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Review Article

A Legal Appraisal of Extractive Sector Laws and Energy Development in Cameroon: The Case of Renewable Energy for Sustainable National Livelihoods

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Abstract

This article examines the nexus between the extractive sector laws and energy development in Cameroon with focus on renewable energy in order to promote sustainable national livelihoods for the benefit of all and sundry. It should immediately be pointed out that, traditional energy sources like mining, oil and gas, or betterstill fossil fuels; are environmentally disastrous. These traditional energy sources contribute enormously in the emission of Green House Gases that are major threats to climate change to which the globe is confronted to nowadays. This article therefore articulates on how the extractive sector laws can serve as a pivot in making the use of renewable energy sources important in the exploration and exploitation of mineral resources. More still, it is regrettable that the current extractive laws in the country do not sufficiently take into cognizance the need to explore renewable energy sources. In consequence to the shortcomings noticed in the extractive sector laws in Cameroon in enhancing energy development with focus on renewable energy, the key recommendation to this legislative quagmire in the extractive sector laws is that, there is urgent need to review some provisons of the extractive sector laws so that, it should henceforth take into keen consideration the relevance of energy development by paying attention on the imoportance of reneawable energy.

Keywords: Cameroon; Development, Energy, Energy Development, Extractive Sector, Laws, Renewable Energy.

1. INTRODUCTION

The extractive sector laws in force precisely the Mining Code of 2016, the Petroleum Code of 2019 as well as the Gas Code of not leaving out the 2011 law on the Electricity Sector do make allocation to the development and use of renewable energy sources. Globally speaking, the price of hydroelectricity has recently increased and Cameroon has not been left indifferent. At the local level, wood, which happens to be one of the energy resources that is mostly resorted to by the locals, is being depleted with little or complete absence of replenishment (Grierson P, 2007).

All these have compounded to a number of challenges as energy is no longer affordable talk less of environmental impacts from such wanton exploitation that has been making matters worse. Although there is limited literature when it comes to the potential of renewable energy in Cameroon, stakeholders including policy makers, researchers and investors have tended to lack guidelines on how and at what level to carry out any investment in this sector.

Additionally, policy makers find it difficult to intervene and design policies that can better lead to the practical exploitation of renewable energy sources with little harm to the environment (Hutton G, 2017). The problem that one is confronted with at this level is to know measures that need to be taken when it comes to the development of energy policy in Cameroon.

1.2. Consideration of the Extractive Sector in the Development of Energy Policy

The development of any energy policy ought to be in line with the environmental exigencies. This is because the exaggerated use of energy such as the burning of fossil fuels is not environmental friendly. The tons of carbon dioxide that is usually put in the atmosphere as a result of such burning always lead to global warming (Anthony B, 2018). This is the reason

why environmental protection must be taken into consideration in the course of developing energy policy. At the time when the electricity sector is undergoing a fundamental transformation, it has been recognised by policymakers that the largest fuel source (fossil) when it comes to electricity production has been contributing very substantially to Green House Gas (GHG) emissions as well as other forms of man-made contamination (Bauer M, 2000).

From the general look of things therefore, there is need for energy policy to reflect the practices that are aimed at protecting the environment. It is needless insisting on the fact that a greater integration and coordination of energy and extractive regulations will definitely lead to an improvement in energy development.

1.3. The Principles of Precaution and Prevention

The precautionary principle requires the exercise of due care, caution and prudence in carrying out socio- economic activities, in order to prevent any possible damaging environmental consequences. That is why focus is made on renewabe energy since ther are sustainable unlike non-renewable resources such as mining, oil and gas. The principle is explicitly incorporated in Principle 15 of the Rio Declaration, as an approach that will secure protection of the environment and efficient use of natural resources in the conduct of developmental activities renewable energy inclusive. Thus, the merits of the principle bear testimony to their value for environmental protection and natural resource management in the conduct of economic activities (Horace F.C, 2018) The principle can foster useful and legitimate environmental law and policy, but fundamental amongst its strategies, is the assessment of environmental impact of developmental activities.

The prevention of environmental damage has been the main reason of environmental policy. Experience and scientific expertise demonstrate that prevention of environmental harm should be the "Golden Rule" for the environment, for both ecological and economic reasons. It is frequently impossible to remedy environmental injury (John D.L, 1987). The complexity of this principle stems from the number and diversity of the legal instruments in which it occurs. A good number of these environmental agreements are instructive here.

The international treaty on the Law of the Sea (ITLOS), in its Order of 3 December 2001 in the *MOX Plant Case*, considered the duty to cooperate in exchanging information concerning environmental risks a "fundamental principle in the prevention of pollution of the marine environment". Examples at hand are found in the following relevant provisions: Principle 17 of the 1992 Rio Declaration, Agenda 21, Principle 8(h) of the 1992 Non-Legally Binding Authorative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of all Types of Forests ("Forests Principles, and Article 14(1) (a) and (b) of the 1992 Convention on Biological Diversity treat both the national and international aspects of the issue. The concept is also contained in Article 206 of the United Nations Convention on the Law of the Sea.

1.4. Polluter-Pays Principle

The principles requires that the persons who pollute or cause damage to the environment (and individuals) in the conduct of economic activities, must bear the cost of cleaning-up, reparation, or remediation of such pollution or damage. The principle is recognised in a number of international instruments. In addition to the conventional references, the principle is also contained in Principle 16 of the Rio Declaration of 1992. While the principle aims to eliminate the deleterious effect of over-exploitation, it also demands that where such actions are technically impossible, the destruction must instead be compensated, by providing or improving the protection accorded to as yet undamaged assets.

Within the extractive sector, fossils fuel and other substances generate massive pollution. To arrest this pollution, alternative energy sources in the likes of biomass, solar energy and wind that are sustainable, could be used by the extractive industry since they are less destructive to man and the environment.

1.5. Prerequisites for any Exploitation of Energy Resources

Since 1971, global energy use has increased by nearly 70% and is projected to continue to increase by over 2% per year over the next 15 years – despite the fact that two billion people are still largely unconnected to the fossil fuel- based economy (Kilian J.M, 2008). It is obvious that the increase in the global energy consumption has a corresponding increase in environmental degradation. This is because more people will be connected or will have access to energy services and as such GHG would be raised to about 50% over current levels (Erik R, 2006). For this to be avoided, there is need for serious efforts to increase energy efficiency and reduce reliance on fossil fuels.

These fossil fuels have the disadvantage in that they are non-renewable on a human timescale and cause other potentially harmful effects on the environment. This is therefore the justification why consideration of the above principles before embarking on any development project in the like of the exploitation of energy resources is a prerequisite. It is worthy to note here that in any event, the exploitation of all energy sources with the exception of direct solar energy used for heating ultimately depens on materials on the planet earth.

As far as Cameroon is concerned, there is an abundant reserve of energy resources such as crude oil, natural gas, hydropower, biomass, solar, wind as well as geothermal energies. What is most surprising is the fact that despite the availability of all these forms of energy resources, there is persistent power outages in the country especially in the dry season. This has partially been explained from the fact that the country relies mostly on hydropower energy for electricity generation and the water levels end to be low during the dry season. Despite the fact that the 2011 Law on the electricity sector makes allocation to the use of renwable energy sources as perceived in Sections 7, 59, 65, 66 and 67.

2. Legal Guarantees in the Management of Energy Resources Following Extractive Dispositions

The need for energy in the human society is indispensable. Energy is needed for cooking, provision of light, refrigerating food and medicine, the supply of fresh water, the elimination of household wastes as well as heating and cooling buildings. From the transport sector right to the agricultural sector, the important position that energy occupy cannot be underestimated. Energy also is an essential ingredient in meeting the Sustainable Development Goals of lifting the standard of living for the billions of the earth's population that now suffer abject poverty, live in unhealthy environments, lack basic health services, suffer gender inequality, and whose children lack basic education.

2.1. The Principle of Sustainable Development in the Management of Energy Resources

As defined by the Brundtland Report, Sustainable development is that type of development that meets the needs of the present without compromising the ability of the future generation to meet their own needs. Energy resources exploitation has the potential of causing devastating harm on the environment in general and the concept of sustainable development in particular (Burhenne W, 1998).

Broadly, it is incumbent on humans that when resorting to such an exploitation, precaution needs to be taken to avoid harmful impact that may be caused to the environment. It is therefore the responsibility of the government to make the bodies whose policy actions degrade the environment responsible for ensuring that their policies prevent that degradation. Most often than not, the institutional flaw in coping with the environment as well as development has been because of failure on the part of the government.

Within the framework of the concept of sustainable development and the management of energy resources, one will not fail to notice that a safe and sustainable energy pathway is crucial to sustainable development. Energy developpment include among other things the planning and operation of energy production as well as energy consumption units (Moster H, 2012). This energy development has got some objectives which are: resource conservation, climate protection and cost savings. These objectives ought to give the users of the energy permanent access to the energy they need. There is a close nexus between this energy management and environmental management. Energy efficiency is defined as the ability to provide the same (or higher) level of energy services, such as thermal comfort and high-quality lighting at lower energy consumption and cost. Energy development buildings have higher levels of thermal comfort, greater ability to operate usably in the face of energy supply disruptions, and encourage greater productivity of their occupants. These benefits may be substantially larger than (and in addition to) the benefits of direct energy savings.

2.2. Management based on the Consideration of Natural Resources as an Integral part of National Heritage

The sovereignty of a state over its natural resources is a principle frequently stated in international treaties. States expanded their jurisdiction over the seas by establishing Exclusive Economic Zones. From common heritage to common concern and now, states have been striving to nationalise almost all of these natural resources, renewable energy resources inclusive. It is as a result of this that the development and management of energy resources is considered as a national heritage that states have an important role to play. If natural resources were considered otherwise, it could have been somehow complicated for a comprehensive management to be carried out.

Since every society needs to preserve its natural heritage which most believe is the identity of their country, energy resources management needs to be looked upon from this perspective. This will give it the same importance that is usually given to national heritage. The simple reason that natural resources are considered as an integral part of national heritage, it implies that its management should involve all Cameroonians. Energy resources therefore fall under common pool and not public good. Common pool resources are resources that could be accessed by all.

Generally, when it comes to the management of natural resources by the state of Cameroon, opinions are divided on the issue. There are people who think that the state of Cameroon is doing well with respect to the management of natural resources in the country. Cameroon scored 54 on 100, placing itself at the 30th position out of some 89 assessment worldwide (Yakovleve N, 1995). Even though the position occupied by Cameroon has been considered as weak by some pundits withing the energy law domain, in the entire Sub-Saharian Africa, out of some 31 assessments, Cameroon is the 7th best placed country. If one were to go by index, Cameroon's oil and gas sector recorded its

highest score in the revenue management component with as satisfactory 70 on 100.

An institution like WWF Cameroon has been working with partners to promote renewable energy services and helps promote socio-economic development, improve quality of lives and reduce the impact on the ecosystems in the country. The country programme equally integrates risk from climate change into its own work, while influencing key local and national adaptation planning processes with the view to contributing to sustainable development goals and increasing the contribution of adaptation to the Cameroon national determined contributions. WWF equally recognises the important rule the indigenous peoples can play in the management of natural resources. This rule can be realised if and only if the rights of the indigenous people are equally recognised and protected through conservation.

2.3. Management Consideration that Considers the Rights of Future Generations

The main objective for the sustainable management of natural resources is because the plight of the future generations has been taken into consideration. Environmental deterioration continues to increase with serious depletion of natural resources, including soil erosion, and loss of forests and fish stocks. Deforestation (most often due to conversion to farms, pastures, human settlements or for logging) continues to reduce the extent and condition of world forests (Raynaud E, 2018). As a result of environmental degradation, the biodiversity of the Earth's ecosystems and the availability of renewable natural resources have declined by 33 per cent over the last 30 years while demands on these resources have doubled.

In the management of natural resources in the likes of energy resources, the state equally take precaution when it comes to the management of wastes that may result from the usage of the resources. The Basel Convention of 1989 is instructive here. Additionally, Article 2 of the Basel Convention defines environmentally sound management of hazardous and other wastes to mean "...taking all practicable steps to ensure that hazardous wastes and/or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes". The totality of the Convention's provisions on waste management presents an "integrated life- cycle approach," which involves strong controls from the generation of hazardous wastes to their storage, transport, treatment, reuse, recycling, recovery and final disposal. If proper care is not taken in the course of doing all these, future generations will negatively be affected.

2.4. Participation of Local People in the Management of Natural Resources for Energy Development

The participation of the local population in the management of natural resources especially when such resources have to do with energy development is what gives them the sense of belonging. It makes them to feel involved in dealing with environmental issues. For the success of any natural resource management (NRM), the involvement of the local population is essential. This is because the use of natural resources by any user has many unintended side effects or externalities on other co-users. Broadly, all users of natural resources irrespective of whether they are owned privately or publicly are interdependent and therefore require the co-operation of all the resource users.

Equally so, Article 2 of the African Convention on the Conservation of Nature and Natural Resources of 1968 as revised by the Maputu Convention of 2002, obliges member states to adopt measures necessary to ensure the conservation, utilisation and development of natural resources in accordance with scientific principles and with regard to the best interest of the people. The same Convention equally seeks to protect animal and plant species that are threatened with extinction and their habitats. It is therefore a legal obligation on the part of the state to involve the local people in the management of natural resources. It should be noted that the natural resources we are referring here can even be in the form of waste that has been recycled for purposes of developing energy.

The OECD's International Energy Agency is committed to research and development on waste heat utilisation and municipal and industrial waste utilisation for energy conservation and the OECD has adopted recommendations on re-use and recycling of beverage containers and on recovery of waste paper. The European Community (EC) law requires member states to encourage the recovery of wastes, including hazardous and toxic wastes, by means of recycling, re-use, reclamation, or other processes to extract secondary raw materials and to use waste as a source of energy.

From a broader perspective, recent research has fundamentally questioned many of the environmental crisis narratives and received wisdoms on the supposed destructiveness of rural people on the environment. A combination of historical analysis, social anthropology, participatory methods to understand local resource users' knowledge and perspectives, and insights from non-equilibrium ecology has challenged some of the environmental knowledge taken for granted by government bureaucracies and donors. For example, historical research in West Africa has shown dominant deforestation estimates to be vastly exaggerated. Many

of the vegetation forms that ecologists and policy makers have used to indicate forest loss, such as forest patches in savannah are, according to the knowledge of local resource users and historical evidence, the results of landscape enrichment by people.

2.4.1. Employment of Local People

The employment of local people when it comes to the management of natural resources energy resources inclusive will go a long way to empower them economically and financially. In the mining sector for instance, very few workers are hired directly by the mining companies and when this even happens, their working conditions are not better than those who are hired by external companies. In both cases, their rights as stipulated in labour law are hardly respected. The natural resources on which they depend for their livelihoods are being taken away from them or damaged, and a model of development is being imposed on them without their consent. This therefore shows that the employment of the local people when it comes to the management of natural resources is an important technique in avoiding community disputes that can even evolve to conflicts.

2.4.2. The Transformation of Products at Local/National Level

The transformation of products at the local/national level always play in favour of the local population. In the course of transforming products, there is technological transfer which is an important asset for economic development of each nation. Therefore, it is imperative on the authority that be to ensure that all the natural resources that are destined for energy development are locally transformed. The transformation of products at the local/national level equally help in the creation of jobs for the local population and thus improving on the living standards.

2.4.3. Recruitment of Local Suppliers

The recruitment of local suppliers aims at empowering and encouraging the local business men in the sector (Tamasang C.F, 2017). It has been settled that local objects are relatively cheaper and even more suitable for energy development than imported objects. This falls within the province of local content clearly defined in Sections 164-169 of the Mining Code of 2016. From the general look of things, the recruitment of local suppliers is far more advantageous to the state than resorting to foreign suppliers. The advantages associated with local supplying is perceived from the fact that they are flexible and there is equally greater degree of control. As concerns flexibility, one never knows when an opportunity will strike or a challenge will arise. When the supplier is a local one, there will be room for easy adaptation. With respect to greater control, it provides a proper forum for an objective supply chain.

From the foregoing, it has been demonstrated that the available legal guarantees put in place for the management of energy resources in Cameroon need to be strengthened. Although there are a good number of legislations that regulate this sector alongside environmental principles, some efforts need to be put in place for such to to be carried out in conformity with the existing laws.

3. The Potentials of Energy Development in the Extractive Sector: The Case of Renewable Energy Sources

Energy development is the field of activities focused on obtaining sources of energy from natural resources. In Cameroon, the 2011 Law on Electricity has made provisions for the development of diverse energy sources most especially the development of renewable energy sources. To this effect, Article 5 of the 2011 Law on Electricity defines renewable energy sources as sources of energy that exist naturally and are permanently renewed by nature. Energy resources may be classified as primary resources, where the resource can be used in substantially its original form, or as secondary resources, where the energy source must be converted into a more conveniently usable form (Bastida E, 2001).

Non-renewable resources are significantly depleted by human use, whereas renewable resources are produced by ongoing processes that can sustain indefinite human exploitation. The global community has proposed and adopted various policy initiatives which advocated shifting the energy production from fossil fuels to energy generated from renewable energy sources (RES), such as solar, geothermal, biomass, wind, biogas, and hydro-power, since these are reported to be cleaner, more sustainable and relatively less pollutant.

Additionally, Article 64 of the 2011 Law on Electricity provides that renewable energy shall help meet the energy requirements of consumers and contribute to environmental protection and securement of energy supply. Likewise, Article 65 of the same law provides that the State shall ensure the promotion and development of renewable energy. The aim of the development of renewable energy shall be to introduce and promote renewable energy processing subsectors. In fact, Article 67 disposes that an agency responsible for the promotion and development of renewable energy may be established as and when necessary. Fossil or traditional fuel sources, such as natural oil, gas and coal, causes negative impacts on our surrounding environment as they produce (GHGs) which are responsible for climate change and global warming.

3.1. Planning Laws and Renewable Energy Technologies

The role planning laws play in ensuring that renewable energy technologies are agents of

environmental development are immense. In fact, it ensures the balance between the rights of property and of public goods lies at the heart of planning legislation, which allows development decisions to be expedited outside the courts and through processes which are designed to be democratically accountable. What can be implied from here is that there is a need to balance the property rights of energy producers and governments in the country with the public good. The property rights here are the rights to locate a green energy infrastructure in a particular environment pursuant to existing title documents, while the public good is the need to ensure that such rights are exercised in an environmentally beneficial manner.

This however does not remove the fact that locating a renewable energy project in a particular place may actually be a public good. Due to the fact that most renewable energy technologies are located onshore, planning laws are of a great significance. They however perform a very important environmental function which is largely absent in the fossil fuel industry.

3.2. Environmental and Social Impact Assessment

Integrating environmental considerations within the laws relating to the activities of the extractive industry as well as energy devlopment is no longer a choice. It is a necessity and one that is increasingly mandated by law. Since February 2013, there exists a new framework text with regard to the conduct of an Environmental and Social Impact Assessment (ESIA) in Cameroon. The key factor in the ESIA is the emphasis on using the best available sources of objective information and in carrying out a systematic and holistic process, which should be bias-free and allow the local planning authority and the whole community to properly understand the impact of the proposed development.

The ESIA should lead to better standards of development but in some cases will prevent the development from happening. Where developments do go ahead, ESIA should help to propose mitigation measures. What this means in effect is that renewable energy technology projects are expected to have passed through the ESIA process, and as such, the risks of adverse environmental impacts must have been greatly minimized. It may be said at this juncture that similar processes made for the conventional energy sources have not done much to eliminate the environmental hazards associated with such energy sources.

This is because most ESIA for the fossil fuel industry are limited to the early stages of the exploration process, with the production and consumption stages largely left out. Several analysts have applied a broader assessment tool which is the Life Cycle Assessment (LCA) to bring out the environmental development potentials of green technologies. The LCA technique is applied to new technologies before they enter the market to investigate their environmental impact and environmental superiority over competing or existing technologies. Also, *Varun et al.,* used the LCA technique for assessing the environmental impact of renewable energy technologies from the production/fabrication stage to the decommissioning stage and thereafter made a comparison with some conventional energy technologies, concluding in favour of renewable energy technologies having far lesser environmental impact. The LCA technique is also useful in a comparative analysis of the land use intensity of renewable energy technologies and conventional energy technologies. Renewable energy sources may after all have less land use intensity than fossil fuels for instance.

3.3. Renewable Energy Basics and its Growing Importance

Energy generated from RES, such as solar, wind, biomass, thermal or hydropower energies, are theoretically considered as renewable as each one could yield an infinite amount of energy. Uses of energy generated through these sources are not new and ancient people successfully utilized these also (Aitken D, 2016). For example, the Egyptian Nile civilization used to utilize the wind to move ships, grain-grinding facilities, and boat propellers. Even the Chinese and Japanese started using wind-run water pumping systems in the historicalpast, leading to cost minimization dramatically.

The succeeding civilizations opted to use windmills as alternative sources, since it is accessible and comparatively less expensive. In fact, in recent times, the increasing energy crisis and stringent enforcement of carbon emission laws for reducing the GHG emissions has forced many nations to think about alternative supplies of energy. RES are the assets that are renewed persistently through natural transformations and can be reused because of their inherent properties. The RES incorporate biomass, solar, wind, geothermal and hydropower energy, but exclude conventional nuclear fuels.

3.4. Renewable Energy Sources: Importance and Concerns

RES, due to the utilization of indigenous assets, can possibly give energy with near-zero discharges of both air toxins and GHG emissions. That is why, clean energy, environmentally friendly power energy, sustainable energy, alternative energy and green energy, are used as the synonyms of RE. The importance of this type of energy is documented in many scientific and policy research. In the case of *Preussen Elektra AG v SchhleswagAG*, the Court of Justice of the European Union (CJEU) reiterated that the use of sustainable energy resources for generating power is paramount in connection with saving the planet because of its undeniable role in reducing GHGs,

which scientists ascribe to be the chief driver of climatic doom.

In addition to this climate change mitigation advantage, renewable energy can also help to protect marine ecosystems (Barnett A, 1990). Recent research indicates that the burning of fossil fuels is adding significant amounts of carbon to the oceans, which in turn makes the oceans more acidic a fact that implies significant detrimental implications for marine biota. Additionally, replacing fossil fuels with renewable energy sources can help to address a variety of pollution problems. Replacing fossil fuel use with renewable energy sources leads to lower pollution levels and also offers a variety of related human health benefits (For example: lower incidence of respiratory diseases such as asthma; as well as, heart and lung conditions, cancers, reproductive and developmental disorders). Greatly increasing the use of renewable energy sources also provides the added environmental advantage of decreasing the large amounts of water currently used by the fossil fuels and nuclear industries.

An additional environmental advantage of using renewable energy is that it can be used to replace nuclear power and thereby eliminate its associated radioactive waste streams. Renewable energy also provides strong energy security benefits, as many renewable energy sources entail no fuel costs. Having predictable fuel costs provides clear economic and supply planning advantages.

Another important advantage that can be secured by adopting renewable energy sources is lower dependence on the long and politically unstable fuel supply chains that increasingly characterize the fossil fuel industry. In addition to energy security, renewable energy also provides important socioeconomic benefits; for example, in terms of employment creation. Most renewable energy industries are more labour-intensive than the fossil fuel and nuclear sectors and therefore constitute a very attractive option for employment generation.

Environmental experts and legal researchers have been campaigning for a shift toward the concentration from finite non-RES to renewable to maintain the development activities, despite the fact that there are some inherent initial concerns. Nevertheless, these concerns are not exceptional in this sector alone; rather, they are generally present whenever any new technological developments are introduced. With the entry of, and advance in every sector, triggered by the scientific advancements, the global community has understood the significance of improvement of the RES in a practical, scalable, and capable ways.

More still, renewable energy frameworks offer attractive an alternative prospect. Besides, the energy generated utilizing renewables is vulnerable to the votality of price and value, which generally suffered by the oil and gas markets. Thus buyers can remain certain about the supply of energy. Renewables are taking a consistently growing pace in the overall energy industry with an evolving number of driving organizations focusing on aggressive inexhaustible power targets. Unfortunately, even such growth cannot decrease the level of GHG emissions that the world desires (Sanchez T, 2000).

Hence, effective, consolidated and synergic strategies and efforts from the stakeholders are required to utilize RES across the board at a quicker pace. Again, the significance of an all-inclusive concession to the environment, as advocated by the Paris Agreement, holds guarantees for a feasible eco-accommodating development and progression of the world for the future. Renewable energy technologies have minimal (manageable) levels of emission which can be conveniently reabsorbed within the ecosystem. They have the benefit of being environmentally benign when developed in a sensitive and appropriate way. At the end of the useful life of every renewable energy infrastructure, there is a need for comprehensive decommissioning laws governing their effective disposal. This is because most of the existing laws are focused on offshore energy infrastructure, while most renewable energy facilities are on land.

4. Barriers and Solutions for the Implementation of Sustainable Energy Development by the Extractive Laws

Cameroon has a high potential to move towards a better and more sustainable country with greener energy without compromising the country's economic efficiency, human dignity, standards of living, and financial development. Nevertheless, considerable development activities, including a sustainable power source and green arrangements in Cameroon have had limited accomplishments and are confronting various challenges which are mostly financial, technical, and regulatory in nature.

Since RE projects are more complex, unpredictable and full of unforeseen risks and dangers, the investors in this field may face serious financial challenges having impacts on future development and commercialization of the projects and technologies (William P, 2005). Besides, there are geographical factors that have effects on the performance of on energy development. Hence, it can be concluded that an already successful RE project in one country probably will not be realistic to another nation for the presence of sunlight-based variables, biomass, wind and sea between nations in the tropical and other areas.

4.1. Employment of Advanced RE Technologies

Technological constraints plague the RE sector worldwide, and this phenomenon is not limited to Cameroon alone. Hence, these constraints are hindering

the growth of innovation within the sustainable energy sector. To begin with, the unreliable power supply with respect to Cameroon's geographical variables makes it difficult and vulnerability for sustainanbele development. Likewise, uncertain technological innovation ensures the development of the RE industry with negative intensity, whereas, the orthodox methods of energy generation still offers a financially feasible choice to the energy actors.

The deficiency of qualified labour and skilled workers with adequate engineering or technical training additionally blocks the pace of the innovative improvement in sustainable energy development industry in Cameroon. In particular, the inefficiency of human resources with engineering and technical skills in handling the equipment hinders security issues on the energy supply (Walde T, 2005). To prepare the industry for these challenges, it is necessary to train and equip the workforce with necessary facilities though such facilities add additional costs to the RE projects. Additional, opportunities to develop local capacity and qualified personnel could be arranged by enhancing the use of existing infrastructure.

4.2. Policy Related Institutional Barriers

Although the government's intention to promote renewable energy as seen in the 2011 Law on Electricity through institutional, legal and regulatory frameworks is appreciable, the policies relating to RE are not firm and comprehensive. The financing bodies in RE projects are more concerned with the heavy return of profits, while the Government of Cameroon is worried about the allocation of subsidies to bear to achieve the ultimate objective of fuel diversification policy. Hence, the government has to deal with different and conflicting interests with the potential industry players. Such disparities in the energy industry create negative impacts on the investment of RE projects. Additionally, financial investors find themselves in a continuous dilemma because of the unreliable fuel supply in the industry. The fact that local people skilled in the design and maintenance of renewable energy systems, and related administrative and supporting infrastructure, are quite scarce, and that training opportunities in the state are almost non- existent, currently presents key challenges for the implementation of renewable energy initiatives. More so, the stakeholders face several investment barriers, due to lack of practice and governance-related discrepancies, because the regulation of the energy sector in Cameroon, like in most jurisdictions, is both fragmented and inconsistent. Regulatory expertise is lacking too at times, due to the dearth of technical know-how.

In practice, the arrangements relating to RE development and strategy execution in Cameroon are viewed as isolated exercises as there are more than one authority that deal with this issue and no single authority is made responsible for monitoring the implementation of the Policy. In general, the sustainable and RE policies are formulated at Ministerial and Parliamentary political process, and, then, such policy is conveyed and executed by the local governments and other agencies which are equipped with specialized technical tools, administrative arrangements, and regulatory structures for proper implementation.

However, this top-down methodology seems non-functional in Cameroon. The participants and stakeholders in the energy business in Cameroon additionally seem, by all accounts, to be less organized. There is no proper forum that listens to their perceptions. Even though they are heard occasionally by way of a public hearing before taking any policy initiative by the regulators, their inputs are less counted in the policy-making process, and the whole process is turned as a routine exercise without any significant impact. There is no other better alternative to develop without addressing the issues of active engagements of the potential stakeholders of the RE industry. Further, inputs from experts, producers, consumers, and engineers should also be counted to upgrade the ability of renewable sources.

4.3. Legal and Regulatory Concerns

With respect to the legal and regulatory barriers, genuine and significant initiatives are missing toward the advancement and extension of energy development in Cameroon irrespective of whether allocations are made to the extractive laws or the law relating to electricity in Cameroon. Without addressing the regulatory concerns, the policy related to fuel diversification can never be achieved. The 2011 Electricity Law happens to be the main text that defines the paths on energy development. However, such laws have limited enforcement and impact in the practicals. Hence, there is no positive output on such regulations.

Also, the government needs to consider several other incentives in the RE industry, such as higher selling tariffs and tax reductions or tax relief. Again, associated administrative and regulatory bodies should reallocate the subsidies from conventional energy generation to RES to sponsor the existing efforts of the RE industry. Such initiatives may progressively reduce the burden of different stakeholders and play a significant role in the growth of the sustainable energy development.In the case of regulatory and administrative difficulties to cope with the complex issues of RE, two remedies may be considered. It is important to note that although the Government of Cameroon initiated several policies to support renewable energy, such policies are not found successful and effective, due to the fact that Cameroonian enterprises still do not consider the RE industry as a suitable place for investment.

Hence, the first task of the regulatory bodies is to review and evaluate the policies comprehensively and make necessary practical amendments to refocus the country's target of achieving energy fuel mix to offer significance to the sustainable energy source. The regulators need to consider distributing subsidies for RE utilization. The subsidies for traditional fossil fuel source ought to be periodically eradicated, as well as converted and reallocated to RE assets to develop the sustainable energy industry establishments.

Broadly, the second task of the regulatory bodies is to address the issues relating to the institutional framework relating to the industry. The absence of an efficient working institutional framework on RE must be overwhelmed by empowering joint exertion between government organizations and private establishments with the ultimate objective to explore the financial and technical viability of RE generation. Enhancing the institutional network between government leaders, enterprises and utilities promise to implement carefully designed RE policies. Generally, a portion of the policies and strategic activities need reviews or explicit clarifications on how the existing or newly incorporated legal and regulatory system and standards would approach and direct the execution of such adopted policies.

4.4. Lack of Awareness

There are likewise various social difficulties relating to RES and green innovations. There is a lamentable, but noticeable absence of public awareness and participation with respect to feasible advancements in the energy industry in Cameroon. The public participation programs, particularly in the rural areas relating to renewable energy development within the country, is not satisfactory. Public participation and awareness about the energy sector promise to deliver the required advancement and development of the commercialization process of the energy industry.

Hence, the viability of public awareness programs needs to be increased and boosted with the goal to raise public support for the advancement of renewable energy, which promises to prompt effective usage of sustainable power policies and green approaches ultimately. Relevant government organizations can also come forward to help and guide the potential beneficiaries of renewable energy to motivate them to engage and disseminate positive information relating to the industry.

4.5. Limited Political Support for Renewable Energy

Another important barrier has to do with the limited political support for alternative energy strategies. The fact that the government favours expansion of the state's electricity grids regardless of its associated higher costs and detrimental environmental implications, and the fact that there is no concrete policy mechanism to enable or support the implementation of renewable energy projects, clearly makes it extremely challenging to develop any alternatives. In the absence of systems and incentives to expand renewables capacity (and faced with limited government resources) state and local representatives see it as safer, politically speaking, to favour expanding the grid and to provide diesel subsidies. In fact, these strategies represent for them highly visible political actions to 'safely' enhance their reputation within the energy sector. The highly hierarchical nature of the political system implies that, without a clear mandate to support renewable energy emanating from the central power, state and local levels find it very difficult to prioritise alternative options even if they may make sense at the local level.

Again, the planet-wide impacts of environmental change and the nature of global warming urge to adopt 'hard' International law and relevant arrangements so as to advance electricity generation through a sustainable manner. Notwithstanding, there is no urgent or explicit authoritative decision that binds the countries legally to advance the local utilization of RES to generate electricity, though the provisions of the recently adopted Paris Agreement to UNFCCC encourages the use of RE .The scarcity of universal legal arrangements on RE does not, in any case,undermine the significance of its utilization to limit environmental degradation. Henceforth, a binding international instrument, alongside the positive activities and mutual cooperation of the stakeholders worldwide, regional and municipal players in terms of financial and technological information exchange, may assume an instrumental job in the advancement of RE.

5. CONCLUSION

The extractive sector laws and energy development in Cameroon with focus on renewable energy is indeed a necessary evil with the country's desire to attain emergence by the year 2035. In this perspective, therefore, with the trend of an ever evolving industralise objectives of the nation in order to meet up with the state's fundamental goals, renewable energy sources becomes the ideal energy alternative for it guarantees sustainability. It should immediately be pointed out that, the non renewable energy sources are not only definite in terms of its nature; but, rather, produce damaging ramifications on the environment and have far-reaching consequences on man's activies be it primary, secondary or tertiary activities, but equally on man's health. This has the character of violating an important fundamental human right-that is, the right to health recognised by both international and national legal instruments. In order to achieve sustainable national livelihoods within the extractive sector and energy development in Cameroon with specificity on renewable energy development, it is sacrosanct for the legal and policy options of both sectors to work in a consensual manner rather than being in divergent perspectives. This shall as a matter of

expedient foster interesting socio-economic developments which shall be beneficiary to the State of Cameroon. Thus, crafting laws within the extractive sector that promotes energy development with impetus on renewable energy is no longer a choice but an irreversible imperative for all and sundry.

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