



PARAMETERS OF MINING SUSTAINABILITY: The Gamut and Trends in the Mining Sector in Cameroon

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ABSTRACT

Although minerals are essential for human welfare, however, their extraction is associated with both opportunities and challenges. Especially as the historical concerns around the work conditions and competitiveness of the mining sector are increasingly complemented by a growing number of other issues. As such, the overarching goal is to find ways by which the sector can promote sustainable development, as the last decade has seen a large expansion of the sector globally, as well as increased interests in the sector's short and long-term economic, environmental, and social effects. Since the concerns about an imminent shortage of metals and minerals have been off-set by improved technology and the discovery of new sources. As the focus now is on other sustainability challenges like access to land, managing acid mine drainage, ensuring regional benefit-sharing, and the rights of indigenous people. A situation that is crucial in Cameroon, as it is embodied with a huge quantity of mineral resources, which are mostly found in vulnerable communities. However, despite its geological wealth, mining is still to play a major role in the economic development of the country. Therefore, a study on the state of sustainability and environmental challenges in the mining sector of the country, permits in identifying the key points to herald for improvement towards achieving a sustainable mining sector in the future. For this reason, the paper reviews the general perspective of mining sustainability - by analysing the scope, potential, policy, national laws and regulations of the mining sector in Cameroon. It also examines the latest historical developments on issues of the environmental and social impact assessment system in the mining sector in the country. As these help in identifying the current challenges of implementing sustainability in the sector, as well as providing some recommendations and future directions for further research works.

Keywords: *Parameter, Mining, Sustainability, Gamut, Trends, Cameroon*

INTRODUCTION

Succinctly, it is noteworthy that during the last two decades, several initiatives have appeared that address sustainable development and business, such as collaborative and voluntary projects, programmes, and organisations that bring together policy-makers from governments, civil societies, academia, and the industries. *Inter alia*, these various initiatives are aimed at formulating an agenda and objectives for sustainable development by setting standards, sharing best practice, promoting accountability, and improving the image of the mining sector. That being the case, the United Nations (UN) World Commission on Environment and Development (WCED) provides in its *Brundtland* report that sustainable development is “*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*” (World Commission on Environment and Development, 1987). As such, the concept is commonly divided into the economic, environmental, and social ‘pillars’ or ‘dimensions’ (<http://macaulay.cuny.edu/eportfolios/akurry/2011/12/21/sustainable-development>) - which form the parametric backbone and substratum of the assessment of mining sustainability. In a similar manner, sustainable development can also be defined in terms of what it specifically seeks to achieve, as can be illustrated by the three sets of goals providing the following different time-horizons, that is, the short-term 2015 goals of the UN millennium declaration, the two 2050 generation goals of the sustainability transition of the board on sustainable development, and the long-term, that is, beyond 2050 goals of the great transition of the global scenario group (Leiserowitz *et al.*, 2005). Notwithstanding, it is worth stressing that although many definitions abound, the one most prominent of all is that proposed by the *Brundtland* commission (Dernbach, 1998; Cerin, 2006; Dernbach, 2003; Stoddart, 2011), which touches on the importance of inter-generational equity. In this vein, *Emas* avers that this concept of conserving resources for future generations is one of the major features that distinguish sustainable development policy from the traditional environmental policy that also seeks to internalise the externalities of environmental degradation (Emas, 2015). In addition, he also emphasizes the need for government policy to always ensure that environmental costs are internalised wherever possible, as this will also serve to minimise externalities (Ibid).

Expediently, despite the great initiatives, it is observed that the sustainable development of mineral resources has become a major challenge in this contemporary global era, addressed to mining companies, scientists associated with mining and many other institutions and organisations. In this regard, the WCED considers the sustainable development of mining as the key to the security of raw materials and energy for many countries in the world - especially as mining is regarded as a major economic activity in many developing countries (Tauli-Corpuz, 1998; United Nations Environment Programme (UNEP), 1997), as artisanal and small-scale mining (ASM) is growing at an exponential rate across sub-Saharan Africa, over the past two decades. With the activities often occurring in remote areas, and engaging the poorest of people (Carmody and Owusu, 2007). What’s more, the operations, whether artisanal, small or large-scale, are inherently disruptive to the environment (Makweba and Ndonde, 1996), producing enormous quantities of waste that can have deleterious impacts for decades (United Nations Environment Programme (UNEP), 1997). Especially as the environmental deterioration caused by mining usually occurs mainly as a result of inappropriate and wasteful working practices and rehabilitation measures. Since as mining has a number of common stages or activities, each also has potentially-adverse impacts on the natural environment, society and cultural heritage, health and safety of mine workers, and the communities in close proximity to the mining operations (Moody and Pano, 1997; Akabzaa, 2000). On this base, *Noronha* affirms that, the social and environmental impacts are more pervasive in regions where operations are newly-established or are closing down (Noronha, 2001). As such, it is observed that artisanal mining is associated with a number of environmental impacts such as deforestation, land degradation, open pits that pose animal and human traps, health hazards, mercury and cyanide pollution, and dust and noise pollution. Equally, a large proportion of artisanal miners are unaware of the laws governing the mining activities and the environment (Muezzinoglu, 2003; Funoh, 2014). Despite this, it is estimated that ASM generates up to five times more income than other rural poverty-driven activities like agriculture and forestry, and that it employs ten times more people than large-scale mining (Carmody and Owusu, 2007). Thus, ASM stimulates considerably local economic development than recognised (Hoadley and Limpitlaw, 2004).

In this connection, it is essential to note that these sustainability challenges and impacts are observed in Cameroon. A situation that prompted it to be selected as a case study for this paper, coupled to its central location in the African continent, and strong geological potential for several mineral resources that, if well managed, could support the economic growth through development of its mining sector. However, although the country (which is geopolitically located within the central African region, lies between latitudes 1838 and 13805 N and longitudes 8833 and 16816 E - has a total surface area of 475,400 Km, with proximately 400 Km of coastline) potentially contains large deposits of iron ore, gold, bauxite, diamonds, limestone and nickel, among others (Mafany *et al.*, 2006). It is

observed that despite this geological wealth, mining has never played a major role in the country's development, as it still remains on the margins of its economy. In addition, though artisanal mining is considered as the basis of the community's livelihoods in several regions of the country rich in gold and other precious stones - inadequate regularisation prevents the sector to readily contribute to economic growth. This is the case even though the country is divided into 10 administrative Regions, with an estimated population of 25.2 million (<http://www.worldometers.info/world-population/cameroon-population/index.html>) - with approximately 57% of the population living in urban areas, while 43% live in rural areas (Forton *et al.*, 2012). Nonetheless, its abundant mineral resources of international value are mostly found in the rural areas, although there is a limited geological mapping of these minerals due to the limited number of large-scale mining operations in the country (Bakia, 2014). Notwithstanding, it is worth noting that natural resource management, however, has a long history in the country, which began before the colonial administration within the village communities, and continues through today's numerous ministries. However, despite these encouraging signs, it is observed that the country still lacks the necessary mechanisms to take advantage of its mineral endowment. That being the case, it is worth revamping the management capacity and governance in the mining sector of the country in order to provide the enabling environment for long-term investments, and allow the sector to resist any volatile economic and political cycles. Especially as the key challenges impacting the sector can be addressed and redressed in an integrated manner, by involving all the stakeholders and the sector management, in improving transparency, sustainability, and accountability.

From this perspective, a paper of this nature examining the current state of sustainable development in the mining sector of Cameroon, permits in identifying the key points for improvement in order to position the country towards a sustainable mining sector in the future. With the aim of achieving the following objectives: To provide a periscopic view of the parameters of mining sustainability, describe the current state of affairs in the mining sector of the Cameroon, and identify the key areas of improvement to enhance mining sustainability in the future. The qualitative method is used with the aid of a single case study, which focuses on the perusing sustainable development in general, while assessing its implications in the mining set up of Cameroon. By analysing other relevant scientific studies, reports of ministries and support organisations, national laws and regulations, and mining permits relating to the area under study. By the same token, the corporate sustainability reports of mining companies and mining stakeholders are also utilised. On this account, the salient issues of the paper are discussed under the following four sections. With the first section dwelling on the parameters of mining sustainability, while the second on the global initiatives of mining sustainability, the third section on the gamut of mining sustainability in Cameroon, and the fourth on the trends and challenges of mining sustainability in Cameroon. From these, the paper wraps up with a conclusion and some viable recommendations to curb the current challenges and enhance the sustainability of the mining sector, as well as envisaging some potential areas for further research. As such, before proceeding with the cogent issue of the paper on the gamut of mining sustainability in Cameroon, it is worth considering the parameters of mining sustainability.

I. MAIN PARAMETERS OF MINING SUSTAINABILITY

Apparently, it is observed that despite the few specific references to mineral exploration and exploitation appearing in international law. It is worth averring that the international legal framework has a strong bearing on the governance of mining. Which is readily colossal notwithstanding the general principles in international law that sovereign States have the rights and responsibilities to legislate and regulate activities within their borders, including the exploitation of their natural resources. As international law (i.e., treaties, conventions, and declarations) has significant implications on the extractive activities. For this reason, the governments need to ensure consistency between their domestic legal frameworks and enforcements, with that of the international legal framework. On this account, the assessments of the three parametric and categorical pillars of sustainable development in the mining sector are of most relevance to this paper. Crisply, such parametric categories worth considering are the economic, social, and environmental effects of mining.

1) The Economic Effects of Mining

With regards to the economic impact, it is appropriate to stressed that although investor-state agreements are situated within the domestic legal framework - a contract with a foreign investor is considered an international contract that is governed by international investment treaties if the host and home countries' governments are parties to such treaties. As such, while the governments of the home country often enter into such treaties to protect their companies' investments abroad, the governments of the host country do so to promote foreign investment in their countries. Besides, the investment treaties allow investors to bring claims against the host countries through the investor-state arbitration, and also provide strong protections for the international investors through a number of provisions. That's why, the host State guarantees to treat the foreign investor in a non-discriminatory way (for example, through 'national treatment' provisions that require treating foreign investors no worse than domestic

investors, and ‘most favoured nation treatment’ provisions that require treating an investor from a given country not worse than investors from any other countries), and to protect them against direct or indirect expropriation, limit performance requirements, and provide guarantees on free transfer of capital. In this regard, the enforcement of international treaties is very effective. Despite these, it is observed that there are several issues to watch for in investment treaties with respect to mining and its sustainability impacts. For example, if the government of the host country adopts a law banning the use of certain substances, prohibiting mining in ecologically sensitive areas, or strengthening its environmental regulations to require better compliance, a mining company can claim that such government actions reduce the value of its mining investment and constitute indirect expropriation or unintended discrimination - thus, could litigate against the government of the host country on these grounds. Equally, some investment treaties also restrict performance requirements, such as requirements to buy local goods and services, use certain technologies or train workers. Which can limit the positive impact of the mining investment on the local economy. On this base, between 1987 and 2015, investors globally initiated approximately 650 international arbitrations against governments (based on publicly available information collected by UNCTAD, it is observed that many arbitrations are conducted behind closed doors), with most of these arbitrations initiated in the last 10 years - in which about one in eight of these arbitration cases are associated with mining investments (United Nations Conference on Trade and Development (UNCTAD), 2017). However, it is worth noting that although many of the problems that give rise to the investment disputes have to do with corruption and mismanagement on the part of the government of the host State, there are also many cases of unreasonable claims of investors against the government of the host State. Likewise, it is observed that the strong protections afforded to investors and the effective enforcement of international investment treaties can be detrimental to environmental protection, human rights, and social development. What’s more, beyond the litigation costs and possible compensation costs in the case the State loses the claim, the arbitration and litigation cases with investors can deter other foreign investors from investing in the country. For instance, a billion-dollar lawsuit made by a UK-based mining company against the Indonesian government, partly prompted the government of Indonesia to embark on a process to rebalance its engagement with investors by discontinuing treaties or reassessing provisions of existing investment treaties and chapters in the trade agreements. As a result, Indonesia is currently developing a new treaty model of international investment agreements (Jailani, 2015). Thus, to ensure that mining contributes to sustainable development and prevent costly arbitration processes, the resource-rich countries need to consider adequate protection for the environment and human rights in negotiating new investment treaties or renegotiating existing ones.

Congruently, drawing from the foregoing, it is important to note that there is an extensive literature on the economic effects of mining. With a more detailed review found in a parallel report by *Söderholm and Svahn*, who focus on the relationship between mining and regional development - particularly employment, also note that several researches focus on the effects on the national level, often in the developing countries (Söderholm and Svahn, 2014). Aply, experience has shown that while natural resource wealth can be a source for economic growth and welfare, it has often not been translated into development for the broader society. A situation that is often called “resource curse” - with the causes for this being weak governance, corruption, and irresponsible company behaviour (Sachs and Warner, 2001). Likewise, the demand and price of mined resources are generally determined on the global markets that tend to be volatile and cyclical – resulting to boom and bust economies but fragile communities (Radetzki, 2008). As such, mining companies, whose investments and technologies have long life-cycles, in turn have difficulties adjusting to changes in the economy and society (Bartos, 2007). Similarly, due to the inflow of new revenues, the exploitation of natural resource wealth can lead to higher real prices and exchange rate appreciation, thereby deteriorating competitiveness in other sectors of the economy – phenomenally called the “Dutch disease” (Radetzki, 2008: 206-211). For this reason, in the developed countries, focus has moved from the effects of mining on the national level, to considering how it contributes towards regional development. This is because while historically, job creation and subsequent increased income has probably been the most tangible benefit from mining for local communities. But currently, indirect mining-related activities, both upstream and down-stream, like exploration and benefaction respectively, have led to more employment. As new jobs appear elsewhere in the community as a result of mining, such as in service due to increased spending by miners and their families. This “employment multiplier” procreates a good relation between the numbers of direct jobs created by mining, and the total number of jobs including those indirectly created in other parts of the economy. Despite this, it is observed that as mining becomes more capital-intensive, technical and automated, there are fewer direct jobs within the mining sector at the same time as the rate of extraction is increasing (SGU, 2013). Based on this, studies of the total employment effect of mining give widely different estimates of the multiplier, from less than one up to several jobs supported for each direct job in mining (Söderholm and Svahn, 2014; Ejdemo and Söderholm, 2011). Since the number of jobs captured by a

region depends on the existence of the potential for up- and downstream activities. Which in turn depends on other factors like the qualification and experience of the local workforce, the potential to attract immigration, and on the investment in infrastructure. That being the case, the bigger and more diverse economies are better equipped to supply the inputs needed, thus, are more apt to capture possible jobs (Ejdemo, 2013: 55-63; Ritter, 2001: 262).

Similarly, it is observed that mines are often situated in sparsely populated areas. On this account, in some cases, the mining companies usually resort to “fly-in fly-out” in order to supply the needed skills. Conversely, in cases where the mining companies employ from the local populations, input such as goods and services may be sourced from further afield. Thus, if that is the case, then the mining projects might increasingly become economically detached from the region in which they are located, as jobs and income no longer automatically benefit the local communities (Ejdemo and Söderholm, 2011; Radetzki, 1994: 2-7). Equally, the diversification of the economy through the development of up- and downstream activities may be important to capture more indirect jobs, as well as for long-term sustainability. That is, the economic opportunities may still be viable even after the local natural resources have been exhausted, through selling goods and services to mines located elsewhere, or to other sectors (Ritter, 2001: 262). Moreover, synergies always exist between mining and some economic activities, as there is often the common use of the same infrastructure - although this can also result to conflicts of interest like competition for workforce. In this context, *Kurkkio et al.*, (2014) aver that one important explanation for Sweden’s success in innovating is the close and long relationship and collaboration between the mining companies and their equipment suppliers. In addition, it is essential to note that another way to ensure that income generated from mining stays in a region or benefits a particular group of stakeholders, is through benefit-sharing mechanisms – which include agreements between the companies, communities, and sometimes with the government, to include provisions regarding job quotas and procurement from local companies, as well as direct payments (Söderholm and Svahn, 2014).

2) The Social Effects of Mining

As for the social impact of mining, the core instruments here are the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights. Equally, the International Labour Organisation (ILO) Convention No. 169 on the Rights of Indigenous Peoples is instrumental for States that have ratified it. As such, in addition to the hard law (i.e., covenants, conventions, and treaties binding on States that ratified them, such as the Human Rights Covenants, and the ILO Convention 169), there is also a body of soft law (i.e., non-binding instruments, such as declarations and guidelines). For instance, the UN Declaration on the Rights of the Indigenous Peoples adopted in 2007 - even though non-binding, however, refers to the rights specified in the aforementioned Human Rights Covenants, thus, making it customary law. Similarly, the UN Guiding Principles on Business and Human Rights (UNGPs) adopted by the UN Human Rights Council in 2011, is a prime example of a soft law instrument with far-reaching implications (United Nations, 2011). Although the UNGPs is non-binding also on investors or States, they can shape the overall regulatory environment in which companies operate and their expectations and actions with respect to human rights, environment, and other issues critical for the development of the communities and countries. This is because the UNGPs cover not only the operations of the company itself, but also those of its suppliers and other business relations. In this regard, governments are encouraged to adopt the National Action Plans (NAPs) on Business and Human Rights as part of their responsibility to disseminate and implement the UNGPs. Since the NAPs aims to allow governments to increase policy coherence and coordination, monitoring, and evaluation of the implementation of the UNGPs, and promotion of transparent dialogue with the stakeholders (United Nations Working Group on Business and Human Rights, 2011). For this reason, the uptake of NAPs has recently accelerated in Asia, with eight countries having started the process for developing such plans (i.e., India, Indonesia, Japan, Malaysia, Myanmar, the Philippines, the Republic of Korea and Thailand), (Business and Human Rights Resource Centre, 2017). Most importantly, it is worth noting that leading mining companies, through the industry body, that is, the International Council on Mining and Metals (ICMM), were closely involved in the consultations, which led to the development of the UNGPs, and the ICMM “fully supports” the UNGPs (International Council on Mining and Metals (ICMM), 2017).

In a similar manner, the UN Human Rights Council adopted a resolution in 2014, to set up an intergovernmental working group to elaborate an international legally binding instrument in international human rights law to regulate the activities of transnational corporations (TNCs) and other business enterprises (United Nations Human Rights Council, 2014). On this account, discussions about a treaty on TNCs and other business enterprises with respect to human rights are currently ongoing (United Nations Human Rights Council, 2017). With these discussions being informed by analysis of the obstacles that victims face in transnational human rights cases, and of the sources of the impunity of corporate entities that operate across different national jurisdictions – primarily

in the natural resources industries. From this, it is noteworthy that the expected treaty, when eventually finalised, would be the first international human rights agreement to specifically and explicitly regulate the activities of TNCs with respect to the fundamental rights of individuals and communities. In addition, another important normative instrument is the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises, adopted by 42 countries (Organisation for Economic Co-operation and Development (OECD), 2011). The OECD Guidelines cover issues like human rights, employment and industrial relations, environment, combating bribery, consumer interests, science and technology, competition, and taxation. Thus, the significance of the OECD Guidelines is that they have been adopted by most governments of the developed countries – the home countries of most multinational companies, which have regulatory power over these companies. As such, whereas international law provides strong and effective protection for investors, it is still a long way from providing similar strong protections to the people affected by such investment, including mining investment. Despite this, it is observed that to strengthen the protection of human rights in order to balance the protection of investors' interests, governments need to make their domestic laws and regulations consistent with their international human rights commitments, and also endeavour to incorporate the principles and guidance within the soft laws into their legal and regulatory framework to protect the people affected by the mining activities.

In a nutshell, as aforesaid, the social effects of mining have at times received less attention than the economic and environmental issues, although in this contemporary era, there is a large and growing literature. In this vein, *Abrahamsson et al.* present a review in a parallel report, structured around the three broad areas of diversity, gender, and work environment *Abrahamsson et al.*, 2014). Likewise, in a report published by the Canadian Government entitled “*The Social Dimension of Sustainable Development and the Mining Industry: A Background Paper*”, the author sorts issues according to “‘Healthy people and healthy environment’, ‘innovation and learning’ and ‘vigorous and proud communities’” (Lapalme, 2003). From these, it is observed that both the non-physical and predominantly physical factors are important for social sustainability. This is because while the former include participation and local democracy, cultural traditions, training and social inclusion, the latter include decent housing and accessibility (Ibid.). Although the list of potential factors is almost inexhaustible, and the impact of mining can be positive or negative. However, research on mining and sustainable development has to a large extent focused on a smaller set of key challenges. Since while mining has the potential to support growth and development of vigorous and attractive societies, it also has the potential to disturb social cohesion (i.e., the presence of common values, networks and solidarity in a community). As it is well documented that an influx of workers can lead to housing shortage and put pressure on local welfare providers like hospitals (Moffat and Zhang, 2014: 62-63). In addition, in some cases, mining has led to an increase in undesirable activities like prostitution and alcohol abuse (Esteves, 2008: 41), while in others it has led to other issues like increased traffic density and accidents, lower school enrolment, etc (Petkova-Timmer *et al.*, 2009).

Altogether, from a company and employee perspective, it is observed that the “fly-in fly-out” may be an attractive alternative to developing and moving into more permanent local settlements. As it can help avoid some of the problems associated with mining and mine closure, such as the disturbance of local indigenous culture or local inflation (Ritter, 2001). Despite this, there has also been criticism of the “fly-in fly-out” arrangements - with the negative social effects including the disruption of families, lower community cohesion, and entrenchment of gender roles (*Abrahamsson et al.*, 2014). Equally, it is also associated with occupational fatigue and associated health problems like high blood pressure and injuries caused by accidents (Ibid.). Likewise, gender in turn has been another prominent focus in the literature on the social effects of mining. Since mining is a male-dominated industry, with men often making up almost 90% - 95% of the blue-collar workers. This stereotypical gender role like ‘macho-masculinity’ among miners has resulted in dysfunctional organisations that inhibit learning, and create opposition to the introduction of new technology and to safety procedures. With the male-dominance within the mining sector having societal repercussions, as high wages *vis-à-vis* other sectors aggravate gender income differences. As the strict norms about gender roles and a ‘masculinised’ local culture may create difficulties for the recruitment and retention of talent. As a consequence, the exodus of young women is experienced in many mining regions, with men feeling anxious about taking up jobs that are associated as more ‘feminine’ than mining (Ibid: 25-26). For this reason, a lot of public debate as well as research on mining have centred on the situation of indigenous populations. Which is at least in part due to the history of gross mistreatment in many areas (Heisler and Markey, 2013: 398). Since while mining may provide jobs, the number of indigenous employees is in many cases low. Besides, mining sometimes competes with traditional forms of livelihood and disturb natural surroundings that are important for indigenous identity and cultural heritage. As such, there is a trend towards mining companies negotiating agreements with local communities and indigenous people like workforce quotas and support to regional development funds, though

experience so far show mixed results of such agreements (Söderholm and Svahn, 2014; O’Faircheallaigh, 2013: 222-238; O’Faircheallaigh, 2010a: 69-86).

3) The Environmental Effects of Mining

Cogently, the environmental impact of mining can be appreciated by reviewing the various instruments of international environmental law relevant for the environmental regulation of the mining sector. These include conventions and treaties on mineral waste, water quality, nature preservation, biodiversity, air pollution, and climate change. Indeed, mineral hazardous waste, and about 95% of all toxic and hazardous chemicals fall into the four industry groupings of toxic metals, petrochemicals, pesticides, and radioactive materials (Louka, 1994). In this vein, the international treaty that is directly relevant to the mining sector is the 2013 Minamata Convention on Mercury (United Nations, 2013) - which envisages the controlled use and progressive removal of mercury from circulation, due to its significant negative impacts on human health and the environment. In addition, other strictest treaties enshrine and include the outright bans on the imports and exports of hazardous wastes. For example, the 1991 Bamako Convention bans imports into Africa, but permits States in each region to trade with each other, subject to certain controls. Equally, the 1989 Lomé Convention bans exports from the European Union (EU) to the African, Caribbean and Pacific States parties, except if the importing State has adequate facilities. Another approach has been to allow hazardous waste transfers, subject to protective requirements like notification, informed consent, manifesting and facility adequacy. On this account, the most comprehensive treaty, is the 1989 Basel Convention on the Trans-boundary Movement of Hazardous Wastes and Their Disposal.

By the same token, the international and regional treaties governing water quality include treaties covering marine pollution and pollution of freshwater resources. As such, the treaties on marine water quality include the 1974 Paris Convention for the Prevention of Marine Pollution from Land-Based Sources (applicable to parts of the North Atlantic, Arctic Ocean and North Sea), the 1972 Oslo Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, and the 1973 London International Convention for the Prevention of Pollution from Ships (MARPOL) and its 1978 Protocol. In addition, other freshwater treaty systems with implications for mining, cover international watercourses and water bodies, groundwater, and multi-state and regional waters in Africa, the Americas, Europe, and the Middle East. For instance, the 1978 United States-Canada Great Lakes Water Quality Agreement could be applied to mining in one country which causes pollution in the other. Similarly, the 1971 Waterfowl Habitat (Ramsar) Convention provides the framework for international cooperation in the conservation and wise use of wetland biomes. That being the case, parties are obliged to list and protect at least one Wetland Site of International Importance in their countries, include wetland conservation within national land-use planning, and promote the wise use of wetlands. Equally, the 1979 Bonn Convention on the Conservation of Migratory Species of Wild Animals (CMS), which aims to conserve avian, marine and terrestrial migratory species - provides a framework within which parties may act to conserve migratory species and their habitats. With the parties obliged to adopt strict protection measures for those migratory species in danger of extinction, develop agreements for the conservation and management of migratory species that have an unfavourable conservation status, and undertake joint research and monitoring. Likewise, the 1972 UNESCO’s Convention on the Protection of World Cultural and Natural Heritage (World Heritage Convention) defines the kinds of natural and cultural sites that can be considered for inclusion in the World Heritage List. It also sets out the duties of States to identify potential sites, and their role to protect and preserve these sites. On this base, the extractive companies must be aware of any existing or potential World Heritage Sites in the vicinity, and take steps to protect them from any adverse environmental impacts that can arise from their activities. Moreover, the International Union for Conservation of Nature (IUCN), an international nature conservation NGO, has agreed with ICMM on several ‘no-go’ World Heritage sites (Buxton, 2012). Equally, other similar regional treaties for the Americas, Africa, Europe and Asia, like the 1985 ASEAN Agreement on the Conservation of Nature and Natural Resources, have made more inputs in this domain.

Most importantly, to enhance sustainability, the Convention on Biological Diversity (CBD) has set the standards to protect the conservation of biodiversity, the sustainable use of the components of biodiversity, and the sharing of benefits that arise from the commercial and other use of genetic resources in a fair and equitable way. In this light, it is worth noting that the preservation provisions of the CBD have the most immediate relevance to the extractive industries (EI). Although it is observed that air pollution from the EI, particularly mining, smelting, and other related operations, are still regulated chiefly by the national laws. There are, however, a growing body of regional treaties governing trans-boundary air pollution. As well as several international air laws that have potential implications for the future of the EI. For instance, the 1979 Convention on Long-Range Trans-boundary Air Pollution (LRTAP), with its four protocols setting specific emissions limitations on sulphur dioxide (1985, 1994), nitrogen oxides (1988, 1998), and volatile organic compounds (1991), provides very substantive restrictions on some of the

basic mineral beneficiation pollutants in northern hemisphere countries like Canada, Russia, the United States, and those of the EU. By the same token, there are two notable global treaty regimes governing the ozone and climate change, which have long-term implications for the EI. With the first being the 1985 Vienna Convention for the Protection of the Ozone Layer, as amended by its 1987 Montreal Protocol on Substances that Deplete the Ozone Layer and other subsequent adjustments and amendments, requiring a rapid phase-out of use and emissions of the stratospheric ozone-depleting chemicals - chiefly chlorofluorocarbons (CFCs), halons and carbon tetrachloride, of relevance to some extractive endeavours. While the second and most significant, is the UN Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol that provide the foundation for intergovernmental efforts to address the problem of potentially irreversible climate change resulting from rising concentrations of the greenhouse gases (GHGs) in the earth's atmosphere. From this, it is noteworthy that mining is highly associated with considerable environmental challenges, sharing it with other industrial activities, such as emissions of GHGs. However, other challenges are more specific to mining, with their effects often found on the local and regional level. For example, mining affects the physical landscape by moving and depositing large amounts of rock and through the construction of roads and railroads. For example, in 2012, mining generated over 80% of waste from all the companies and households in Sweden, the vast majority of which was waste rock (Swedish Environmental Protection Agency, 2014a). With the disposal of tailings (i.e., materials left over from the process of separating valuable parts from ore, typically disposed in large dams) being a significant environmental challenge. This is because some of the materials are potentially hazardous for the local ecosystems. Thus, preventing leakages is vital in reducing the environmental impact of mining. Equally, another potential discharge from mining is nitrogen, as the mining sector consumes large amounts of ammonium-nitrate-based explosives. Which can lead to eutrophication of lakes and rivers, harming local wildlife (Widerlund and Öhlander, 2014). In addition to the GHGs, other airborne emissions from mining include dust and aerosols, which may affect human, for example through inhalation, or through the food chain, as plants absorb toxic elements. Uptake of some metals may lead to damages to vital organs and the nervous system (Csavina *et al.*, 2012: 58-73).

Correspondingly, noise and vibrations are other mining-related environmental effects that may affect human welfare. However, it is worth reiterating that most of these environmental challenges discussed so far vary from mine to mine. With acid mine drainage being considered as one of the most serious environmental challenge posed by mining, especially sulphide-containing ores. Which often result from the outflow of acidic discharges that can seriously damage the local flora and fauna – as it occurs when the sulphide minerals are exposed to water and air. On this account, tailing dams are a notable source of acid drainage, whose effects can last for as long as hundreds or even thousands of years (Widerlund *et al.*, 2014). Besides, gold mining is associated with a risk of leakage of cyanide (Mudd, 2007a: 42-56), and uranium mining may lead to radioactive contamination. Nevertheless, as highlighted earlier, mines differ in their environmental impacts depending on the related activities taken into consideration like pelletizing - as environmental challenges also vary over time. This is because new technology has made it possible to reduce some negative consequences, such as emissions to land, water, and the atmosphere. Similarly, the extraction of lower-grade ores has resulted in the removal of larger amounts of waste rock, often through open-pit mining. Although other problems may be intensified, for instance, the discharge of mine waters to the ground and surface waters from pit lakes. Indeed, from this discussion, it is worth stressing that the effects, synergies, and trade-offs summarising the three parametric pillars or dimensions of sustainability (economic, environmental and social), seem like a fruitful point of departure for identifying the effects of mining. Since some of the essential effects identified include job creation and regional economic development, acid drainage and emissions of dust and GHGs, and potential disruption of the local communities – with large variations between mines, their surroundings and stakeholders. As well as there is no consensus on how to conceptualise sustainable development in the context of mining - since in considering the issues in isolation risk overshadowing the fact that key synergies and trade-offs exist. For instance, the quality of the environment has social implications, *inter alia* through affecting people's health, and the company's profitability may in turn be affected by the health of their workers. As already mentioned, economic development might aggravate gender wage differentials, and demands for increased local participation in decision-making might increase short-term costs for companies, though with the hope to reduce long-term risk of conflict. While for policy-makers, synergies and trade-offs can create difficulties as they need to be added to the equation when the pros and cons of mining are weighed. As such, it is worth considering mining sustainability in Cameroon.

II. GAMUT AND TRENDS OF MINING SUSTAINABILITY IN CAMEROON

Crisply, in line with the foregoing, the issues of sustainability in the mining sector in Cameroon can be appreciated by examining the parametric pillars, to assess the extent to which it is being implemented. Especially as Cameroon has ratified most of the international treaties and agreements related to sustainability, coupled with the domestic legal framework in place. On this account, it is worth providing the colossal appraisal of the issues by considering the impact and interface of the economic sustainability prospects, the social sustainability obligations, and the environmental sustainability problems of the mining Sector in Cameroon, in seriatim.

1) The Economic Sustainability Prospects of the Mining Sector

Generally, the mining sector can bring significant economic benefits to a country by generating fiscal revenues and export earnings, relieving constraints to investment, spurring economic growth and creating jobs, as well as contributing to building physical infrastructure. Which can enable the local communities living near the mine sites to also gain economic benefits from such mining activities. Despite this, it is worth noting that these beneficial actions can only be realised and enhanced if the government, mining companies, local communities, employers, and the businesses in the country, are committed to such activities. However, as the benefits from the revenues earned in the mining or other resource sectors do not flow in automatically. As such, to translate the fiscal revenues from the mining sector into sustainable development benefits, the following four steps are needed: Mining companies need to earn profits or rents; governments need to collect fiscal revenues from mining companies; governments need to manage these revenues; and governments need to spend or invest these funds for sustainable development. In this regard, it is observed that the mining sector of Cameroon has not fully improved the economy of the country, although embodied with quite good potentials of mineral deposit. This is because the sector is still clouded with some debilitating factors like poor infrastructure deficiency, a difficult business environment – rife with corruption, just to name a few. Although the Government of Cameroon (GoC) is striving very hard to address the infrastructure problems, with several roads, port, and power projects currently at different stages of construction. On this base, concerning the mining sector, the GoC has specific interest to build railroads from iron ore and bauxite deposits in the south-eastern parts and central parts of the country, to the new deep-sea port at Kribi. Besides, the GoC has commissioned several hydro and thermal power stations to increase the power supply to the nation's grid. Indeed, since these are among the most important considerations for foreign investors looking to expand into Africa. The GoC needs to quickly address and redress these issues to attract more foreign investment in the future. Especially as its economic prospects rest on the recent revival of the hydrocarbons sector to boost other sectors like mining. On this account, with the country's considerable potential in mining and other mineral resources, the GoC is now taking concrete steps to develop the mining sector as a priority sector, as it strives to achieve key economic goals by 2035 (Cameroon Mining Guide, 2014: 1-28). Similarly, in line with the initiatives and support of the World Bank to developing countries, the GoC is presently more committed to the key parameters of sustainability to develop its economic sectors within a sound environmental and social framework (World Bank, 2011). With mining being a priority sector to bring about the enhance development and improvement of the socio-economic conditions in the country. For this reason, it is worth noting that improving the sectorial management will make benefits at the local level more concrete, while also increasing the country's attractiveness to investors. Which in the long run, the investments in the sector will provide sustained revenues that can be used to help maintain the sector's oversight and management systems set up during the project, such as mining cadastre, inspectorate functions, as well as for wider development purposes.

2) The Social Sustainability Obligations in the Mining Sector

(a) *The actors monitoring the social obligations of mining companies in Cameroon*, can be categorised into the following two key groups - the public sector and non-governmental organisations (NGOs). As such, on the one hand, some actors in the public sector via the Ministry of Mines, Industry, and Technological Development (MINMIDT) are highly involved in the control of the mining projects – with MINMIDT also working closely with its Regional and Divisional offices to monitor the social obligations of the mining companies. Equally, the “*Institut de Recherches Géologique et Minières*” (IRGM) is also charged to establish the mineral resource maps of Cameroon. While on the other hand, many national and international NGOs operating in Cameroon play a vital role in monitoring the sustainability of the mining sector. For instance, the Centre for Environment and Development (CED) - an independent, non-political and non-governmental organisation, was created in 1994 in reaction to the huge increase of industrial wood production, illegal logging and poaching that occurred in Cameroon in the early 1990s. In fact, the first focus of CED was on ecological, social and economic problems, before extending its expertise to mining activities, defending the rights of people and environmental protection. With the aim to contribute in protecting the rights, interests, culture and aspirations of the local communities against the EI and protect the forests of Central

Africa (<http://www.cedcameroun.org/>) - which is done by promoting environmental justice and the sustainable management of the natural resources in the region. Similarly, the “*Forêts et Développement Rural*” (FODER), created in December 2002 also fights for transparency in the EI. In addition, other organisations are involved in the monitoring of the sustainability obligations of the mining companies - this is particularly true for the national and international civil society organisations like the GIZ Office in Cameroon.

(b) *The legal framework of social sustainability in the mining sector*, is principally contained in Law No. 001/2001 of 16 April 2001 establishing the Mining Code as amended, together with its implementing Decree No. 2002/848 PM of 26 March 2002, Law No. 92-007 of 14 August 1992 establishing the Labour Code in Cameroon, and the 1996 Environmental Management Law. As such, as per the provisions of the Mining Code as amended, it is observed that within the framework of a mining agreement signed between the GoC and a mining company, the Mining Code states that, “For the development and exploitation of a mineral discovery or for its funding, a mining agreement is concluded between the holder of an exploration permit and the State. With the said agreement to include provisions on: obligations relating to employment, vocational training, and social achievements; relationships with suppliers and sub-contractors; the percentage of the production of minerals extracted to be devoted to local transformation, and any other matter that the parties of the agreement may find of interest”. From this, it is observed that Cameroon applies but the contract-based regime under the aegis of the Mining Code. Since the aforementioned provision clearly provides that local processing, source of employment, and wealth creation at the local level are of utmost importance in the mining agreement. Likewise, the transfer of skills and capacity building, and the production-marketing chain in which the suppliers and sub-contractors are involved, are among the obligations of the companies. Similarly, with regards to the implementing decree of the Mining Code, the provisions relating to the obligations in terms of sustainability are mentioned in Sections 65 and 128 of Decree No. 2002/648/PM of 26 March 2002, laying down detailed rules for the application of the 2001 Mining Code. In this light, Section 65(2) provides that the application for the award of an exploitation permit is addressed and compiled to the Minister of Mines before the expiration date of the exploration permit from which it is derived. Equally, it further provides that the period for which the exploitation permit is requested should be accompanied by a feasibility study including notably: a note on the socio-economic impact of the project on the local residents in particular, and the proposals of the applicant on the recruitment and training of Cameroonians.

In addition, Section 128 also provides that during the exploitation phase, the management plan should describe the management of impacts due amongst others to the eventual positive social impacts like jobs, training opportunities, and the provision of communications and infrastructure. What’s more, notwithstanding the provisions of Law No. 96/12 of 5 August 1996 establishing the general framework for environmental management, Section 133 of Law No. 2016/17 of 14 December 2016 promulgating the new Mining Code in Cameroon, specifically states that “any natural or legal person carrying out exploration and mining works pursuant to this law shall be bound to do so in accordance to standard practice and the laws and regulations in force, in such a manner as to safeguard the health and safety of persons, workers of the mine and property”. In this vein, the health, safety and hygiene rules applicable to prospecting, exploration and mining, as well as to the transportation, storage and use of mineral or dangerous substances shall comply with the laws and regulations in force. Despite this, where the standards provided for by the laws and regulations in force are lower than to those observed by the permit holder in other countries where it carries out the same activity, the latter shall prevail. Thus, in such case, the permit holder shall adopt and apply rules that comply with such standards, to ensure optimal conditions of hygiene, health and safety for the workers. As such, before undertaking exploration or mining activities, the holder of a mine or quarry title is supposed to draw up rules relating to safety, health, hygiene and prevention of occupational hazards for the proposed works, which shall be submitted to the joint approval of the ministers of mines and labour. Once such approval is granted, the mining or quarry title holder shall comply therewith.

Moreover, as a protective measure, any accident occurring or any danger detected at a work site, mine, quarry or in their outbuildings should be reported to the authorities in charge of mines, health and occupational safety within the time limit prescribed by the regulations in force. On this base, in the event of any impending danger or accident at a work site or a mine, the authority in charge of mines, judicial police officers, and other competent authorities may take all necessary measures to end the danger and prevent its consequences. Equally, in the event of emergency or refusal of the mining title holders to comply, such measures are enforced as of right at the expense of the parties concerned. In addition to the aforementioned health, safety and hygiene rules provided, it is worth noting that all the holders of mining titles, quarry mining licences and permits with the exception of non-industrial mining operators and operators of non-industrial quarries for domestic purposes are obliged to take out an insurance policy to cover any civil liability and any damage that may result from their activities, under terms and conditions laid down by

regulation. (Section 133(7) of Law No. 2016/17 of 14 December 2016 promulgating the new Mining Code in Cameroon). Notwithstanding, in the event of an accident occurring at a mine or quarry or their outbuildings, or in the event of danger detected, the holder of the licence, mining or quarry title are bound to take all necessary measures to contain or prevent the disaster and/or request competent bodies to repair same in accordance with the regulations in force. Such relevant authorities are supposed to jointly conduct an investigation to determine the causes of the accident and draft a report containing proposals to prevent the recurrence of further accidents. However, where the holder of the mining or quarry title or the beneficiary of a licence is unable to prevent or contain the disaster using his own means, the authority in charge of mines, judicial police officers, and other competent authorities can, at the expense of the operators concerned, take all necessary measures to end the danger and prevent its recurrence (Section 134 of the 2016 Mining Code). In a nutshell, it is worth reiterating that despite the resounding provisions of the Mining Code and its implementing decree relating to social sustainability, its application is still piecemeal.

3) The Environmental Sustainability Appraisal of the Mining Sector

(a) *The general provisions of environmental protection*, as per the provisions of Section 135 of 2016 Mining Code, provides that quarry operations are to comply with the laws and regulations in force relating to sustainable environmental protection and management in Cameroon. Equally, apart from the non-industrial mining licence, the exploration permit and the licence for non-industrial quarry mining for domestic purposes, the granting of mining titles, quarry licences and permits, are all subject to the prior conduct of an environmental and social impact assessment (ESIA), a hazard and risk assessment, and provision of an environmental management plan. What's more, Section 136 of the Mining Code also provides that each operator shall be responsible for the restoration, rehabilitation and closure of mining and quarry sites. Likewise, the former mining and quarry sites must be restored to their stable conditions of security, agro-sylvo-pastoral productivity, and appearance close to their original state or conducive to any new and sustainable development deemed suitable and acceptable by the authorities in charge of mines, the environment and any other relevant authority. However, without prejudice to the provisions of Section 236 of the Code, the State or mining and quarry operators may use the old sites for various activities. On this account, the post-inspection establishment of the proper rehabilitation and restoration of the mining sites by the authorities in charge of mines and the environment or any other relevant authority shall result in the grant of a discharge, which shall release the former operator of any obligation concerning his former mining title, quarry licence or permit. Otherwise, the former operator shall remain responsible for any damage discovered subsequently in connection with his previous activities on the site. Most importantly, Section 137 provides that to ensure the rational use of mineral and quarry resources in line with environmental protection, the holders of mining and quarry titles are responsible to prevent gee-hazards and gee-disasters, prevent or minimise the discharge of waste in the open, protect fauna and flora, promote or maintain the general health of the population, reduce waste, dispose of non-recycled waste in such manner as to ensure safety of the environment, after informing and receiving the approval of the authorities in charge of mining and the environment; and manage waste in accordance with the laws and regulations in force.

Notwithstanding, Section 138 of the Code emphasizes that where a mining title, quarry licence or quarry permit expires, is abandoned, withdrawn or renounced, the holder shall, within the period prescribed by the minister in charge of mines, dismantle, in accordance with standard rules, any mining plant found on the land covered by the title. With the holder of the mining title, quarry licence or permit being liable to pay the required duties and taxes, as well as bound to honour his obligations relating to the environment and rehabilitation of the mining sites, in accordance with the laws and regulations in force. However, where the mining plant is not dismantled, the minister in charge of mines may take measures for the mining plant to be sold by public auction or tender, and deposit the sale proceeds in the Public Treasury. But if upon the expiry of a mining or quarry title, the holder is unable, within the prescribed time limit to remove or complete the treatment of waste, and after a formal notice remained unheeded, the holder is liable to the penalties provided for by the laws and regulations in force. Similarly, if upon the expiry of a mining or quarry title, the holder is unable, within the prescribed period, to remove other minerals extracted, then such minerals become State property. Conversely, it is worth noting that the provisions of this Section shall not apply to agreements between the former holder of the mining or quarry title and the possible owner of the land covered by the mining or quarry title, as concerns the facilities abandoned on the land after the prescribed period.

Despite the provisions of Section 125 of the Code, Section 139 provides that no material used to construct or support any shaft, tree, gallery, terrace, dam or other extraction work shall be removed without the authorisation of the authorities in charge of mines. Nevertheless, the mining agreement may include other provisions applicable to the holder at the expiry of a mining permit. With Section 140 stressing that at the end of mining or quarry activities, the buildings, outbuildings, wells, galleries and all structures in general, built and used for the mining or quarry activities are to be secured, in accordance with conditions set out in the Environmental and Social Management Plan and the

mining sites rehabilitation programme. In spite of these, it is worth stressing that the major environmental problems in the mining sector include land degradation, water and air pollution, deforestation, ecological disturbance, degradation of natural landscape, geological hazards, destruction of wildlife habitats etc. Which is diminishing freshwater availability and agricultural productivity, thereby increasing the rate of food insecurity, famine, and health diseases. As such problems have readily brought negative points to the sustainability of the mining sector in Cameroon. For this reason, it is worth considering the legal and institutional system and development of ESIA in Cameroon.

(b) *The contour of the ESIA system in Cameroon*, can be seen as a family of tools on ESIA used for the mitigation and prevention of the environmental and social impacts of industrial activities – including mining. That being the case, this must be in line with the environmental impact assessment (EIA), which was initially developed in the United States in the 1970s, but later adopted by several countries like Cameroon. Indeed, an EIA provides the environmental baseline before the start of a project, as it evaluates the likely impact of the project, and proposes how such impacts are to be monitored and how they can be mitigated (USAID, US EPA, INECE, and CACED 2011). On this based, a typical EIA report includes the following parts: (a) description of the project, (b) project alternatives, (c) environmental baseline, (d) identification and evaluation of likely impacts, (e) monitoring plan; and (f) environmental management plan (EMP) (which can be separate from the EIA report, or be part of it, depending on the legal requirements of the host country). As such, in a narrow sense, the EIA refers only to the immediate process of assessing environmental impacts of a project, which includes feasibility studies, baseline studies and impact studies. While in a broad sense, EIA refers to the comprehensive process which consists of screening, general and detailed environmental impact assessment, public consultation, and preparation of an EIA report, preparation of an EMP, and their review and approval by the government. On this account, EIA is often used as an umbrella term which covers the entire family of environmental and social impact assessments - as it is accompanied by the EMP. For this reason, since mining is considered one of the most polluting industries, the preparation of EIAs and EMPs ('EIAs/EMPs') is compulsory for the mining projects in most countries. Although for mining exploration projects, some countries do not require EIA at all, or require a simplified EIA. Despite this, it is worth noting that EIAs/EMPs serve to inform the mining company, the government, affiliated stakeholders, and the public of the environmental consequences of implementing a mining project and identify the mitigating actions. Since in its narrow form, EIAs are a project-based process, whose scope was initially limited to mining projects within the formal mining sector - while in the case of oil and gas, an EIA is done for a block of assets collectively. With this limitation of scope having allowed for the assessment to specify concrete actions to mitigate impacts, with clear accountability for implementing and financing those actions. However, over time, EIAs have expanded in scope, both thematically and geographically - with greater recognition of social, human rights and gender impacts of mining prompting the development of specialised impact assessment tools. As currently, EIAs increasingly include social impact assessment. Equally, cumulative and strategic impact assessments are also carried out in regions and countries with extensive mining activity, for example, before opening an area for mining (USAID, US EPA, INECE, and CACED, 2011). In this vein, it is worth stressing that the environmental movement first touched the industrialised countries, before later, especially after the early 1990s, the developing countries like Cameroon. In particular, in the late 1990s, most of these countries saw the rise of environmental assessment (EA) - as they were influenced by the 1992 Earth Summit, as well as by the World Bank, which readily imposed it as a condition for development aid. Which has taken the form of the adoption of appropriate legislation and regulations that require the use of these procedures.

Notwithstanding this enormous effort, it is observed that this drive to institutionalise EA will still remain inadequate unless EA is made to be part of the adaptive process mindful of the contextual characteristics, in order to assure, beyond the enactment of laws and the creation of structures, the effectiveness of the system of impact evaluation as a whole (Bitondo and André, 2007: 139-148; Lanmafankpotin *et al.*, 2013: 180). In fact, along with the dissemination of EA as a useful innovation in fighting pollution and in proactively preventing environmental degradation due to mindless, runaway industrialisation, there has been an expansion of the concept of the environment and the birth of the idea of sustainable development (Bitondo *et al.*, 2014). Since at the onset of the 1970s, the environment had a biophysical connotation - with the essence of the concept being the physio-chemical and biological elements surrounding humanity. With the environmental protection laws being initially aimed at combating pollution. However, in this contemporary era as discussed in section one above, the environment is seen more as an organised and dynamic system of interactions between the biophysical and human factors, in which organisms evolve and human activities take place (André *et al.*, 2003). For this reason, the environmental system is now envisaged as a socio-ecological system. As such, EA can be defined as the set of procedures aimed at integrating aspects connected to the natural and human environment in making decisions related to the design, planning, implementation, and

monitoring of interventions, with an eye to a balanced and sustainable development. That being the case, in Cameroon, the best-known form of EA is still the Environmental Impact Study (EIS) used in projects under appraisal. Equally, more use is being made of environmental audits of projects already being executed, and what is known as the Strategic Environmental Assessments (SEAs), which cover policies, plans or programmes (André *et al.*, 2003). As such, SEA assess impacts at the policy or programme level, which allows the consideration of alternatives over a long term and larger area – like an entire region or a country or a sector. For example, SEA can be used in considering whether to open a particular region for mining projects, or in considering changes in mining royalties, and the ensuing implications on mining activity. Thus, incontestably, EA seems to be one of the principal ways for sustainable development actors to contribute to the integration of aspects related to governance and sustainability in the development processes of a country.

(c) *The legal and institutional guides of ESIA in Cameroon*, is echoed in the principle of taking the environment into account in public action as enshrined in the Cameroon's constitution of 1996 as amended - which signifies the highest possible level that the country is committed to sustainable development. As the preamble of the constitution specifically proclaims the right of every citizen to a healthy environment, by stating that the protection of the environment is a duty for everyone, and that the State ensures its defence and promotion. On this account, this willingness to take the environment into account in development projects has created a relatively complex legal and institutional framework. As such, although Law No. 94/001 of 20 January 1994 on the forests, wildlife, and fisheries already explicitly required an EIA for projects that could impact the ecological balance of the forests. However, it is worth noting that it is Law No. 96/12 of 5 August 1996 that established a robust general framework for environmental management, thus, embodying the principle of ESIA. As it provides in its Article 17 that an ESIA is required for any project liable to have an impact on the environment. Subsequently, in this context, other sectorial laws like the Mining Code has made explicit reference to the requirement for an ESIA. What's more, at the regulatory level, Decree No. 2013/0065/PM of 13 January 2013 on ESIA, clearly laid down the process and framework for carrying out an ESIA for the first time. Which has been followed by several orders including one detailing the list of projects required to undergo the procedure. Equally, at the institutional level, Cameroon seems to opt for a multi-sectorial, regional, decentralised and participatory approach to environmental management, coordinated by its Ministry of the Environment, Nature Protection and Sustainable Development (MINEPDED) and assisted by an Inter-ministerial Committee on the Environment, whose missions include making appropriate recommendations on all ESIA before the competent authority makes its decision.

(d) *The development of ESIA procedure in law and practice*, can be appreciated by perusing the quality of the texts put in place in the country since 2005. As such, the publication of the 2005 Decree laying down the methods for carrying out EIA is considered as a great initiative. Which has provided the platform to guide the elaboration of several orders to improve the regulatory provisions related to EIA. For instance, the Order of April 2005 laying down the various categories of operations requiring an environmental impact study, the Order of February 2007 defining in general the terms of reference of environmental impact studies and that of July 2007 laying down the conditions for authorisation of consultancies carrying out ESIA. Notwithstanding, it is worth noting that certain requirements can still be refined, adapting them if necessary to the new policy directions of the Decree of 13 February 2013, laying down the procedures for conducting the ESIA and Decree No. 2013/0066/PM of 13 January 2013, setting the environmental and social audits preparation and processing modalities. Despite these initiatives, it is observed that the legislation and regulations do not provide for the involvement of the environmental inspectorate at the various phases of ESIA (Ibid). Equally, there is an urgent need to ensure a wider public involvement and participation in the ESIA process. Especially as *Bitondo et al.* have alluded that about a quarter of the projects still do not undergo the procedure, and the quality of the teams in charge of writing the reports, as well as the quality of the content and clarity of the reports, although improving, still score moderately in practice (Bitondo *et al.*, 2014). In this vein, a review of the evolution of the ESIA system in Cameroon from the various orders and manuals need to be updated to reflect the Decree of 13 February 2013. Similarly, although a significant improvement can be detected in the requirements governing all aspects of the ESIA procedure, from screening to monitoring and compliance, more precision is still necessary with regard to the procedures and decision-making criteria. Likewise, there is need to improve on capacity building in the knowledge of the laws and regulations applicable during the initiation, monitoring, implementation phases of the project. Especially as the institutional capacity remains relatively unsatisfactory because of weak institutional memory and relatively few requirements for expertise. Since despite the favourable regulatory provisions, it is observed that there is still practically no use of outside expertise. Which is an alarming situation coupled with the weak regulatory practice of ESIA, lack of public participation in decision-making and obligation to justify the decisions, especially in the mining sector. Although this can be mitigated in one way or the other, if the

improvements in the decentralisation process introduced by the Decree of February 2013, entrusting responsibility for impact statements to the municipalities where the projects are found, is well implemented.

CONCLUSION

Unerringly, as analysed above, it is noted that the mining companies, whatever their size, are now subject to something of an international consensus on sustainability matters even if it is only at the level of high principle. This consensus as discussed, has been the product of a diverse group of factors ranging from science, environmental philosophy, environmental politics, and the developments in the international arena. Since for whatever reason, the situation faced by such companies in this contemporary era is clearly and quantitatively different from the past. As their operations are now increasingly influenced by the visionary statements of international conferences, the activities of NGOs, and the economic aspirations of peoples or their leaders, to whom the very word 'environment' is still vague or indecipherable or outright meaningless. Equally, companies operating are also influenced by the range of self-regulatory, industry codes, and standards that have been developed, particularly in the last 10 years, such as the ICMM, the GRI, and the Global Compact, just to name a few. Although it is naïve that all countries will behave in a fashion that reflects the reality of an apparent consensus at the international level. Since the capacity of a country to enforce its regulations will also impact on the effectiveness of the regulation. That's why the apparatus of international law can, in the main, be said to exist, but the actual regulatory and enforcement mechanisms in a particular State are paramount, so too the consequent behaviour of the mining companies in that State is very vital.

Expediently, in the case of Cameroon, it is noted that making domestic laws and regulations coherent with each other and sufficiently detailed to function as the core set of instruments for governing mining is a vital issue. Since the growing mining sector poses a serious challenge to the GoC, as it has to ensure control of the sector so that substantial revenue could be generated via taxes to boost the country's economy. Besides, it is observed that the sector can be a major contributor to the country's economy, if the industrial mines start producing and the ASM are well regulated and monitored. Moreover, it is noted that beyond the need for effective monitoring and the respect of contractual obligations between the mining companies and the GoC, it is necessary for the GoC to sign contracts or conventions that allow it to capture maximum benefits from the mining extractive projects. Likewise, transparency and the respect of contractual obligations by the mining companies are also significant factors for the GoC to effectively capture the expected benefits. As such, enhancing the monitoring mechanism of the mining sector is vital for stakeholders, in ensuring accountability, transparency and sustainability. Since this will enable Cameroon with its vast mineral resources and promising future to grow into a major player in the mining sector in Africa and the World at large. Thus, ensuring a steady and thoughtful growth toward a sustainable sector, with a great impact on the country's economy in the coming decades.

Congruently, the GoC and its development partners need to make great efforts to harmonise the forestry and mining laws - so as to avoid conflicts of interest, and enhance the sustainable management of both the forest and mineral resources. In this light, there is an urgent need to put in place follow-ups to check environmentally friendly mining practices and sanctions imposed on any defaulter - with the possibility of reducing taxes or compensations given to those with best practices. Equally, there is the need to improve the livelihoods of miners by teaching them sustainable mining techniques to mitigate the negative environmental effects that the mining activities can generate; giving them technical assistance by carrying out prospection and allocating zones for artisanal mining activities. This, if properly planned and implemented will readily reduce the anarchic destruction of the forest in search for productive deposits. Besides, this can give them opportunities to benefit from social insurance for a secure retirement, thus, creating the fora whereby they are taught financial management and diversification of activities, which can facilitate them to easily change from the mining activity to other to activities.

RECOMMENDATIONS

Concisely, in line with the foregoing discussion and conclusion, it is iconic to outline the following recommendations, as a paramount contribution to mining sustainability in Cameroon, with regards to the core orientation of the legal frameworks of the sustainable development goals in order to maximise the benefits from the mining sector. Which can be achieved by:

- Making the domestic laws and regulations coherent with each other and sufficiently detailed to function as the core set of instruments for governing mining; improving coordination between government agencies and between the national and subnational governments; and considering moving from contract-based regimes to law-based regimes, by avoiding the usage of mining contracts to fill legal and regulatory gaps.

- Considering the establishment of model agreements, which provide the policy space for environmental and social laws of the country, which limit terms that are open to negotiations - however, where mining contracts are made, paying special attention to provisions relating to environmental impact mitigation, mine closure, resettlement, local content and employment; ensuring transparency of mining contracts like disclosure of beneficial ownership; and recognising and progressively registering customary land rights to protect poor and marginalised rural communities and indigenous peoples.
- Assessing the implications of international investment treaties on the country's commitments to sustainable development, human rights, and the domestic policy space; negotiating the terms in investment treaties to minimise these negative implications; incorporating or strengthening consultation with the local communities - by enshrining the principle of free, prior and informed consent (FPIC) in domestic laws and regulations; establishing or strengthening national remedial mechanisms for people affected by mining; and making use of voluntary standards developed for the mining sector, encouraging responsible mining investments and recognising companies that adhere to strong standards.
- Designing environmental regulation that adequately protects the environment, which also establishes clear rules for investors. Likewise, where the capacities of the government and the mining sector allow, to consider adopting more innovative approaches to environmental regulation, such as performance-based regulation and economic incentives.
- Making requirements for EIA and EMP for the mining sector, by setting out clear roles for the government, mining companies, environmental services experts, civil society organizations and community groups; establishing laws and regulations for mine closure that prevent large environmental legacies and public costs; and ensuring that affected communities are informed in advance of mining projects about land use options which are available after mine closure, and enhancing access to mining-related information that is important and relevant to local communities.
- Investing in building the capacities of regulators to monitor and enforce the regulations; while equally enhancing access to mining-related information that is important and relevant to the local communities; and fostering a culture of transparency in the government and mining sector - by improving intra-governmental coordination mechanisms, such as those between the mining and environmental ministries, local governments, human rights commissions and other government agencies.
- Opening legal avenues for local communities and the indigenous peoples affected by mining to have a say in mining projects; defining minimum standards for adequate consultation and consent; investing in the capacities of the communities affected by mining; and providing access to remedy for people affected by mining activities.
- Designing and instituting progressive fiscal regimes that balance between the financial returns to the country and those to the mining companies, in line with international comparisons; making use of tools like project-level mining fiscal models to estimate the government 'take' from mining projects to design fiscal regimes and negotiate with mining companies; ensuring that the fiscal regime is stable over time, which in the long term would help to move towards greater reliance on legal frameworks, rather than mining contracts; and ensuring flexibility of the fiscal regime to respond to the cyclical nature of the minerals and metals commodities markets - by building in contract appropriate negotiation clauses.
- Ensuring transparency of the fiscal regime and access to information - by drawing on international initiatives like the EITI, which ensures a relatively straightforward fiscal regime that does not obscure transparency, but fosters a culture of transparency.
- Managing the volatility of resource revenues by using tools like structural budget rules developed by the IMF, to design and institute natural resource funds; investing the resource revenues in a way that increases the national wealth - into infrastructure, social service provision, financial assets, and alternative sources of growth; and setting priorities that are consistent with the country's level of development and needs.
- Using a combination of strategies to improve the competitiveness of domestic workers and firms, and set local content requirements to enhance the benefits from the mining sector for employment, business development, and economic growth; collaborating with and fostering collaboration between the mining companies in designing and implementing local development initiatives, community development agreements, and skills development initiatives; and supporting the capacity of local communities impacted by mining to take greater advantage of the local development opportunities, to encourage the local development initiatives by the mining companies to synergise with the plans and programmes of the government.

- Integrating the country's mining sector strategies with other plans and policies, such as national and regional development plans, fiscal revenue projections and budget plans, macroeconomic policies, land use plans, infrastructure plans, public service delivery plans, human resource development plans, and education policies; and ensuring coherence between the plans, policies, strategies and laws.

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