



Pivotal aspects of hydrocarbons sustainability: The challenges, drivers and way forward for the sector in Cameroon

Bande Gulbert Mbah Tarh

Ph.D. in Law, Senior Lecturer, FSJP, University of Maroua, Cameroon

Abstract

The hydrocarbons sector remains a crucial drive for the economic development of the world. Especially as the global demand for fossil fuels is rising, though companies are facing complex investment challenges because of the harsh operational environment of the exploration and production activities. As these activities are causing local and global environmental risks like groundwater contamination, or climate change in broader scale. On this base, the paper has identified and examined the critical challenges and drivers of sustainable development in the hydrocarbon sectors. So as to proffer the way forward for the emerging sector in Cameroon, in terms of accountability, transparency and sustainability. By x-raying “how the concept of ‘sustainable development’ is articulated, interpreted, and implemented in the hydrocarbons sector within the international and national legal regimes? With specific interest on the issue of pollution - by examining the role of the international conventions on the protection of the environment, with particular focus on civil liability and compensation. Since despite the adaptation and coming into force of these conventions directly dealing with the right of the users and its amenities against hydrocarbons pollution, there is dilemma in terms of application of the conventions by the various States. That being the case, the challenges facing the application were examined, in line with what can be done to improve such state of affair to achieve a meaningful hydrocarbons sustainability in Cameroon. With the paper concluding that this can only be successfully achieved if a viable legal regime is adopted and implemented - along the lines of the globally accepted sustainable development principles.

Keywords: pivotal, sustainability, hydrocarbons, challenges, drivers, measures, Cameroon

Introduction

Concisely, the central concept in this paper is “Sustainable Development”, which is depicted as the goal for the development of the hydrocarbons (oil and gas) resources. In this regard, the definition of the Brundtland Commission on Sustainable Development, which states that “sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”^[1], is very iconic. Especially as *Sands* affirms that the definition “contains within it two concepts - that of ‘needs’, in particular, which is the essential needs of the world’s poor, and the idea of limitations imposed, by the state of technology and social organisation, on the environment’s ability to meet the present and future needs”^[2]. That being the case, this means that all the different parts of the process of exploration and exploitation of the natural resources, including investments, technological innovations and institutional changes should be in harmony – to ensure that the current and future potentials meet the human needs and requirements. In this light, it is observed that the concept of sustainable development with regard to the hydrocarbons sector, is of particular significance since these natural resources are non-renewable resources. With *Arcott*, in considering sustainable development in the oil and gas sector, asserts that there is the need to carefully balance the social, economic and environmental capital in the continuously changing world. By the same token, he adds that the extractive industries’ role in sustainable development should be to meet the needs of the global society for oil, gas, and mineral at a reasonable cost, safely, and minimal impacts on the environment until suitable alternative energy sources are available”^[3]. From this, it is important to note that since

economic growth is considered to be a powerful means to improve the well-being of man - economic development, therefore, must be limited by the bounds of what is ecologically sustainable. Since the environment not only provides the resources for economic activity, but also ensures the ecological conditions for the life of humans. For this reason, it is vital from the perspective of the danger that lies ahead for the global climate change caused by the development and use of fossil fuel^[4] - to ensure that the ecology is as significant as the economy.

Correspondingly and based on the foregoing, the paper will examine and explore how the concept of “sustainable development” can be transposed into and implemented within the domestic law in the hydrocarbons sector - with the end in view of proposing an effective national framework in accordance with the international safeguard policies and standards of sustainability in the sector. By so doing, it also specifically peruses the pivotal issues in order to clarify the concept of “sustainable development” in the sector, and considers the challenges, drivers, and measures on how sustainable development can be transposed into the domestic law and policy, and adopted and implemented in Cameroon. On this account, the paper seeks to answer the following main question: “How is the concept of ‘sustainable development’ articulated, interpreted and implemented in the international and domestic legal regimes with respect to the hydrocarbons sector? With specific emphasis in examining the extent to which the international legal regime has influenced that of Cameroon, in the context of sustainable development. This is because since hydrocarbons enormously contributes to the development of the economy of the world, something vital needs to be considered with respect to such development – whether is it

negative or positive development. That being the case, the paper is inspired by the special connection existing between the hydrocarbons sector and sustainability. As it elaborately examines the key issues of the sector and sustainable development. Likewise, it considers the role of the international legal regime in the protection of the environment – with particular interest being laid on civil liability and compensation. As special consideration is laid on the persons and industries that in one way or another are touched by the practices of the hydrocarbons sector throughout the journey to sustainable development. Conversely, despite the adaptation and coming into force of such international conventions directly dealing with the right of the users and its amenities against hydrocarbons pollution, there are difficulties in applying the conventions in the individual States. As such, these challenges facing the applications of the international conventions are examined, in line with what can be done to improve such state of affair in order to achieve a meaningful co-existence between the hydrocarbons sector and environmental sustainability in Cameroon.

Pivotal aspects of hydrocarbons sustainability

As re-echoed above, it is worth inculcating that sustainable development is widely recognised as “the golden rule of civilisation in the 21st century” and placed high on the international agenda by the *Brundtland* Commission in 1987^[5]. As the concept is primarily based upon the values and ethics shared in today’s interdependent world, aiming to provide an integration of environmental protection, economic development, and social justice (including human rights) at the international, regional, and national levels. As such, at the international level, the concept of sustainable development is applied as a global policy and an essential part of the international environmental law^[6]. While at the national level, the governments of many countries are addressing the concept by introducing specific national strategies for sustainable development, organising various intergovernmental offices and independent advisory boards, as well as, issuing national environmental legislations that contain the sustainability principle. Likewise, there is emphasis that the principles and norms, which are intended for the whole nation, are often more effective when they are used at the regional levels. A position averred by *Boer et al.*, who distinguish two particular strategies to deal with the regional issues related to sustainable development. With the first one being “to deal comprehensively with environmental problems within a specific region”, while the second is to develop “specific regional conventions that address a certain sectorial issue”^[7], for example, marine pollution or hazardous wastes. Undoubtedly, it should be noted that a regional regime that deals with oil and gas resources is referred to this second type of environmental law regimes. Equally, they also believe that such regional initiatives are extremely helpful for the reinforcement of global environmental law, although allowing the protection and preservation of the regional environments for States’ interests. As these can lead to a better regional competitive and properly regulated and taxed markets, and reasonable, differentiated and viable regulations^[8].

Notwithstanding, it is observed that the nature of the concept of sustainability has made it difficult to coordinate and monitor the implementation of sustainable development in the formulation of effective policy^[9]. On this account, the

International Law Association at its meeting in New Delhi in 2002, offered a set of “Seven Principles of International Law relating to Sustainable Development” as a definitive tool to inform the formulation of policy and potentially legal arrangements. Indeed, the New Delhi Declaration was viewed as a result of efforts of many experts and political leaders from all corners of the worlds, which have been undertaken during the last several decades. With the document, thus, presenting the following seven principles of international law on sustainable development, which was already presented in the *Brundtland* Report and the 1992 Rio Declaration, as reaffirmed by the World Summit for Sustainable Development (WSSD), and later re-echoed in the Sustainable Development Goals (SDGs): The duty of States to ensure the sustainable use of natural resources; the principle of equity and the eradication of poverty; the principle of the precautionary approach to human health, natural resources and ecosystems; the principle of public participation and access to information and justice; the principle of good governance; the principle of common but differentiated obligations; the principle of integration and interrelationship, in particular in relation to human rights and social, economic, and environmental objectives. From these, it is worth noting that contemporarily, these principles serve as legal norms in “binding international treaties, forming part of international law and policy in the field of sustainable development, providing normative context for best policies and laws in the field, as well as in the Local Agenda 21 initiatives and national sustainable development strategies”.

In this connection, it is widely recognised that these common principles can be applied differently depending on the political, economic, environmental, cultural, and legal context of the countries. This is because they provide a reliable framework for developing criteria for assessment and selection of best international, national or local policies or laws in relation to sustainable development^[10]. Since the implications of these principles on the petroleum resources can mean, “the maximisation of the benefit of petroleum resources without causing ecological imbalance and some requisites need to be followed like to use the petroleum resources to benefit the present and future generations, by consuming in an appropriate rational and prudent manner”^[11]. In this light, the paper vehemently considers such principles in relation to the sustainable development of the hydrocarbon resources in general, with particular focus on seeking ways to help the policy and law-makers, to evaluate, initiate or draft new laws and policies carefully, in line with such viable principles. As it clearly brings out the problem challenging and impeding the hydrocarbons sector in Cameroon, which lies in straddling the balance between compliance with environmental commitments and the maximisation of resources to revitalise the lagging economy. That is why although the need for new legal and policy guidelines of sustainable development for the sector in the country is widely recognised among the stakeholders in Cameroon, owing to the on-going political debates, however, an effective solution has not yet been found so far. As such, owing to the alarming state of environmental degradation, a protracted period of policy-crafting may no longer be tenable. On this account, it is observed that despite the lapses in the legal architecture put in place to regulate and monitor the hydrocarbons sector, the bone of contention still lies on the issues bearing on the putting in

place of a vibrant legal and institutional framework to enhance the promotion of the sustainability principles in Cameroon in general, and the local communities where most of these hydrocarbon projects are found in particular.

An overview of the perspective of the hydrocarbons sector

To all intents and purposes, the hydrocarbons sector continues to be the main source of energy in the world, and is one of the most important parameters that have left an impact on the growth of the global economy. This is because the sector supplies more than 50% of global fuel consumption, with hydrocarbons expected to remain the superior source of energy by 2035^[12]. As such, on the one hand, it is noted that the daily production of oil was around 96.3 million barrels in 2016 – yielding about two litres per day per each person in the world^[13]. Equally, the continued research of BP shows that till 2035, natural gas will become the second largest fuel source, as the demand for fossil fuel is on the rise. A situation which has led to the continuous exploration and production activities in the world. With IEA also alluding that the needs of investment in the upstream section shall be US\$700 billion yearly until 2040, to meet the global energy needs. While on the other hand, it is realised that the financial markets of the world now have billions of dollars in turnover from the daily production of more than 96 million barrels of oil^[14], which has left economic impacts on the regional markets of the countries that are either exporters of oil and gas or importers of fossil fuels. Despite this, it is worth noting that there has been no precise forecast for changing the principles of energy market neither on demand nor the supply side. Nonetheless, it is obvious that from each barrel of oil, there are many more barrels of waste generated^[15].

That being the case, to be able to properly understand the role of the hydrocarbons sector with respect to sustainable development, and to properly assess the challenges and the roles of each component of the oil business chain, there is a need for a proper understanding of the structure of the sector^[16]. For this reason, it is worth emphasizing that the hydrocarbons sector is often divided into three major sectors – “Upstream, Midstream, and Downstream”. With the “Upstream Sector” also known as “E&P” - where “E” stands for exploration and “P” for production, being divided to other categories depending on the characteristics of the reservoir and circumstances of the field. Therefore, it is in the upstream that the searching of potential on-shore or off-shore crude oil and natural gas is performed, for the later drilling of the exploratory and appraisal wells. On this base, commercial production often commences after the drilling of several development wells, before their connections to the surface production unit and transportation facilities. While the “Downstream and Midstream Sectors” are usually considered as supplements of the upstream sector, in delivering the products to the consumers. What’s more, it is worth noting that the midstream is mainly comprised of transportation means from the well to the processing facilities, and then to the refineries. With the main component of the downstream sector being the refining of the crude oil and processing of the natural gas. A process that provides gasoline or petrol, kerosene, diesel, fuel or jet oil, lubricant waxes, asphalt, NLG or LPG, besides petrochemicals. Moreover, the delivery to the end user is also part of the downstream sector. Most importantly, it is

essential to note that the main developers of the hydrocarbons sector can be grouped as follows: the national oil companies (NOC) and international oil companies (IOC). This is because these companies often operate in an integrated manner, encompassing both the upstream and downstream^[17] - forming the basic structure of the sector. Despite these, there are also plenty of smaller size businesses that contribute to the main activities of the hydrocarbons sector, or supply services to the NOC’s, IOC’s and other type of companies involved in the sector.

The intertwine between the hydrocarbons sector and sustainability

Explicitly, as highlighted earlier, the hydrocarbons sector involves the exploration, extraction, refining, transportation, marketing, etc. Thus, on the one hand, the importance of hydrocarbons and its products to the development of the world cannot be overemphasized. This is because hydrocarbons plays a vital role in the production of energy throughout the world – since it is the primary source of energy in the world^[18]. As it has contributed much, to both the technological and economic development of the world. While on the other hand, it is worth noting that the sector has equally contributed to the loss of other industries like fisheries and tourism, as well as the degradation of the environment through oil pollution. A situation that is coupled with the fact that the concept of sustainable development has been interpreted in several different ways - although its applicability is still facing criticism. Despite this, the subject is aptly important in as far as development is concerned. As the landmark definition of sustainable development stresses the urgent tendency of meeting the needs of the present without compromising the ability of future generations to meet their own needs^[19]. As a consequence, it is worth affirming that environmental sustainability and economic sustainability are essential parts of sustainable development. As such, for there to be ample sustainability, the activities of the hydrocarbons sector must focus on both the environmental sustainability and economic sustainability throughout the journey to sustainable development.

For this reason, it is observed contemporarily that the hydrocarbons sector has been called to deliberate over environmental protection. Since the severity of environmental crises and climatic change emanated from the production of oil and gas has left grave repercussions for many societies. Especially as the major oil companies have been accused of creating disorder in global environmental issues, as they are facing reliability issues by policy-makers and the public from around the world. A situation that has prompted the people of the world to re-examine how fossil fuels are used in their lives^[20]. For instance, this negative mentality is based on several evidences and issues like the Santa Barbara oil spill in 1969 in California and the Deepwater Horizon disaster in the Gulf of Mexico in 2010. With such environmental disasters having prompted the public into seeking both measurable improvement in performance and greater transparency and operation in the hydrocarbons sector, pertaining to sustainability. Which has led the hydrocarbons sector, like other sectors, to redefine their business development strategy on the basis of sustainable development, with some of them becoming responsive toward some of the operational criticisms^[21]. Similarly, the oil companies are also adopting supportive

policies for protecting the environment to ensure safety measures in the exploration and production activities. As such, this shows how the concept of sustainable development has entered and intertwined in the hydrocarbons sector literature – as terms like “Green Economy, Sustainable Development, Social Responsibility, and Risk Management” have become commonplace in lectures and seminars presented by oil companies ^[22].

In a similar manner, the top management of the oil company are now in favour of smart solution implementations and innovations, such as “Performance Assurance and Operation Risk Management, Contaminated Site Management and Air Quality, and Climate Change”. Despite these, it is worth noting that there is always a difference between what the oil companies are declaring about sustainability, and how they are performing. This is because from the considerable studies conducted so far, the overall conclusion conveys that sustainable development has seriously gained entrance into the decision-making levels of major hydrocarbons producing companies, though in reality, the hydrocarbons sector still remains one of the main causes of environmental degradation and climate change ^[23]. A situation that has prompted organisations like IPIECA, API and OGP, to be very active in organising sustainable development management standards for the hydrocarbons sector, and encouraging the oil and gas companies and their shareholders to provide voluntary reports as one of their priorities, thereby consolidating with, and adhering to the sustainable development strategies ^[24]. This is because hydrocarbons and the environment are directly connected, as petroleum can contribute to the damage of the environment and its amenities. Although the exploitation and exploration of oil and gas, off-shore oil installations and transportation of oil, may not be the most polluting activities in as far as the hydrocarbons sector is concerned - but once a major spill of crude oil occurs at sea it is indeed disastrous. On this account, for instance, the world witnessed the first biggest oil spill through the Torrey Canyon in 1967. Moreover, to name a few, the Exxon Valdez that grounds in Prince William Sound, Alaska, spilled approximately 40,000 tons of crude oil, the Erika spilled approximately 30,884 tons of fuel oil and polluted over 400 kilometres French coast, the Prestige broke in two and sunk west of Vigo in Spain – spilling approximately 63,000 tons of heavy fuel oil ^[25]. On top of that, there is the Deep-water Horizon Oil Spill of 2010, which is so far considered the largest oil spill of all times. Thus, in the named oil spill incidents, it is observed that the adverse effects of hydrocarbons has been demonstrated evidently, such as the damage to shoreline, marine ecosystem, fisheries and coastal amenities, which are considered to be remarkable. Especially as these damages corresponds to financial, commercial, and other related losses ^[26]. With preventive measures, clean-up operations and restoration of property damaged having proved to cost to a great deal of resources and time. As the cost of damage done to the environment can neither be quantified nor fully recovered.

The relevant international legal regime of hydrocarbons sustainability

Congruently, it is worth reiterating that pollution is one of the critical issues that affects the hydrocarbons sector in terms of sustainability. On this base, there are some relevant public and regulatory international conventions addressing

oil pollution, such as the United Nations Convention on the Law of the Sea of 1982 – which addresses the protection and preservation of the marine environment; the International Convention for the Prevention of Pollution from Ships 73/78 - emphasizing the prevention of pollution from ships including oil pollution; the International Convention relating to the Intervention on the High Seas in Cases of Oil Pollution Casualties of 1969 - addressing issues of intervention by coastal States in case of oil pollution in the high seas; the International Convention on Oil Spill Preparedness, Response and Co-operation of 1990 – providing the guidelines on the establishment of measures for effectively dealing with oil pollution incidents. However, despite these, it is observed that although all the conventions provide among other things for the protection and preservation of the marine environment from oil pollution; none of them provide for the protection of the rights of other users of the sea and their amenities from oil spills. As oil pollution incidents contribute to the going down of other businesses, especially in the fishing industry, which contributes to the backward development for the victims. For this reason, it is important to note that after the Torrey Canyon incident, the world community reiterated the need for a specific convention, to address the issues of liability and compensation for pollution caused by oil spills ^[27].

Accordingly, under the auspices of the International Maritime Organisation (IMO), for which Cameroon is a member State, several conventions have been adopted to address the civil liability for oil pollution damage. With the following forming the current international legal regime for oil pollution liability and compensation:- the International Convention on Civil Liability for Oil Pollution Damage of 29 November 1969 (CLC 1969); the International Maritime Organisation Protocol of 1992 to amend the International Convention on Civil Liability for Oil Pollution Damage of 29 November 1969 (CLC 1992); the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage of 18 December 1971 (ceased to be in force in 2002); the International Maritime Organisation Protocol of 1992 to amend the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage of 18 December 1971 (Fund 1992); the Protocol of 2003 to amend the International Convention on the Establishment of an International Fund Compensation for Oil Pollution Damage 1992 (Supplementary Fund 2003); the International Convention on Civil Liability for Bunker Oil Pollution Damage of 21 March 2001 (Bunker 2001), all of which are applicable in Cameroon as a member of IMO.

From this perspective, it is worth examining the role of the international legal regime in protecting the victims of oil pollution damage, in order to propel a way forward for Cameroon. In this vein, it is observed that the CLC 1969 was the first liability convention on oil pollution by persistent hydrocarbons. With the rationale for the convention being to establish uniform international rules and procedure for determining liability, and to ensure adequate compensation for victims of escape or discharge of oil from the ships. Despite this, the convention, however, limited itself to pollution from ships carrying oil in bulk as cargo. With liability channelled to the ship-owner – on the basis of strict liability - which implies that there is no need to prove fault or negligence by the victims. Therefore, the

need to provide for compulsory insurance on the part of the ship-owner. As such, this development prompted Cameroon to ratify the CLC 1969 in 1984, although later on a major amendment to the convention was made in the form of a stand-alone protocol (CLC 1992). As the establishment of CLC 1992 considers the importance of maintaining the viability of the international oil pollution liability and compensation system. Equally, among other things, it provides for a wider scope of application of the convention (referring to changes made on the meaning of ship, pollution damage, incident and geographical scope of application of the convention), and enhanced compensation. Moreover, Fund 1992 provides for compensation where the ship-owner is not liable under the CLC 1992 or incapable of fully meeting his financial liability as provided under CLC 1992. While the Complimentary Fund 2003 complements where Fund 1992 could not fully provide compensation. From these, it is worth stressing that the idea is not to put the entire burden onto the shoulders of the ship-owners, but to share with the cargo owners who in this case are the oil importers.

That being the case, it is observed that although the oil importers contribute to Fund 1992, there are set criteria for a claim to qualify for compensation since not all claims are compensable under CLC 1992 and Fund 1992. Since there are always some difficulties in the proper assessment and quantification of damages to the environment as the marine environment does not have a quantifiable market value^[28]. Despite this, it is worth noting that Bunker 2001 provides the principles of liability and compensation for oil pollution damage originating from the bunkers of the ship - although it also has some different features, especially in relation to the responsible person. As on the one hand, the convention is fundamentally built on the firm foundation of the CLC regime, especially on issues of strict liability and compulsory insurance. While on the other hand, it is considered to fill the gap left by the CLC regime^[29], as it regulates oil pollution from ships other than those carrying oil as cargo. As a consequence, it is observed that the international legal regime for oil pollution liability and compensation is playing a great role in governing discharge of oil into the sea, in consideration to other users of the sea and its amenities by ensuring liability for polluters and compensation for victims of pollution. Especially as the compensation for clean-up costs and preventive measures, as well as for environmental damage is offered to the affected countries - while compensation for property damage, consequential loss, as well as pure economic loss are offered to the affected individuals in the fish, fishing and tourism industries^[30]. Likewise, the incentives offered by the regime have contributed much to the protection of the environment, especially the marine environment, as the number of oil pollution incidents over the decades from the establishment of the regime has dramatically decreased^[31]. Despite this, it is worth noting that the application of the various conventions are facing some difficulties due to the challenges of sustainability in the hydrocarbons sector. On this base, it is worth examining the initiatives put in place in Cameroon to complement the conventions in alleviating the sustainability of the hydrocarbons sector.

The Sustainability Initiatives of the Hydrocarbons Sector in Cameroon

Intrinsically, the discussion so far has provided a sweeping tone of the theoretical contours of sustainable development – and its application and reflection on some critical issues on pollution, especially sea pollution that particularly bears on the sustainability of the hydrocarbons sector in Cameroon. This is because from independence to the late 1990s, the hydrocarbons sector in Cameroon was principally State-operated, greatly involved in off-shore exploration and production, with little awareness on sustainability. However, the sector has recently benefited from decades of emerging development, especially with the resurgence in interest from investors. Which prompted the need for a viable legal framework that can boost the sustainable economic development of the country. A situation that led in the introduction of the first legal instrument for oil and gas operations in Cameroon in 1964^[32]. By sporadically making alterations and promulgating complementary legal instruments in a bid to broaden the viability and sustainability of the country. Which led to the adoption of Law No. 99/013 of 22 December 1999 instituting the Petroleum Code and its associated Text of Application No. 2000/465 of 30 June 2000 that take into cognisance issues of sustainability. Moreover, the 1999 Petroleum Code was later amended in 2019, to inculcate more issues of sustainability in the sector. However, it is worth noting that due to the lapses of the Code, specific provisions governing the exploration and production petroleum activities are included in the petroleum contract, which take the form of a Concession Contract or Production Sharing Contract^[33]. Equally, companies carrying out petroleum activities are also subject to the OHADA^[34] Uniform Acts, as well as to the customs and exchange regulations, applicable in the CEMAC^[35] zone. What's more, in addition to the Petroleum Code and OHADA Uniform Acts, the government of Cameroon (GoC) has adopted the legal framework governing the gas sector^[36]. Likewise, other substantial instrument enhancing the sustainable development of the hydrocarbons sector, include the General Tax Code^[37]; Ordinance No. 94/004 of 16 February 1994 on the taxation of petroleum products^[38]; Law No. 96/12 of 5 August 1996 on environmental management, Decree No. 2013/0171 of 14 February 2013, setting the procedures for carrying out environmental and social impact studies^[39]; and Order No. 0069 of 8 March 2005, setting the different categories of operations, the completion of which is subject to an environmental impact study.

Correspondingly, it is worth noting that the contours of sustainability can be illuminated via the putting in place of a viable environmental law with a great emphasis on sustainability, to help in moving the countries and societies toward an ecologically sustainable patterns of production and consumption. Since sustainability is regarded as a set of established principles and practices, having a great impetus on environmental law that can cause the alterations and development of new doctrines and legal mechanisms. For this reason, it is observed that although the GoC has made great initiatives by passing a ground-breaking piece of legislation that introduced the concept of “environmental and social impact assessments (ESIA)”, including stiff penalties for pollution and other acts of non-compliance in its Law No. 96/12 of 5 August 1996, on environmental management. Most of the provisions and initiatives still

remains a paper commitment – as the law is not largely implemented to an effective degree - in line with international standards. However, with the support of its partners, particularly the World Bank, the GoC has improved governance with respect to sustainability as contained in its 1996 Environmental Management Law – by adopting other subsidiary regulations to serve as the main legal framework governing environmental and social management in Cameroon. By enshrining the following six cardinal principles: precautionary, preventive and corrective action, polluter pays, responsibility, participation, and subsidiarity. As Title I Chapter 2 of the 1996 Environmental Law on impact assessment clearly emphasizes in its Section 17 that “promoter or owner of any works that may, due to its dimension, nature or environmental incidences harm the environment, needs to conduct, according to the prescriptions of its terms of reference, an impact assessment evaluating the direct or indirect incidences of the said project on the ecological balance of the implementation area or any other region on the quality of life of the local population, and, more generally, on environmental incidences”.

In like manner, Section 55 of the Environment Law requires that any owner of an industrial or commercial unit ^[40], should prepare a risk assessment before the opening of the unit in order to prevent and control potential accidents. With Section 56 prescribing to all owners of any first or second-class plant, as defined in the ‘gazetted units’, to prepare an emergency plan involving the call for alert among the competent authorities and riparian populations in case of potential or actual industrial accident, staff evacuation, and ways and means to control the root causes of the accident. In this connection, two texts of application have, in 2005 and revised in 2013 and 2016, specified the application modalities of the 1996 Environmental Law; with Decree No. 2013/0065/PM of 13 January 2013 setting the ESIA preparation and processing modalities, and the Ministerial ^[41] Order No. 00001/MINEPDED of 8 February 2013 setting the categories of operations that are subject to ESIA. As such, as per Section 2 of Decree No. 2013/0065/PM, “environmental Impact assessment (EIA) is a systematic analysis aimed to determine whether or not a project has a harmful effect on the environment”. On this account, a proper EIA needs to include: the description and analysis of the initial state of the site and its physical, biological, socio-economic, and human environment; the description and analysis of all the elements and natural/socio-cultural resources potentially affected by the project, as well as the site selection rationale; the project description and rationale for its selection among competing activities; the identification and assessment of potential project implementation effects on the natural and human environment; the indication on the measures proposed to avoid, minimise or eliminate the potential environmental damages, a programme for awareness building and public information along with proceedings of the meetings held with populations, non-governmental organisations (NGOs), trade unions, opinion leaders, and other organised groups as relevant to the project; the environmental management plan, including monitoring mechanisms and, as relevant, the compensation plan; the terms of reference of the study as well as the bibliography; and a summary, in simple language, of the key specific information.

In addition, Law No. 2003/003 of 21 April 2003 on phytosanitary protection provides that chemical treatments should be conducted with due respect for the agricultural good practices, so that human and animal health and the environment can all be protected. For this reason, only duly certified phytosanitary products and those benefitting from a temporary sale authorisation are mandated to be used in Cameroon. Equally, Section 3 of Law No. 98/015 of 14 July 1998 on gazetted and hazardous industrial units also provides that depending upon the hazards generated and/or the potential nuisances, gazetted units are split into two classes according to their potential danger to the environment. Accordingly, in corroboration with the preceding discussion, Section 91 of the Petroleum Code as amended in 2019 provides that the “Petroleum contract holders shall carry out petroleum operations in such a manner as to ensure under all circumstances, the conservation of natural resources in particular hydrocarbon deposits, and due protection of essential features of the environment”. On this base, the holders need to take all the necessary measures to preserve the safety of person and property, and protect the environment, natural surroundings and ecosystems. Likewise, Section 92 of the Code provides that “the petroleum contract holders shall at their own expense carry out an ESIA in accordance with the environmental protection laws and regulation in force”. With such ESIA aimed to help in evaluating the direct or indirect impacts of the petroleum operations on the ecological balance of the contract and the surrounding areas, the people's living environment and the quality of life, and the environment in general. As such, ESIA is considered as one of the documents submitted for public inquiry, where such a procedure is required. However, despite these viable initiatives, it is observed that the application of the various conventions and domestic legal frameworks intertwined with sustainability - are still facing some difficulties due to the challenges of sustainability in the hydrocarbons sector in Cameroon.

Challenges, drivers, and measures for sustainability in the hydrocarbons sector

1. The challenges of sustainability in the hydrocarbons sector

Compulsorily as reiterated above, over the past years, the hydrocarbons sector has faced several complex challenges. Despite this, it is worth noting that the sector needs to invest *pro rata* to the increasing demand for energy in the world. Similarly, in view of the more competitive activities in the sector, it is observed that it also needs to reduce the total cost of production of the hydrocarbon resources, while simultaneously adhering to the environmental laws and social responsibilities. This is because the most significant challenges for the hydrocarbons sector include: price fluctuation ^[42]; increasing pressure on managers by shareholders focusing on value creation instead of output because of the low returns on investments ^[43]; complexity of the drilling and production process ^[44]; increasing demand for oil and gas in most regions ^[45]; HSE compliance remaining critical - especially in the current environment of volatile prices and cost savings ^[46]; protection of the social license of operation ^[47] and corporate social responsibilities (CSR) ^[48]; fluctuation of fiscal regimes; R&D and innovation ^[49]; handling growing size of data and knowledge management ^[50]; and unstable partnership of

NOC-IOC^[51]. For this reason and base on the foregoing, it is essential to note that these challenges epitomise the set of effective factors that have hit the major oil and gas producing companies in the process of implementing the sustainable development policies. This is because as mentioned earlier, the production of every barrel of crude oil, refining, and transportation of the petroleum products to the customer, entails high pressure - temperature of the underground reservoirs, and the usage of a variety of chemicals to safely drill and produce the oil and gas, thus, causing contamination and pollution.

As a consequence, the challenges of sustainable development in the hydrocarbons sector can be categorised as follows: Flaring and venting; decommissioning of the oil and gas installations; oil storage tank disposal; managing drill cuttings; produced water disposal/treatment; managing drilling muds and fluids; estimating and validating greenhouse gas emissions; subsidence; spills; safety; and enhanced profitability. What's more, it is worth noting that each of these undermentioned challenges has created numerous environmental concerns and occasionally environmental crises in the past. Which has prompted some major hydrocarbons companies to take some crucial decisions about each of the challenges - with billions of dollars often spent annually on improving the methods and technologies, and in dealing with the indigenous communities around the hydrocarbons facilities. In addition, over the past years, NOC under the pressure of their governments, and IOC under the pressure from the public and lawmakers, have taken several measures to address the challenges of sustainable development in the hydrocarbons sector. With lobbying having continued to take place among the executives of some oil company and the local governments^[52], as the worries about the repetition of bitter memories like the fire of the Alpha Piper oil rig in 1988 causing the death of 167 people and so on, still in the minds of environmental activists. A scenario that has led several oil and gas companies to be currently engaged in making significant strides to enhance their CSR initiatives, as they most effectively support the achievement of the SDGs and the 2030 Agenda^[53]. Notwithstanding, it is important to note that although such companies do not guarantee a world free of any environmental crises, they however, demonstrate some significant efforts to avoid such incidents. For this reason, the existing conditions proved that they can do much more than what they claim, although there are still some challenges with respect to the application of the conventions related to sustainability

The Challenges Facing the Application of the Conventions

The application of the international conventions involves their implementation in State parties. As the State parties are legally bound to implement the relevant provisions of the conventions. As such, in Cameroon, this is enshrined in Section 45 of the 1996 Constitution as amended, which states precisely that, "Duly approved or ratified treaties and international agreements shall, following their publication, override national laws, provided the other party implements the said treaty or agreement". Despite this, it is observed that although it has been very functional in predicting the law and procedure that is common throughout the world, the application of international convention has not been smooth in some circumstances. On this base, on the one hand, it is

observed that among the difficulties in applying the convention lies the issue of "compulsory insurance". This is because the importance of such compulsory insurance ensures that the compensation for the oil pollution victims cannot be overemphasized - although the coming into force of the Bunker 2001 in November 2008 brought some difficulties, especially in the issuance of the Certificates as it involves more ships comparing to the CLC regime^[54]. Likewise, with the advent of more conventions on oil pollution damage, it has proved complicated in some circumstances to determine which convention should be applied in a certain incident. A situation which is specifically seen under Article 4.1 of the Bunker 2001 - which provides that "the convention does not apply to pollution damage as defined in the CLC 1992, whether or not compensation is payable in respect of it under that convention". Which implies that in certain circumstances that oil pollution would occur, neither CLC 1992 nor Bunker 2001 will be applicable^[55]. While on the other hand, it is observed that there are parts of the hydrocarbons sector that are not covered by the international conventions. For this reason, victims of oil pollution from off-shore installations are not protected by the international legal regime for oil pollution damage as there is no specific convention into force addressing liability for spills from off-shore installations. Besides, there are different legal systems applicable in different Member States. Which has been a great challenge in the application of the international conventions. Besides, different courts even in the same State may interpret conventions in different ways. As such, the emerging issues, thus, include holding liable a party other than the ship-owner in as far as CLC 1992 is concerned as it happened in the Erika incident. What's more, it is observed that as the conventions increase in number, so could be the time and energy consumed in paper works for not only the regulators but also the operators of the hydrocarbons sector. On this account, there is an impending need to seek for ways to eliminate or mitigate such challenges facing the application of international conventions. As this will enable the actors of the hydrocarbons sector to focus and make effort on the protection and preservation of the environment for sustainable development.

The Sustainable Drivers of the Hydrocarbons Sector

As highlighted above, it is worth reiterating that as the population of the world is steadily increasing, there is the need for more affordable and accessible energy^[56]. A situation that has led to the fluctuation in pricing and staggering competition in the energy supply market, resulting in the reduction of prices. As such, over the past decades, regional, cultural and security disputes have steadily increased - reaching their peaks in recent times. This is because under such critical circumstances, the provision of sustainable energy has greatly increased the risk prospects in corporate activities, leading to higher investment costs. With climate change being steadily exacerbated every year, as the world is constantly facing the devastating consequences of global climate change. Which has increased the danger of raising sea level, as more villages and towns are being at risk of floods and storms - an aspect of the challenges that needs to be addressed in the long term. Moreover, with the steady rise in production costs, the expectations of the shareholders of enterprises have also increased. With the shareholders considering more

economic gain as a priority of their activities, while expecting a steady increase in the profitability of the entities. For this reason, it is observed that the factors as increasing population, escalating competition, global climate change, and shareholder expectations, regional trade patterns, are “Sustainable Drivers” that have instigated the business environment with risks and tension^[57]. As a consequence, identifying the challenges and addressing each challenge is an ongoing battle for the hydrocarbons companies – as they need to constantly improve their business plan to be as comprehensive and consistent as possible, in line with international sustainability precepts.

In this connection, it is observed that some critical and significant facts about the hydrocarbons companies operating in several developing countries like Cameroon, severely lack a consistent strategy, and a robust policy for sustainable development. Especially as their employees and managers are occasionally not in full compliance with their value statements - a situation that mostly due to lack of proper communication and education within their respective organisations. This is coupled to the fact that a remarkable portion of the employees in the department of sustainability in the companies, either lack the requisite knowledge of sustainable development or are unaware of the activities of such department. Moreover, it is also observed that businesses often vary with respect to their attitude toward clean energy supply, and where on the key performance indicators list, they shall include environmental protection. This is because although profitability is as essential to the entire value of an entity as efficiency, there is a worry “why private and government companies have totally different viewpoint in this regard”. Which is a critical issue that sheds more light on some of the dark aspects of sustainability. Similarly, it is observed that although all businesses strive for preponderance in the future’s competitive and rapidly evolving energy market, their influence significantly vanishes from the lack of long-term plans – a situation that often stops them from appropriately responding to the newly emerging challenges of the hydrocarbons market.

The Measures in Enhancing Sustainability in the Hydrocarbons Sector

Aptly, since the hydrocarbons sector is playing an important role in the global economy, its role in environmental protection must be enhanced. This can be done by ensuring that it effectively adhere to the guidelines and requirements of the international and national legal regimes in force - and also being self-initiating on issues of environmental preservation and protection. On this account, giving that the sector has contributed enormously to the economic development of the world, being conscious of the environment should be a big step towards achieving sustainable development. A situation that can be achieved if great effort is made to prevent oil pollution from happening, which is a crucial issue for the sector^[58]. Accordingly, it is observed that if this is effectively done, the sector will ensure and promote not only safety to its existence, but also to its productive co-existence with other sectors for a sustained development. For this reason, the operators together with the stakeholders of the hydrocarbons sector need to consider a change of behaviour for a long-term achievement. A situation which can be achieved by inculcating a culture that can genuinely put environmental sustainability at the centre of issues - in the realisation of the

economic sustainability of the sector. By the same token, there is the need for the stakeholders to ensure that appropriate and relevant expertise and innovative technology are used, to revitalise and enhance the sector to achieve its goals without hindering other sectors from achieving their respective goals in the furtherance of sustainable development and universal civilisation.

In addition, although the literature on the topic bears a distinct lack of exploration of the legal and regulation issues pertaining to the sustainable development of the hydrocarbons sector in Cameroon - since there is inadequate discussion as to whether the laws, both domestic and international, are sufficient enough and capable of ensuring the sustainable development of the sector in the country. As the few studies that have examined such need within the Cameroonian context, had focused particularly on the legal and institutional mechanisms in enhancing international partnerships to attract investment capital. However, this paper moves ahead by considering the pivotal aspects, challenges and drivers of sustainability in the sector. By portraying the basic premises on which a national sustainability hydrocarbons policy can be elaborated, adopted, and implemented in line with international sustainability principles. As such, the sustainability issues examined in the paper aim to revitalise the proper implementation of the impetus of sustainability, as enshrined in the environmental law to help in moving the country toward an ecologically sustainable patterns of production and consumption. Since sustainability is regarded as a panacea and set of established principles and practices, having a great impact on the environmental law. Notwithstanding, it is worth stressing that the significance and implementation of the environmental protection policies can be affected by the financial stability of the companies, since under severe economic situations, companies are often less enthusiastic to strictly implement such policies. On this account, the paper with all intent and purpose has provided a comprehensive analysis ‘how’ and ‘why’ the companies need to intertwine the economic sustainability and environmental sustainability to achieve sustainable development in the hydrocarbons sector, as a prime solution for strategic planning.

Conclusion

Succinctly, it is noted that the hydrocarbons sector is among the most important sectors for the development of the world -although its activities have been involved in the widespread pollution of the environment. On this base, the paper has examined and explored how the concept of sustainable development can be transposed into and implemented within the domestic law in the hydrocarbons sector, to revitalise an effective national framework in line with the international safeguard policies in the domain of sustainability. With the paper having perused the pivotal issues of sustainability in the hydrocarbons sector, and equally examined the challenges, drivers and measures on how it can be transposed into the domestic legal regime, and interpreted and implemented by the GoC and other stakeholders. As such, to accomplish this, it has responded to the question: “How is the concept of ‘sustainable development’ articulated, interpreted and implemented in the international and domestic legal regimes with respect to the hydrocarbons sector? With focus in considering the extent to which the international legal regime impacts that of Cameroon, within

the context of sustainable development. Indeed, as the paper is inspired by the special connection existing between the hydrocarbons sector and sustainability. It, thus, considered the special role of the international legal regime in the protection of the environment – with particular interest on civil liability and compensation. By noting that despite the adaptation and coming into force of the international conventions directly dealing with the right of the users and its amenities against hydrocarbons pollution, there are still some drawbacks with respect to the application of the conventions in individual states. With the challenges facing the application of such conventions being discussed, in line with what can be done to improve such state of affair to achieve a meaningful co-existence between the hydrocarbons sector and environmental sustainability in Cameroon.

In this connection, it is noted that the protection of the environment forms the critical part of the ingredients of sustainable development. Since to achieve sustainable development one needs not only a sustainable economy, but also an environmental sustainability – with the international legal regimes providing such uniform rules and procedures. As they are playing a significant role in the protection and preservation of the environment. Accordingly, the legal regime for liability and compensation for oil pollution damage have contributed to the best practices of the hydrocarbons sector, as well as in the reduction of the number of oil pollution incidents globally. Despite this, it is noted that since the international conventions are a product of the deliberations of States. There is a setback at the level of implementation since a successful international convention is not only the one that obtains enough ratification to enter into force, but the one capable of affording the proper application in and by the relevant State Parties. As such, it is affirmed that any duly ratified international convention that is not properly applied is self-denying. Thus, to avoid the occurrence of such setback, it is necessary for the stakeholders in the hydrocarbons sector and the international community, to re-examine the need for a liability convention that govern the exploration and exploitation, as well as the off-shore installations related to the hydrocarbons sector. This is because such change of behaviour will contribute enormously throughout the journey to sustainable development. A situation that can be achieved, if the stakeholders of the sector take ample time to reflect on the significance of both the economic sustainability and environmental sustainability. Since if they ameliorate their collective and collaborative efforts in striking a balance in conducting their business not only economically, but also in an environmentally sustainable manner – the world will be a better place. As such effort will motivate everyone to always remember to act in a manner that does not endanger the global environment, for the good of the present and future generations.

From this perspective, the use of variety of tools like information technology, intelligent control tools, intelligent maintenance programmes, as well as organisational reform and targeted investment in the research and development sectors will readily fulfil the goals of sustainable development. Since such series of measures can restore public confidence in the hydrocarbons sector, which shows clearly that the implementation of sustainable development requires a change of behaviour and policies of the hydrocarbons producing companies and countries. As the

private sector is in a better position to respond to price fluctuations due to its structural constitution and values. Equally, skills development and job creation during the downturn of the hydrocarbons sector are a priority within the private sector, although the governmental entities often tend to freeze such employment, which readily minimise their contribution to the job market. What's more, in terms of benefits from customer intimacy, the larger sized companies are often seen doing better off, due to the efficiency of their customer relation policies they might have adopted in their organisations. Which is crucial since profitability and efficiency are often the main performance indicators among the state owned and private companies respectively. As such, the hydrocarbons companies need to intertwine their strategic plan to boost sustainability. In this vein, the maintenance of a biodiversity policy is also another emerging requirement within the hydrocarbons sector, which needs a lot of work. A situation that is like a dilemma in Cameroon since the companies are not fully aware of the significances of the environmental protection policies, which is further unintentionally made riskier with further exploration and production activities. This is coupled with the fact that several hydrocarbons' companies do not have a specific department responsible for sustainability, nor a comprehensive approach to educate their managers and employees to improve the quality of services in the sector in line with the sustainability precepts.

Last but not the least, although the literature on the legal aspects of sustainable development from the global perspective is vast and multi-faceted, that for Cameroon is more limited in context. On this ground, the paper has made a modest contribution to the discourse in at least three ways: Firstly, though they are some existing works that look at Cameroon's extractive resources in the context of sustainable development, there is really scarce information or research endeavours that focuses mainly on the compelling imperative of Cameroon to profit from its hydrocarbons resources and maximise its efficiency - by ensuring and implementing the principles of sustainable development, as a definitive tool to inform the formulation of policy and potentially legal arrangements. Which makes it differ from the work of other scholars, as it considers the pivotal aspects, challenges and measures to be taken in the hydrocarbons sector, with the end to find a cohesive balance in intertwining the economically-sound and ecologically-safe principles, to enhance and meet the country's energy and efficiency targets. Secondly, it is a great attempt to explore the explicit usage and interpretation of the concept of "sustainable development" under the Cameroonian context, and how the concept is viewed and filtered through the country's domestic frame of analysis, by enhancing its policy orientation and legal regimes. Since it vividly presented the essentials of sustainability and its impact on the hydrocarbons sector. By examining not only "how" sustainable development has shaped the legal regime of Cameroon, but also how "sustainable development" has been shaped and re-shaped by the complex contextual landscape of Cameroon. Thirdly, since the paper is possibly the latest attempt to consider the viability of "sustainability" *vis-à-vis* sustainable development under the Cameroonian context. As such, it is very significant as it x-rayed the differing and competing positions of the concept of sustainable development in Cameroon.

Ultimately, it is of great interest that the paper will enormously contribute to and support positive change to the existing Cameroonian policy orientations and legal framework in the domain of the hydrocarbons sector – in line with the international legal regimes and principles of sustainable development through, either, proposing viable amendments or elaboration of new laws or regulations in the sector. As the paper proffers and assists in the understanding of the constituents of sustainable development, and how these changes and amendments can help in revitalising the sustainable development of the hydrocarbon's resources in Cameroon. Similarly, the paper will readily benefit the law and policy makers in Cameroon, in enhancing their understanding of the plights of the indigenous communities closed to the hydrocarbons resources. Since the implementation of sustainable development is readily achievable via the ample commitments and contributions of every stakeholders. Likewise, the paper will be particularly helpful in orientating and designing of appropriate actions to be taken, in relation to legislation and regulations towards the sustainable development of the extractive industries as a whole. A situation which will be vital to the GoC, IOCs and international financial institutions, and donor countries - since it will be appealing and appreciable to draw upon it. As the adequate understanding of the contemporary and relevant issues can boost the future decision-making process of the sustainability in Cameroon. Thus, filling the lacuna and paucity in literature on the subject so far. For this reason, the paper is very useful to aid policy makers concerned with sustainable development at large, by providing a firm basis for a sound legislative orientation and change. Equally, it is also useful to other researchers and potential researchers, who are to conduct further research in other areas linked to sustainable development in the extractive industries and its impact on the indigenous stakeholders.

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