



Legal and Regulatory Evidence on Mining in Ghana Forest Reserves: A Qualitative Perspective on the Atewa Range Forest Reserve

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ABSTRACT

A global initiative to restore forest reserves in response to biodiversity loss caused by unregulated mining operations has gained significant attention, calling for the conservation of green environments, particularly forest reserves. In addressing this menace, little to no critical attention has been given to the legal and regulatory structures governing mining in forest reserves. This study critiques the Ghanaian mining regulations to identify weaknesses in the legal and regulatory framework governing mining in forest reserves, using secondary data supplemented with key informant interviews, in-depth interviews and focus group discussion data using thematic analysis. The study found that the interference by authorizing bodies/agencies through directives, lobbying, and negotiation undermines the conservation of the Atewa Forest and the attainment of global SDG agenda. The study recommends for amendment of the mining laws to clearly define "No-go zones" in forest reserves due to conservation purposes.

Keywords: Unregulated mining, biodiversity loss, legal and regulatory structures, conservation of green environment.

INTRODUCTION

Recent developments in the field of environmental sustainability have led to a transformed interest of the global diverse populations and the sustainable development (SDG) goals 13 (climate action), 14 (life below water) and 15 (life on land), which find their roots largely in the green environment, particularly the role played by forest reserves. Besides, several studies have indicated the significant role forest reserves contribute to the environment. Apart from their intrinsic and extrinsic importance, forest reserves greatly contribute to carbon sequestration that regulates the ever-increasing global [climatic] warming menace (Raihan, 2024; Raihan and Tuspekova, 2022; Raihan *et al.*, 2021). Environmental activists have in the past and recent times raised critical concerns regarding the numerous attacks on forest reserves leading to their destruction (i.e., forest or biodiversity loss and degradation) diminishing the purposes of these SDG goals. Again, due to forest destruction, scientists have cited several environmental issues including the greenhouse effect or climate change, rapidly

dwindling species populations, and loss of productive agricultural land (Yuan *et al.*, 2024; Yang *et al.*, 2024; Malhi *et al.*, 2021). Additionally, several studies have reported that problems of water quantity, distribution, and quality are also enormous due to their pollution states (Dehkordi *et al.*, 2024; Morin-Crini *et al.*, 2022; Akhtar *et al.*, 2021).

According to environmentalists, a major causal factor of forest destruction, particularly in developing nations, is unlawful or unapproved mining activities and practices (Kumar *et al.*, 2022; Suglo *et al.*, 2021; González-González *et al.*, 2021). The Atewa Range Forest Reserve in Ghana is no exception due to degradation and transformation because of extractive land use, particularly mining (Atanga *et al.*, 2024; Mensah-Odum *et al.*, 2023; Agbo and Swatuk, 2023). Other examples in notable forests exist, especially natural reserves at the Jarrah Forest in South-West Australia (Soltangheisi *et al.*, 2023; Cramer, 2023), the Kakadu National Park in Australia, the Yellowstone National Park in the USA, and the Jasper National Park, Canada (Lim, 2024; Vranich, 2023; Rust, 2020), which have all been subjected to mining operations resulting in their destruction. There have been several global efforts to curb these environmental menaces and restore the natural forest with emphasis primarily on land reclamation (i.e., reafforestation) (Lim, 2024; Vranich, 2023; Zhichkin *et al.*, 2020). However, in the attempts to restore the green environment, research has shown that little or no critical attention has been paid to the legal and regulatory structures governing mining in forest reserves. Therefore, this article critiques the mining regulations to ascertain the weakness of the legal and regulatory instruments governing mining in the Ghanaian forest reserves. The main aim of this study is to assess the legal and regulatory frameworks on mining in forest reserves in Ghana and specifically to examine the provisions in the mining laws related to mining in forest reserves. The paper seeks to answer the following questions: what laws (regulations) relate to mining in forest reserves in Ghana? and What do these laws state about mining in forest reserves in Ghana? Do these laws promote environmental sustainability? Do these laws contribute to the achievement of the global SDGs agenda?

CONCEPTUAL FRAMEWORK

This study has conceptualized the Ghanaian legal and regulatory schemes (frameworks) governing mining into three (3) and these comprise (1) the constitution— the 1992 Constitution of Ghana; (2) the mineral acts— Minerals and Mining Act, 2006 (Act 703), the Minerals and Mining (Amendment) Act, 2019 (Act 995), the Minerals and Mining (Amendment) Act, 2015 (Act 900); and (3) the mining policy— the National Mining Policy, 2014. The supporting regulations include the Minerals & Mining (General) Regulations, 2012 (LI 2173), the Minerals & Mining (Support Services) Regulations, 2012 (LI 2174), the Minerals and Mining (Compensation and Settlement) Regulations, 2012 (LI 2175), Minerals & Mining (Licensing) Regulations, 2012 (LI 2176), Minerals and Mining (Explosives) Regulations, 2012 (LI 2177) and Minerals & Mining (Health and Safety) Regulations, 2012 (LI 2182). These frameworks [due to their enactments] aim at defining ownership and access to mineral utilization, curtailing conflict regarding land grabbing, land alienation, community resettlement and compensation payment as well as addressing social responsibility agreements and benefit-sharing agreements (Smyth and Vanclay, 2024; Noy, 2023; Atahar, 2021) and also buttressing the concept of sustainable utilization of minerals in forest reserves including Atewa (National Mining Policy, 2010). Nonetheless, all forms of unapproved mining operations in the Ghanaian forest reserves, including the Atewa forest reserve, exemplify the call for an investigation into

the framework. Therefore, this study seeks to examine the mineral regulations governing mining in forest reserves in Ghana.

LITERATURE REVIEW

General Conceptual Understanding of Law, Legal and Regulatory Frameworks

It has been theorized that several disciplines including law, anthropology, political science, organizational theory and economics enable a better understanding of the contribution of laws to the protection of the environment globally through international standard sources or instruments such as conventions, agreements, protocols, treaties (Kolb, 2023; Klabbers, 2023; Gostin *et al.*, 2021). This study, per its focus, generally employs an operationalized concept of law and legal and regulatory frameworks to include the descriptions stated by several authors such that law consists of a set of rules that is instituted by state authorities, and backed by a binding legal force; a rule promulgated by the State and ultimately implemented by state officials (De Cruz, 2024; Danilenko, 2024; Taulbee and Von Glahn, 2022), and to protect various interests in society (Goodwin-Gill *et al.*, 2021; Selznick, 2020). Moreover, legislation (or statutory law) remains a kind or form of rule produced by a governing body to regulate, authorize, sanction, grant, declare or restrict a project and to promote environmental quality (Danilenko, 2024; Kolb, 2023; Goodwin-Gill *et al.*, 2021). Some law experts have expressed that the rule of law takes priority over State Institutions, in that mining legislation is administered by State Agencies in the sector (De Cruz, 2024; Klabbers, 2023; Selznick, 2020). In effect, the laws are promulgated to ensure and enhance transparency, accountability, instill integrity and ethics in the conduct of corporate affairs, equity and inequality (both intra and inter-generation) (Taulbee and Von Glahn, 2022; Gostin *et al.*, 2021; Selznick, 2020)

The Legal Framework on Mining in Ghana

Studies have acknowledged that the regularization and utilization of mineral reserves including the control of unlawful mining operations and their enforcement within a broader governance perspective are best administered by laws. In Ghana, the main legislations (legal framework) governing the mining sector comprise the 1992 Constitution of Ghana. Others include the Minerals and Mining Act, 2006 (Act 703) and the National Mining Policy, 2014.

The 1992 Constitution of Ghana

The 1992 Constitution of Ghana prescribes some provisions that support mineral exploration and exploitation not only in off-reserves, but on-reserves such as the Atewa Forest including the protected areas. These constitutional provisions include:

“All public lands in Ghana shall be vested in the President on behalf of the people of Ghana” (Article 257(1))

Another provision states that:

“Any transaction, contract or undertaking involving the grant of a right or concession by or on behalf of any person including the Government of Ghana, to any other person or persons howsoever described, for the exploitation of any mineral, water or other natural resource of Ghana made or entered into after the coming

into force of this Constitution shall be subject to ratification by parliament” (Article 268(1))

Another provision states that:

“Every mineral in its natural state in, under or upon land in Ghana, rivers, streams, watercourses throughout the country, the exclusive economic zone and an area covered by the territorial sea or continental shelf is the property of the Republic and is vested in the President on behalf of, and in trust for the people of Ghana” (Article 257(6))

Furthermore, the Constitution specifies the enactment of an Act to enable the establishment of institutions regarding the regulation and management of the utilization of mineral reserves: Article 269 (1) states that:

“Parliament shall provide for the establishment, a Fisheries Commission, Minerals Commission, Forestry Commission, and such other Commissions, which shall be responsible for the guideline and administration of the exploitation of the natural resources concerned and the co-ordination of the policies”.

Therefore, some studies have endorsed that a constitution creates the institutions of government, outlines their powers and functions, and restricts limits to those powers (De Cruz, 2024; Danilenko, 2024; Taulbee and Von Glahn, 2022).

The Minerals and Mining Act, 2006 (Act 703)

Act 703 was enacted to amend and strengthen mineral regulations and its related purposes. Act 703 demands that mining firms pay corporate taxes and royalties to advance Ghana’s economy. The Legislation further seeks to specify a stable policy environment that ensures significant financial incentives to encourage investment in the country. Ghana’s mining industry has become globally competitive and tackles the concerns and interests of disparate stakeholders with the inception of Act 703 (Ghana National Commission for UNESCO, 2010).

The main provisions made by this Legislation include ownership of minerals and cadastral systems, mineral rights, royalties, rentals and fees, dispute resolution, prospecting license, reconnaissance license and mining lease. The others consist of the radio-active minerals commission, surrender, suspension and cancellations of mineral rights, surface rights and compensation. It also includes information on small-scale mining, industrial minerals commission and administration and miscellaneous provisions. Additionally, section 110 of Act 703 points out that subsidiary legislation, if enacted, would expand and deepen the support to some provisions of Act 703. These legislations include the Minerals and Mining (General) Regulations 2012 (LI 2173), Minerals and Mining (Support Services) Regulations 2012 (LI 2174), Minerals and Mining (Compensation and Settlement) Regulations 2012 (LI 2175), Mining and Minerals (Explosives) Regulations 2012 (LI 2177), Minerals and Mining (Licensing) Regulations 2012 (LI 2176) and Mining and Minerals (Health, Safety and Technical) Regulations 2012 (LI 2182).

The National Mining Policy (NMP) 2014

The description a policy includes setting clear rules and expectations for delivering programmes and services to a state (Hill and Varone, 2021; Howlett and Cashore, 2020; Howard and Miller, 2020). It further states: what is to be done, who is to do it, how it is to be done and for or to whom it is to be done (Hill and Varone, 2021; Howlett and Cashore, 2020; Howard and Miller, 2020). Besides, other studies have described a policy as being formulated based on identified problems or needs in a society (Laursen and Vanhoonacker, 2023; Jones *et al.*, 2023; Fiorino, 2023). As highlighted in other studies, institutions need to implement policies but institutional systems including enforcement principles, and incentive or penalty schemes are needed to achieve the goals of policy implementation/enforcement (Jones *et al.*, 2023; Fiorino, 2023). Moreover, some studies have highlighted that before policies are implemented, adequate discussion and consultation should be exercised to ensure their feasibility and acceptability by society since policies are seen as a commandment for decision-making Hill and Varone, 2021; Howlett and Cashore, 2020). Policies, however, can be communicated or authenticated through certain instruments such as policy documents, laws or legislations and contracts, not only formally but informally, through communication (Laursen and Vanhoonacker, 2023; Jones *et al.*, 2023).

The National Mining Policy was promulgated in 2010 to provide a framework of principles and directives that will guide the government to manage prudently the country's mineral reserves. It also seeks to urge the role of Ghanaian women in decision-making on issues regarding the sector at the local and national levels. The policy, with regard to the gold sector, also seeks to support investment attraction into the mining industry. In addition, the policy seeks to elevate the benefits of other minerals like limestone and bauxite and lesserknown ones like salt to traditional minerals such as diamonds and gold (Ghana National Commission for UNESCO, 2010). In support of this, Andrea and Lambrou (2008) commented that the key policy objective for Ghana's mining industry was to boost production such that mines will source for global fundings which aim at up-grading mine infrastructure, improving management practices and restoring equipment and machinery. The plan, according to the National Mining Policy (2014), was to institute legal measures and macro-economic elements that will result in attracting investments into the mining sector and also inspire the expansion of existing mines. Rather than the previous role of the Government as owner and operator, the focus now is on the administration and regulation of mining assets with the inclusion of the private sector to be a driving force in mining development (Andrea and Lambrou, 2008)

METHODOLOGY

The study employs the thematic analysis technique to examine the provisions in the mining laws of Ghana through desktop study (secondary data) and supplemented with key informant interviews conducted with experts, agencies and stakeholders (primary data) in the mineral sector of Ghana as well as focus group discussions (FGDs) and in-depth interviews (IDIs) with community members. The respondents included: heads of regulatory agencies, metropolitan, municipal and district assemblies (MMDAs), traditional authorities, mining companies, small-scale miners, and community members. The data analysis comprised the following sequential steps: the researcher transcribed all the audio from the interviews into readable softcopies; modified the wording sequence to accurately convey the intended meaning; and readable soft copies of mining laws documents were prepared separately with unique identification plus the

audio transcripts [i.e., interview data]. The final data were reviewed for clarity and fed into the NVivo software, and the following procedures were observed to conduct the analysis:

1. All the various [number of] transcripts were thoroughly read multiple times by the researcher to gain familiarity with the interviews' content.
2. To gather relevant data from the transcripts, the researcher identified key terms [statements or phrases] that emerged during the interviews and assigned preliminary codes [nodes] to them.
3. The researcher grouped similar codes to create potential themes, i.e., control, access and punishment for offenders.
4. To ensure that the identified themes accurately reflect the subject matter, the researcher conducted a review of the existing themes.
5. At this stage, the researcher ensured that the themes were clearly defined and named appropriately.
6. At the final stage, the researcher wrote a narrative [interpretation of the results] using the defined themes. Also, at this phase, direct quotes from interviews were cited to supplement the discussion based on the themes.

RESULTS AND DISCUSSION

The analysis of the primary and secondary data was finalized based on three thematic areas: control, access and punishment for offences for the utilization of natural resources.

Provisions in the Mining Laws Relating to Mining in Forest Reserves

The mining laws, since the colonial era, provide mechanisms for mining concessions either in the off-reserves or on-reserves. These are:

Theme 1: Control Over Natural Resources:

Mining laws clearly indicate who controls natural resources in the country. These provisions are stated below:

"The President shall, on behalf of the Republic of Ghana in trust for the People of Ghana, have the right of pre-emption of all minerals raised, won, or gotten in Ghana or from lands covered by territorial waters by any existing holder or by any holder of a license granted under this Act and of products derived from the refining or treatment of such minerals" (The Minerals Act, 1962 (Act 126) section 5 (1); Minerals and Mining Act, 2006 (Act 703) section 7(1)).

It is also noteworthy that, the 1992 Constitution of Ghana from which all other legislations take their source states that:

"Every mineral in its natural state in, under or upon land in Ghana, rivers, streams, watercourses throughout the country, the exclusive economic zone and an area covered by the territorial sea or continental shelf is the property of the Republic and is vested in the President in trust for the people of Ghana" (The 1992 Constitution, Article 257 (6))

Moreover, the 1992 Constitution summarizes the control power over natural resources as it states that:

“All public lands in Ghana shall be vested in the President on behalf of the people of Ghana” (The 1992 Constitution of Ghana, Article 257(1)).

The exploration and exploitation of Ghana’s natural resources including mineral reserves such as gold, bauxite, manganese and diamond as well as mica, coal, feldspar, kaolin, quartz and silica sand are instituted by laws and regularized by institutions. In terms of control over natural resources, especially mineral deposits, the first mining Act of Ghana after independence, the Minerals Act, 1962 (Act 126) Section 5(1), and subsequently, the Minerals and Mining Act, 2006 (Act 703) Section (1), and the 1992 Constitution, Article(s) 257(1) and (6) all give the President of Ghana, the ultimate power or right to the utilization of all mineral reserves including the products derived from its refinery in trust for Ghanaians. This infers that upon a discovery mineral deposit in Ghana, the President can order for its exploration and exploitation through Authorizing Bodies such as the Lands and Natural Resources Ministry and the Minerals Commission in particular regarding mineral resources (the Minerals and Mining Act, 2006, Act 703). Hence in legal and practical terms, this provision applies to the Atewa Forest because companies such as Vimetco Ghana (Bauxite) Ltd., Kibi Goldfields Ltd., and Akyem Goldmines Ltd. that mine in the reserve were lawfully permitted to carry out their operations because the Government encourages mining investors to participate in the country’s mining industry to boost the sector economically (National Mining Policy, 2010). However, the invasion of these mining firms in the Atewa forest and their operations to some extents have resulted in a negative impact on the fringe communities. Generally, this is because their mining operations have exposed the reserve to illegal or unregulated mining activities which violate the national mining policy provision because the miners operate unlawfully without any authorizations.

“The presence of mining companies operating in the Atewa Forest indicates that they have lawfully acquired permits, and the [mining] laws protect their operations and aside from that, any other mining activities including that of the galamseyers contrarily violate the laws” (KII, Head of a Regulatory Institution, Accra, Greater Accra Region).

Another stakeholder pointed to the operations in forest reserves:

“I know that before any mining company starts its operations [particularly in the Atewa Forest], the authorities in charge, including the President have approved their license to mine in our forests. Illegal miners’ activities are against the mining laws” (KII, Traditional Ruler, Akyem Abuakwa, Eastern Region)

The invasion of these recognized mining companies to commence mining in Ghana could be a result of the President’s bid to industrialize and draw more value from the country’s natural resources, especially mineral resources by considering its economic prospects such as foreign exchange earnings, tax payment by mining firms, employment creation and source of livelihood to Ghanaians.

“The legal [mining] operations of multi-nationals in our forests indicates the President of the Republic of Ghana’s vision to make good use of our mineral resources to the benefit of the country” (IDI, Assemblyman, Akyem Abuakwa, Eastern Region).

Another stakeholder expressed:

“I believe the President’s economic growth vision for the country relies heavily on the mining sector, as evidenced by the presence of mining companies.” (KII, Head of a Regulatory Institution, Accra, Greater Accra Region).

Despite the economic importance of mining, members of fringe communities in Atewa, however, expressed that these mining companies have failed to contribute to the development of Akyem Abuakwa communities due to their inability to fulfil their corporate social responsibilities (CSR) such as the provision of potable drinking water as supported with reports by Conservation International (2007).

“We [the people of Akyem Asiakwa] have not observed any significant contribution [from these mining communities] to the development of our community as well as other neighbouring communities to the extent that we lack certain social interventions such as the provision of portable drinking water” (FGD, Community Members, Akyem Asiakwa, Eastern Region).

Moreover, the people of Akyem Abuakwa have raised livelihood concerns as they complained of a lack of employment opportunities, hence they depend on the [illegal] mining activity as their source of livelihood.

“The mining companies [operating in our forests, i.e., Atewa Forest] have deprived us [the people of Akyem Nkwabeng] of our main source of livelihood (i.e., farming) through their mining operations since they have degraded our agricultural land. Given this, the only option left for us is to illegally mine for our survival” (FGD, Community Members, Akyem Nkwabeng, Eastern Region).

Additional community concerns were with the bureaucratic manner of acquiring mining licenses to mine at the small-scale level. According to some community members, this is a contributory factor to the menace of illegal mining activities in the Atewa Forest resulting in its depletion.

“I understand that the mining laws allow for small-scale mining to be done by the indigenes, but the process of acquiring a license in that regard seems to be challenging. Therefore, some community members cannot withstand that and would indulge in illegal mining as a livelihood option” (IDI, Opinion Leader, Akyem Nkwabeng, Eastern Region)

The invasion of these mining firms in the Atewa Forest, aside from exposing the reserve to unapproved mining activities, has also significantly generated other critical environmental

issues such as land encroachment, land grabbing and land degradation, and farmland destruction as supported by a study conducted by Karki (2023) and Kinoti (2022).

"The incidence and reports of farmland litigation, land encroachment and grabbing, among others have become prevalent among residents of fringe communities due to the exposure of mining activities in the Atewa Forest" (KII, Traditional Ruler, Akyem Apapam, Eastern Region).

Moreover, the activities of these illegal miners have contributed to the pollution of water bodies including Ayensu, Densu and Birim rivers as confirmed by investigations conducted by FoN (2014). These have also resulted in the extinction of aquatic species and more importantly, posing a threat to the health of the deprived indigenes that use the water bodies for their daily activities, whilst the rich people resort to the use of purified drinking water (FoN, 2014).

"We used to drink and fish from the Ayensu, Densu and Birim rivers because they all take their sources from the Atewa Forest, but now due to all forms of mining activities, these waterbodies have become contaminated, making it hard for surrounding communities to derive intended benefits, with some us resorting to purified water as our main source of drinking water" (FGD, Community Members, Akyem Apapam, Eastern Region)

Theme 2: Access to Natural Resources:

Access to the exploration and exploitation of natural resources is also provided in the mining laws. The Minerals Ordinance of 1936 states that:

"Mining shall be lawful under a mining lease. Provided that pending the grant of the applicant to mine in, on or under the area for on such conditions and subject to such restrictions as the Governor may think fit. Such permissions may at any time be withdrawn by the Governor" (The Minerals Ordinance, 1936 section (31)).

Furthermore, the 1992 Constitution states that:

"Any transaction, contract or undertaking involving the grant of a right or concession by or on behalf of any person including the Government of Ghana, to any other person or persons howsoever described, for the exploitation of any mineral, water or other natural resource of Ghana made or entered into after the coming into force of this Constitution shall be subject to ratification by parliament" (The 1992 Constitution Article 268(1); Minerals and Mining Act, 2006 (Act 703) section 5 (4)).

Additionally, Act 703 provides that:

"Subject to subsections (4) and (5), the Minister on behalf of the President and on the recommendation of the Mineral Commission may negotiate, grant, revoke, suspend or renew mineral rights in accordance with this Act" (The Minerals and Mining Act, 2006, (Act 703) section 5(1)).

The mining laws of Ghana, aside from the control mechanisms also provide access to the utilization of mineral resources. Hitherto, the Minerals Ordinance 1936 Section (31) specified that the government may withdraw the permit given as a lease when it becomes necessary. This provision suggests that when a miner violates the mining laws, the license issued is revoked. This remains applicable to the companies mining in the Atewa Forest reserve, but these guidelines have not been adhered to, and no company has had its permit revoked. Presently, and in this constitutional era, the provision, Article 268(1) of the 1992 Constitution, gives priority to the Parliament of Ghana to grant mineral rights upon ratification by Parliament as an authorization body through the recommendation of the Minerals Commission, the lead Regulatory Institution. In respect of this Provision, and upon certifying all environmental requirements, companies mining in the reserve affirm that this provision applies to the Atewa Forest, but the illegal mining in the reserve indicates that this Provision is not fully implemented in the management of the reserve.

“As it stands now, companies mining in the Atewa Forest have met all requirements and are adhering to or complying with standard practices, hence no revoke of license. Meanwhile, illegal mining activities show proof of ineffective implementation of the mining laws by the appropriate agencies” (KII, a Manager of Operations, Mining Company, Atewa, Eastern Region)

Additionally, the Minerals and Mining Act, 2006 (Act 703) and National Mining Policy, 2010 give Ghanaians the leverage to become small-scale miners. But findings from this study prove that this provision is partly implemented. The study results show that there are registered small-scale miners at Atewa who observe the guidelines. However, the incidence of illegal mining in the reserve also suggests that there are some weaknesses in the enforcement of this provision. This is attested to by the statement below:

“It is worrisome that illegal mining has become common in this environment [possibly because of regulation issues] because the laws are weak to protect registered small-scale miners” (IDI, Registered Small-scale Miner, Akyem Abuakwa, Eastern Region)

Access to the exploration and exploitation of natural resources in Ghana according to the Minerals and Mining Act, 2006 (Act 703) is granted by the Minerals Commission (MC), the key Regulatory Body in liaison with other Regulatory Institutions. These are the Forestry Commission (FC), Environmental Protection Agency (EPA), Water Resources Commission (WRC) and the Metropolitan, Municipal and District Assemblies (MMDAs) on whose territory the mining activity is undertaken. In this instance, as they are present or related to the East Akim Municipal and Atewa District Assemblies. However, per the study findings, this liaison concept seems to be very weakly implemented at Atewa, since very few Regulatory Institutions act accordingly stated in the mining laws. Besides, field observations indicated that very few of these Regulatory Institutions exist at the district level.

Theme 3: Punishment for Offences of Illegal Utilization of Natural Resources:

The mining laws provide punishments for people who flout the conditions to mine properly in either forest reserves or off-reserves in Ghana. The Minerals and Mining Act, 2006 (Act 703) prescribes that:

“A person who acts in contravention of the provision of this Act in respect of which an offence has not been specified, commits an offence and is liable on summary conviction to a minimum fine of one thousand penalty units or to imprisonment for a term not more than three years or to both” (Minerals and Mining Act, 2006 (Act 703) section 99(2b)).

For conservation purposes, the above provision is supported by similar studies conducted around this subject matter which indicated that the environmental resource laws of some countries prescribe some punishments for offenders (Al-Kayid *et al.*, 2024; Zaid *et al.*, 2023; Sharif and Uddin, 2023; Hutchinson, 2023). To this effect, the mining laws of Ghana have set aside some punishments for those who flout the mining laws. However, these punishment terms as specified in the Minerals and Mining Act, 2006 (Act 703) Section 99(2b) remain weakly enforced for offenders because it seems to be lenient or soft to offenders possibly due to the ongoing menace (Awogbami *et al.*, 2024; Orozco, 2022; Dewey *et al.*, 2021). This by implication presupposes that an illegal miner could deliberately embark on the activity and pay the stated fine or serve the imprisonment terms if he is found guilty.

CONCLUSION

The study revealed that the provisions in the mining laws relating to mining in the Ghanaian forest reserves, including the Atewa Forest, are enshrined in the 1992 Constitution and other mining legislations such as the Minerals and Mining Act, 2006 (Act 703) and National Mining Policy, 2010. Besides, the provisions in the Constitution include Article 267(1), which recognize the President as the steward of all public lands, and Article 268(1). It also provides an avenue for the Government to certify mining operations in forest reserves through ratification by Parliament and Article 257(6) acknowledging the President as the steward of the country's natural resource endowment.

The study has also proven that the mining laws and provisions are inconsistent with the conservation of forest reserves in Ghana including the Atewa Forest due to the prevalent rate of unlawful mining activities destroying the Atewa Forest. The study deems these provisions as weaknesses due to the exposure of legal mining operations given to unapproved mining practices in the Ghanaian forest reserves including the Atewa Forest. Additional weaknesses include poor [regulatory] institutional liaison structures and ineffective implementation of the mining laws, especially at the district level. Given this, there are campaigns to advocate for the conversion of the Atewa Forest into a Nature Park purposely to ensure the sustainability of the remaining resources and possibly restore degraded lands with reforestation interventions.

RECOMMENDATION

1. The mining laws and provisions, particularly, those relating to mining in forest zones should describe the “No go areas”. Evidently, this will distinguish forest reserves and protected areas from lands characterized by mineral exploitation and assist in the

protection of certain state landmarks and communities at large. This calls for amendment of existing laws.

2. There should be a legal framework dedicated specifically to mining on lands with special conservation status in Ghana to protect them from any form of destruction.

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