National Journal of
Environmental Law

ISSN: 2581-6683
Volume 4, Issue 1, 2021
DOI (Journal): 10.37591/NJEL

http://lawjournals.celnet.in/index.php/jel/index

Research NJEL

A Critical Assessment of Environmental Challenges Caused by Infrastructural Projects in Cameroon: A Legal Analysis of the Case of Lom Pangar Dam and Kumba-Mamfe Road

Tasiki Desvarieux Ntobengwia[1,*], Ndung Chantal Mbong[1]

Abstract

A healthy environment is indispensable for all forms of life on earth and on economic activities and growth. It is now factual that the environment is under serious threat caused by some types of investments causing the depletion of the ozone layer and irreversible destruction of the fauna and the flora. Among the environmental and social threatening activities, we can mention the development of major infrastructures needed for development. Since Cameroon embarked on the much-needed infrastructure such as roads and dams, so there is need for precautionary measures to strike a balance between the needs and risks for the environment and the human society. The legal requirement to protect both the environment as provided in both national legislation and international legal instruments is implemented by the production of an Environmental and Social Impact Assessment (ESIA). Consequently, this paper has as main objective to critically examine the environmental and socio-legal problems underlying the development of major investments projects in Cameroun with the case studies of the Lom Pangar Dam and the Kumba-Mamfe road projects. In order to realise the above objective, both doctrinal and empirical research methods were used. Empirical research consisted of field work during which data was collected. Doctrinal research involved essentially analysis of data collected with the help of documents at our disposal. We also used doctrine from secondary sources such as journals, articles, textbooks, websites and thesis that talk on the topic. We realized that, despite the existing laws, regulations and conventions, the Lom Pangar and Kumba-Mamfe infrastructural projects still result in many negative environmental and social effects such as: soil pollution, deforestation, destruction of secret sites, land expropriation, involuntary resettlement. It is thus evident that the authorities charged to ensure environmental protection to more effective and efficient in their assigned mission, should integrate the suggestions made in this work. This will go a long way to ameliorate environmental protection in the course of infrastructural projects.

***Author for Correspondence**
Tasiki Desvarieux Ntobengwia
E-mail: ntobengwia@yahoo.com

[1]PhD Research Scholars in Law, Department: English Law, Dschang School of Law and Political Science, University of Dschang, PO Box 66, Dschang, Cameroon

Received Date: January 22, 2021
Accepted Date: February 19, 2021
Published Date: April 24, 2021

Citation: Ndung Chantal Mbong, Tasiki Desvarieux Ntobengwia. A Critical Assessment of Environmental Challenges Caused by Infrastructural Projects in Cameroon: A Legal Analysis of the Case of Lom Pangar Dam and Kumba-Mamfe Road. National Journal of Environmental Law. 2021; 4(1): 34–58p.

Keywords: Environment, society-infrastructure, challenges, legal analysis

INTRODUCTION

The natural environment is indispensable for all forms of life. It is central to economic activities and growth by providing the resources we need to produce goods and services and absorbs and processes unwanted by-products in the form of pollution and waste [1]. Infrastructure is a double-edged sword, associated with income gains and also often with environmental cost [2], infrastructure services are vital for supporting

economic growth and improving the quality of life by improving transport and communication, education and health services. However, providing these services leads to environmental impacts that also have important implications for quality of life including both biophysical and social aspects.

Ever since the industrial revolution which led to large scale production, infrastructural investments have become much more intensive over the centuries, proportionately affecting the environment, which provides raw materials and the space for investment infrastructure. With globalization, investment and trade interact as a cause and effect on environment and the society [3]. This is because trade and infrastructure are being carried out on the environment so here, we find ourselves needing investments and environment because all are important to the world at large and Cameroon in particular.

Infrastructure for example is important in that it promotes in varying degrees economic development, the expansion of employment opportunities, the improvement of employment quality and the increase in government revenue through taxes. On the other hand, environment is very important in that, the biosphere or the earth that is where we live, breath, eat, and raw material we rely on come from the environment so a complex interaction between living organisms and the physical world maintain the condition for life [4].

Notwithstanding the importance of infrastructure and environment, they are often opposing to each other in that infrastructure causes harm to the environment and this harm could either be long- or short-term effects, reversible or irreversible effects and equally renewable or non renewable natural resources. With regards to all these effects caused by infrastructural investment on environment and the society, there is a need to strike a balance between them since the two are important. So, with regard to the balance, the government, the investors and the financial institutions have strived to foster economic development without creating social or environmental harm. For this reason, the international and the national bodies have seen that successful development requires actions to secure the future of the planet, ensure social inclusion and set a solid foundation for the wellbeing of the future generation [5]. Because of this, the Multilateral Environmental agreements (MEAs) were developed to address or promote actions relating to pollution control, natural resource conservation and use, protection of cultural aesthetic value, environmental activities that pose danger to human health [6]. So here the investors can work together with the government to reduce environmental and social harm by respecting the environmental and social laws set forth to monitor infrastructure projects thereby ensuring that both working together can be manage without compromising one or the other.

THE NATURE OF THE ENVIRONMENT

It must be said at the beginning that it is not our intention to be incarcerated by any definition, for the simple reason that the concept of environment, is a matter of lineage in Cameroon and should necessarily be looked in consonance with the socio-economic and political realities of the society [7].

THE MEANING OF THE TERM ENVIRONMENT

Generally, the environment means where we live and develop. This includes the air, the land, the vegetation and the water surrounding human beings. The term “Environment” has been defined in various ways: The Oxford Advanced Learner English Dictionary defines Environment as the condition and circumstances affecting people’s lives [8]. Environment has also been defined as the sum total of all conditions that surrounds man at any point in time on the earth surface. Also, in accordance with section 37 of the National Environmental Standard and Regulation Enforcement Agency (Establishment) Act 2007 in Nigeria, the term environment include water, air, land, all plants and human beings or animals living therein and the inter relationship which exists among these or any of them [9].

Equally, the word Environment has been ascribed a broad but rather reasonable meaning under the Cameroonian Environmental Code [10]. It defines the environment as “All the natural or artificial

elements and biogeochemical balances they participate in as well as the economic, social and cultural factors which are conducive to the existence, transformation and development of the environment, living organisms and human activities". We will therefore adopt this exhaustive definition by the Cameroonian environmental code, which ostensibly recognizes the symbiotic relationship between man and the environment and the interactions between the living and non-living matrixes. Within the context of this paper, the environment therefore includes natural resources both biotic and a biotic, such as air, soil, water, fauna and flora and the interaction between the same factors. Also, the environment consists of the components of the biosphere in which all life exists [11]. Therefore, it encompasses the air, water, soil and related ecosystems. It also includes the flora, fauna and landscape as well as the natural and cultural heritage.

Mainstreaming the environment also involves considering the human interactions and impacts on the biosphere. These environmental elements have often been under threat whenever an infrastructural investment is being carried out in a country. Some of the environmental effects that were caused by the Lom Pangar dam and the Kumba-Mamfe road project are effects on biodiversity that is fauna and flora, soil and desertification, effects on ecological system which are air pollution, climate change, noise pollution and water pollution.

ENVIRONMENTAL CHALLENGES CAUSED BY THE LOM PANGAR DAM AND KUMBA-MAMFE ROAD INFRASTRUCTURAL PROJECT IN CAMEROON

They include the following as seen below.

Biodiversity Challenges

All life on earth is part of one great, independent system, it interacts with and depends on the non living components of the planet such as the atmosphere, oceans freshwater, rocks and soil [12]. The term covers several interrelated aspects and it is understood in terms of the wide variety of plants, animals and micro organism. Scientists estimate that the number of species including insects and micro organisms is about twelve thousand (12000) million. This diversity of species has emerged through genetic mutation and expansion into new niches over the past four billion five hundred (4.5) billion years [13]. Therefore, biodiversity must be regarded as a non renewable resource, whose potential loss would be irreplaceable and could never be reproduced through modern technologies. Biodiversity is therefore valuable not only for the sake of variety itself but also as an output of a four billion years old process of evolution.

Today, the world population is nearly eight times as large and resource consumption and utilization of biological resources is far greater. Due to human activities, species of ecosystems are more threatened than ever before in recorded history. These losses are mostly taking place in the tropical forest which hosts about fifty percent (50%) to ninety percent (90%) of identified life species. Estimate shows that forty percent (40%) of the world's economy and eighty percent (80%) of the needs of people in developing countries are derived from biological resources [14]. The loss of biological diversity destabilizes ecosystems and weakens their ability to deal with natural such as floods, droughts, and climate change. Also, the destruction of biodiversity threatens cultural identities especially to the indigenous population whose culture resides and is deeply rooted in nature. Thus, degradation of the environment and national biodiversity severely threatens the life style and cultural heritage of the indigenous population along the Lom Pangar and the Kumba-Mamfe road project.

Even though biodiversity is of fundamental importance to the functioning of all ecosystems and their services which contributes to essential constituents of human wellbeing, countries like Cameroon are experiencing its accelerated loss. Because of the importance of biodiversity, Cameroon has ratified some Multilateral Environmental Agreements (MEA) [15] essential for addressing the problem of biodiversity loss and ecosystem degradation. There are equally some regional agreements [16] and the Cameroon's national laws [17] to regulate biodiversity. However, in order to achieve the Lom Pangar

dam and the Kumba-Mamfe road project, biodiversity was affected. This is because these two projects are being carried around the forest areas and so the deforestation took place in these areas, wild animal in these sites were displaced as seen below.

Deforestation

Cameroon forest has been estimated that it has approximately twenty-two million hectares of forest within its territory [18]. This forest plays a socially important role with regards to the livelihood of the forest dependent people and for the traditional use of the non-forest products, such as fruits, bush meat and medicinal plants as they solely depend on them. It is estimated that communities could earn twenty times as much from the sale of sawn wood than from the sale of standing trees to loggers [19]. So, the lack of appropriate forest management and use is keeping the rural communities in extreme poverty. Also, forest products accounts for twenty seven percent (27%) of Cameroon's export earnings of which the main export products are logs, sawn wood, and plywood [20]. Cameroon forest belongs entirely to the tropical forest type with tropical moist forest being the most important forest ecosystem. [21] This was affirmed by an author who made it clear that:

Forests are the lung of our land, purifying our air and giving fresh strength to our people. Start with the rising sun and work towards the setting sun. Take only the mature trees, the sick trees and the trees that have fallen... and the trees will last forever and must be used in a way the present needs should not compromise future needs [22].

However, it is estimated that about two hundred thousand (200,000) hectares of forest are lost annually due to deforestation [23]. Deforestation can be defined as the clearing, cutting down of trees in the forest without reforestation. This is often cause by manmade activities which may either be clearing down the forest for agricultural purposes and for infrastructural investment purpose.

Notwithstanding, there are some legal instruments put in place to regulate deforestation and these instruments are international and national instruments which are the Convention on Biological Diversity (CBD) which was ratified by Cameroon to protect forest exploitation, the Central African Forest Commission (COMIFAC) otherwise called the Yaoundé Declaration and the African Ministerial Declaration on Forest law Enforcement and Governance (FLEGT), Convention on International Trade in Endangered Species of wide Fauna and Flora (CITES). With regards to Cameroon national laws, there is Law No. 94/01 of 20th January [24], Ordinance No.99/1 of 31st August 1991 to supplement certain provisions of the 1994 Forestry law, the 1974 Land tenure Ordinance jointly as Forest Legislation is also applicable in Cameroon. Also, there are some prime ministerial and presidential Decrees to ensure regulation enhancement in forestry sector. Ministries like the Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED) formally the Ministry of Environment and Nature Protection (MINEP) and the Ministry of Forestry and Wildlife (MINFOF). Equally, Orders of 1999 of 21st January 1999 to lay down Modalities for controlling and monitoring Forestry activities in Cameroon.

However, with all these laws put in place to manage and control forest in Cameroon, some major infrastructural investment projects in Cameroon still submerge forest especially those carried out around the forest site like the Kumba-Mamfe road project and the Lom Pangar dam. The Lom Pangar dam is located around the Deng forest and the experts of the Environmental and Social Assessment of the project noted that before this project can be achieve, the main impact is the flooding of about 540square kilometer including approximately 300 square kilometer of natural forest. This is because the dam is located next to the portion of the Deng forest that is a critical habitat. More so, the project alternative is the gradual degradation of the Deng forest that could lead to the extinction of some species. However because of this, the logging of marketable timber which can be processed into lumber, increasing the value of timber through charcoal production [25] and the Project Supervisor working in collaboration with the NGOs involved in primate protection, in particular forest protection [26]. These are some of the measures that were put in place to mitigate forest effects.

With regards to deforestation along the Kumba-Mamfe road project, forest will face increase risk of illegal exploitation of timber resources and non-timber resources and greater risk of degradation of protected areas and forest reserves is a possibility [27]. Because of this effect on forest, it was suggested that the felling of trees should be reduced and be no excess excavation, the planting of eight thousand (8000) replacement trees (agro-forestry and fruit trees) in the project area and street tree planting over a distance of 150m on both sides of the road running through all the 39 villages [28]. There should be reforestation and equally building and equipping a forestry and wildlife post at Konye [29].

Animal Life

The forest areas are generally the habitat of species of animal and their biological productivity is very high in these areas. But infrastructural investments carried out around the forest areas endangers the life of this wildlife which may cause these animals to escape to different places thereby causing the extinction of some endangered species. Because of the importance of wildlife in the world in general and Cameroon in particular, both international and national laws were put in place to protect wildlife. The international instruments are the 1975 CITES which aims at ensuring that international trade in specimen of wildlife and plants does not threaten the survival of species. The 1973 CITES classifies animal species into types 1, 2 and 3. This classification is done in descending order from the most endangered species to the least. Another convention is the Bonne Convention on Migratory species.

The national laws for the protection of wildlife in Cameroon are, Law No. 94/01 of 20th January to Lay down forestry, wildlife and fisheries Regulation, Decree No.95/466/PM of 20th January 1995 to lay down the conditions for the implementation of wildlife Regulations, Order No. 6648/MINFOF of 18th December 2006 to set the list of animals into classes A, B and C. Order No. 0649/MINFOF of 18th December to lay down the distribution of animal species whose killing is authorized as well as the latitude of killing per type sports hunting permits. The species of class A shall be totally protected and may on no occasion be killed except as provided for in sections 82 and 83 of the law [30]. The list of protected animal species is periodically review by the minister in charge of wildlife in order to take into account the fluctuation in the various animals. Elephants with tusk weighing less than five kilograms each belong to class a while others belongs to class B [31]. The protection of wildlife was demonstrated in the case of the *People of Cameroon v. Bissong Daniel Nkwo* where the accused was found guilty and sentenced to two years imprisonment plus a fine equivalent to 2000 US dollars for killing nineteen (19) elephants in violation of law No. 94/1 of 1994 laying down forest, wildlife and fisheries regulation [32].

Notwithstanding all these international and national instruments to protect wildlife in Cameroon, it is still notice that wildlife is being threatened by the presence of infrastructures in Cameroon more especially caused by the Kumba-Mamfe road project and the Lom Pangar dam. For instance villages along the Kumba-Mamfe road project are rich in giant pangolins, elephants, gorillas, chimpanzees and monitor lizards which are mostly in reserves like in the Korup and Takamanda National parks, despite the fact that they are on reserves areas, they are still being disrupted by the noise at the project site by heavy machinery and risk of accidents between Nguti and Nfaitock especially elephants [33], also risk of illegal hunting because of the ease created by the construction of the road.

However because of the risk created by this project on wildlife, the solution that was put forth was the construction of speed bumps in the villages along the road as well as in the vicinity of the elephants crossing point that was identified, setting up of sign boards for road user awareness of over 5 km on either side of the elephants crossing point between Nguti and Nfaitock IB, construction of a wildlife and forestry check point office at Konye, awareness raising campaigns of local residents on environmental protection including topics related to wildlife [34]. All these were to limit the extinction of wildlife in this area.

Also, the Lom Pangar site is rich in viable population of gorillas and a significant population of chimpanzees of which the project alternative is a gradual degradation of the Deng forest that could lead to the extinction of its gorilla population. However, because of the context of the LPHP, Government Commissioned additional work on the Deng gorilla in late 2008, including immediate protection and leading to the establishment of the Deng National Park [35]. These efforts put in place are seen not to be enough because as a result of noise around these infrastructure areas, some endangered species could escape and never return. Also, the clearing of the forest road for construction will equally increase illegal hunting.

Soil

Soil is the part of the Earth between its surface and its bedrock [36]. It contains the nutrients necessary for maintenance of plant life and it acts to filter out pollutants before they reach subterranean water sources or enter the food chain. Soil also helps to avoid flooding by absorbing considerable amounts of water. Nearly all soil constitutes a habitat for flora and fauna and in this way contributes to biological diversity. In addition to its natural roles, soil is a primary resource for construction, physical support for structures and of historical evidence on the origins of plants, humans, animals and the Earth. Soil naturally erodes and degrades, but it is increasingly threatened by excess demands on all the roles it plays. Overuse of soil depletes its nutrients and leads to erosion and desertification.

The principal cause of erosion, in most cases an irreversible process, is incorrect management of forests and agricultural lands, principally through intensive and environmentally unsound cutting and farming methods. Erosion can also diminish the ability of soil to prevent and to absorb flooding. Contamination by heavy metals and organic toxic substances, including fertilizers and pesticides, is a particularly serious problem in many parts of the world. Waste, particularly industrial waste, has likewise become a major source of soil contamination. Finally, the surface space of soil is diminishing as it becomes covered by buildings, industrial facilities, and impermeable roads, airport runways, and other artificial surfaces.

Due to the importance of soil, some international laws were put in place in order to prevent and protect soil pollution and ensure its sustainable use. These laws are the UN Food and Agriculture Organization which proclaimed a World Soil Charter on November 25, 1981. This document contains guidelines for action and basic principles, advocating the development of land-use programs tending to the best possible use of the land, ensuring long-term maintenance and improvement of its productivity, and avoiding the loss of productive soil. Agenda 21 devoted five chapters to different aspects of soil conservation respectively related to planning and management of land resources, deforestation, desertification, sustainable mountain development and agriculture and rural development.

However, the presence of laws to protect the soil, one can still notice that there is still serious threat on soil especially that of Cameroon as the increase use of soil by giant infrastructures in Cameroon is causing soil pollution, degradation and erosion. This is the case of the Lom Pangar dam and the Kumba-Mamfe road project. Around the Kumba-Mamfe road project, there was modification of soil texture and structure in the immediate vicinity of the road through compacting, pollution of the soil through accidental spillage of drainage oils and other hydrocarbons, sedimentation [37]. It was also noticed that there was soil compartment and soil pollution caused by Lom Pangar dam due to the machines, oil spill and fuel.

However, in order to prevent soil pollution that was identified in this area, it was proposed that soil rammed during construction works will be churned up to restore its natural ventilation and pedological properties, herbaceous, shrubby or woody vegetation destroyed will be replaced, Oils and fuels will be stored off-land in watertight vats to enable the recovery of leakages or accidental spills [38]. Measures will be taken to prevent erosion risks on slopes by building levees. Also, the reduction

of risks of landslides and erosion will be ensuring through the reinforcement and monitoring of embankment areas [39]. Though all these mitigation measures were proposed by the investors, it has been seen that no proposed solutions were discussed with regards to the degradable soil fertility caused by the Lom Pangar dam to farmers in order to foster sustainable transition from their current farming practices to something else [40].

Desertification

Land degradation is old as civilization itself, stretching from the plains of China to the peaks of the Inca Empire. The world's first ever written story, a Sumerian epic, tells how a man felled the forest of Mesopotamia, bringing down a curse. The ancient Sumerian failed to heed the parable and went on cutting the trees. As early as 2000BC, their literature carries evocative descriptions of desertification. Their great city state of Uruk, which once contained 50,000 people and produced crops yields comparable to those of North America today, is now just a bump in the sand [41].

The UN General Assembly coined the term desertification when it decided to convene a conference on the subject in the wake of several years of hash drought and famine in Africa. This convention defined desertification as land degradation in arid, semi arid and dry sub humid areas resulting from various factors including climate variation and human activities. Desertification can also be defined as the reduction or loss of biologically or economic productivity of land resulting from land use or from processes such as water or wind erosion [42]. This has created environmental refugees, people who are forced to abandon land that cannot longer support them, as a result; approximately two to three thousand people are displaced each day. These refugees often migrate to cities to find jobs and social services. This impacts of desertification has made many environmentalist to believe desertification to be one of the most significant environmental problem facing man in the twenty first century [43] Because of this, International Conventions to Combat Desertification was signed for instance the 1994 United Nations Convention to Combat Desertification.

In all countries of the world and Cameroon in particular, land is a critical resources and basis for survival but yet its degradation is very high and therefore threatens not only economic but also the physical wellbeing of the society. This is the case of the Lom Pangar dam and the Kumba-Mamfe road project which is a source of degradation in its surrounding areas where there are being carried out.

ECOLOGICAL EFFECTS

These effects are climate change, air pollution, water pollution, and noise pollution.

Climate Change

The earth's climate is affected by the interaction of radiation from sun and the earth's atmosphere. The atmosphere consists of nitrogen and oxygen and a number of neutral greenhouse gases (GHG) including carbon dioxide, methane, nitrous oxide, ozone gas, and chlorofluorocarbon (CFC) [44]. The atmosphere and the surface of the earth absorb part of the sun's radiation, but the remainder is reflected back into space. The GHGs have the important function of trapping this radiation in the lower layers of the earth's atmosphere, this process is called the 'greenhouse effect' without which the earth would be as cold as the moon. This is now known that increased concentrations of GHGs in the atmosphere will increase this greenhouse effect and there leads to changes in the earth's climate. Neutral events also cause changes in the climate for instance volcanic eruption. However, human activities are recognized as contributing to climate change. This is because during recent years, scientists have been able to collect evidence of changes in the temperature. This data suggests that over the twentieth century, the average world temperature increased by 0.6 Celsius [45]. The data also demonstrates an increase in the quality of GHGs in the atmosphere of up to thirty percent (30%) especially carbon dioxide. Carbon dioxide (CO_2) is partly produced as a result of human activities such as burning of coal, oil and natural gas, as well as agricultural activities and deforestation [46].

Oceans and forest can absorb CO_2 and other GHGs, and so are therefore referred to as greenhouse gas 'sink'. But deforestation however releases previously stored GHGs, thus contributing further to the increase of GHGs in the atmosphere for a long time. So, this means that even if emissions from human activities are stopped immediately, the effect of the emission that is already accumulated in the atmosphere may persist for a long time. Climate change experts predict that global warming will cause increased rainfall in many areas, increased desertification in others. This will also have impacts on natural vegetation and fauna, changes in seasonal patterns leading to longer and hotter summers thereby making some species of fauna to be unable to adapt well to this change of environment and may even slowly die out.

As a result of all these effects of climate change, there are some Multilateral Agreements (MAs) that has been ratified in order to combat climate change. These international agreements are, the United Nations Framework Convention on Climate Change (1992 UNFCCC) whose main objective is to tackle the negative effects of climate change. In addition, there is the Kyoto Protocol to the United Nations Framework Convention on Climate Change (1997 Kyoto Protocol). Also, in 1988, the United Nations General Assembly determined that "climate change is a common concern of mankind" which required urgent actions by all states. Because of this, around the same time, the United Nations Environmental Program (UNEP) and the World Meteorological Organization (WMO) established and still co-sponsored an independent scientific body called the Intergovernmental Panel on Climate Change (IPCC). This body consist of over two thousand scientific and technical experts from around the world who collects scientific information about the causes of climate change, its effects and possible ways to mitigate these effects [47].

Notwithstanding all these international laws to combat climate change, it is still evident that some major infrastructural investment projects still cause climate change. This can be seen in the case of the Lom Pangar dam and the Kumba-Mamfe road project which causes climate change due to the activities that are being carried out in these project areas. It is noticed that there is increase Greenhouse emission caused by the Kumba-Mamfe road project. With regards to climate change caused by the Lom Pangar dam, the quantity of GHG produced by the Lom-Pangar impounding dam has been estimated by two thematic studies: the study of alternatives is based on data on CO_2 and CH_4 emission from the Petit Saut hydroelectric project in Guyana (3 500 hm3 for 310 km²) as well as on studies carried out on the Nam Theun II project in Laos. The result of estimates, updated for a quantity of submerged vegetation corresponding to about 6.4 million tons of carbon, is 21 million tons of emitted CO_2, according to the study on vegetation; this same quantity is estimated at 24 million tons of CO_2. [48] The entire Lom-Pangar project will contribute to climate warming whose indirect effects are many and are felt worldwide and likely to vary significantly from one area of the globe to another. With regards to climate change caused by the Lom Pangar dam, two types of complementary actions were proposed that will be implemented to reduce GHG emissions. The first will act on the quantities of GHG emitted at the beginning of operation of the dam (targeted clearing, partial priming, frequent marling, compensatory a forestation, etc.). The second will be the optimization of the GHG-free power generation chain [49].

Air Pollution

Air pollution describes the presence of substances that are artificially introduced into the air. Air pollution stems from gases, which in excess are harmful to human health, buildings, ecosystems and the environment in general. Air pollution can be define as the introduction by man directly or indirectly of substances or energy into the air, resulting in deleterious effects of such a nature as to endanger human health, harm living resources and ecosystems and material property, and interfere with amenities and other legitimate uses of the environment [50]. Sulphur dioxide (SO2) and Nitrogen oxide (NOx) are the primary causes of acid rain and although some quantities of sulphur dioxide and nitrogen oxide are also produced by nature, human activities generates the majority of these gases and the resulting environmental problems [51]. Emission of SO_2 and NOx originate from stationary

sources, such as coal-fire and oil-fired power stations, and from mobile sources, such as cars and trucks, ships and aircraft.

Acid rain occurs when SO_2 and NOx react in the atmosphere with water, oxygen, and other chemicals forming various acidic compounds. Sunlight increases the rate of most of these reactions. The result is a mild of sulphuric acid and nitric acid that is deposited back into land through dry depositions. The atmosphere's acidity is carried by wind, which blows these particles and gases into buildings, plants and water. Motor vehicles using hydrocarbons are the primary movable source of air pollution. Their exhaust fumes contain chemicals that are major contributors to urban and rural air pollution. One of the most widely adopted legal techniques for combating pollution is by submitting all pollution—causing activities to prior authorization. The existence of licensing regimes has played a great role in the prevention of air pollution. Licensing regulations typically list types of activities requiring a license, although variation exists in the classification criteria, such as the size of the installation effects on the environment, the feasibility of preventing pollution by using an alternative production process and the likely risk of a major accident.

Many states have elaborated regulations to limit polluting emission which may concern large series of pollutants such as a sulphur gases, particulates and dust, nitrogen oxide. Obligations flowing from international instruments have a growing influence in this field. At least one detailed regulatory regime that is the US Clean Air Act which gives citizens broad authority to challenge the government's final decisions applying its clean air regulation and equally to initiate court action when the government fails to perform non discretionary duties related to air pollution regulation. That regime also provides citizens with certain rights to participate in the government's decision-making process through notice and comment proceedings [52]. Also, the United Nations Convention on the law of the sea (UNCLOS) December 10th 1982. According to its Article 212, states must adopt laws and Regulations to prevent, reduce and control pollution of the marine environment from or through the environment. States also must take other measures as necessary to prevent, reduce and control such pollution.

However, notwithstanding all these laws put in place of which Cameroon is a signatory, it is seen that some giant infrastructural investment projects still causes air pollution especially that of the Kumba-Mamfe road project and the Lom Pangar dam. This comes as a result of heavy machines, movable sources such as trucks and cars that are being used in the project site. Around the Kumba-Mamfe road project, there was degradation of air quality due to emissions from construction machinery and dust particles [53].

Despite all the laws put in place to prevent air pollution and its effects, it can still be seen that increased air born diseases caused by the lack of befitting paved roads to Lom Pangar project site let to increased medical health burden to the affected grassroots communities especially for their children [54].

Water Pollution

Looking at all the natural resources in the world, water features as the most indispensable. Also, water is a scarce and finite resource with no substitute, and upon which the very existence of life on earth depends [55]. This is perhaps unsurprising given that water is critical to life and covers over seventy percent of the earth's surface [56]. Water is essential to human and other forms of life and is useful for a variety of ways which are, domestic uses, industrial, agricultural, recreational, navigational, waste disposal, in stream uses such as fishing, conservation of fish and other aquatic life, safeguarding aesthetic values and preservation of aquatic ecosystems.

It has been seen that water neither increases nor diminish though with all its usages and although water has been the same for billions of years and so challenges facing water resources are daunting given the fact that during the last century, the population of the world has more than tripled, from 1.6

billion to over 6 billion [57]. Concerns about its scarcity derive largely from intensified human demand for a finite supply and deterioration of its quality caused by human activities and environmental degradation and so the intensified human demand for it is due to rapid population growth [58] The United Nations World Water Development Report, 2003, presented a gloomy picture, about two billion people lack in over forty countries are affected by water shortages and more than one billion people lack sufficient drinking water.

In 2004, more than a billion people lacked safe drinking water and nearly three times that number lack access to sanitation services [59]. The lack of water sanitation is the primary cause of water contamination and water related diseases such as cholera, diarrhea and typhoid fever. Some two billion three hundred people are afflicted with these diseases each year, and children are particularly vulnerable since their immune systems are not fully developed [60]. The poor are the most likely to have inadequate sanitation facilities and suffer consequent adverse effects on their health and environment. Considering the fact that sewage disposal is a classic use of flowing water and has been linked to epidemics of plaques and cholera, the disposal of chemicals, and hazardous waste and the use of pesticides and fertilizers equally affect the quality of water.

The World Health Organization (WHO) estimates that almost half of the world's population is suffering from debilitating water borne or water related diseases which accounts for an estimated five million deaths each year [61]. Considering the fact that water is essential to human and other forms of life, therefore attention should be paid not only to regulating the exploitation of water and halting pollution of single water bodies, but also protecting and preserving the entire ecosystems of which water resources constitutes integral part. For instance, deforestation in a watershed can affect its streams which in turn can affect fish and other aquatic life and lead to flooding.

However, taking into consideration the scarcity and effects of pollution in water, international and national conventions have been put in place in order to regulate water and provide safe drinking water thereby reducing water borne disease that has been killing many every year. The United Nations Water Conference that was held in Mar del Plata, Argentina in 1977 observed that existing legislations in many countries is often complex, lags behind modern water management practices and techniques. The World Bank Water Resources Management Policy Paper, 1993 pointed out that in must legislations, allocations and priorities are often vaguely stated or are absent, and many uses such as in-stream or environmental uses may be over-looked [62]. The United Nations Convention on the law of the Sea (UNCLOS), the 1997 United Nations Convention on the law of Non Navigational Uses of International Watercourses (International Watercourses Convention), and this law is based on preparatory work done by the United Nations International Law Commission (ILC) whose objective is a progressive development of International law and its codification.

In addition, we have the Bonn International Conferences on Freshwater December 2001 and the second March 2002 and the third March 2003. Also, one of the major priority areas at the World Summit on Sustainable Development (WSSD) in Johannesburg 2002 was water. More so, Agenda 21 of the Rio submit "Programme of Action for Sustainable Development" included a separate chapter eighteen on Fresh water resources [63], this chapter eighteen was titled the "Protection of the Quality and Supply of freshwater resources: Application of Integrated Approaches to the Development, Management and use of Water Resources". Furthermore, the United Nations (UN) Commission on sustainable Development decided at its eleventh session April 2003 to monitor progress and promote the further implementation of the water agenda in the first cycle of its new multi-year program of work. Also, at the eighth special session of the Governing council/ Global Ministerial Environment Forum of the UN Environment Program held in Jeju, republic of Korea in March 2004 [64].

Ministers and other heads of delegations engaged in dialogue on the priority of environmental dimensions of the water related themes and associated targets stemming from the Millennium Declaration and the World Sustainable Development, and in particular on integrated water resource

management, water and sanitation and water, health and poverty. In common law system, nuisance, negligence or strict liability actions may frequently be brought at common law for water pollution causing injury, for instance in the case of *Ryan v. Great Lakes Council (1999) Fed. Ct.* [65] of Australia 177, provides an example, the plaintiff sued the Great Lake Council and others for damages after he contracted hepatitis A from eating contaminated oysters from Wallis Lake. He alleged negligence, arguing that the council knew of the pollution of the lake and had a duty to warn those using the lake and its resources. The court found that at all material times the council knew that the waters were used for growing oysters for human consumption and that numerous sewage facilities within the lake catchment area were potential sources of contamination which could adversely affect human health.

The court held that the council had failed to take reasonable steps to minimize contamination of the lake and entered judgment for the plaintiff for thirty thousand (30,000) US dollars. Also, Agenda 21 program of Action for the Rio Declaration following the UN Conference on Environment and Development held in Rio de Janeiro in 1992. With regards to the national laws, there is the Water Code of 1998 [66], this law identifies the following different types of water which are; surface water which are run-off water, ground water which means infiltration water, spring water meaning water sold as drinking water, and lastly mineral water which are ground water containing dissolved minerals with therapeutic properties. This law also provides that water is a natural resource protected and managed by the state [67]. The minister of Energy and Water can forbid the harnessing of surface water and ground water in the following situations [68], where there is risk of drying of the stream, obvious pollution of water, risk of public health and public interest and utility.

Despite all these international and national laws put in place to protect and control the level of polluting water, it is still seen that some major infrastructural investment projects carried out in the world at large and Cameroon in particular still causes water pollution. This can be seen in the case of Lom Pangar dam and the Kumba-Mamfe road project as spring, underground and pipeline water is contaminated in these project sites caused by the activities carried out. For instance, around the Lom Pangar Dam, dyke works increase the turbidity of the river and fish will have to move depending on the work being carried out [69]. With regards to the Kumba-Mamfe road project, it was discovered that there was high risk of ground water pollution which was higher in Baduma and Faitock I B, where there are areas of groundwater upwelling, symptomatic of a high water table because of accidental spillage of drainage oils and other hydrocarbons [70].

Also, it was equally noticed that there was water pollution caused by the Lom Pangar dam. This was due to the submerging of the forest for the reservoir and due to oil spill in the water table. To prevent the risk of contamination of the water table with oils, watertight vats will be constructed and placed under station transformers and connected to an isolated sealed pit to recover any leaks [71]. Also, there was the establishment of baseline situation for surface and ground water by a specialized laboratory [72] and also monitoring of the quality of surface and ground water for four years by specialized laboratory.

Noise Pollution

Unlike other environmental problems, noise does not lead to chemical or organic pollution of natural resources but instead affects human beings and other animals directly. Noise pollution can be defined as any unwanted or harmful sound created by human activities. Types of noise pollution are barking dogs, household appliances, loud music, road traffic, air traffic, and machinery use and construction activities. Recently, noise has been seen not only as annoyance but as a serious health hazard of which prolonged or excessive exposure to noise can result in cardiovascular problems, communication disruption, headaches, increased blood pressure, poor attentiveness or memory, sleep disruption, stress and tension [73].

With an ever-growing world population and equally with rapid advancement in technology, the effects of noise pollution are being felt by greater number of people. Because of this, there are some

Multilateral Agreements being put in place in order to prevent excessive noise pollution. Some of these agreements are, the Chicago Convention on International Civil Aviation 1994, the World Health Organization (WHO) has equally adopted standards to prevent excessive noise pollution, courts equally plays an important role in controlling noise pollution, this is because persons suffering from noise pollution can bring nuisance action in court against the party responsible for the nuisance. Here, the court has the power to secure abatement of the nuisance, prohibit or restrict the nuisance and equally order payment of damages if necessary [74]. Also, if anyone's activity is causing pollution to the atmosphere to the point of rendering public ill health [75].

Notwithstanding the effects of noise pollution on human beings and the international and national laws put in place to prevent noise pollution, one still sees that some major investment projects in the world at large and Cameroon in particular are still causing noise pollution. This can be seen around the Lom Pangar dam and the Kumba-Mamfe road project which are causing noise pollution around the project areas. There was increase in noise pollution [76] around the Kumba-Mamfe road development project caused by heavy machines and trucks. Also, it was seen that there was noise pollution around the Lom Pangar dam caused by machines during the construction phase of the dam. In a way to prevent noise pollution in these areas, it was agreed that Machines will be consistent with international standards and specifications for noise and exhaust fumes [77]. Also, Machines used will comply with the technical and safety standards of their manufacturers and will be equipped with sound-proofing devices to reduce sound nuisance during construction works as much as possible.

THE SOCIAL EFFECTS OF THE PROJECTS

According to the International Association for Impact Assessment (IAIA), social impacts, for the purpose of social impact assessment [78], can be defined as changes to one or more of the following: People's way of life how they live, work, play, and interact on a day-to-day basis; Their culture that is, their shared beliefs, customs, values, and language or dialect; Their community its cohesion, stability, character, services, and facilities; Their political systems the extent to which people participate in decisions that affect their lives, the level of democratization that is taking place and the resources provided for this; Their environment the quality of the air and water people use; the availability and quality of the food they eat; the level of hazard or risk, dust, and noise they are exposed to; the adequacy of sanitation, their physical safety, and their access to and control over resources;

Their health and wellbeing health is a state of complete physical, mental, social, and spiritual well-being, and not merely the absence of disease or infirmity; Their personal and property rights particularly whether people are economically affected, or experience personal disadvantage which may include a violation of their civil liberties; Their fears and aspirations their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children. Some of these social effects to be discuss here are land expropriation, involuntary resettlement, vulnerable group, cultural heritage, compensation, and the spread of diseases as will be seen below.

LAND ACQUISITION AND RELATED ISSUES

The legal regime governing land tenure in Cameroon distinguishes between three categories of land which are as follows.

Private land which is titled and registered in the landholder‘s name. This includes land in the State's private domain, and land held by decentralized public authorities and private individuals. Public land which is held by the state for the benefit of the people of Cameroon. This land, which is inalienable, includes airspace, roads, maritime areas and water ways on public lands. Most of the land in Cameroon is unregistered and is classifieds national land ("*domaine national*"). Most rural areas where local communities live and pursue their livelihoods, and which are managed through community regimes (commons), fall into this category [79]. Two primary legal orders govern land

ownership, access and rights in Cameroon: customary law and statutory law. On the one hand, the statutory system of land ownership grants one a legal title and thus greater protections of land rights under the law. On the other hand, land registration remains a very costly, bureaucratic and lengthy process. Cameroon's primary land law, Ordinance No. 74–1 of 6 July 1974, established land tenure rules following the 1972 unification of the country.

A companion law, Ordinance No. 74–2 of 6 July 1974, addressed the governance of state land. These laws created a tenure system based on land registration: all privately-owned land must be registered and titled to retain its character as private land. All unregistered land is deemed to be either public land, which is held by the state on behalf of the public, or national‖ land, which includes unoccupied land or land held under customary law [80]. Registration is the main means of securing land tenure. It enables land holders to obtain land titles and is the only way of acquiring ownership rights. Although it is over a century since land titles were first introduced under the German protectorate (1896), only about 10 per cent of land in the country is registered [81]. As a result, around 90 per cent of land is in the national domain, and as such cannot be privately appropriated. This situation leaves the occupants of 90 per cent of the land in Cameroon with insecure rights, making them "de facto squatters" on their customary lands.

Today, there is a growing threat to local peoples' land tenure security which directly affects their social, cultural and economic development. This is due to the fast-growing large-scale land acquisitions by foreign and national companies, national governments, rich and powerful individuals [82]. Some giant projects like the Lom Pangar dam and Kumba-Mamfe road construction occupy huge land surfaces thereby destroying the livelihood base of communities who depend on land, forest, pasture and water resources and endangering Cameroon's biodiversity. Customary Land Tenure systems are threatened, and smallholder dwellers cannot defend themselves against the destruction of their livelihood base. Rural Cameroonians are deeply insecure in their land tenure. National law [83] provides some security of occupancy for unregistered lands which have a house, plots and farms, but only to the extent that limited compensation is payable for loss of permanent crops or infrastructure when the government requires the land for other purposes.

These include the right to grant unregistered land (most of Cameroon's land area) in absolute title, lease or exclusive occupancy licenses to loggers, miners, ranchers, biofuel or food entrepreneurs, or to itself (in the form of State Forests). The government may do this for two reasons: first, because the legal definition of public purpose is very loose, and second because Cameroonian law fails to acknowledge customary land-holding as amounting to real property interests, and therefore according to the protection of private property, including paying customary owners the market value for lands which government appropriates for public purpose [84].

Cameroon's land legislation of 1974 imposes the State as owner of all unoccupied and undeveloped land Prove of ownership is largely depended of having land registration document (title). Most rural dwellers, poor and marginalized people cannot afford the cost of making a land title and are unable to undertake the cumbersome procedure [85]. Private land is defined in ways which deliberately exclude unregistered property [86] and private land also appears to include the public and private property of the state [87]. The most important to be discussed here is land expropriation around the Kumba-Mamfe road construction project and the Lom Pangar dam project.

LAND EXPROPRIATION

The 1996 Constitution provides that no one shall be deprived of property except for public purposes and subject to the payment of compensation under conditions determined by law. The land laws of 1974, specifically Ordinances No. 74–1 and No. 74–3, state that the government can expropriate land for public, social or economic utility or at the request of local governance bodies and public service concessionaires if they have not been able to negotiate to acquire the land. Compensation can be in

cash or in kind and shall include payment for improvements and standing crops [88]. Expropriation refers to the acquisition of privately owned land by a public entity [89]. Also, Expropriation refers to the expropriation of land in the public interest: the state may use expropriation procedures in order to achieve general interest objectives. Public interest here according to the Legal and practical definitions are so general that they can include both public infrastructural projects like (roads, dams) and agro-industrial projects led by large private investors International and European laws generally permit expropriations that are; provided for by law, for a public purpose, and accompanied by adequate compensation [90].

First, expropriation must be provided for by clear and specific state laws. Such laws must contain adequate safeguards to ensure that Expropriations do not occur arbitrarily or for invalid reasons. In order to satisfy international standards of due process, the legal framework must provide landowners with notice of the expropriation and an opportunity to challenge the expropriation before a neutral decision-maker. Additionally, state laws must forbid discrimination between people on the basis of race, colour, sex, nationality, ethnicity, religion, class or any other status.

Second, expropriation is only permitted in order to achieve public interest. Though states interpret "public interest" differently, it generally signifies that the property, once put to the intended use, will benefit the community or country generally rather than a particular individual or group. For instance, national security, economic growth, and social justice usually qualify as public interests.

Third, expropriation must be accompanied by adequate, effective and prompt compensation. Adequate compensation generally includes the fair market value of the expropriated property, but certain circumstances may justify the payment of less than market value. Effective compensation may take the form of money, real estate, or other property rights. In practice, states often appoint an independent expert to assess property value, require that public authorities attempt to negotiate a voluntary sale price by the owner before resorting to expropriation, and permit property owners to Challenge the initial compensation figure. Expropriation refers to the expropriation of land in the public interest:

However, with regards to expropriation, it is evident that land expropriation took place in these project sides that is the Kumba-Mamfe road construction project and the Lom Pangar Dam in order for these projects to be realized. This can be seen as about 16 houses in three villages of which losses involve 328 households and concern 41.35 ha of farmland. The number of trees and perennial crops affected is twenty three thousand (23 000), of which five thousand (5 000) plantains and nine thousand (9 000) old cacao and coffee trees, and a village rubber plantation of one hundred and forty one (141 trees) in Mansa. There was also increased pressure on land, increased land clearing, agricultural intensification and soil degradation around the dam construction site.

Also the different categories of people and property affected are: nineteen (19) villages; eight hundred and fifty-five (855) households; forty eight (48) ha, that is five hundred square meters (561 m^2) per household, of food crops; forty one thousand, one hundred and forty nine (41 149) trees and perennial crops, of which seven thousand, six hundred and forty nine (7 649) banana trees, seven thousand, three hundred and forty two (7 342) old plantain and fifteen thousand and fifty one (15 051) cacao and coffee trees; sixty four (64) tombs, of which sixty (60) earth and four (4) cement tombs; sixteen (16) houses, of which eleven (11) in Kané, two (2) in Koumé Goffi and three (3) in Kambo Cassi; six (6) round huts, of which two (2) in Kano and four (4) in Koume Goffi. Therefore, expropriation concerns only sixteen (16) families along the HV Line construction [91]. Also the destruction of trees and crops (fruit trees, food and industrial crops) during the opening of quarries, construction of workers' camps and clearing of the right-of-way and the destruction of shops, residences, tombs etc. during clearing of the right-of-way along the Kumba-Mamfe road construction [92].

Involuntary Resettlement

Involuntary resettlement refers to physical displacement (that is. physical relocation of residence or loss of shelter), economic displacement (i.e. loss of assets or access to assets that leads to loss of income sources or means of livelihood) as a result of project-related land acquisition or restriction of access to natural resources [93]. Resettlement is considered involuntary when affected individuals or communities do not have the right to refuse land acquisition resulting in displacement [94]. Involuntary resettlement can be caused by Environmental degradation, natural disasters, conflicts or development projects. Even if the resettlement is prompted by public safety concerns (such as natural hazard-induced displacement), it is still considered involuntary if the resettled population has no choice to remain at their location. The involuntary resettlement is associated with loss of housing, shelter, income, land, livelihoods, assets, access to resources and services, among others. These losses occur as a consequence of declaring a public purpose in cases of: land acquisition, expropriation or restrictions on land use based on eminent domain, forfeiting of a livelihood/subsistence strategy dependant on the use of natural resources.

According to the African Development Bank (ADB), the overall goal of the Bank's policy on Involuntary Resettlement is to ensure that when people must be displaced they are treated equitably, and that they share in the benefits of the project that involves their resettlement [95]. They are some objectives that must be followed which are:

- To avoid involuntary resettlement where feasible, or minimize resettlement impacts where population displacement is unavoidable, exploring all viable project designs.
- To ensure that displaced people receive resettlement assistance, preferably under the project, so that their standards of living, income earning capacity, and production levels are improved;
- To provide explicit guidance to Bank staff and to the borrowers on the conditions that need to be met regarding involuntary resettlement issues in Bank operations in order to mitigate the negative impacts of displacement and resettlement and establish sustainable economy and society; and
- To set up a mechanism for monitoring the performance of involuntary resettlement programs in Bank operations and remedying problems as they arise so as to safeguard against ill-prepared and poorly implemented resettlement plans.

In order to achieve the overall objectives of this policy, projects that involve involuntary resettlement shall be prepared and evaluated according to the following guiding principles:

- The borrower should develop a resettlement plan where physical displacement and loss of other economic assets are unavoidable.
- Additionally, displaced persons and host communities should be meaningfully consulted early in the planning process and encouraged to participate in the planning and implementation of the resettlement program.
- Displaced persons should be compensated for their losses at "full replacement" cost prior to their actual move or before taking of land and related assets or commencement of project activities, whichever occurs first.
- The total cost of the project as a result should include the full cost of all resettlement activities, factoring in the loss of livelihood and earning potential among affected peoples.
- Particular attention should be paid to the needs of disadvantaged groups among those displaced, especially those below the poverty line, the landless, the elderly, women and children, and ethnic, religious and linguistic minorities; including those without legal title to assets, female-headed households. Appropriate assistance must be provided to help these disadvantaged groups cope with the dislocation and to improve their status.

Upon completion of the project, the borrower will prepare a Project Completion Report (PCR). This should be followed by the bank's own PCR. If either assessment reveals that any key objectives of the

resettlement plan were not achieved, follow up, measures should be developed in consultation with the borrower and the project affected persons to remedy the situation [96].

Also, with regards to the World Bank's policy on involuntary resettlement, its objectives and principles [97] are as follows:

- Avoid or minimize involuntary resettlement and associated disruptions.
- Treat resettlement as a sustainable development programs.
- Assist displaced people to improve their livelihood and standards of living or at least restore them to pre-displacement levels.
- Provide affected people with opportunities to participate in the planning and implementation of the resettlement programs.
- Also, the scope of application of the OP 4.12 applies [98] to:
- All components of the projects that result in involuntary resettlement, regardless of the source of financing the other activities requiring land take that are directly and significantly related to the bank assisted projects, necessary to achieve its objective as set forth in the project document and also carried out or planned to carried out, contemporaneously with the project.
- A project regardless of the total number of people affected or the significance or severity of the impacts.

Looking at the Kumba-Mamfe road project and the Lom Pangar dam project, one can notice that there was involuntary resettlement of the indigenous population around the project areas as about sixteen houses in three villages of which losses involve three hundred and twenty eight (328) households, 41.35 hectares of farm land, twenty three thousand (23000) trees and perennial crops were affected around the construction site of the dam. Along the HV line, nineteen villages were destroyed, forty-eight (48) hectares that is 561m square per household, food crops forty-one thousand one hundred and forty-nine (41149) trees and perennial trees were equally destroyed. With regards to the Kumba-Mamfe road project, shops, residences, cacao and crops were destroyed thereby causing involuntary resettlement to the indigenous population as their houses and economic activities of their livelihood.

All population displacements within the framework of the Lom-Pangar project have been carried out according to the OP 4.12 of the World Bank. Cameroonian legislation and the World Bank's OP 4.12 are applied. As a matter of fact, where these two sets of rules differ, the project will apply the one that is more favourable to people affected by the project. [99] This is the case with houses, for example, which are compensated according to their replacement value (according to World Bank rules) and not on the basis of their actual value (according to Cameroonian law). Also, the financing of ESMP activities under the ADB project will cover impact caused by the construction of the plant, two sub-stations and a transmission line. The overall budget of the ESMP and RAP will be CFAF 2.71 billion **[**100].

The Vulnerable Group

Some individuals or groups may be less resilient to risks and adverse impacts than others. individuals and groups who are at a higher risk of being unable to anticipate, cope with, resist and recover from project-related risks and adverse impacts are considered vulnerable. Vulnerable individuals or groups may include women, children, the elderly, the poor, ethnic, religious, cultural or linguistic minorities, or indigenous groups [101].

Vulnerability is not inherent and does not occur in a vacuum. Women for instance are not inherently more vulnerable than men; but discrimination, entrenched social roles and attitudes, poverty and lack of access to decision-making can weaken their resilience and render them vulnerable to adverse project impacts [102]. Vulnerability is thus context-specific and is to be understood through the interplay of three factors which are exposure to risk and adverse impacts, sensitivity to

those risks and have a weaker adaptive capacity for coping with those risks and recovering from those impacts, due to limited access to necessary assets. As a result, they risk being disproportionately affected by project-related risks and adverse impacts. Thus, Vulnerability can be understood in terms of a lack of resilience to changes that threaten welfare; these can be environmental, economic, social and political, including those linked to project impacts. Such changes usually bring risk and uncertainty. Poverty, isolation, insecurity, entrenched social attitudes, gender roles, systemic discrimination and language barriers, amongst others, constitute causal factors for the emergence or reinforcement of vulnerability.

It is evident that in these project areas, there were vulnerable people who needed special attention from the investors in order for the vulnerability to be reduced. With the issue of this vulnerable group that were in these project areas, the Cameroonian legislation makes no specific arrangements on how the vulnerable group around the Lom Pangar dam and the Kumba-Mamfe road project should be treated. But however, the World Bank (WB) made specific procedures with particular attention to those who live under the poverty level, persons with no land, old persons, women and children, and ethnic minorities.

CULTURAL HERITAGE

Cultural Heritage is respected and promoted by the European Investment Bank (EIB) in the regions it operates in. Their aims are safeguarding unique and irreplaceable cultural heritage and at guiding promoters to integrate cultural heritage management into their operations so as to avoid or mitigate the adverse impacts of their project's activities on cultural heritage. In order to effectively promote and respect cultural heritage, international conventions [103] were put in place. It was recognized that cultural heritage is about far more than 'stones and bones' from the past [104], the term including a wide variety, and incorporating all the aspects, of a community's past and present that it identifies as a reflection and expression of its constantly evolving values, beliefs, knowledge and traditions and which it considers valuable, and desires to sustain and transmit to future generations, mainly: "tangible heritage", such as buildings, industrial structures and technology, landscapes and artifacts, having archaeological (prehistoric), historical, cultural, artistic, or religious value and non-visible cultural heritage features and; "intangible heritage", such as language, visual art, music, performance, religion, beliefs and customary practices like hunting and gathering.

With regards to cultural heritage in these project areas, it is seen that both tangible and intangible cultural heritage was destroyed in these project areas. For instance, we have ancestral sites, graves, traditional song, and dialect. Sacred sites were identified in nine villages around the Lom Pangar dam. These often include trees, sites marked by the presence of water and sometimes artefacts (tombs, esplanade, etc.). Also, some secret sites were identified along the Kumba-Mamfe road project and with graves which were mostly at the compounds.

Looking at graves whose destruction was really evident in these project areas is important in that, it functions as much for the living as they do for the dead [105]. For the dead, graves might be understood as an unchanging, perpetual and specialized place of dwelling, or a transformative space in which one might enter into a new form of existence. For the living, graves serves not only to hold the remains of the deceased, or to memorialize the existence of an individual but significantly a grave or collection of graves might also serve to mark the boundary of a given place or to signal possession or ownership of a territory.

Within ancient Near Eastern ancestor cults, perceptions of the continued existence of the dead were bound up with the family household; death did not break these domestic relationships, it merely altered the nature of family members' interaction with one another. The ancestors played an important dual role within the lives of their descendants: they bore some responsibility for the fertility and perpetuation of the family line. Also, with the diverse cultures and tradition in Cameroon, tombs or graves are significant to many communities as the family members of those that were buried in those

graves make some incantation and sacrifices on those graves to their ancestors when there is misfortune in the family believing that the ancestors are not happy and therefore needs to be appease before successes can be achieve in the family.

In addition, ancestral sites like shrines of which most communities worship especially on their Sundays "country Sunday" [106], they believe that their gods lives there and so they depend on those shrines or their gods for the success of their communities and therefore offer sacrifices of various nature and gather there every "country Sunday" to worship their god and offer sacrifices either to thank the gods or to petition for something. They believe that every good thing comes from their god and so do misfortune. So with the destruction of these graves, and some other aspects of cultural heritage in order to achieve these investment projects, these effects are permanent and irreversible because no matter the compensation that was given to them will never be able to measure up to their lost of which it can never be replace. This therefore has brought a lot of hindrance to the day to day activities and interaction of the indigenous population. With regards to intangible cultural heritage such as songs, and dialect, this affected population will really face a lot of difficulties especially if they are resettled in totally different communities of which the language is different and equally their traditional songs. With all these, their social ties with one another will be cut off and no matter the compensation given to them; it will not be able to measure up to the loss.

COMPENSATION

Few communities can even claim compensation when their lands are designated as national property or public property, or the former allocated to others in the interest of 'public purpose. The extent of lands which may be compensated for due to appropriation for public purpose is limited. Law No. 85/09 of 1985 governs expropriation, with more procedural provisions provided in Decree 87–1972 of 1987 and an Instruction of June 2007. These establish that only private properties (i.e. registered parcel) which are taken for public purpose are eligible for compensation. However, compensation is also made obligatory for bona fide owners or occupants on National Lands or State Lands (Ordinance No. 74–2 of 1974, Section 7).

This promise is then diminished through the requirement that the land be 'effectively occupied' that is, with buildings, plantations, farms or animal enclosures physically evident [107]. Compensation for cultivated lands and houses held by registered and titled owners is payable in monetary form or by allocation of land of the same value. If the latter, this must be located as far as possible in the same Council area as the expropriated land as provided by Law No. 85/09 Section 8. In principle compensation is to be awarded before eviction, but at the same time the beneficiary of the expropriation may occupy the premises before eviction of the previous owner occurs as provided by Section 4 (3). Meanwhile the vast majority of customary landowners, those without any such certificate, are not eligible for compensation for loss of their lands.

This is an example of Njombe, where fruit farmers argued that they had been displaced and unfairly compensated for their land by the company, Plantations du Haut Penja, (PHP) [108]. After failing to evict the farmers through a court order, PHP pursued an out-of-court settlement with the farmers with the understanding that they would be properly compensated for their crops and would have six months to retrieve them from their fields. At the end, however, the farmers received compensation that was much lower than their own assessment and their fields were cleared by PHP tractors prior to the six-month grace period. This case clearly demonstrates that only those that have land titles are adequately compensated. Also, there are times that compensation does not comes immediately after the destruction, this was the case of a small fishing community of Ebomé, a village in the district of Kribi located at the point where the pipeline reaches the Atlantic Ocean.

This formerly prosperous community saw its local economy destroyed when a reef rich in fish stocks located two kilometers off the coast was blasted by dynamite. Apparently, this reef had not

been identified when the impact assessment for the project was carried out, and its destruction did not give rise to any immediate compensation, despite the protests of the fishermen. Five years later, an artificial reef was created in the same spot, but the fish never returned. It should be noted that, for the community of Ebomé, the reef was also a sacred site, the home of the "mami wata" or water spirits, who were responsible, among other things, for attracting the fish and putting them at the disposal of the village. The destruction of the reef was believed to have angered and driven off the spirits [109].

Considering all this as provided by the law of compensation, it can be seen that only those with land tittles were effectively compensated for the expropriation of their land, destruction of property and equally those not having land tittles but who effectively occupy the lands with buildings, cultivated farms of which compensation is limited. However, with respect to land ownership in these project areas, it is seen that most affected people own and manage their land under the customary system as very few have land titles. Also, with regard to compensation for the destruction of property by land expropriation for public utility, structures are classified into six categories [110], depending on the nature of the materials used. Each category has a particular rate of compensation which takes account also of the dilapidated state of the investment. The existing compensation rates run between 1960 and 1990.

With regards to compensation for expropriation around the Lom Pangar area for Public utility, some laws were put in place [111] which are; Decree No. 2012/0034/PM of 24 January 2012 on the compensation of victims of destruction of property in the framework of the construction of the hydroelectric dam at Lom Pangar, in the East Region, the Order No.00237/MINLCLA/SG/D1/D14/ D142 of 10 February 2012 on the procedures for payment of compensations to victims of destruction of property during the construction of the hydroelectric dam at Lom Pangar in the East Region. Decree No. 2012/1631/PM of 11 June 2012 on compensation for victims of the destruction of their property during the works of construction of a mini hydroelectric plant on a public property located at a place called Mekin. In addition, with regards to livelihood, the law clearly provides that compensation should be made for it and compensation for the destruction of cultural heritage by the investors.

Compensation here was evaluated in two different forms which are compensation in cash and in kind given to the affected persons around the Lom Pangar dam; compensation was proposed as follows [112]: For graves, an indemnity of eighty thousand (80 000) FCFA was proposed for the exhumation and burial in a new earth grave, one hundred and twenty thousand (120 000) FCFA for exhumation and burial in a new cement grave and one hundred and forty thousand (140 000) FCFA for exhumation and burial in a new tiled grave. Without burial, a sum of eighty thousand (80 000) FCFA will be given for the ceremony.

For sacred sites, the indemnity corresponds to the cost of animal sacrifices and the cost of meals and drinks. It amounts to about one million (1 000000) FCFA/site. With regards to dwellings and public buildings affected (churches, mosques, etc.) will be replaced in the relocation villages by buildings with at least an equivalent surface area, and with improved standards (made of bricks covered with cement and with a sheet metal roof). Importantly, houses with two rooms will replace one-room houses and huts. Semi rigid exterior kitchens and private latrines will be installed systematically. With regards to forest resources, it is difficult to scientifically evaluate the value of non-cultivated resources (such as non-timber forestry products, for example) for each village that will be submerged by the reservoir. Compensations for loss of forestry products are taken into account in the framework of the development support actions integrated in the ESMP.

Concerning compensation for land expropriation, it was acknowledged by the Lom Pangar dam investors that, those with land titles are to be appropriately compensated, those occupying land under customary land system, the Cameroonian law provided that they will likely be compensated while the World Bank (WB) acknowledged their compensation and so did the investors. Those occupying land

illegally after the expiration date were not acknowledged for compensation by the Cameroonian law and the WB [113]. Also, compensation was acknowledged for those whose livelihood was affected, for instance those who were refused from fishing and carrying out their hunting activities.

For fishermen, the consultant proposes payment of a fixed indemnity of three hundred thousand (300 000 FCFA) [114]. However, it can be seen that despite the acknowledgment to compensate those who lose their likelihood, it was seen that this was not done [115]. The pending compensation of the affected grassroots community for losing their livelihood by virtue of the fact that they have been forbidden from hunting and fishing in the Deng Deng forest reserve and the Lom Pangar river bands respectively in return of nothing. Also, there was no compensation to the affected communities regarding the construction of electricity grid across their farm lands and houses.

With regard to compensation along the Kumba-Mamfe road project, payment for fair and equitable compensation to persons affected by the project for property is identified in the Compensation and Resettlement Plan (CRP). The budget estimate for the three road segments, including the cost of monitoring CRP implementation, is 1,358,493,437cfaf [116]. This amount must be paid by the Cameroon government prior to the commencement of works. Compensation is paid for buildings, crops, tombs, wells and public taps within the project right of way. In this project area, ten (10) plots or bare land was identified, one hundred and ninety two (192) buildings, five hundred and fifty one (551) trees and young crops, one thousand five hundred and fifty four (1554) trees and full grown crops, twenty five (25) tombs, seven (7) public taps and seven (7) wells [117]. The amount of money allocated for plots or bare land was 45,170,000fcfa, crops and cultivated trees was 53,859,775fcfa, buildings and accessories 1,107,909,259fcfa, tombs was 8,755000fcfa and wells and public taps was 8,300,000fcfa [118].

Despite the fact that the OP4.12 provides that displaced people should be assist to improve their livelihood and standards of living or at least to assist them to pre-displacement level, it is notice that those affected by the grid line that past over their farmlands and houses were not provided compensation, also those occupying land after expiration period were not compensated and equally though compensation was provided for those who lost their livelihood in the first ESIA, the other ESIA did not provide for their compensation. With regards to all these, standards of living cannot be raise but instead the affected people will instead become poorer.

The Spread of Diseases

Infrastructural investment projects bring about the spread of sexually transmitted diseases, cardiovascular disease that is lung and heart diseases and water born disease. With the presence of the investors and many workers employed, it brings about high crime wave that is prostitution in these areas thereby rapidly spreading sexually transmitted diseases like HIV /AIDS [119] amongst the workers and the indigenous population in these areas due to the presence of contractors, and staffs in the project sites. Also, with regard to lung diseases, this comes about as a result of dust and air pollution being generated in these project areas by heavy tractors and sophisticated machines being used by the investors. Equally, water borne diseases comes as a result of water pollution that takes place around the project areas. This is as a result of heavy machines, tractors that are being used in these sites which shakes the ground thereby polluting ground water and brings about diseases like typhoid. For instance, the grassroots communities suffered from air pollution caused by dust as a result of the degradable road leading to the Lom Pangar dam site made their children suffer thereby increasing medical care to the communities.

In order to mitigate the spread of sexually transmitted diseases like AIDS, there was awareness rising of STI/AIDS and environmental protection including issues relating to water and soil conservation (WSC) and riverbank protection techniques [120]. Also, around the Lom Pangar dam there is health screening during recruitment and information on STIs, including AIDS; health follow-up in construction sites, site safety plan [121].

CONCLUSION AND WHERE FROM HERE

This paper has it that the Kumba-Mamfe road project and the Lom Pangar Dam have brought about many environmental challenges which are on biodiversity, desertification, soil, water and noise pollution and climate change because of deforestation in these project sites. Though some of these were mitigated, yet some were not though it was identified that they will be prevented or mitigated. This is for instance air and soil pollution, climate change, desertification and equally some wild animals especially the monitor lizards taking into consideration that these projects were carried out by the Chinese who are known to be lizard eaters.

These infrastructures are as a result of many social effects like land expropriation which resulted to involuntary resettlement, vulnerable group, the destruction of cultural heritage, the spread of diseases and inadequate compensations. Infrastructure being a double-edged sword which brings about economic development and environmental harm, it can be clearly seen in this part how infrastructure have brought about both environmental and social harm. With all these effects, one can say that economic development or infrastructures are often chosen over the environment and while the environment and the society are often over looked, so the efforts to strike the balance between the two is often not realise by the government of Cameroon.

The government should improve accountability; strengthen the effectiveness of the authorities in charge for environmental protection. This will provoke the environmental authorities to carry out their assigned duties and ensure that all the ESIA process are followed by the investors and this will make the investors to be transparent with all the ESIA thereby including everything that is needed to protect the environment

We propose that the government should effectively apply the legislations for environmental protection and implement sanctions on violators. This will make the investors to be conscious of their acts that may cause injury or harm to the affected communities.

In addition, if the government can make a legal change that is by upholding customary land interest as rights of land ownership and not just as rights of occupation and use. This will help the poor indigenous population who cannot afford money to register their land to be recognized as landowners.

WB's OP4.12 of providing assistance and improving the living standards of the displaced people or even restoring the affected people should be effectively applied. This will provide compensation for all the affected people especially those electricity grid destroyed their farms and houses and equally those illegally occupying land if the policy must be attain.

Also, if the state can make specific provisions in the law on how the vulnerable people are to be treated in a special way. This will help to reduce street children and beggars.

REFERENCES

1. Tim Everett, Mallika lshwaran and Co, Defra Evidence and Analysis Series paper 2, Economic Growth and Environment, p. 5, March 2005.
2. John D. Shilling & Co, the Nexus between Infrastructure and Environment, the Evaluation Cooperation Group of the International Institutions, June 2007, p.5.
3. CCICED Annual General Meeting 2011 on Investment, Trade and the Environment our Framework of Analysis, p.2.
4. Danya Satter and Co, Conservation of the natural environment and social investment, Big Society Capital, Social Investment Insights Series April 2015, p.4.
5. Larsen Gaia and Athena, Striking the Balance between Investment and environment, ownership and accountability in social and environmental safeguard, WRI.Org, p.8.
6. Sylvia Bankobeza UNEP, International Environmental Law and Policy, p.10.

7. Rodrick Ndi, et al., Double Sale of One and The Same Piece of Land in Cameroon: The Legal Implications. *National Journal of Real Estate Law*. 2019; 2(1): 1–12p. See also Egbe Samuel Egbe. *The Concept of Community Forestry under Cameroonian Law*, The African Society of International and Comparative Law, African Journal of International and Comparative Law, Vol. (2000), 12 Pt. 2.
8. Uwem EU. Environmental Degradation in the Niger Delta: A Critique of Existing Law for Curbing Degradation, in Nigerian Environmental Law Review vol. l, C.A Omaka (ed), 2007, Kingdom Age Publications 2007, at 67. See generally Ignation Prieto & Raul Noceda, Legal protection of the environment in developing countries, being the colloquium of the International Association of legal Science, (1974), p.27.
9. National Environmental Standards Regulation Enforcement Agency (Establishment Act) 2007. Section 37. See also OMOTOLA, J.A., Environmental law in Nigeria, the Caxton press (West Africa) limited Ibadan, (1990), p.1.
10. See article 4 (k) of Law No 96/12 of 5th August 1996 relating to Environmental Management in Cameroon. See also Muam Chi A., Cameroon environmental law within the framework of sustainable development ARIKA, Yaoundé, Cameroon ISBN, (2017), P.34.
11. African Development Bank (ADB), Integrated Environmental and Social Impact Assessment Guidelines, October 2003.
12. Klaus Topfer, Executive director, UNEP, The Training Manual on International Environmental Law, op-cit, p.183.
13. Ibid.
14. Ibid p.184.
15. Convention on Biological Diversity (CBD), Convention on International Trade in Endangered Species of wide Fauna and Flora (CITES), Convention on Migratory Species (CMS), Convention on Wetlands of International Importance especially as waterfowl habitat (ILM 1972), Convention concerning the Protection of the World Cultural and Natural Heritage (ILM 1972).
16. African Convention on the Conservation of Nature and Natural Resources (1968) 001 UNTS4, The Treaty on the Conservation and Sustainable Management of Forest ecosystems in Central African and to establish the Central African Forest Commission (COMIFAC).
17. Law No 96/12 of 5th August 1996 Relating to Environmental Management, Law No 94/01 of 20th January 1994 to lay down Forestry, Wildlife and Fishery Regulation.
18. Awung WJ. Underlying Causes of Deforestation and Forest Degradation in Cameroon. World Rainforest Movement.
19. Liviu Ameriei. Legal Compliance in the Forestry Sector: Case Study Cameroon, P.6, Final Report 7th January 2005.
20. Ibid, p.7.
21. Amarie L. Legal Compliance in the Forest Sector. Case study: Cameroon. 2005, Final Report, p.4.
22. Hunter D. and Co, International Environmental Law, 2nd Edition, 2006, New York, Foundation press, p. 622.
23. Justice Nchunu Sama and Electha Bih Tawa, I U C N—ELC 2009 REDD—Legal Framework. Case study Cameroon, p.1.
24. Law No 94/01 of 20th January Relating to Forestry, Wildlife and Fisheries which refers to the 1994 Forestry law.
25. African Development Bank, Energy, Environment and Climate Change Department, Republic of Cameroon, Lom Pangar Hydroelectric Power. Summary of The Environmental and Social Impact Assessment, (ESIA), p.16.
26. Ibid, p.19.
27. African Development Bank, African Development Fund. Summary Environmental and Social Impact Assessment of the Kumba-Mamfe Road Development Project. Cameroon Infrastructure Department July 2012, p.8
28. ADB, Ibid, p.10.

29. African Development Fund, Cameroon: Kumba-Mamfe Road Development Project, Project Appraisal, p.19.
30. Law, Section 78(2) of the 18th December 2006.
31. Robinson Djeukam and Co, Wildlife Law as a tool for protecting threatened species in Cameroon, P.5, March 2012.
32. Oliver Njuh Fuo & Sama Miemuna Semie, *Cameroons Environmental framework law and balancing of interest in socio-economic development* in the balancing of interest in environmental law in Africa, June 27th 2012, Michael Faure &Willemien du Plessis (editors), Pretoria University law press, South Africa, World Bank, Washington DC, p.80.
33. ADB, Summary of ESIA of the Kumba-Mamfe road project, op-cit, p.12.
34. Ibid.
35. African Development Bank, Energy, Environment and Climate Change Department, Republic of Cameroon LPHP Summary of ESIA.
36. Dinah Shelton & Alexandre Kiss, Judicial Handbook on Environmental Law, op-cit, p.87.
37. ADB, Summary Environmental and Social Impact Assessment of The Kumba-Mamfe Road Development Project in Cameroon, Ibid, p.7.
38. ADB, Energy, Environment and Climate Change Department, Lphp, Op-Cit, p.14.
39. African Development Fund, Kumba-Mamfe Road Development Project, Project Appraisal Report, p.19.
40. Charles Linjap, I-Watch, Investment Watch Initiative. Appraising Development Effectiveness for the affected grassroots communities within the scope of the Lom Pangar Dam project. report on community-company dispute within the construction phase of the Lom Pangar Hydroelectric project, January 2014, p.18.
41. The centre for our Common Future, Down to Earth, 1995, in Hunter D., j. Salzman & Z. Durwood, op-cit, p.1147.
42. Klaus Topfer, The Training Manual on International Environmental law, op-cit, p.276.
43. Hunter D., J. Salzman and Z. Durwood, op-cit, p.1148.
44. Klaus Topfer, The Training manual on International Environmental law, op-cit, p. 111.
45. Ibid.
46. Ibid.
47. Ibid.
48. African Development Bank, Energy, Environment and Climate Change Department, Republic of Cameroon, Lom Pangar Hydroelectric Project, Summary of the Environmental and Social Impact Assessment (ESIA), P 15.
49. African Development Bank (ADB), Energy, Environment and Climate Change Department, Ibid p.16.
50. Dinah Shelton and Alexandre Kiss, United Nations Environmental Programme, Judicial Handbook on Environmental Laws, Introduction by Hon. Judge Christopher G. Weeramantry.
51. Klaus Topfer, op-cit p.92.
52. Ibid p.80.
53. Summary Environmental and Social Impact Assessment of the Kumba-Mamfe Road Development Project, op-cit p.7.
54. Charles Linjap, I-Watch, Investment watch initiative, p.18.
55. Salman M.A Salman and Daniel D. Bradlow, Regulatory Framework for Water Resources Management. A Comparative study p.32.
56. The Judicial handbook and Environmental law, p 65.
57. The World Bank, Law, Justice and Development series.
58. Klaus Topfer, op cit, p.245.
59. Dinah Shelto & Alexandre Kiss, op-cit p.65.
60. Ibid, p. 245.
61. Ibid, p.65.
62. The World Bank, Law, Justice and Development p. 2.

63. Earth Summit, Agenda 21, United Nations Programme of Action from Rio, UN, United Nations Publication 1993.
64. Klaus Topfer, The Training Manual op-cit, p.247.
65. Dinah Shelton & Alexandre Kiss, Judicial, op-cit, p.69.
66. Law No-98/005 of 14th April 1998 laying down Regulations Governing Water Resources and provisions to safeguard the Principles of Environmental Management and Public Health Protection.
67. Ibid, article 2(1).
68. Ibid Article 9.
69. Lom Pangar Resume Environmental and Social Assessment, p.10.
70. ADB, Summary of Environmental and Social Impact Assessment of the Kumba-Mamfe Road Development Project, OP-CIT p.7.
71. ADB, Energy, Environment and Climate Change Department, LPHP, OP-CIT p.14.
72. ADB, Summary of Environmental and Social Impact Assessment of Kumba-Mamfe, op-cit, p.9.
73. Dinah Shelton & Alexandre Kiss, Judicial Handbook on Environmental Law, op-cit, p.115.
74. For example, article 261 of Cameroonian penal code of 2016 punishes any pollutant with an imprisonment term of fifteen days to six months and a fine of five thousands FCFA to one million FCFA or any of the two.
75. Ibid, article 261(b).
76. Summary Environmental and Social Impact Assessment of the Kumba-Mamfe Road Development Project, op-cit, p.7.
77. ADB, Energy, Environmental and Climate Change Department, Republic of Cameroon, LPHP Summary of the ESIA, OP-CIT p.14.
78. European Investment Bank, *Environmental and Social Handbook*, Environment, climate and social office, Projects Directorate, version 9.0 of 02/12/2013.
79. Pierre-Etienne and Co, Land Investment accountability and law: Lessons from Cameroon, p.5.
80. United State Agency International Development (USAID) from the American People USAID, Country Profile, Property Rights and Resource Governance. Cameroon, p.6.
81. Pierre-Etienne and co op cit.
82. Fon Nsoh, Defending community land rights in Cameroon, tools and approach. p.2.
83. Ordinance No. 74–2 of 1974, section 7 of 6th July 1974 to Establish Rules Governing States lands.
84. Liz Alden Wily, Centre for environment and development/ FERN/ the Rainforest foundation UK. Whose Land is it? The status of customary land tenure in Cameroon, editor, Fd Fenton, printed by Redline print limited on recycled paper, February 2011, p.11.
85. Liz Alden Wily, Op-cit, p.4.
86. Ordinance No.74–1 of 1974 section 2 op-cit.
87. Ibid, Section 14(1).
88. USAID Country Profile op-cit.
89. Expropriation in Europe, January 2013, p.2.
90. Ibid.
91. Environnemental Résume, Environnemental et social op-cit, p.12.
92. African Development Bank, Government of Cameroon, Summary Environmental and Summary Impact Assessment of The Kumba-Mamfe Road Development Project In Cameroon, Infrastructure Development Oitc July 2012, op-cit, p.7.
93. Environmental and Social Policy, PR5: Land Acquisition, Involuntary Resettlement and Economic Displacement, p.1.
94. European Investment Bank op-cit., p.54.
95. ADB, Involuntary Resettlement Policy, November 2003, pp.17–18.
96. ADB, ibid, p.32.
97. Afshan Khawaja, OPCQC Zagreb, *Involuntary Resettlement, Operational Policy* OP 4.12, May 2009, p.5.
98. Ibid, p.7.
99. ADB, Energy, Environmental and Climate Change Department, op.cit., p.19.

100. ADB, ibid, p.21.
101. European Investment Bank, Ibid, P. 63.
102. The European Investment Bank, ibid, p. 65.
103. Convention concerning the protection of the World Cultural and Natural Heritage 1972, Convention for the Safeguarding of the Intangible Cultural Heritage, 2003 (UNESCO Intangible Heritage Conventional), Council of Europe Convention for the Protection of the Archeological Heritage of Europe,1992 (revised version of the convention adopted in 1969).
104. European Investment Bank op-cit, p.47.
105. Francesca Stavrakopoulou, *Placing and Displacing the Dead in the Book of Kings*, University of Exeter, Society of Biblical Literature San Diego, P. 1, November 2007.
106. This is a special day of the week set aside by a community not to go to the farm but to go and worship their gods in their shrine.
107. Liz Alden Wily, op-cit, p.56.
108. Sandra Belaude and Co, Land Legitimacy and Governance in Cameroon, Institute for Research and Debate on Governance and Columbia University school of International and Public Affairs, 2010, p.31.
109. Samuel Nguiffo (CED-AT) Cameroon, World Rainforest Movement (WRM), Infrastructure, development and natural resources in Africa: A few examples from Cameroon, posted on July 4th 2014 included in Bulletin203.
110. Order No 0832/1.15.1/MNUH/D000 OF 20TH November 1987 laying Down the Bases for calculating the market value of the Buildings Affected by Expropriation for Public utility.
111. Georges Jay, Jean Paul Grandjean, Cameroon Network of Human Rights Organisations (CNHRO), Respect Of Human Rights On Sites Of Major Projects in Cameroon: Case Study of Lom Pangar, Mballam, Nkamuna and Mobilong, Observation Report, Yaoundé—Cameroon, op-cit, p.35.
112. Ibid, p.24.
113. EDC, Projet Hydroelectrique de Lom Pangar, Plan d'indemnisation et de Reinstallation, Ibid, P.18.
114. EDC, Projet Hydroelectrique de Lom Pangar, Plan d'indemnisation et de Reinstallation Ibid, P. 24.
115. Charles Linjap (Executive Manager Of Investment Watch), I-Watch, Investment Watch Initiative, Working For Inclusion, Report on Community-Company Dispute within the Construction Phase of the LPHP, P. 18.
116. ADB, Summary ESIA on Kumba-Mamfe road project, p.8.
117. ADB, ibid, p.22.
118. ADB, ibid, p.21.
119. ADB, Summary ESIA of the Kumba-Mamfe Road Development Project in Cameroon, ibid, P.7.
120. ADB, ibid, p.10.
121. ADB, Energy, Environment and Climate Change Department, op-cit.

