of the matters raised in this report, we urge the Honorable Speaker and the Members of the House of Representatives and Honorable Pro-Tempore and Members of the Liberian Senate to consider the implementation of the recommendations conveyed herein with urgency.

**P. Garswa Jackson ACCA, CFIP, CFC
Auditor General, R.L.**



Monrovia, Liberia
December, 2022

THE EXECUTIVE SUMMARY

Sand is one of the most abundant natural mineral resources in the world. It can be found in almost every country on earth and can be mined from coastlines, rivers, lakes, opened pits, etc. It is also a very important mineral that we use in our everyday lives and built the foundations for the world economies. Our cities are built of sand. We use sand for the construction of buildings, roads, and bridges. The glasses we use in computer and smartphone screens and our windows are made of sand. We also use sand for land reclamation projects. Due to its importance, a **2019 United Nations Environment Programme report; Sand and Sustainability**, says sand has become the second largest resources extracted and traded by volume after water, and one of the least regulated in many regions. The world mines between 40-50 billion tons of sand annually and the demand is likely to increase as world population increases and countries develop. The report however warned that the world is spending its sand “budget” faster than can be replaced. That is, we are extracting sand at a rate faster than it can be replaced by the natural environment.

In Liberia, there is no credible data available on the quantity of sand mined annually. Following the civil war, sand has played an essential part of the reconstruction of the country; buildings, new roads, bridges, etc. Sand mining also provides job opportunities and income; and enhances local economy. However, sand needs to be mined in a more responsible and sustainable manner. Additionally, Liberia is signatory to the United Nations Sustainable Development Goals 2030. The UN-SDG 12 is aimed at ensuring “responsible/sustainable consumption and production patterns everywhere in the world.” To meet this goal relative to sustainable and responsible river sand mining in Liberia, decisions concerning where to mine, how much and how often to extract, who should and how to monitor, etc. are to be determined/guided by a legal framework; policies and specific guidelines for sand mining.

Sand mining was mostly on the coastline/beaches of Liberia. There was, however, a growing concern about the adverse effects of beach sand mining. Sea erosion destroyed buildings/properties along the beaches and coastlines. The numerous destructions of properties in the Township of West Point and the Borough of New Kru Town are vivid examples of sea erosion blamed on beach sand mining. Thus, the Government of Liberia was constrained to put mechanisms in place to ensure sustainable mining of sand and other industrial rocks and minerals for construction and traditional purposes as well as ensure the adequate generation of revenues from these activities. One of the measures put in place was to ban beach sand mining in Liberia. Rivers, then became the primary source of sand mining.

Objective and Scope of the Audit

The overall audit objective is to assess whether the Ministry of Mines and Energy (MME) has sufficient relevant legal framework in place to regulate river sand mining activities across the country.

Methods Used in Gathering Audit Evidence

We reviewed documents, analyzed data, conducted interviews and performed physical observations to gather sufficient relevant audit evidence for the report.

Assessment Criteria

Assessment criteria for the audit were drawn from the following sources:

- The Act Establishing the Ministry of Mines and Energy
- The New Minerals and Mining Laws of 2000
- Mineral Policy of Liberia 2010
- Exploration Regulations 2010
- The Environmental Impact Procedural Guidelines of Liberia
- The Revenue Code of Liberia 2011
- The United Nations Sustainable Development Goals

Summary of Findings

Limited Guidelines and Legal Framework for River Sand Mining

The audit acknowledges the existence of some notable regulations and policies that include the Mineral and Mining Laws of 2000, the Liberia Mining Policy and the Environmental Impact Procedural Guidelines of Liberia. However, the referenced regulations/policies are mostly generic or broad and cover the entire mining industry of Liberia, including, but with limited focus/reference on river sand mining. There are no specific laws or policies developed and available to regulate river sand mining in Liberia.

Ineffective Monitoring Mechanisms

Our review of documents and interviews conducted with key players at the MME revealed that there were no monitoring plans, guidelines or SOP. We further observed that there were no field assignments schedules and logs clearly laying out monitoring procedures and processes, reporting requirements and schedules to guide the activities of river sand mining inspectors. Field inspectors and the Inspectorate Division did not make written reports about their monitoring activities on river sand mining across the country.

Illegal/Illicit River Sand Mining Activities

During our field verification and review of documents, we observed that there were illicit mining activities by individual miners (artisanal), Zeph-Na Liberia Inc. on an industrious scale, and by previously licensed companies that failed to regularize their status and operate in accordance with licensing requirements.

River Sand Mining Negatively Affecting Communities

There is evidence of present negative environmental degradation in project communities and evidence of high risks of future environmental disasters observed during our field verification. The river banks were caving in along the St. Paul River and evidence of flooding and erosion were observed. Further, we observed cracks meandering on several buildings along the road during the field visits. Residents claimed that the cracks are due the effects of heavy equipment used by the miners and constant passing of huge trucks transporting sand.

Benefits Not Impacting the Communities

Seventy-seven percent (77%) of residents interviewed asserted that community leaders do not account for the funds received; no financial reports to the communities on the amounts received from the companies, amounts expended and balances available. The residents also said they are not consulted about community projects undertaken out of the funds, neither are they informed about project costs.

Limited Skilled/Qualified Personnel at BM

During an interview, the Inspector General of Mines, asserted that the Inspectorate Division does not have sufficient trained staff to function adequately. Relative to river sand mining, he indicated that there is a need to have professionals like engineers, geologists, and environmentalist, with the requisite technical and scientific skills to effectively assess/monitor the activities of miners. The division currently lacks those staff. The head of HR did not respond to questionnaire we circularized requesting information and other data on staffing arrangement and personnel qualifications at the BM and the inspectorate division in particular.

Limited Collaboration Between MME and Other Regulatory Bodies

Documents reviewed for the audited period did not show evidence of collaborations, such as meeting minutes, MOUs, joint resolutions, joint investigation reports or research activities between MME and other stakeholders.

Unknown Sand Budget and Sustainability

The Ministry of Mines and Energy did not provide the "sand budget" for Liberia; that is , the current quantity of sand in the various rivers, the quantity being mined, and the rate at which the rivers are naturally replenishing the sand mined. Further, the Ministry did not provide a yearly quantity of sand extracted from rivers by mining companies to corroborate the information provided by the companies.

Lack of Safety Measures and Equipment at Mining Sites

During our field verification and inspection of miners' operation sites, mine workers were observed to be working without PPEs. There were no eye shields, no safety boots, reflector jackets, etc. seen on staff and others working at the operation sites. Additionally, there were no warning/danger signs posted at strategic high risks points/locations to alert individuals (customers, staff, visitors, etc.) of impending dangers. Also, representatives of companies visited

could not provide copies of “hygiene and occupational safety regulations” reviewed and signed by the Minister, neither were there safety regulations conspicuously posted for all to see as enshrined in Section 16.6 of the Mineral and Mining Laws of 2000.

Conclusions

This chapter presents the conclusion of the findings against the key audit objectives as to whether the Ministry of Mines and Energy has the requisite laws, monitoring mechanism, etc. to regulate river sand mining activities in Liberia.

1. There are no specific laws/policies to directly regulate river sand mining in Liberia. The existing mining laws and policies do not comprehensively guide river sand mining activities across the country. Those laws and policies are generic and very broad.
2. Despite having the administrative structure in place to monitor and enforce the mining laws, the Ministry’s mechanisms employed are not yielding the desirable outcomes.
3. The lack of adequate budgetary support to the bureau of mines through MME is impairing the operations of MME/BM and its ability to function effectively.
4. MME has not done much to curtail illegal mining activities across the country. This is evidence by the daring attitudes of illicit miners to flagrantly operate closed to major infrastructures and the refusal or delay of companies to regularize the status of licenses and refusal to live up to licensing requirements.
5. There is eminent danger of erosion, flooding, and other negative environmental and social economic impact on river sand mining communities.
6. Funds paid as royalties to sand mining communities meant for development purposes for the entire communities are not meeting the intended objectives and there is no proper accountability of funds collected by community leaders.
7. MME does not have the requisite number of qualified employees to effectively administer river sand mining activities.
8. No evidence of collaboration among relevant regulatory stakeholders for the audited period.
9. The exact quantity of sand being mined from rivers across the country is unknown. Further, there are no available data from scientific studies or research of the St. Paul and other rivers to ascertain their sustainability at the current rate of extraction.

10. Mining companies are not prioritizing the safety, health and wellbeing of employees, contractors, customers, community residents and visitors at and around mining sites.

Recommendations

1. MME, in consultation with relevant stakeholders, should develop, approve and operationalize comprehensive policies, rules and or regulations that are specific to the governance of river sand mining in the country. Liberia could take consonant from countries like Malaysia, India, South Africa, etc. that have developed comprehensive policies and guideline specifically for river sand mining.
2. The Bureau of Mines, through the Ministry should be given the requisite budgetary support needed to acquire the services of trained staff and provide the needed logistics to function.
3. MME should develop a robust monitoring and inspection mechanism that will require monthly written reports from field inspectors as well as the Inspector General on the activities of river sand mining in Liberia. The monitoring mechanism should include detail reporting channels, schedules and frequencies of inspections, an inspection checklist and reporting template for uniformity, and an SOP describing actions to be taken and procedures to follow when violations are observed.
4. MME should ensure that its monitoring plan also captures the quantity of sand extracted yearly and the rivers natural rates of replenishment.
5. MME should ensure detail photos of project sites to document the area prior to the commencement of operations (for new companies) and periodically; yearly, for all companies before approving yearly licenses. The photographs, which should include both ground and aerial photos of the land scape, river course, river banks, vegetation, etc., will show changes to the environment and the cumulative effects of sand extraction over time.
6. MME should consider the use of electronics, IT-enabled devices & latest technologies for monitoring and surveillance of the sand mining activities.
7. MME should ensure the mining laws are fully adhere to by all concern parties across the country.
8. MME should put a stop to all forms of river sand mining activities closed to major infrastructures like the bridges near Jamaica Road/Japan High Way and the Caldwell Road.
9. MME should investigate the activities of Zeph-Na Liberia Incorporated, for operating without a mining license.

10. MME should ensure that Grass Field Sand Mining Company (License No. MBL 1218/14), located in Montserrado County and Inland Investment Inc. (License #AM2005020) located in Grand Bassa County are promptly investigated for operating without valid licence. Also, Jiangyo Investment Group (PL10020021) located in Nimba/Bong Counties should be investigated for mining and “disposing off” sand (while holding a prospectus licence) without the approval of the Minister.
11. MME should ensure that mining companies pay all legal fees due to government revenue timely and are penalized for failure to do same in accordance with the mineral and mining laws.
12. MME should review the licenses and operations of all companies mining in the St. Paul River and assess the impact of their activities; cancelling and relocating mines that are causing greater environmental degradation.
13. MME should issue regulations restricting the mining and trucking of sand to between 7am-6pm daily.
14. MME should introduce the licensing/permit of trucks and other vehicles transporting sand in the country to limit and regulate the sector, curtail the sales of illegally mined sand, and generate revenue for the government and the communities.
15. MME should ensure that all funds from mining companies to communities be properly accounted for by the leaderships of benefiting communities.
16. MME should mandate Community leaders managing royalties/funds from sand mining companies to provide comprehensive financial reports, in writing, of all funds received and expended; fund balances, projects undertaken with cost details yearly through the respective mining companies.
17. MME should ensure that all expenditures from the community funds and all projects earmarked in the community should be sanctioned by a resolution of community residents in a style and manner similar to the county development funds. Records of meetings, attendance and decisions should be attached to the financial report.
18. MME should ensure an annual “audit” of community fund is undertaken yearly. The team should comprise at least three reputable persons; 1 representative from the mining company and two community members not part of the community leadership.
19. MME should increase collaboration with other regulatory agencies like the EPA, LRA, on all issues relating to river sand mining across the country.

20. The Government of Liberia should prioritize effective staffing at MME. The Ministry should exert all efforts to ensure that adequate staffing requirements for the efficient and effective monitoring and regulation of river sand mining is achieved.
21. MME should undertake a study of the sand budget of the country as a base line; and henceforth after every 5 years.
22. MME should ensure a comprehensive study of the rivers being mined for data on ecosystem, river beds, fauna.
23. MME should put in place a mandatory threshold of sand to be mined and carry out a compulsory audit of the quantity extracted and quantity permitted along with the replenishment rate of the mined rivers.
24. MME should ensure all river sand mining companies should provide safety materials, such as PPEs, for all employees and visitors.
25. Visible conventional safety signs; with writings and symbols, should be displayed or posted at points/locations that are off limit, or pose a danger to human and materials.
26. MME should ensure that all mining companies have an approved hygiene and safety regulations and posted where it is visible to all.
27. MME should develop /adopt a specific law/policy to regulate or guide sand mining activities across the country.

1 CHAPTER 1: INTRODUCTION

This chapter presents the background and motivation for the audit, the objectives, scope and methodology of the audit, and outlines the sources of audit criteria used.

1.1 Background To the Audit

Sand is one of the most abundant natural mineral resources in the world. It can be found in almost every country on earth and can be mined from coastlines, rivers, lakes, opened pits, etc. It is also a very important mineral that we use in our everyday lives and built the foundations for world economies. Our cities are built of sand. We use sand for the construction of buildings, roads, and bridges. The glasses we use in computer and smartphone screens and our windows are made of sand. We also use sand for land reclamation projects. Due to its importance, a **2019 United Nations Environment Programme report; Sand and Sustainability**, says sand has become the second largest resources extracted and traded by volume after water, and one of the least regulated in many regions. The world mines between 40-50 billion tons of sand annually and the demand is likely to increase as world population increases and countries develop. The report however warned that the world is spending its sand "budget" faster than can be replaced. That is, we are extracting sand at a rate faster than it can be replaced by the natural environment.

In Liberia, there is no credible data available on the quantity of sand mined annually. Following the civil war, sand has played an essential part of the reconstruction of the country; buildings, new roads, bridges, etc. Sand mining also provides job opportunities and income; and enhances local economy. However, sand needs to be mined in a more responsible and sustainable manner.

Sand mining was mostly on the coastline/beaches of Liberia. There was, however, a growing concern about the adverse effects of beach sand mining. Sea erosion destroyed Buildings/properties along the beaches and coastlines. The numerous destructions of properties in the Township of West Point and the Borough of New Kru Town are vivid examples of sea erosion blamed on beach sand mining. Thus, the Government of Liberia was constrained to put mechanisms in place to ensure sustainable mining of sand and other industrial rocks and minerals for construction and traditional purposes as well as insure the adequate generation of revenues from these activities. One of the measures put in place was to ban beach sand mining in Liberia.

The Ministry of Mines & Energy is the statutory agency of government in charge of administering the mining sector of Liberia. The Ministry is responsible to formulate and implement policies and regulations in collaboration with other ministries/entities relative to sand mining. The Ministry is also required to monitor and enforce compliance with all policies, laws and regulations pertaining to research, exploration and development of mineral resources, including sand, in Liberia.

The Bureau of Mines, a department within the Ministry of Mines and Energy, is responsible for all mining activities; including river sand mining.

The Environmental Protection Agency of Liberia is responsible to conduct Environmental Impact Assessment of mining sites before the issuance of mining licenses and the environmental safety.

1.2 Audit Motivation

In the midst of Liberian Government ban on beach sand mining in 2012, rivers have now become the primary source of sand mining for constructions and some major developments within the country. According to information provided by the Ministry of Mines and Energy, there are more than twenty (20) sand mining licenses issued to fourteen (14) registered sand mining companies operating in Liberia; spread out in Montserrado, Margibi, Bong and Grand Bassa Counties.

Unregulated, excessive river sand mining could cause serious harm to the environment and the ecosystem, threatening bridges, river banks and nearby structures as well as polluting ground water.

The New Dawn Newspaper September 07, 2020 edition reported that residents of Battery Factory Community near the river banks alarm of pollution in their area as a result of sand mining. The VOA also reported the lack of clean drinking water due to heavy rain and flooding of the St. Paul River.

1.3 Objective of the Audit

The overall audit objective is to assess whether the Ministry of Mines and Energy (MME) has sufficient relevant legal framework in place to manage river sand mining activities across the country. Specifically, the audit focused on the followings:

- Assessed the adequacy of the legal framework; legislations, policies, etc. in place to regulate river sand mining.
- Assessed the Ministry's controls, inspections and monitoring of river sand mining activities.
- Access the level of collaboration between MME and other stakeholders; EPA, communities, etc.
- Assess the environmental impact on the mining sites.
- Determine whether MME has sufficient skilled personnel to manage sand mining activities.
- Access the benefits accrued by the project communities

1.4 Scope of the Audit

The audit focused primarily on the Bureau of Mines under the Ministry of Mines and Energy and assessed the legal framework in place to regulate river sand mining in the country and covered the fiscal years 2016/2017-2020/2021. The audit also reviewed the collaborations between MME

and EPA relative to environmental issues. It covers four of the fifteen counties of Liberia; Montserrado, Margibi, Grand Bassa and Bong/Nimba Counties.

1.5 Methods of Data Collection and Analysis

The audit was conducted in accordance with the International Standards of Supreme Audit Institutions (ISSAI 3000) as well as relevant SAI standards and guidelines applicable to performance auditing. Audit evidence was gathered through document reviews and data analysis, interviews and physical verification/observations.

1.6 Documents Review and Data Analysis

During the audit, we reviewed documents from the Ministry of Mines and Energy, the EPA, the sand mining companies and others, as well as analyzed data from the LRA to gather comprehensive, relevant and reliable information on the subject matter. Documents reviewed and analyzed also enable us to validate information obtained through interviews, observation and field verifications.

Table 1: List of documents reviewed

Name of Document	Reason
Liberia minerals and mining law 2000	To obtain knowledge on the minerals and mining law (Inspection, safety, fees charged for offenses and penalty, Government right to receive royalties, taxes on precious mineral exported and income taxes from miners)
Mineral exploration regulations	To inform the auditors about term of licenses, exploration right,
Liberia Mineral Policy	To obtain knowledge about the mineral policies and its application
EPA Investigation Report	To have another stakeholder view on environmental issues

Source: Auditors

1.7 Interviews

Interviews were conducted with officials from the Ministry of Mines and Energy, the Environmental Protection Agency, licensed and non-licensed river sand miners, and residents within the project communities.

Table 2: List of Persons Interviewed

Location	Officials Interviewed	Reason
MME	Assistant Minister of Mines	To understand what is required for one to operate a sand mining business in Liberia.
MME	Director of Mines	To gather information on the measures in place to inspect, monitor and regulate mining activities.
MME	Inspector General of Mines	To gather information on how mining activities are monitor and regulated.

Location	Officials Interviewed	Reason
MME	Inspectors	To gather information on inspection carryout on mining sites.
Licensed Miners	Owners of mining entities	To check whether the mining sites are in compliance with the laws of the Republic.
Illegal Miners	6 illicit miners	To establish the level of effect on the environment; especially to their areas of operations.
Residents	Community dwellers	Ascertain whether their benefits in keeping with the MOU actually reaching them on time.

Source: Auditors Analysis

1.8 Physical Verification

We visited the operational sites of sand mining companies in Montserrado, Grand Bassa, Nimba/Bong and Margibi Counties. The visits were to verify the existence of the companies, ascertain whether miners are operating in line with their mining agreed guidelines, and determine whether required safety measures are in place. The physical verification was also intended to find out if there were illicit mining activities going on in the country, see firsthand the environmental impacts of river sand mining on project communities, and assess benefits accrued to the communities.

1.9 Assessment Criteria

In order to answer the audit questions and assess MME's regulation of river sand mining, assessment criteria were drawn from the following sources:

- The Act Establishing the Ministry of Mines and Energy
- The New Minerals and Mining Laws of 2000
- Mineral Policy of Liberia 2010
- Exploration Regulations 2010
- The Environmental Impact Procedural Guidelines of Liberia
- The Revenue Code of Liberia 2011
- The Sustainable Development Goals

2 CHAPTER 2: SYSTEM DESCRIPTION

2.1 Introduction

This chapter describes the processes of obtaining sand mining license; process map. It also identifies governing legislations for the sector, roles and responsibilities of Stakeholders, as well as funding source of the audited entity.

2.2 Process Description – Registration/Qualification of River Sand Miners

Sand mining license falls under Class B. To obtain a Class B mining license, one must first make an application to the Minister of Mines and Energy, who initials and sends the application to the exploration division of the Ministry to commence the process of licensing.

The miner's application to the Minister should include business registration, current tax clearance, filled application form, mining agent's clearance, etc. When granted, the exploration division issues a prospecting license valid for six (6) months for a fee of \$125.00.

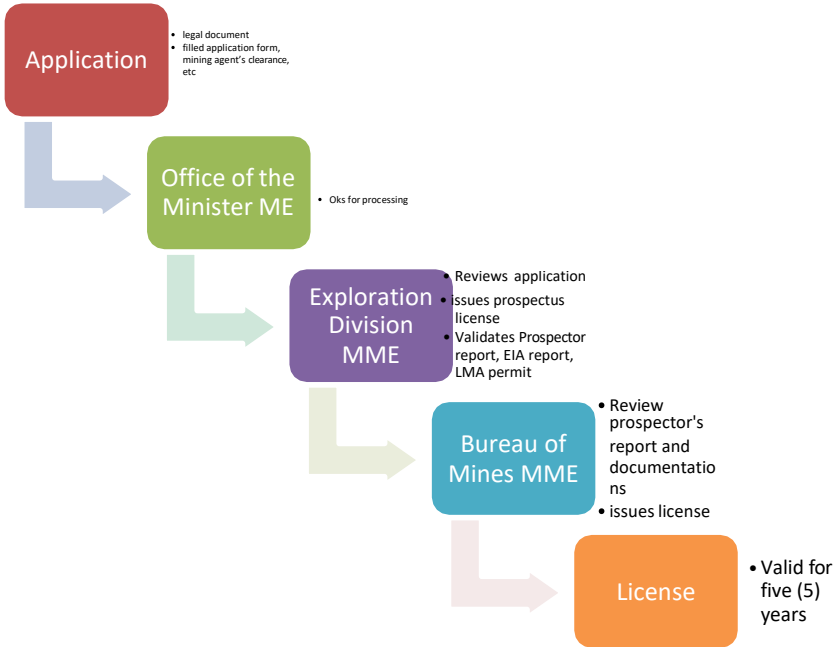
The prospecting license is granted for research purposes only and holder of said license is not allowed to engage in any form of mineral trading. It is renewed only once for the same cost and duration.

The prospector, after researching the potential mining site, sends a written report of findings to the exploration division.

The division then sends a memo to the Bureau of Mines upon validating the prospector's report to initiate the licensing process.

At the Bureau of Mines, the applicant/prospective miner's application is reviewed and approved or denied for licensing.

2.3 PROCESS MAP



2.4 Governing Legislations

River sand mining activities in Liberia should be governed by laws, policy and regulations to ensure sustainability of the sector. Some of the legislations governing the sector include the following.

The Act Establishing the MME

According to Chapter 56 of the Act to repeal Chapter 5 of The Natural Resources Law and to amend the Executive Law to Create the Ministry of Lands and Mines, sub-section 1522; The Ministry of Lands and Mines shall be charged with the administration of the Mining and Survey Laws of the Republic.

The Mineral and Mining Law of 2000

According to Section 2.1 of the Mineral and Mining Law of 2000, minerals on the surface of the ground or in the soil or subsoil, rivers, streams, watercourse, territorial waters and continental shelf are the property of the Republic of Liberia; and, anything pertaining to their exploration, development, mining, and export shall be governed by the Mineral and Mining Law.

Mineral Exploration Regulation 2010

Part 1 of Title 23 of the Liberian Code of Law Revised of the regulations, govern the administration of exploration licenses issued under the Liberia Minerals and Mining Law of 2000, including those granted under the authority of Regulation No. 002 of the Public Procurement and Concessions Commission ("Regulation on Procedures for Issuing Exploration Licenses").

2.5 Key Players and Stakeholders' Roles and Responsibilities

Key Players

Minister

Gives final approval to mining licenses.

Assistant Minister for Mines

- Supervises the overall activities of the Bureau of Mines including administrative and technical operations;
- Scrutinizes the application for mineral export licenses, initiates and submits same to the Minister for approval;
- Develops and updates policy on mining and minerals conservation laws to international standards;
- Makes periodic fact- finding visits to the mining concession areas;
- Works in collaboration with D' MER in the issuance of exploration blocks to avoid overlapping with mining claims (class B and C);
- Participates on the Secretariat of the mineral Technical Committee for review and negotiation of Mineral Development Agreement (MDA);

Director of Mines

- Administers the affairs of the Bureau of Mines.
- Submits monthly, quarterly and annual reports on the operational activities of the Bureau to the Assistant Minister for Mines.
- Checks on the renewal and non-renewal of licenses and ensure that the claimants are charged the right amount due GOL;
- Makes periodic fact-finding visit to mining concession and alluvial mining areas in order to ascertain compliance with mining laws;
- Assists in monitoring mining projects and concessions, conducts field investigation along with other engineers and technicians, assists mining engineers to perform detailed evaluation and quantification of minerals;
- Authorizes the issuance of broker's mining and prospecting license and submits them for validation by the Assistant Minister for Mines
- Assigns survey parties to conduct demarcation or re-demarcation of mining claims and plans programs with other mining engineers for optimization of mining activities.

Inspector General of Mines

- Reports to the Director of the Bureau of Mines any corruption, malfeasance. Misfeasance and nonfeasance on the part of the Mining Agent(s);
- Ensures that the Mining Laws and Regulations are carried out on the field, mining violators are arrested and turned over to the proper authorities;

- Prosecutes all cases of mining violation discovered in remote areas in accordance with the Mineral and Mining Laws of Liberia upon the directive of the Director of the Bureau of Mines;
- Submit monthly and annual reports to the Director of the Bureau Mines;
- Ensures that all licenses are valid for the period and areas of operation;

Inspector

- The Inspector is responsible to monitor and evaluate all miners who are involved in class B and C mining activities.
- Additionally, he or she is also responsible to close down illicit institution that are not registered and do not have valid licenses.
- He/she is responsible to ensure that the appropriate safety measures are put in place by miners in the mining environment in which they work.

Stakeholders

Ministry of Mines and Energy

The Ministry of Mines & Energy (MME) was established by a legislative act to administer all activities relative to mineral resource exploration, coordination and development in the Republic of Liberia.

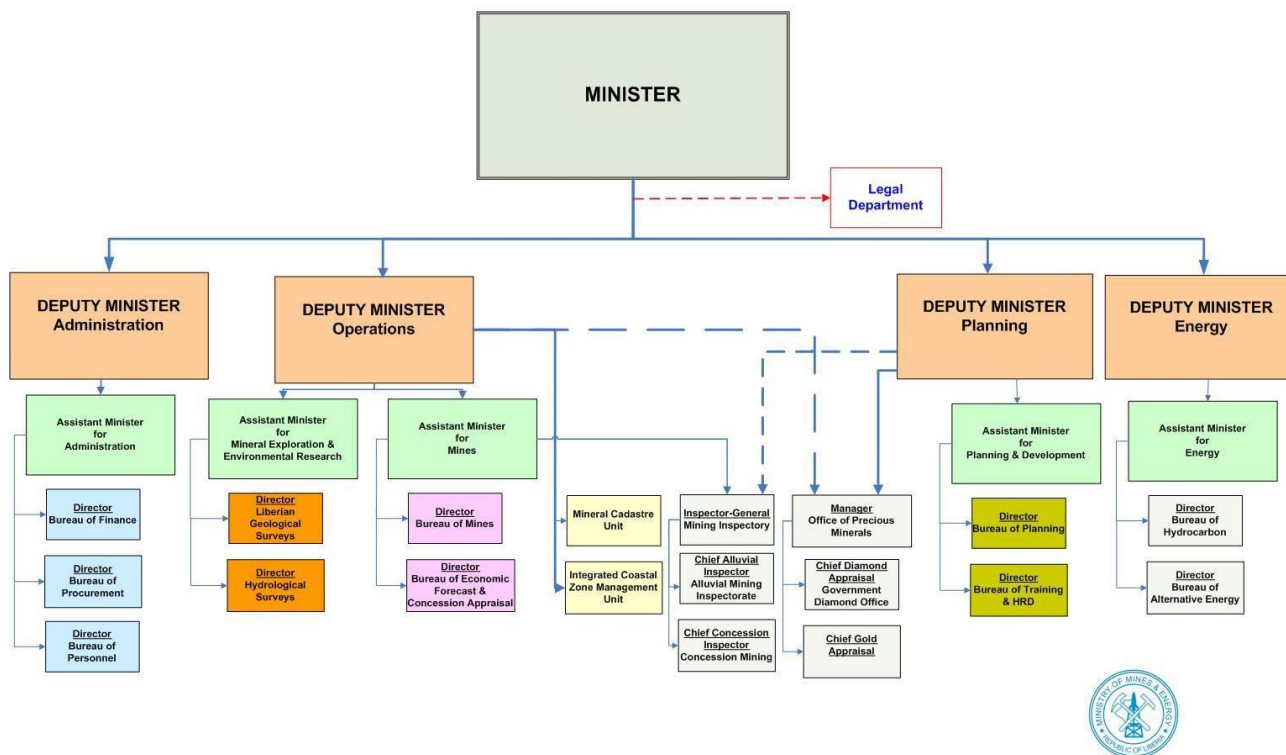
In adherence to its statutory mandate, the Ministry formulates and implements policies and regulations in collaboration with other sector related agencies for the delivery of efficient services to the public from mineral. Additionally, MME supports the mineral industry by providing it with valuable information about Liberia's geology. It also delivers and administers Liberia's Mining Laws to improve the investment climate for mineral development.

The Ministry performs the following functions relative to the audit topic:

- Conducts evaluation of mineral applications and grant mineral rights.
- Monitors and enforces compliance of all policies, laws and regulations pertaining to research, exploration, and development of mineral resources in Liberia.
- Promulgates new regulations to guide and govern the mineral sector
- Engages in scientific investigations for the proper assessment of mineral resources

The Bureau of Mines which is a department within the Ministry of Mines and Energy is responsible for all mining activities.

MINISTRY OF MINES & ENERGY



Environmental Protection Agency

The Environmental Protection Agency (EPA) is the regulatory Institution of the Government of Liberia for the sustainable management of the environment and its natural resources. The Agency was established by an act of the Legislature on November 26, 2002 and published into hand bill on April 30, 2003.

The Act creating the Agency provides the legal mandates and authority to manage, coordinate, monitor and supervise in consultation with relevant line Ministries, Agencies and organizations, and other relevant stakeholders for the protection of the environment and sustainable use of natural resources. The act details the functions of the EPA from the Policy Council to environmental inspectors. The Act also clearly explains the entire environmental impact assessment (EIA) process in its totality.

Liberia Revenue Authority (LRA)

The core mandate of LRA is "to administer and enforce Liberia's revenue laws, including the Liberia Revenue Code of 2000 as amended in 2011, and other related laws under which it is assigned responsibility, for the purpose of assessing, collecting, auditing and accounting for all national revenues and for facilitating legitimate international trade through customs border management and enforcement. LRA roles and responsibilities include collecting fees generated for MME from mining activities.

Liberia Maritime Authority

Collects all amounts due from an applicant for a License or a Licensee (Payments for Surface Rights, License Fee and Application Processing Fees) and all penalties for deposit in the consolidated account of the Government.

Funding Source

For the audited period, the tables below show funding from the Government of Liberia consolidated funds to the Ministry of Mines and Energy.

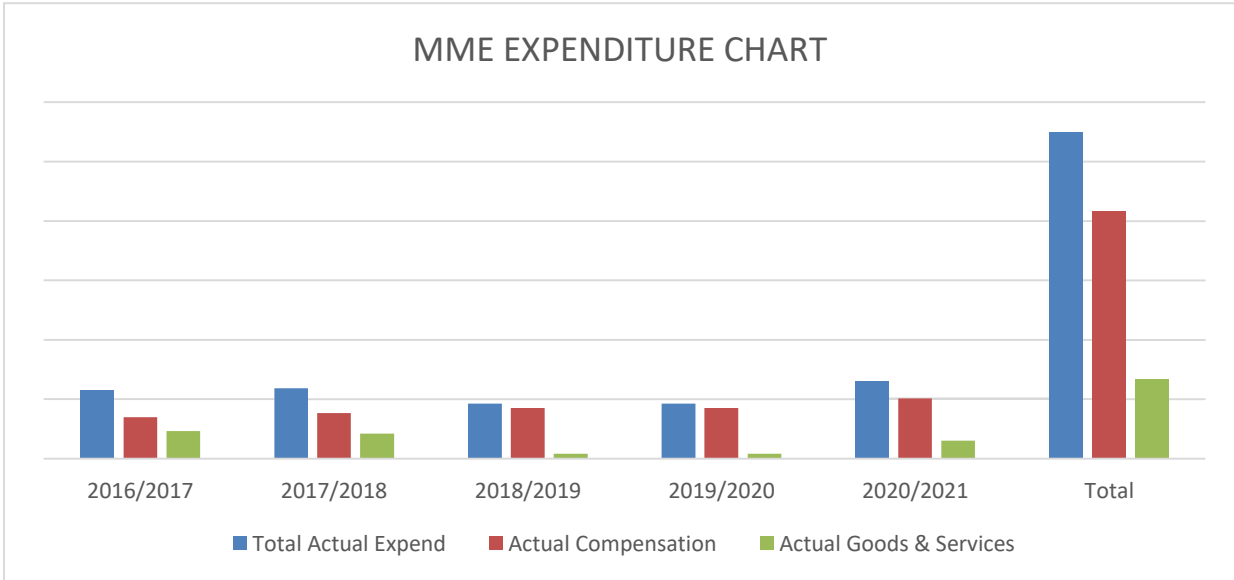
MME actual expenditure total for the audited period was **\$10,993,860.00**; compensation to employees carried **\$8,325,886.00 (75.73%)** and **\$2,667,974.00 (24.27%)** was spent on the procurement of goods and services. See Table 3 below.

Table 3: Funding from GOL to the Ministry of Mines

Period	Total		Compensation for Employees		Goods and Services	
	Budget	Actual	Budget	Actual	Budget	Actual
2016/2017	3,628,558	2,306,645	1,622,419	1,384,290	1,106,139	922,355
2017/2018	2,306,190	2,364,087	1,531,344	1,531,344	774,846	832,743
2018/2019	1,960,515	1,851,626	1,650,082	1,694,801	310,433	156,825
2019/2020	1,742,497	1,851,626	1,530,218	1,694,801	5,000	156,825
2020/2021	1,734,557	2,619,876	1,524,517	2,020,650	185,851	599,226
Total	11,372,317	10,993,860	7,858,580	8,325,886	2,382,269	2,667,974

Source: The National Budget of FY 2016/2017 to 2020/2021

Graphical Representation of MME Actual Expenditure



The Ministry of Mines and Energy generated over **\$104,332,000.00** for the government of Liberia during the audited period. The Ministry expenditure for the same period totaled

\$10,993,860.00 constituting 11% of total revenue generated. The table below shows a summary of MME revenue generation and expenditure for the audit period.

Table 4 Total Expenditure VS Total Revenue for the Audited Period

Period	MME Revenue Actual/Outturn	MME Actual Expenditure	variance
2016/2017	\$ 13,478,000.00	\$ 2,306,645.00	\$ 11,171,355.00
2017/2018	\$ 13,093,000.00	\$ 2,364,087.00	\$ 10,728,913.00
2018/2019	\$ 13,326,000.00	\$ 1,851,626.00	\$ 11,474,374.00
2019/2020	\$ 26,672,000.00	\$ 1,851,626.00	\$ 24,820,374.00
2020/2021	\$ 37,763,000.00	\$ 2,619,876.00	\$ 35,143,124.00
Total	\$ 104,332,000.00	\$ 10,993,860.00	\$ 93,338,140.00

Source: The National Budget of FY 2016/2017 to 2020/2021

The table below shows the Government of Liberia funding to the Bureau of Mines as captured from the MME budget. For the audit period, the Bureau of Mines expended over \$1,325,317.00; \$1,314,187.00 as compensation to employees, and \$11,130.00 for goods and services.

Table 5 GOL Funding to BM for the Audited Period

FY	Total	Compensation for Employees	Goods and Services	Compensation for Employees to Total Expenditure
2016/2017	\$301,845.00	\$ 300,175.00	\$ 1,670.00	99%
2017/2018	\$345,264.00	\$ 338,004.00	\$ 7,260.00	98%
2018/2019	\$339,104.00	\$ 338,004.00	\$ 1,100.00	99.68%
2019/2020	\$339,104.00	\$ 338,004.00	\$ 1,100.00	99.68%
2020/2021	\$339,104.00	Not Available	Not Available	
Total	\$1,325,317.00	\$ 1,314,187.00	\$ 11,130.00	99%

Source: National Budget

From the review of the National Budget for 2020/21, allocation for Compensation of employees and goods and services was not indicated for the Bureau of Mines.

Analyzed data provided by the Liberia Revenue Authority (LRA) for the period July 01, 2016 to June 30, 2021 for 13 river sand mining companies show that the Government of Liberia collected over \$1,042,968.31 USD and \$24,780,981.42 LRD as revenue from the activities of these companies. The revenues include license fees, Corporate Income Taxes, Personal Income Taxes, Business Registration, other withholdings, etc. **Table 6** below summarizes revenue collected from river sand mining companies.

Table 6 Revenue from River Sand Mining

Revenue From River Sand Mining Activities for the Audit Period		
Source	USD	LRD
License fees	\$453,599.00	0
Other fees and charges related to Sand mining companies/activities	\$589,369.31	\$24780981.42
Total	\$1,042,968.31	\$24,780,981.42

Source: LRA

3 CHAPTER 3: FINDINGS

3.1 Introduction

This chapter presents the audit findings based on the audit objective whether the Ministry of Mines and Energy has sufficient legal framework to efficiently and effectively regulate the mining of sand from rivers across Liberia. The findings are based on our assessments using the selected audit methodology, applying reasonable professional judgments to answer audit questions and analyzing the information gathered. The audit focused on whether MME has adequate laws, policies, guidelines and regulations to govern river sand mining activities across the country. We also assessed the monitoring mechanism in place to enforce existing laws, the extent of illicit mining, the effect of mining on the environment, the impact of funds paid to communities, among others.

3.2 Limited Guidelines and legal framework to regulate River Sand Mining

Section 21.1 of the Mining and Mineral Laws of 2000 says, "The Minister shall have and is hereby empowered and authorized to issue, from time to time, Regulations pursuant to this Law for the conservation and development of Mines, Quarries and their substances for the purpose of giving effect to the policies set forth in and provisions of this Law."

Section 10 of the Liberia Mining policy provides that "The Government of Liberia recognizes the need for special procedures to regulate mining of construction materials for the reconstruction of the country. The Government of Liberia shall put mechanisms in place to ensure sustainable mining of industrial rocks and minerals for construction and traditional purposes."

The audit acknowledged the existence of notable regulations and policies that include the Mineral and Mining Laws of 2000, the Liberia Mining Policy and the Environmental Impact Procedural Guidelines of Liberia. However, the referenced regulations/policies are mostly generic or broad and cover the entire mining industry of Liberia, including, but with limited focus/reference on river sand mining. The audit further noted that the Liberia Mineral Policy and the Mining and Mineral Laws of 2020 empower and authorize the Minister to put mechanisms in place and issue regulations to control mining activities like river sand mining.

During the audit, our review of documents provided no evidence of an existing law that is directly regulating river sand mining in Liberia as provided for in the Mineral Laws of 2000. Liberia lacks specific legislations, policies and regulations to govern the river sand mining sector. Despite the mining laws mandating and empowering the Minister to do so, like many developing countries around the world, authorities at the Ministry of Mines and Energy are not giving the sector the needed attention.

With the growing concern of the adverse environmental and social economic effects river sand mining may cause, as well as the expected increase demand for sand in Liberia and globally, the need for sector/commodity-based regulations is crucial. Adequate guidelines and legal framework

governing river sand mining require the existence of explicit well-established and robust regulations, policies, guidelines and systems.

The lack of regulatory policies may lead to indiscriminate mining, causing severe damage to the environment and related ecosystem services.

Recommendation

Management in consultation with relevant stakeholders, should develop comprehensive policies, rules and or regulations that are specific to the governance of river sand mining in the country.

Management's Response

This is a very good observation as the current mining law and succeeding ones cannot and will not comprehensively guide any mining related activities, hence the generic nature. However, comprehensive details of all mining related operations should be provided in the mining regulations. Unfortunately, developing a set of mining regulations remains a work in progress.

Auditor General's Position

We acknowledge Management's acceptance of our finding and recommendation. We will follow up on the implementation of our recommendation during subsequent audit.

3.3 Ineffective Monitoring Mechanisms

Section 6.7 (h) of the Liberia Mineral and Mining Law 2000 states that the Ministry shall have the right to order an inspection at any time of any Exploration Area or Production Area and, upon reasonable notice, of the books and records of the Holders of Mineral Rights.

Further, The Regulations Governing Exploration under A Mineral Exploration License of the Republic of Liberia ('Exploration Regulations'), Section 11.4 states "Inspection Agencies of the Government may monitor a Licensee's operations from time to time to determine compliance with applicable laws and regulations. Government personnel may inspect any facilities or operations of a Licensee in Liberia without prior notice but at reasonable times of the day. "

Our review of documents and interviews conducted with key players at the MME revealed that there were no monitoring plans, guidelines or SOP. We further observed that there were no field assignments schedules and logs clearly laying out monitoring procedures and processes, reporting requirements and schedules to guide the activities of river sand mining inspectors. Field inspectors and the Inspectorate Division did not make written reports about their monitoring activities on river sand mining across the country.

In addition to the review of documents and interviews conducted, we visited nine (9) sand mining companies' sites across the country. The objective of the field verification was to confirm the existence and legal statuses of the companies, inspect the operating environments, and safety procedures in place.

During the field verification, we gathered evidence on the below listed companies that were operating despite not meeting their financial obligations with regard to licensing requirements to the Ministry of Mines and Energy. See **table: 7** for details.

Table 7: Companies Without Valid licenses

No.	Company	Period Operated Without License	
1	Grass Field Sand Mining Co.	2020-2021 2021-2022 2022-2023	
2	Inland Investment Inc.	2021-2022 2022-2023	

Source: GAC

We also observed that there were no Personal Protective Equipment (PPEs) such as life jackets, safety boots, eye protectors/shields, etc., seen on staff working at those facilities. In addition to the above, clearly visible safety and warnings signs to indicate areas of danger to people and vehicles, risks to injuries, or falling, etc. as customary in industrial zones were not observed by auditors.

During an interview, the Inspector General of the Bureau of Mines asserted that the Ministry's inability to carry out effective and efficient monitoring of river sand and other mining activities across the country as stipulated in its functions and responsibilities is due to lack of trained and sufficient man power and the lack of logistics. The IG further said that the Inspectorate Department does not have a single vehicle for operations.

Our analysis of GOL funding to BM through MME budget for the audit period showed that 99% of the bureau's actual expenditure was on personnel cost, while 1% was spent on goods and services. **See table below.**

Y	Compensation	Percentage Compensation	Goods & Services	Percentage G&S	Total	
2016/2017	300,175	99%	1,670	1%	301,845	100%
2017/2018	338,004	98%	7,260	2%	345,264	100%
2018/2019	338,004	99.68%	1,100	0.32%	339,104	100%
2019/2020	338,004	99.68%	1,100	0.32%	339,104	100%
2020/2021	N/A	N/A	N/A		N/A	
Total	\$1,314,187	99%	\$11,130	1%	\$1,325,317	100%

There has been no budgetary allotment and no purchase of capital assets; vehicles, bikes, computers, scientific equipment, etc. by the Ministry/Bureau for the audited periods.

We recognize the constraints hampering the Ministry's ability to effectively monitor as stated by the Inspector General of Mines; nonetheless, an efficient use and deployment of limited resources is essential in yielding reasonable results. Developing a monitoring and inspection plan to deploy the limited staff on inspection periodically, with clear instructions on how to carry on inspections and focusing on certain specifics can mitigate the challenges mentioned above. Also, written reports by mining inspectors and the Inspectorate Division on activities on river sand mining, following up on issues of concern will strengthen the Ministry's control over the sector.

Due to the Ministry's lack of efficient and effective monitoring and inspection mechanism, and its inability to enforce the existing laws throughout the country, the issue of illicit/illegal river sand mining activities is increasing across the country. Unauthorized individuals are openly mining in communities and around critical infrastructures. Mining companies are delaying to pay their mandated fees into government revenue account. Sand mining companies are also not adhering to safety and environmental requirements and concerns of the residents in sand mining communities are been ignored. Lack of monitoring systems may also lead to indiscriminate mining, triggering severe damage to the environment and related ecosystem services.

Recommendations

1. The Bureau of Mines, through the Ministry should be given the requisite budgetary support needed to acquire the services of trained staff and provide the needed logistics to function.
2. The MME should develop a robust monitoring and inspection mechanism that will require monthly written reports from field inspectors as well as the Inspector General on the activities of river sand mining in Liberia. The monitoring mechanism should include the following: Detail reporting channels, schedules and frequencies of inspections, an inspection checklist and reporting template for uniformity, an SOP describing actions to be taken and procedures to follow when violations are observed.
3. MME should ensure that its monitoring plan also captures the quantity of sand extracted yearly and the rivers natural rates of replenishment.
4. MME should ensure detail photos of project sites to document the area prior to the commencement of operations (for new companies) and periodically; yearly, for all companies before approving yearly licenses. The photographs, which should include both ground and aerial photos of the land scape, river course, river banks, vegetation, etc., will show changes to the environment and the cumulative effects of sand extraction over time.
5. MME should consider the use of electronics, IT-enabled devices & latest technologies for monitoring and surveillance of the sand mining activities.

Management's Response

Understandably, monitoring and enforcement will require site visits and documentation of said visits. However, we lack the capacity to do both due to very low budgetary allocations. In relation to having SOPs, there is currently an African Development Bank's supported project called Enhancing Efficiency and Sustainability in the ASM through Climate Smart Technology that is hiring consultants to develop that.

On the issue of inadequate budgetary support to the Bureau of Mines, *the report could not have said it better. This is not only affecting the Bureau of Mines but also the entire MME.*

Auditor General's Position

We acknowledge Management's acceptance of our findings and recommendations. We will follow up on the implementation of our recommendations during subsequent audit.

3.4 Illegal/Illicit River Sand Mining Activities

Sections 7.1 of the Liberia Mineral and Mining Laws forbids any person from operating a Quarry or Mining Building and Industrial Minerals except they have a valid Quarry License obtained as provided for by the mining laws of Liberia.

Section 4.3 of the Mineral Prospecting requirement states that prospecting license is granted for research purposes only and holders of said license are not allowed to engage in any form of mineral trading. However, a holder of prospecting license shall have the right to dispose of mineral extracted during prospecting subject only to the declaration of such find to the Minister.

Section 9.14. (Revocation of Mineral Rights) of the Mineral and Mining Laws 2000 states that "Mineral Rights under this law may be terminated by Government on any of the following grounds: Where the Operator shall fail to pay any taxes, duties, levies, fees or other payment due Government on the date due and within sixty (60) continued days after receiving notice of default or demand for payment has continued to fail to make payment."

During an interview with the Inspector General of Mines, when asked about illicit mining activities across the country, he asserted that "Except for residents along the rivers that mine sand to produce blocks on a very limited scale, we do not have illicit sand miners operating at an industrious or semi-industrious scale."

However, during our field verification and review of documents, we observed that there were illicit mining activities by individual miners (artisanal), Zeph-Na Liberia Inc. on an industrious scale, and by previously licensed companies that failed to regularize their status and operate in accordance with licensing requirements.

Illicit Artisanal Miners

Unauthorized individuals and organized groups were seen mining sand from rivers along the Stockton Creek in closed proximity to the recently constructed Stockton Creek Bridge on the Japan

Freeway; formerly Somalia Drive. Individuals were also observed mining sand closed to the Caldwell Bridge on the Caldwell Road. We further observed illicit river sand mining activities in the St. Paul River by individuals claiming to be residents of the areas. All the mining activities by those individuals and organized groups were being carried out manually through the use of canoes, shovels, buckets, etc.

In separate interviews with the suspected illicit miners, they acknowledged that they do not have legal authorization to mine, but they indicated that mining of sand is the only source of income they have to feed and take care of their families. They further indicated they were not aware of any environmental effect of their activities and do not think the quantity of sand and proximity to the bridges will affect the bridges or surroundings.

Illicit/illegal Mining “Company”

Zeph-Na Lib Inc.

In Margibi County, the road leading to Slagpawein Community, auditors came across ZEPH-NA LIBERIA INCORPORATED, a “company” openly mining and trucking sand from the Junk River; very closed to the river bank. The “company” was using regular industrious machinery; sand dredging boat and heavy equipment, to mine and truck sand away. We visited the operations site of ZEPH-NA on February 01, 2022 during the field verification to ascertain if it’s a legal entity and if it has the mining rights to operate. At the entity’s operations site, those present could not provide information or document of the legal status and mining rights of the “company”. Further, during our review of miners’ document provided by MME, there were no record seen for Zeph-Na.

Zeph-Na Lib Inc. loading truck with sand as dredger seen in the river on the left



Source: GAC photo 1 February 01, 2022.

Previously Licensed Companies Not Meeting License Requirements

Grass Field Sand Mining Company

During our field verification on February 08, 2022, we observed that Grass Field Sand Mining Company (License No. MBL 1218/14), located adjacent the Taylor Mayor Compound, Edenton Down Street, Upper Caldwell, Montserrado County was carrying on full scale river sand mining activities; dredging and selling of sand, in the St. Paul River without a valid mining license.

Our preliminary review of documents at MME did not also show evidence of a current/valid mining license for Grass Field Mining Company. Additional documents provided by MME after the field verification established that Grass Field Mining Company five years sand mining license (License No. MBL 1218/14) issued on July 10, 2013 expired on July 10, 2018. Further, a communication from the Minister of Mines and Energy to Grass Field Mining Company, dated August 15, 2019, informed the company that as at July 10, 2018, it was operating illegally. Accordingly, the communication stated that in reference to Chapter 22.1 of the MML 2000, the company was fined US\$10,000.00. In addition to the fine, the Minister mandated the company to pay US\$20,000.00 annual fees for the periods it was operating illegally; July 10, 2018-July 10, 2019, and July 10, 2019-July 10, 2020. The fine and two years annual fees for illegal operations, totaled \$30,000.00.

Analysis of payment records provided by the LRA showed the company paid the amount of US\$20,000.00 on April 01, 2020 (8 months after the Minister's communication, contravening Section 9.4 of the MML2000) for the two years it operated illegally. There was no evidence provided to confirm that Grass Field paid the fine of US\$10,000.00 as instructed in the Minister's communication.

From the review of payment record from LRA, we observed that the Minister of MME received an application from Grass Field Sand Mining Company for license renewal on February 15, 2022. Analysis of the renewal application documents indicate that MME issued a payment form for the period "FROM APRIL 2020 TO APRIL 2021" to Grass Field Mining Company on February 16, 2022 and the payment of US\$10,000.00 was done on February 22, 2022 (LRA Receipt # 779674). There is no record of penalty or fine levied against the company despite operating without a valid license from April 2, 2020 to April 5, 2021. There is no record for payment for the current period (2021-2022). There is also no evidence of the renewal of Grass Field five years license that expired on July 10, 2018.

Commercial Truck Being Loaded by Grass Field Operator during field visit



Source: GAC Photo 2 08/02/2022

Inland Investment Inc. (License #AM2005020)

In addition to the above, Inland Investment Inc. (License #AM2005020) is located in Grand Bassa County. Its sand mining operations is in the St. John River, Neekreen Town Community. We visited the company’s mining site on January 28, 2022 and observed active dredging and sales of sand. The company representatives; sales manager, and an expatriate worker on ground could not provide any document of the company to auditors. On March 01, 2022, our review of documents from MME and analysis of payment records from LRA established that Inland Investment Inc. has not applied for or made payment for license for the period February 14, 2021 to February 14, 2022.

Jiangyo Investment Group Ltd

JIANGYO INVESTMENT GROUP LTD, located between Bong and Nimba Counties, applied for and obtained a Prospecting License (PL10020021) for the period of six (6) months; effective June 03, 2021. The prospecting license was renewed effective February 07, 2022 with the same coordinates as the initial license.

Jiangyo Mining Coordinates

Beacon	E	N
1	484840	784800
2	485480	784800
3	485480	784165
4	484840	784165

During the field visit to JIANGYO operations site along the St. John River in Dukpuyee Town, Nimba County, on January 31, 2022, we observed that JIANGYO INVESTMENT GROUP LTD was operating fully, with sand dredging boat deployed on the St. John River while its loader was

available on land. There were indications that the company was “disposing” off sand mined during the prospecting period.

Further, the company has also extended its operations to another site about two kilometers away from its original prospecting area without evidence or supporting document granting it the right to prospect/mine at the new site. We observed a huge pile of sand mined from the river and deposited on land at the new site waiting to be trucked away. Physical observation of the terrain, movement of equipment and interviews with residents of Dukpuyee Town indicate that JIANGYO was also engaged in commercial trucking/sales of river sand. During our visit to the company’s offices, and the review of document provided by MME, there was no evidence provided to confirm that the company declared the sand being trucked as required in section 9.14 of the MML



Source: GAC Photo 3, Jiangyo Loader at initial prospecting site. 31/01/2022



Source: GAC Photo 4, Jiangyo dredger deployed on the St. John River. 31/01/2022



Source: GAC Photo 5, Jiangyo Stock pile of sand on 2nd site. 31/01/2022

The increase in illicit mining activities, as well as the refusal and or delay of previously licensed sand miners to regularize their status is due to the Ministry of Mines inefficient and ineffective monitoring and regulatory mechanisms. The Ministry is not fully enforcing the mining laws and regulations. Illegal miners are not being arrested for their violations of the mining laws. Companies failing to live up to the terms of the licenses are not penalized for their actions. According to authorities at the Ministry, the lack of adequate resources is the key factor for their inability to enforce the mining laws across the country.

Illegal/illicit river sand mining activities pose a risk to the environment, may destroy private and public infrastructures, and deny the communities and the government much needed financial resources. The illicit mining of sand closed to the Stockton Creek Bridge and the Caldwell Bridge may undermine the structural integrity of those bridges and shorten their lifespans, cause additional loss of properties and possible human casualties in case any of these bridges collapsed. Further, the delay and refusal of licensed companies to live up to the terms and agreements of issued licenses may not only deprive the government and communities of needed revenues, but may also undermine and weaken the authorities of the Ministry.

Recommendations

1. MME should ensure the mining laws are fully adhered to by all concern parties across the country.
2. MME should put a stop to all forms of river sand mining activities closed to major infrastructures like the bridges near Jamaica Road/Japan High Way and the Caldwell Road.
3. MME should investigate the activities of Zeph-Na Liberia Incorporated, for operating without a mining license.

4. MME should ensure that Grass Field Sand Mining Company (License No. MBL 1218/14), located in Montserrado County and Inland Investment Inc. (License #AM2005020) located in Grand Bassa County are promptly investigated for operating without valid licence. Also, Jiangyo Investment Group (PL10020021) located in Nimba/Bong Counties should be investigated for mining and “disposing off” sand (while holding a prospectus licence) without the approval of the Minister.
5. MME should ensure that mining companies pay all legal fees due to government revenue timely and are penalized for failure to do same in accordance with the mineral and mining laws.

Management’s Response

This is not entirely true. We have, on numerous occasions submitted proposals for funding in order to tackle illicit mining and other activities that are counterproductive to the mining sector but due to what is termed as competing priorities, ours is usually pushed to the back burner. It is impossible to fight illicit activities without the requisite budgetary support.

Auditor General’s Position

We acknowledge Management’s assertion. However, we maintain our finding and recommendations. We will follow up on the implementation of our recommendations during subsequent audit.

3.5 River Sand Mining Negatively Affecting Communities

The Vision Statement of the Liberia Mineral Policy highlights; as one of its shared visions, the achievements of a sustainable and well-governed mining sector that effectively garners and deploys resource rents and that is safe, healthy, gender & ethnically inclusive, environmentally friendly, socially responsible and appreciated by surrounding communities.

Section 8.1 (Protection of the Environment) of the Liberia Mining Laws 2000 says “Each Holder of a Mineral Right shall take reasonable preventative, corrective and restorative measures to limit pollution or contamination of, or damage to streams, water bodies, dry land surfaces and the atmosphere as a result of Exploration or Mining.”

We observed during the field verification that project communities have signs of present negative environmental problems and high risks of future environmental disasters. The river banks are caving in along the St. Paul River and evidence of flooding and erosion were observed. According to residents interviewed, there were mangroves, palm trees and other vegetation along the river banks prior to the increase in river sand mining activities. Some of the vegetations have fallen into the river due to the constant caving in of the river banks, thus increasing the size of the river and posing high risk of flooding to the communities. In Margibi, Grand Bassa and Nimba/Bong Counties, residents in mining communities complained about constant dust in the air due to the condition of their roads.



Source: GAC Photo 6, Erosion along the St. Paul



Source: GAC Photo 7, River Bank Caving In St. Paul



Source: GAC Photo 8

Also, during our interviews with community residents, two other issues were highlighted. Residents claimed that ground vibration by heavy equipment used by the mining companies and frequent movements of heavy trucks transporting sand is causing damage to building foundations and cracks in the walls of buildings along the roads leading to the mining operation sites. They fear continuous use of the roads by these equipment and trucks would further damage their properties and cause the loss of lives if buildings collapse. We saw cracks meandering on buildings along the road during our visits. The residents also informed us that noise pollution and excessive speed by trucks were affecting the communities. They asserted that transport/trucking of sand begins as early as 4:00 am daily and it is depriving them of sleep, posing a risk to their health.

In addition to our observation and assertion by the residents along the St. Paul River, The Environmental Protection Agency of Liberia (EPA) in its April 2021 Investigation on The Sand Mining Operations in Louisiana Township and Caldwell Community, Montserrado County, Liberia, concluded that soil erosion, mudslides, river banks caving in, loss of vegetation and threat to asphalt pavement at certain localities are the consequence of active sand mining/dredging activities in the St. Paul River.

The level of environmental degradation along the St. Paul River and other adverse effects of river sand mining is largely due to ineffective monitoring mechanisms in place and the lack of adequate legal and regulatory framework for mining activities.

River sand mining can increase flood risk, cause pollution, lower the water table, reduce biodiversity and threaten critical infrastructures. Residents in sand mining communities visited are at high risks of getting health issues due to dusts from trucks transporting sand, as well as possible damage to properties, collapse of buildings, etc.

Recommendations

1. MME should review the licenses and operations of all companies mining in the St. Paul River and assess the impact of their activities; cancelling and relocating mines that are causing greater environmental degradation.
2. MME should issue regulations restricting the mining and trucking of sand to between 6am-6pm daily.
3. MME should introduce the licensing/permit of trucks and other vehicles transporting sand in the country to limit and regulate the sector, curtail the sales of illegally mined sand, and generate revenue for the government and the communities.

Management's Response

There is no mining operation that is free from one environmental/social problem or the other. However, it is required that the EPA Permit is obtained by the applicant of a Class B Mining License. The EPA has its fiduciary responsibility to manage the environment, therefore we can only envisage that before a permit is issued, all the relevant conditions, including mitigation measures to problems identified, have been met.

Auditor General's Position

We acknowledge management's assertion. However, we maintain that effective oversight, monitoring and enforcement of established regulations can minimize the negative effect mining activities have on the environment and society.

Further, EPA "fiduciary responsibility to manage the environment" as mentioned in MME's response does not relieve the Ministry of its statutory responsibility as enshrined in Section 8.1 (Titled: Protection of the Environment) of the Liberia Mining Laws 2000 requiring miners to take reasonable steps; preventive, corrective, and restorative) to safeguard the environment.

Therefore, we maintain our findings and recommendations. We will follow up on the implementation of our recommendations during subsequent audit.

3.6 Benefits from Sand Mining Not Impacting the Communities

According to Chapter 11 of the Liberia Mineral Policy – "The Government of Liberia will ensure that communities adversely affected or that could be thus affected by mining operations derive regular and significant benefits from those operations. A predictable formula shall be put in place to determine such benefits, which shall include but not be limited to revenue allocation, access to employment, the provision of infrastructure for local use and resources for local education and skills formation.

The Ministry has made an official Memorandum of Understanding (MOU) between a company seeking Class B (river sand mining) license and the project community as one of the required documentations to qualify for a mining license. According to the Assistant Minister of Mines and the Director of Mines, MOUs are mandatory requirements to ensure project communities receive

income for social welfare projects or infrastructure development, job opportunities and other benefits as envisaged in the Law.

The MOUs are signed by the companies' executives and the project communities' leaderships. We interviewed project community leaders and residents, reviewed copies of available MOUs, and carried out physical inspections to assess the impacts of funds provided by mining companies for the benefit of the communities. Nine (9) community leaders interviewed and responses to questionnaires received from 14 sand mining companies indicate that there are signed MOUs between project communities and mining companies. However, only two MOUs were observed by auditors.

We gathered through interviews that community leaders were the direct representatives of their respective communities and are responsible to ensure compliance with the MOU's, manage all funds and direct development activities emanating from the MOU's. In addition to other provisions, community leaders interviewed said the MOUs require royalty payments in cash as the main source of income/benefit to the communities. Royalties range from US\$4.00 to US\$6.00 per load of truck sold by the companies. Every community visited had representatives on site to keep records of served trucks leaving. According to community leaders interviewed, companies are fulfilling their obligations for cash payments to the communities as enshrined in the MOUs.

However, 77% of those interviewed claimed that community leaders do not account for the funds received; no financial reports to the communities on the amounts received from the companies, amounts expended and balances available. The residents also said they are not consulted about community projects undertaken out of the funds, neither are they informed about project costs. After our interviews with the community leaders and residents, we toured the communities to verify projects undertaken by sand mining companies and projects undertaken by the communities from funds received as a result of the MOUs.

Neekreen Community, Grand Bassa County

In Neekreen Community, Grand Bassa County, where Inland Mining Company has been operating from 2020, there were no evidence of a visible community project. All the residents interviewed said except for the road leading to its operations site, the company has not undertaken any projects for the community. The residents also informed us that they are aware the company pays money to the community through the community leaders, but there have been no projects undertaken by the community leaders and no account given for the funds. When contacted, the community leader and Commissioner of the town confirmed that there was no development undertaken despite receiving a royalty of US\$4.00 per truck. The Commissioner did not provide information on the usage of the funds collected.

Schlefflin Town, Margibi County

In Schlefflin Town, LICI Incorporated began mining river sand in 2012. According to the Town Chief and the company's representative, the town receives US\$5.00 for every 10 tires-truck and

US\$2.50 for every 6 tires-truck taking sand from LICHI's site. Neither the Town Chief nor the LICHI representative provided copy of the MOU. Regarding accounting of the funds collected, the Town Chief named four (4) hand-pumps, community latrine, contribution to the construction of the community youth center, one off payment for the rent of the town's clinic, as some of the projects undertaken with royalties from LICHI. During our inspection of the mentioned projects, we observed that 3 of the 4 hand pumps were out of use and the latrines were in bad conditions. Moreover, no records of the cost of the projects were given to us. Additionally, there were also no evidence to support payment for the clinic's rent and of the town's contribution to the construction of the youth center.

Community Latrine in Schlefflin



Source: GAC Photo 9

One of 3 Damaged Hand Pumps



Source: GAC photo 10 taken on 27-01-2022

Slagpawein Town, Margibi County

Jiuzhou Int'l Lib. Inc. began river sand mining operations in Slagpawein Town, Margibi County on February 17, 2021. The community youth chairman and the Town Chief informed auditors that as part of the MOU signed between the town and the company, the town receives cash payments from the company. Copy of the MOU provided by the company revealed that the company was to pay four thousand united states dollars (US\$4,000.00) to the community via its leadership for the first-year operation, 2021. The community chairman, in collaboration with the Town Chief and the youth chairman, manages the town's funds received from the company operations. During our visit to the town, the community chairman was not available to be interviewed. We interviewed both the town chief and the youth chairman. They confirmed that the company was complying with the MOU and paying the stipulated amount to the town. However, they could not provide evidence on how the funds were used, neither show us physical projects undertaken from the funds. Further, town residents interviewed informed auditors that there are no projects undertaken by the community leadership or the company and the towns' leadership does not account for funds received.

Edenton Down Street Community, Caldwell-Montserrado County

Grass Field Sand Mining Company began river sand mining operations in Edenton Down Street Community, Caldwell-Montserrado County since 2014 and is continuing to mine sand as at the date of the audit team visitation. The community chairman told auditors that the current MOU between the company and the community is yet to be signed by both parties. The community lawyer is reviewing the document. Notwithstanding, in the absence of the signed MOU, the community is still receiving the royalty of US\$5.00 per truck leaving the site. According to the chairman, the office of the commissioner of Caldwell receives 20% of said amount for "road

maintenance” while the remaining 80% stays for community development. During separate interviews with community residents, 62.5% of interviewees said they are not aware of any project implemented from the funds received and managed by the community leadership. They also said the maintenance of the road is done by the mining company.

Tailor Mayor Compound community, Caldwell, Montserrado County

HYDE Investment Inc. began its operations of river sand mining in the St. Paul River in 2020. The company is located in the Tailor Mayor Compound community, Caldwell, Montserrado County. The community chairman and company representative said an MOU exists giving the community royalty of US\$5.00 per truck.

However, when interviewed, 80% of residents claimed there has not been any community development project undertaken with funds intended for the community and the community leaders do not account for the funds.

Communities are not benefiting as intended by the mining laws and Government of Liberia due to the lack of accountability by community leaders who are managers of community funds. Those managing the funds are not consulting the entire citizenry, neither are they giving proper account of the funds generated or expended. Further, there is no mechanism put in place by the government or MME to ensure that revenues paid to communities through their leaders are used for the communities.

Failure to account for funds intended for the development of communities could lead to corruption, fraud, mismanagement and waste of public resources. Funds may be diverted to personal use and communities could be left destitute with no visible or tangible benefits after the sand is depleted. Fraud, waste and mismanagement of public funds could also increase poverty and incite community violence.

Recommendations

1. MME through their oversights should ensure that all funds from mining companies to communities be properly accounted for by the leaderships of benefiting communities.
2. MME should mandate Community leaders managing royalties/funds from sand mining companies to provide comprehensive financial reports, in writing, of all funds received and expended; funds balances, projects undertaken with cost details yearly through the respective mining companies.
3. MME should ensure that all expenditures from the community funds and all projects earmarked in the community should be sanctioned by a resolution of community residents in a style and manner similar to the county development funds. Records of meetings, attendance and decisions should be attached to the financial report.

4. MME should ensure that an annual "audit" of community fund be undertaken yearly. The team should comprise at least three reputable persons; 1 representative from the mining company and two community members not part of the community leadership.

Management's Response

An MoU with the host communities of a Class B operations is required as part of the licensing regime. However, MME is not party to the drafting of said MoU. Terms and conditions in the MoU are discussed and agreed on by the company and the host communities. Additionally, the local government structure in that particular area is also a signatory to that document. However, we could initiate a process of guiding the administration of the MoU.

Auditor General's Position

We acknowledge Management's assertion that "MME is not party to the drafting of said MoU". However, we recognize that MME is the proponent of the requirement of having an MoU between miners and communities as a prerequisite for licensing. This requirement is aimed at actualizing government's **vision** laid out in the Mineral Policy to ensure that communities adversely affected or that could be thus affected by mining operations derive regular and significant benefits from those operations. Accordingly, MME being the crafter and enforcer of this requirement, can also revised or augment the existing requirement or issue new ones in line with recommendations put forth in this report.

Therefore, we maintain our findings and recommendations. We will follow up on the implementation of our recommendations during subsequent audit.

3.7 Limited Qualified Personnel

The Liberia Mining Policy section 13 recognizes the importance of strengthening key institutions involved in the monitoring of the mineral sector and emphasizes the need for trainings for these entities.

In order to effectively and efficiently execute its functions and responsibilities, it is essential that the Ministry has the requisite number of trained and specialized staff.

During interview with the Inspector General of Mines, he informed the audit team that the Inspectorate Division does not have sufficient trained staff to function adequately. Relative to river sand mining, he said there is a need to have professionals like engineers, geologists, and environmentalist, with the requisite technical and scientific skills to effectively assess/monitor the activities of miners. The division currently lacks those staff. The IG also intimated that the Inspectorate division needs at least two hundred (200) well trained staff to adequately cover the entire country, but at the time of the interview, the division had only sixty-seven (67) staff; 20 assigned at Headquarters in administrative roles, while 47 are serving as inspectors covering the 15 counties.

The Human Resources Department at MME is responsible for staffing; recruitment, training and development, etc. The head of HR did not respond to questionnaire circularized requesting

information and other data on staffing arrangement and personnel qualifications at the BM and the inspectorate division in particular.

The low budgetary allocation to the Ministry is affecting its ability to hire more trained/ specialized staff to effectively carry out its functions.

The lack of sufficient qualified staff to monitor river sand mining activities across the country may lead to constant violations and non-enforcement of the mining laws, an increase in illicit river sand mining activities, and staff inability to investigate and report on environmental bridges and identify future risks.

Recommendation

The Government of Liberia should prioritize effective staffing at MME. The Ministry should exert all efforts to ensure that adequate staffing requirements for the efficient and effective monitoring and regulation of river sand mining is achieved.

Management's Response

MME does have qualified staff to administer river sand mining but would require reshuffling. We take this under consideration.

Auditor General's Position

We acknowledge Management's acceptance of our findings and recommendations. We will follow up on the implementation of our recommendations during subsequent audit.

3.8 Limited Collaboration Between MME and Other Regulatory Bodies

Sections 16.7, 16.5 and 16.9 of the Mineral and Mining Law 2000 provide for collaborations amongst MME and Ministry of Health, Ministry of Labour, EPA, etc. on relevant issues relative to mining.

Additionally, an effective collaboration would also bring about joint policies, resolutions, setting up of joint working groups or technical committees, as well as cooperate on field patrols and investigations. These collaborative efforts relative to the river sand mining sector are essential in carving a common approach aimed at curtailing the negative effects of mining and ensuring the sustainability of the sector.

Contrary to the above, documents reviewed for the audited period did not show evidence of collaborations, such as meeting minutes, MOUs, joint resolutions, joint investigation reports or research activities between MME and other stakeholders like the EPA.

Limited collaboration between MME and other regulators is due to the Ministry's failure to adhere to the laws requiring same.

The lack of collaboration between MME and other regulatory stakeholders regarding river sand mining could result to conflicts, confusion in the enforcement of the laws, and failure to clearly define and reenforce each stakeholder's roles and responsibilities.

Recommendation

MME should increase collaboration with other regulatory agencies like the EPA, LRA, on all issues relating to river sand mining across the country.

Management's Response

We sometimes collaborate with the LRA to conduct inspections.

Auditor General's Position

We acknowledge Management's acceptance of our findings and recommendations. We will follow up on the implementation of our recommendations during subsequent audit.

3.9 Unknown Sand Budget and Sustainability

The Mineral and Mining Laws of Liberia say one of the visions of the Liberia Mineral Policy is to have a comprehensive knowledge of Liberia's mineral endowment.

The Ministry of Mines and Energy did not provide the "sand budget" for Liberia; that is the current quantity of sand in the various rivers, the quantity being mined, and the rate at which the rivers are naturally replenishing the sand mined. Further, the Ministry did not provide a yearly quantity of sand extracted from rivers by mining companies to corroborate data provided by the companies.

Record from MME revealed that 17 river sand mining licenses (Class B) were issued across the country; 14 in Montserrado, 2 in Margibi, 1 in Grand Bassa. We circularized questionnaire to each of the 17 license holders to provide records of their yearly extraction data. Twelve respondents provided annual production/extraction data averaging about 48,000 cubic meters (16,950 tons) of sand yearly. Analysis of data provided also indicates that more than 527,000 cubic meters (186,108 tons) of sand is being extracted from rivers yearly by all operating mining companies. The veracity of data provided by mining companies cannot be independently established. The companies that provided the data informed auditors that the productions figures are calculated from the number of trucks loaded.

The Ministry is giving less attention to river sand mining activities as compare to other minerals like gold, diamond and iron ores.

The lack of scientific research and standardized data to make informed decision about river sand mining could limit regulations, deplete the country sand resources and further cause

environmental degradation. Without credible data, such as the rate of extraction, it would be difficult to minimized the impact of sand extraction in rivers across the country.

Recommendations

1. MME should undertake a study of the sand budget of the country as a base line; and henceforth after every 5 years.
2. MME should ensure a comprehensive study of the rivers being mined for data on ecosystem, river beds, fauna.
3. MME should put in place a mandatory threshold of sand to be mined and carry out a compulsory audit of the quantity extracted and quantity permitted along with the replenishment rate of the mined rivers.

Management's Response

Research will have to be conducted not only on the St. Paul but every river in Liberia to establish many things not only for sand. A reporting template will be developed to address the extraction rate.

Auditor General's Position

We acknowledge Management's acceptance of our findings and recommendations. We will follow up on the implementation of our recommendations during subsequent audit.

3.10 Lack of Safety Measures and Equipment at Mining Sites

Section 16.1 (Safety Measures) of the Minerals and Mining Laws 2000 states "all Holders of Mineral Rights shall employ and all measures which are intended and/or designed to eliminate or mitigate the risk or danger that their Operations might cause to public safety or hygiene, to mine workers, to the preservation of the Mine or Quarry, to neighboring Mines Quarries, water sources or public roads."

Further, Section 16.6. (Approval of Regulations) mandates the texts of any and all such hygiene and occupational safety regulations; referenced above, shall be submitted to the Minister for his prior review and subsequent approval. Once approved, copies thereof shall be posted in the most visible locations for workers within plants, Operation and other work sites.

Section 6.0, titled Occupational Safety and Health, of the Environmental Permit issued to river sand mining companies requires the companies to implement a comprehensive health and safety policy to cover employees, contractors, subcontractors, visitors and customers. This includes the provision of Personal Protective Equipment (PPEs) for the entire workforce.

We visited 10 mining companies' sites in Montserrado and three other counties to assess safety measures in place. We could not visit/inspect the sites of Ever Bright Incorporated that has four (4) sand mining licenses, Hualee International Corp. and Up Right Incorporation due to MME

failure to formally communicate with the companies' representative to grant auditors access to the companies' facilities. During our field verification and inspection of mining operation sites, mine workers were working without eye shields, safety boots, reflector jackets, etc. as required. Additionally, there were no warning/danger signs posted at strategic high risks points/locations to alert individuals (customers, staff, visitors, etc.) of impending dangers. Due to the possibility of the river banks caving in, it is essential to have signs warning people to stay away from the river banks.

Also, representatives of companies visited could not provide approved copies of hygiene and occupational safety regulations, neither were there safety regulations conspicuously posted for all to see as enshrined in Section 16.6 of the Mineral and Mining Laws of 2000.

Limited monitoring and none enforcement of the mining laws is responsible for miners' failure to adhere to essential safety measures and requirements.

Failure to provide PPEs for staff and visitors at sand mining operations site as well as failure to display warning signs for high risk and off limit areas could lead to workplace injuries, serious health related issues and the destruction of properties. Additionally, the lack of hygiene and safety regulations would not only increase work place injuries, limit staff motivation, but may also draw legal claims against the companies from anyone injured.

Recommendations

MME should ensure that,

1. All river sand mining companies should provide safety materials, such as PPEs, for all employees and visitors.
2. Visible conventional safety signs; with writings and symbols, should be displayed or posted at points/locations that are off limit, or pose a danger to human and materials.
3. All mining companies have an approved hygiene and safety regulations and posted where it is visible to all.

Management's Response

All mining companies operating in Liberia are under obligation to draw up health and safety procedures. However, it is only by inspection of these sites that we will determine if the procedures are adhered to. Again, due to the lack of logistics, we cannot conduct inspections as is deemed adequate.

Auditor General's Position

We acknowledge Management's acceptance of our findings and recommendations. We will follow up on the implementation of our recommendations during subsequent audit.

4 CHAPTER 4: CONCLUSIONS

This chapter presents the conclusion of the findings against the key audit objectives as to whether the Ministry of Mines and Energy has the requisite laws, monitoring mechanism, etc. to regulate river sand mining activities in Liberia.

1. There are no specific laws/policies to directly regulate river sand mining in Liberia. The existing mining laws and policies do not go far enough to fully guide river sand mining activities across the country. Those laws and policies are generic and very broad.
2. Despite having the administrative structure in place to monitor and enforce the mining laws, the Ministry's mechanisms employed are not yielding the desirable outcomes.
3. The lack of adequate budgetary support to the bureau of mines through MME is impairing the operations of MME/BM and its ability to function effectively.
4. MME has not done much to curtail illegal mining activities across the country. This is evidence by the daring attitudes of illicit miners to operate in broad daylight closed to major infrastructures and the refusal or delay of companies to regularize the status of licenses and refusal to live up to licensing requirements.
5. There is eminent danger of erosion, flooding, and other negative environmental and social economic impact on river sand mining communities.
6. Funds paid as royalties to sand mining communities meant for development purposes for the entire communities are not meeting the intended objectives and there is no proper accountability of funds collected by community leaders.
7. MME does not have the requisite number of qualified employees to effectively administer river sand mining activities.
8. No evidence of collaboration among relevant regulatory stakeholders for the audited period.
9. The exact quantity of sand being mined from rivers across the country is unknown. Further, there are no available data from scientific studies or research of the St. Paul and other rivers to ascertain their sustainability at the current rate of extraction.
10. Mining companies are not prioritizing the safety, health and wellbeing of employees, contractors, customers, community residents and visitors at and around mining sites.

5 CHAPTER 5: RECOMMENDATIONS

1. The Ministry of Mines and Energy, in consultation with relevant stakeholders, should develop comprehensive policies, rules and or regulations that are specific to the governance of river sand mining in the country. Liberia could take consonant from countries like Malaysia, India, South Africa, etc. that have developed comprehensive policies and guideline specifically for river sand mining.
2. The Bureau of Mines, through the Ministry should be given the requisite budgetary support needed to acquire the services of trained staff and provide the needed logistics to function.
3. The Ministry of Mines and Energy should develop a robust monitoring and inspection mechanism that will require monthly written reports from field inspectors as well the inspector general on the activities of river sand mining in Liberia. The monitoring mechanism should include detail reporting channels, schedules and frequencies of inspections, an inspection checklist and reporting template for uniformity, and an SOP describing actions to be taken and procedures to follow when violations are observed.
4. MME should ensure that its monitoring plan also captures the quantity of sand extracted yearly and the rivers natural rates of replenishment.
5. MME should ensure detail photos of project sites to document the area prior to the commencement of operations (for new companies) and periodically; yearly, for all companies before approving yearly licenses. The photographs, which should include both ground and aerial photos of the land scape, river course, river banks, vegetation, etc., will show changes to the environment and the cumulative effects of sand extraction over time.
6. MME should consider the use of electronics, IT-enabled devices & latest technologies for monitoring and surveillance of the sand mining activities.
7. MME should ensure the mining laws are fully adhered to by all concern parties across the country.
8. MME should put a stop to all forms of river sand mining activities closed to major infrastructures like the bridges near Jamaica Road/Japan High Way and the Caldwell Road.
9. MME should investigate the activities of Zeph-Na Liberia Incorporated, for operating without a mining license.

10. MME should ensure that Grass Field Sand Mining Company (License No. MBL 1218/14), located in Montserrado County and Inland Investment Inc. (License #AM2005020) located in Grand Bassa County are promptly investigated for operating without valid licence. Also, Jiangyo Investment Group (PL10020021) located in Nimba/Bong Counties should be investigated for mining and “disposing off” sand (while holding a prospectus licence) without the approval of the Minister.
11. MME should ensure that mining companies pay all legal fees due to government revenue timely and are penalized for failure to do same in accordance with the mineral and mining laws.
12. MME should review the licenses and operations of all companies mining in the St. Paul River and assess the impact of their activities; cancelling and relocating mines that are causing greater environmental degradation.
13. MME should issue regulations restricting the mining and trucking of sand to between 7am-6pm daily.
14. MME should introduce the licensing/permit of trucks and other vehicles transporting sand in the country to limit and regulate the sector, curtail the sales of illegally mined sand, and generate revenue for the government and the communities.
15. MME should ensure that all funds from mining companies to communities be properly accounted for by the leaderships of benefiting communities.
16. MME should mandate Community leaders managing royalties/funds from sand mining companies to provide comprehensive financial reports, in writing, of all funds received and expended; funds balances, projects undertaken with cost details yearly through the respective mining companies.
17. MME should ensure that all expenditures from the community funds and all projects earmarked in the community should be sanctioned by a resolution of community residents in a style and manner similar to the county development funds. Records of meetings, attendance and decisions should be attached to the financial report.
18. An annual “audit” of community fund should be undertaken. The team should comprise at least three reputable persons; 1 representative from the mining company and two community members not part of the community leadership.
19. MME should increase collaboration with other regulatory agencies like the EPA, LRA, on all issues relating to river sand mining across the country.

20. The Government of Liberia should prioritize effective staffing at MME. The Ministry should exert all efforts to ensure that adequate staffing requirements for the efficient and effective monitoring and regulation of river sand mining is achieved.
21. MME should undertake a study of the sand budget of the country as a base line; and henceforth after every 5 years.
22. MME should ensure a comprehensive study of the rivers being mined for data on ecosystem, river beds, fauna.
23. MME should put in place a mandatory threshold of sand to be mined and carry out a compulsory audit of the quantity extracted and quantity permitted along with the replenishment rate of the mined rivers.
24. All river sand mining companies should provide safety materials, such as PPEs, for all employees and visitors.
25. Visible conventional safety signs; with writings and symbols, should be displayed or posted at points/locations that are off limit, or pose a danger to human and materials.
26. MME should ensure that all mining companies have an approved hygiene and safety regulations and posted where it is visible to all.
27. MME should develop /adopt a specific law/policy to regulate or guide sand mining activities across the country.

APPENDIXES

Appendix 1: List of Officials interviewed

Location	Officials Interviewed	Reason
MME	Assisting Minister of Mines and Energy	To understand what is required for one to operate a sand mining business in Liberia.
MME	Director of Mines	To gather information on the measures in place to inspect, monitor and regulate mining activities.
MME	Inspector General of Mines	To gather information on how mining activities are monitor and regulated.
MME	Inspectors	To gather information on inspection carryout on mining sites.
Licensed Miners	Owners of mining entities	To check whether the mining sites are in compliance with the laws of the Republic.
Illegal Miners	6 illicit miners	To establish the level of effect on the environment; especially to their areas of operations.
Residents	Community dwellers	Ascertain whether their benefits in keeping with the MOU actually reaching them on time.
Institution	Title of interviewed officials	Reasons

Appendix 2: List of documents reviewed

Name of Document	Reason
Liberia minerals and mining law 2000	To obtain knowledge on the minerals and mining law (Inspection, safety, fees charged for offenses and penalty, Government right to receive royalties, taxes on precious mineral exported and income taxes from miners)
Mineral exploration regulations	To inform the auditors about term of licenses, exploration right,
Liberia Mineral Policy	To obtain knowledge about the mineral policies and its application
EPA Investigation Report	To get other stakeholders' assessment of the sector.

Appendix 4: Assessment Criteria

No.	Audit questions	Criteria	Source of criteria
1	Are there specific legislations, policies available to regulate river sand mining activities?	Section 10, Liberia Mining policy "The Government of Liberia recognizes the need for special procedures to regulate mining of construction materials for the reconstruction of the country. The Government of Liberia shall put mechanisms in place to ensure sustainable mining of industrial rocks and minerals for construction and traditional purposes." Section 21.1 Mining and Mineral Laws of 2000	Liberia Mining Policy The Mining and Mineral Laws of 2000 SDG Target 12.2

No.	Audit questions	Criteria	Source of criteria
		<p>“The minister is hereby empowered and authorized to issue, from time to time, Regulations pursuant to this Law for the conservation and development of Mines, Quarries and their substances for the purpose of giving effect to the policies set forth in the provisions of this Law.”</p> <p>SDG Target 12.2 -Sustainable Management and Use of Natural Resources</p>	
2	Are there measures in place to monitor licensed sand mining companies?	<p>Section 6.7 (h), Liberia Mineral and Mining Law 2000</p> <p>“The Ministry shall have the right to order an inspection at any time of any Exploration Area or Production Area and, upon reasonable notice, of the books and records of the Holders of Mineral Rights. Target 12.6: Encourage companies to adopt sustainable practices and sustainability reporting (‘Exploration Regulations’), Section 11.4 “Inspection Agencies of the Government may monitor a Licensee’s operations from time to time to determine compliance with applicable laws and regulations. Government personnel may inspect any facilities or operations of a Licensee in Liberia without prior notice but at reasonable times of the day</p> <p>Sect 4.7(4) The EIA process must be monitored from time to time by relevant authorities</p>	<p>Minerals and Mining Laws Liberia National Environmental Policy Exploration regulations</p> <p>Target 12.6</p>
3	Are there defined roles and collaboration between the MME and different entities involved in the regulation of sand mining?	<p>Sections 16.7, 16.5 and 16.9 of the Mineral and Mining Law 2000 provide for collaborations between/amongst MME and Ministry of Health, Ministry of Labour, EPA, etc. on relevant issues relative to mining.</p> <p>Sect 34.1 EPML</p> <p>The Agency, in collaboration with the relevant ministries and agencies, shall establish a monitoring system that provides regular reports for polluting facilities, industries and activities in Liberia;</p>	<p>Mineral and Mining Law 2000</p> <p>Environmental Protection and Management Law</p>
4	Does MME have sufficient skilled staff to manage/monitor	<p>The Liberia Mining Policy Section 13 recognizes the importance of strengthening key institutions involved in the monitoring of the mineral sector and emphasizes the need for trainings for these entities.</p>	<p>The Liberia Mining Policy</p>

No.	Audit questions	Criteria	Source of criteria
	river sand mining activities?		
5	Are the companies in compliance with the environmental impact assessment requirements?	Section 8.4 LML The Minister shall require each applicant for a Class A or Class B Mining License to submit as a condition precedent to the grant of the Mining License, an Environmental Impact Assessment Study Report prior to the grant of any such application. Sect 4.7(2, 3,) 2. EIA process shall be mandated by law and must require environmental impact statements prior to project implementation and environmental audits for all private and public development projects; 3. The Environmental Protection Agency must have the oversight function for EIA process, with the implementation being left with relevant line ministries, agencies and developers,	Liberia Mineral Laws Liberia National Environmental Policy

No	Interview Question	PEOPLE	Responses			Percentage			TOTAL
			YES	NO	Other	YES	NO	OTHER	
1	How long have you resided in this community?								
2	Are you aware that there is/are sand mining company (ies) operating in your community?	31	31	0	0	100%	0%	0%	100%
3	If yes, did the company, or GOL rep or the community chairman have any meeting with the community before the company started work?	31	17	12	2	55%	39%	6%	100%
4	Are you aware of any MOU/agreement between the community and the Miners?	31	15	16	0	48%	52%	0%	100%
5	Are you aware of some of the things the company supposed to do for the community?	31	14	17	0	45%	55%	0%	100%
6	Can you name some projects done by the company or the funds from the company?	31	10	21	0	32%	68%	0%	100%

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No	Interview Question	PEOPLE	Responses			Percentage			TOTAL
			YES	NO	Other	YES	NO	OTHER	
7	Do you know if the community can receive money from the mining company?	31	14	17	0	45%	55%	0%	100%
8	Do community leaders make report on funding received or development work done from the funds received from the mining company?	31	7	24	0	23%	77%	0%	100%
9	Do the community leadership have regular meetings with the community to ask about how you feel and inform you of the activities of the mining company?	31	9	22	0	29%	71%	0%	100%
10	Have you ever experienced flooding in the community?	31	7	24	0	23%	77%	0%	100%
11	Has anyone from GOL come to ask the community about the company's activities?	31	9	22	0	29%	71%	0%	100%
12	Are there problems; now or in the past, you think the sand mining is causing?	31	22	9	0	71%	29%	0%	100%