Journal of Economics and Sustainable Development
ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online)
Vol.9, No.12, 2018

Opportunities and Challenges of Sustainable Forest Management for a Green Economy Transition in Cameroon

Joe Eyong Assoua[1, 2*] Ernest L. Molua[1,2]
1.Centre for Independent Development Research (CIDR), P.O. Box 58 Buea, SWR, Cameroon
2.Faculty of Agriculture and Veterinary Medicine, University of Buea, SWR, Cameroon
* Corresponding Author
Faculty of Agriculture, University of Buea, Cameroon,
P.O. Box 63 Buea, Cameroon

Abstract
The unfolding biodiversity and climate crises provide an opportunity to reconsider orthodox growth and business models. These concurrent crises have been considered as key drivers of the new paradigm of green economy. Beyond the direct provision of timber products, forests play different roles in the carbon cycle, and are a foundation for the green economy. With recent developments on issues related to sustainable development in the face of the urgency to mitigate the challenges posed by climate change, and in making the transition towards the green economy, the linkage between sustainable forest management and green economy has gained new policy momentum. In this study, we adopt a qualitative review to highlight the potentials of the forest sector in contributing to a green economy transition in a typical developing country such as Cameroon. The paper underscores the principal challenges and opportunities for more sustainable and equitable management of forest resources, and unveils the range of green investments in forests and their likely implications on the timber industry, community livelihoods and ecosystem services. The paper establishes that sustainable forest management and biodiversity conservation is central in the transition to a green economy.
Keywords: Cameroon, Green Economy, Forest, Sustainable Management.

1. Introduction

The concept of green economy (GE) has emerged in recent years alongside various other interrelated concepts such as green growth (GG), low carbon development (LCD), and climate resilient development (CRD) as a response to the recent financial and biodiversity crises, and a rapidly changing climate (Organisation for Economic Co-operation and Development (OECD), 2009; 2012; United Nations Department of Economic and Social Affairs (UNDESA), 2012; Lederer et al., 2018; Ahenkan et al., 2018; Bina and La Camera, 2011; Bina, 2013).In 2008, the United Nations Environment Programme (UNEP) launched its Green Economy Initiative (GEI) to provide analysis and policy guidance for investment in green sectors and for greening resource and pollution intensive sectors. A green economy has been defined by UNEP as one that results in *"improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities"* (UNEP, 2011). The Global Green New Deal (GGND) launched by UNEP in 2008, describes the greening of the economy as the *"process of reconfiguring businesses and infrastructure to deliver better returns on natural, human and economic capital investments, while at the same time reducing greenhouse gas (GHG) emissions, extracting and using less natural resources, creating less waste and reducing social disparities"*.

The GGND published in April 2009 called on governments to allocate a significant share of stimulus funding to green sectors and set out three objectives which include economic recovery, poverty eradication, and reduced carbon emissions and ecosystem degradation; Basically, the main goal is to achieve low carbon, efficient resource use, and socially inclusive growth (UNEP, 2009). In June 2009, the United Nations (UN) released an interagency statement supporting the GE as a transformation to address the plethora of global crises. In 2012, GE in the context of sustainable development and poverty eradication was one of the two specific themes of the United Nations Conference on Sustainable Development (UNCSD), dubbed Rio+20 (UNDESA, 2012). Green economy has been broadly identified as an important tool for achieving sustainable development(OECD, 2015; United Nations Conference on Trade and Development (UNCTAD), 2011;Phoochinda, 2018). The Sustainable Development Goals (SDGs) accentuate the need to balance objectives and potential trade-offs between poverty eradication, growth and sustainability (Bulkeley et al., 2013). Goal 15 of the SDGs which states, "s*ustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss*" and Goal 13 which asserts, "*take urgent action to combat climate change and its impacts*", place forest management and sustainability into the international development framework and agenda. Greening the economy by investing in natural assets (forests) can spawn consistent and positive outcomes for increased wealth, economic growth, poverty reduction and job creation (UNEP, 2011). Forests can thus be regarded as a critical nexus in the transition to a green economy since they serve to promote sustainable development, poverty alleviation and job creation. Forests provide ecosystem services such as shelter, catchment protection and carbon sequestration. They are a source of livelihood for many communities (e.g. indigenous

peoples) and provide medicine to many people as well as regulate the global climate. Markets to ease payments for such services have been created in a number of countries and also globally. According to Shvidenko et al., (2005), forests sustain more than 50% of terrestrial species and play a fundamental role in protecting watersheds, regulating climate, promote provision of low carbon solutions and build resilience against climate change.

In a nutshell, forests play wider economic roles in shaping a green economy as factories producing timber and food and as ecological infrastructure (climate regulation and water-resource protection). In other words, forests are the major enablers of a green economy. Figure 1 shows the three pillars of a green economy. The three pillars include resource use efficiency, low carbon technology, and socially inclusive growth. All these put together leads to innovation, productivity, and job creation. Green economy transition by greening the forest sector will stimulate growth and sustainable development, while increasing sustainable management of natural assets and social inclusiveness. The Intergovernmental Panel on Climate Change (IPCC) projects that the resilience of many ecosystems will be destabilized by climate change, with rising carbon dioxide (CO_2) levels reducing biodiversity, damaging ecosystems and compromising the services that they provide (IPPC, 2007). However, tropical forests are particularly vulnerable to the effects of climate variability and climate change, and at the same time they have the capability to reduce both social and environmental vulnerability.

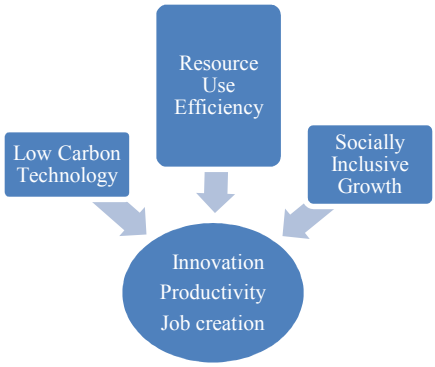

Figure 1: Three Pillars of Green Economy (Source: UNEP, 2011)

African countries, as well as developing countries such as Cameroon are now at a crossroad to make history as potential enablers of GE. Cameroon's forest contributes immensely to the country's socio-economic and socio-cultural landscape. Cameroon's forests represent about 11% of the Congo Basin forest occupying more than 45% of the national territory (Greiber and Schiele 2011; Food and Agriculture Organization, 2005). Cameroon is among the world's top five tropical log exporters, and it is the second largest exporter of tropical logs within the Congo Basin. With more than 20 million hectares of moist tropical forest, the forest sector of Cameroon provides a range of ecological, economic and social services (Greiber and Schiele, 2011). Cameroon is Africa in miniature; 92%of all African ecosystem and 84% of all known African primates are represented in the country. Forests regulate and stabilize the climate, offer soil, spring, stream and watershed protection, soil fertility replenishment, regulate water cycles, and host a wide variety of medicinal plants. They also provide a wide range of non-timber forest products (NTFPs), as well as cultural, spiritual values, and aesthetic qualities. Cameroon's forests being part of the large ecosystem of the Congo basin represent an important carbon sink, through carbon sequestration and play an important role in mitigating the emissions of CO_2. With the recent concurrent crises that have unfolded during the last decade (biodiversity, food, water, climate), Cameroon's forestry authorities are now recognising the potentials from financial markets for the ecosystem goods and services that national and community forests provide, such as storing carbon in biomass, clean water, clean air, habitat for fauna and more significantly carbon sequestration.

Notwithstanding the multiple-functions which place the forest at the underpinning of the green economy, sustaining a broad range of sectors and livelihoods, we have been witnessing a rapid depletion of forestry resources for limited private and short-term revenue gains which could compromise its role and function in a green economy. Illegal logging is widely recognised as a perennial constraint to sustainable forest management in Cameroon. Also, vast forests are being cleared annually to make way for small and large-scale agricultural land; the rights of indigenous peoples are not respected and protected. Also, there is an increasing rate of desertification in the northern regions of the country as the demand of fuel wood increases, land degradation caused by poor agricultural practices, and an increasing rate of deforestation which is unprecedented. Cameroon currently lacks a green economy development policy for the forest sector which is further compounded by lack of profound understanding of the concept of green economy by the various stakeholders, a weak institutional and legal framework, and a lack of human and material resources. The main purpose of this paper is to assess the potentials of the forest sector in contributing to a green economy transition in Cameroon.

The remainder of the paper proceeds as follows: the methodology is presented in section two. In section three we highlight some options for greening the forest sector and associated value-chain in Cameroon. Here, the challenges and opportunities for greening the forest sector are presented, as well as the enabling conditions for a green economy. The paper concludes in section four with some policy prescriptions.

2. Methodological Approach

This is a qualitative review of published materials of leading private, public, international and non-governmental organisations. Policy documents and reports presented in workshops, seminars, conferences, and policy dialogues on forest and green economy are also reviewed. With a surface area of 475,442km^2, Cameroon is located on the Gulf of Guinea on the central west African coast as noted in Figure 2. The country lies between latitudes 1° and 13°N, and longitudes 8° and 17°E. Given the country's total surface area, 11% is located in a "dry savannah" type zone, 20% in a "humid highland savannah" zone and 58% in a "humid dense forest" zone, and the other parts are considered to be in transition zones. Cameroon is divided into five major agro-ecological zones characterised by distinctive physical, climatic, and vegetative features. The total surface area of non-degraded closed forest is estimated at 175,000km^2 of which an estimated 140,000km^2 are considered exploitable. The coastal plain extends 15 to 150 kilometres inland from the Gulf of Guinea and has an average elevation of 90m. This belt is densely hot and humid with a short dry season, densely forested and is amongst some of the wettest places on earth. The South Cameroon Plateau has an average elevation of 650m. Equatorial rainforest dominates this region, although its alternation between wet and dry seasons makes it less humid than the coast. This region is part of the Atlantic Equatorial coastal forests eco-region. An irregular chain of mountains, hills, and plateaus known as the Cameroon range extends from the Mount Cameroon on the coast, which is the country's highest peak at 4,095m. This region has a mild climate, particularly on the western high plateau, with high amounts of rainfall. Its soils are among Cameroon's most fertile, especially around the volcanic Mount Cameroon area. The southern plateau rises northward to the grassy, rugged Adamawa plateau. Its average elevation is 1,100m, and its average temperature ranges from 22 °C to 25 °C with high rainfall between April and October reaching its climax in July and August. The northern lowland region extends from the edge of the Adamawa to Lake Chad with an average elevation of 300 to 350m. Its characteristic vegetation is savannah scrub and grass. This is an arid region with little rainfall and high median temperatures. Cameroon has four patterns of drainage. In the south, the principal rivers are the Ntem, Nyong, Sanaga, and Wouri. This flow southwestward directly into the Gulf of Guinea. The Dja and Kadéï drain south eastward into the Congo River. In northern Cameroon, the Bénoué River runs north and west and empties into the Niger. The Logone flows northward into Lake Chad, which Cameroon shares with three neighbouring countries.

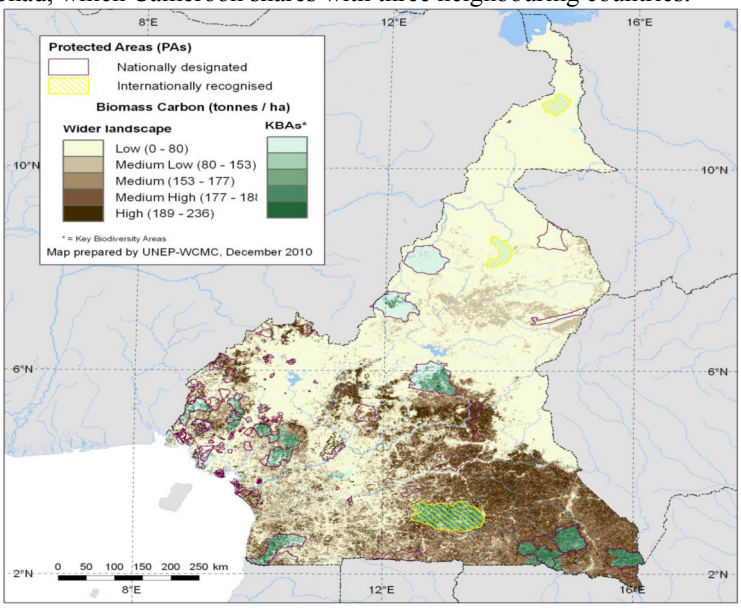

Figure 2: Distribution of biomass carbon, key biodiversity areas (KBAs) and protected areas (PAs) in Cameroon. Source: UNEP, 2009.

3. Greening the Forest Sector in Cameroon

Cameroon's forestry sector can make a significant contribution towards meeting the objectives of a green economy, linked to climate change policies, primarily through the abatement of GHG emissions and expansion of renewable energy objectives. There are three main channels through which the forestry sector can contribute:

biomass energy, green infrastructure and building which are related to forests products and the role of forest resources as carbon sinks (United Nations Economic Commission for Europe (UNECE), 2009). In Cameroon, there are very few studies on green economy within the forest sector. Several studies have examined the economics of timber production, export, and sustainable management of forest in African countries especially those of the Congo Basin (Alemagi, 2011; Alemagi and Nukpezah, 2012; Oyono et al., 2005; Ndoye and Tieguhong, 2004; Owusu, 2001; Molua, 2011; Assoua, 2011). However, most of these studies do not examine the greening of the forest sector within the context of a changing climate. It therefore becomes imperative to assess the potential of Cameroon's forest sector for a green economy transition.

3.1 Challenges and opportunities facing the forest sector

3.1.1 Challenges for greening the forest sector

Biodiversity loss is a perennial constraint to sustainable forest management. Cameroon's forest covered approximately 19.6 million hectares in the mid-1990s according to FAO estimates. However, empirical evidence points to the fact that Cameroon's forests are not being sustainably managed. Cameroon has the second annual deforestation rate in the Congo Basin after the Democratic Republic of Congo (Global Forest Watch (GFW), 2000). This current trend may have huge environmental and social costs. Cameroon's forested area is declining both in absolute terms (deforestation) and in net terms (taking account of forest planting and natural expansion). Trends for different types of forests are also important. Over half of the country's historic forest cover has been lost. Between 1980 and 1995 nearly 2 million hectares of forest vanished (GFW, 2000). Although at a much slower rate today than in previous years, the situation still calls for urgent action.

Another challenge identified is policy, governance, and market failures. Market failure arises from the fact that not all of the important ecosystem services provided by Cameroon's forests are monetized and captured in national, regional and international markets. Cameroon's forestry authorities have sought to secure these other ecosystem services of forests through designation of protected areas (PAs), restricting the exploitation of timber or access, and through regulations on timber harvesting and forest management (e.g. Forest Management Plans (FMPs)). This has however proven to be very difficult to enforce particularly in areas where outright harvesting is the norm.

Competing land use also represents a challenge. It is estimated that land-use changes release an estimated 6 billion tonnes of CO_2, most of it through tropical deforestation annually (Centre for International Forestry Research (CIFOR), 2008). Agricultural expansion, often combined with timber extraction and the expansion of infrastructure, has been found to be the main cause of deforestation in Cameroon over the years. The pressure on forests assets is overwhelming. More than 18 million hectares of Cameroon's historic forests have been cleared to make way for agricultural expansion, expansion of infrastructure and settlements (GFW, 2000).

3.1.2 Opportunities for greening the forest sector

According to the Programme for the Endorsement of Forest Certification (PEFC), sustainable forest management (SFM) is "a holistic approach" defined as *"the stewardship and use of forests and forest land in a way and at a rate that maintains their biodiversity, productivity, regeneration capacity, vitality and potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national and global levels and does not cause damage to other ecosystems"*. Though there is no consistent, regular and comprehensive assessment of forest management at the international level, considerable effort has gone into developing SFM criteria and indicators to describe comprehensively the elements of good practice via several international forest certification schemes, the major ones being the Forest Stewardship Council (FSC), and PEFC. They cover the socio-cultural, socio-economic, institutional and ecological dimensions of SFM, based on scientific and technical knowledge of forest systems (UNEP, 2011). The International Tropical Timber Organisation (ITTO) criteria apply to Cameroon and its entire member states (ITTO, 2011). A key component of the 94/01, 20 January 1994 law was its requirement that logging companies granted concessions to harvest government owned forests must prepare detailed FMPs. The aim of the FMPs is to guarantee that companies pay adequate attention to the cultural, socio-economic and environmental issues related to the forests under their control. Sadly, the results of these FMPs are far from being satisfactory. Though there is room to improve SFM in Cameroon, the authorities are keen to highlight that resources (financial, human, logistics) for enforcement, implementation and management are inadequate; trained staffs, equipment, vehicles, are all in short supply.

The recent growth of Protected Areas (PAs) in Cameroon represents a huge opportunity for greening the forest sector due to its contribution to the conservation of forest resources. There are 341 PAs in the region, of which 174 are in Cameroon. Currently, Cameroon has 6.6 million hectares under protection, representing almost 14% of the national territory (Greiber and Schiele, 2011). The development of PAs has produced many tangible and intangible results. PAs are an important alternative in land use planning for achieving the objectives of conservation, and supporting policies of sustainable development and poverty alleviation. PAs are valuable reservoirs for carbon sequestration and capture. However, the marked expansion of PAs contrasts with the continuing loss of forests and other natural ecosystems within PAs. Effective management, and enforcement of

land and resource-use restrictions in some PAs in Cameroon is weak and some are being encroached on.

Payment for Ecosystem Services (PES) is nascent in Cameroon and there is no legislation which regulates directly PES schemes. Environmental services have not been increasingly recognized in existing legislation and therefore are not monetized. The country's forests provide a range of benefits, from ecosystem services, such as watershed protection, control of soil erosion and soil fertility, and carbon storage, to NTFPs sold on regional and local markets and used in the home. Cameroon's forests are estimated to store at least 1.3 and possibly as much as 6.6 giga tonnes of carbon, most of which is locked up in their vegetation (GFW, 2000). Degradation and clearing of forests for agricultural purposes and other land uses over the past three decades has contributed significantly to the CO_2 that has built up in the atmosphere. Sadly, areas storing the greatest carbon are those currently being opened for logging. By encouraging reduced-impact logging methods, Cameroon's forest authorities could help diminish release of carbon, which leads to climate change. Through reforestation programmes (to sequester carbon) and careful management and protection of remaining primary forests (to retain carbon), Cameroon could continue to provide a global public good. This opportunity was highlighted in a recent report, which ranked Cameroon among the top 15 most significant tropical countries in the world for potential carbon retention and sequestration (GFW, 2000).

The term reduced emissions from deforestation and forest degradation (REDD), which has been expanded to REDD+ to include the role of conservation, SFM, and enhancement of forest carbon stocks, is considered as a key strategy of mitigating the adverse effects of climate change. The Stern review of 2006 estimates that one-fifth of total carbon emissions now come from land-use change, most of which involves tropical forest deforestation. It is estimated that 6 billion tonnes of CO_2 are released annually from deforestation, surpassing the global transport sector carbon emission, and emissions from deforestation and degradation account for about 20% of global carbon emissions (African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE), 2012). Besides its contribution to climate change, deforestation causes loss of biodiversity (both flora and fauna), flooding, siltation and soil degradation. It threatens the livelihood of forest dependent communities as well as the future supply of forest goods and services. Current REDD activities are mainly targeted at developing frameworks to make payments to least developed and developing countries for reducing emissions from deforestation and forest degradation (compared with a reference level) and readiness activities which prepare countries to participate in the REDD mechanism. REDD+ focuses and emphasizes on the capacity of tropical forests to capture and store carbon. REDD+ has the potential to provide substantial new and additional funding badly needed for the sustainable management of forest resources in Cameroon. A good example of such funding is Norway's contribution to the Amazon Fund in Brazil, which is conditional on the achievement of deforestation reduction targets that have been set. In the same light, Norway in 2010 announced a grant of US$1 billion to Indonesia in return for agreed measures to combat deforestation and forest degradation (UNEP 2011). The Ngoyla-Mintom project is an example of a REDD+ pilot project which is currently being implemented in Cameroon in partnership with the World Bank. The objective of the project is to advance the conservation and management of the Ngoyla-Mintom forest block, as well as improve the livelihood of forest-dependent communities around the area. Cameroon is yet to develop a National REDD+ Strategy. Building capacity for REDD+ implementation is vital.

3.2 Options to promote forest-based green economy

In general, green investments can be targeted at reversing the loss of forest area by conserving existing areas of primary forest like the Mt. Kupe or promoting expansion of forests through reforestation programmes especially in the northern regions of the country. It is imperative to intensify the operation green Sahel programme aimed at addressing desertification in the northern regions of the country. Green investments can also be directed to improving management in existing forests and agroforestry systems to ensure they continue to provide a wide range of environmental services. Such investments can only be considered green if it ensured that the forests conserved, or restored meet the criteria of SFM, and balance the needs of different stakeholders. Moreover, the Cameroon experience shows that creating a protected area may not guarantee enforcement.

Investments in protected areas are a long term investment which may bring economic benefits to forest communities and the national economy through nature based eco-tourism. Cameroon has over 6.6 million hectares under protection, representing almost 14% of the national territory (Greiber and Schiele, 2011). The development of PAs has been the dominant approach used by the government of Cameroon to secure ecosystem services by curtailing deforestation and forest degradation. Both private and public sector investments should be encouraged through public-private sector partnerships; that is the adoption of a multi-stakeholder approach and the need to address concerns over ineffective enforcement and benefits sharing with local communities. Prior to the creation of PAs, cost-benefit studies have to be conducted to examine the costs and benefits of protected forests at local, national, and global levels, particularly where indigenous people are involved.

Funds channelled into Payments for Ecosystem Services (PES) schemes broadly cover two main costs: the payment to the forest concession holder, compensating for the opportunity cost of forgone land-use, and the

transaction costs of designing, setting up and operating the payment scheme. At present, there are very few investments and public awareness in both public and private PES schemes in Cameroon. This is partly due to the absence of a specific regulatory body and legislation that encourages investments in PES schemes.

Investments in improved forest management and certification are another green investment approach. Reduced impact logging is one aspect of SFM criteria and indicators used in national standards and in voluntary certification schemes which describe more comprehensively the elements of good practice. To meet SFM standards can be very challenging, as SFM plans can be very costly. As a result, this may tend to delay these investments.

There is urgent need to scale up investments in planted forests. There are several ongoing government programmes in partnership with key stakeholders to promote reforestation in Cameroon. The cost of planting forests and the rate of return on investment may vary according to the species, location, and whether planting is for protective or production purposes (UNEP, 2011).

Agroforestry encompasses a wide range of practices. According to UNEP (20011), *"Agroforestry has a potential to be both beneficial to farmers and to provide offsite-benefits in the form of carbon sequestration, reduced sedimentation in surface water, and maintenance of a wider basis of biodiversity than agriculture"*. Agroforestry has a number of positive benefits for farmers: the conservation and protection of natural resources, control of soil erosion, creating wildlife habitat, provision of products such as fodder for livestock, fuel wood and fertiliser in the form of nitrogen-fixing trees, additional source of income, decreased risk as a result of product varieties on the farm (Molua, 2005; Molua, 2012; UNEP, 2011).

A new paradigm is thus needed for forests in a green economy in Cameroon. Greening the forestry sector in Cameroon will imply managing it and investing in it as an asset class that produces a broad range of goods and services to indigenous communities. The greening of the forest sector will be driven by societal demands for environmental services spread across a number of sectors, encompassing the traditional industries of timber processing, tourism, energy, water and waste management, carbon trading, and sustainable agriculture (UNEP, 2011). Forestry in a green economy can alleviate poverty by meeting critical livelihood needs of indigenous peoples and local communities such as providing a stream of fuel wood, construction materials, medicinal plants, bush meat and food sources. There are indicators that enable us assess how far the forest sector may be shifting towards a green economy. According to UNEP (2011), it will be important to keep track of indicators that measure the following: "*the changing proportion of consumption made up by forest goods and services, and particularly the rate of substitution of carbon-intensive products with forest products; changing markets for forest ecosystem services; investments in sustainable forest enterprise and production, especially those which aim at several ecosystem services and include sustainability conditions; the changing ownership of forest land and forest enterprise, notably the inclusion of local forest stakeholder groups; improving forest governance and sustainable forest management (SFM), from national to regional levels, in environmental, social and economic terms."*

3.3 Enabling conditions for greening Cameroon's forest sector

To make the transition to a green economy, enabling conditions are required to stimulate key stakeholders and motivate indigenous peoples to make investments in SFM, by backing public-sector efforts and ensure they yield fruits. For instance, forest governance and policy reform is imperative. Forest governance and market failures still remain a serious issue which the forestry authorities in Cameroon have to address. Good forest governance at the national level should be based on specific analysis of the institutional, socio-economic, and socio-cultural drivers of forest loss. In the country's quest of becoming an emerging economy by 2035, sustainable management of natural resources calls for a proactive approach, which will address the sustainability of forest ecosystems and equitable provision of all forest ecosystem goods and services. Still at the institutional level, it includes strengthening the legal and policy framework to achieve a balance between national and regional public goods with private goods and community needs, captures the value of forest ecosystem services in public and private decision making, and rewards good practice while sanctioning bad ones. It encompasses collective action, land tenure and fair property rights to forest resources particularly for vulnerable groups such as indigenous peoples.

It is paramount to address illegal logging. Illegal logging and poaching remains a perennial problem in Cameroon. The international trade in illegal logging was estimated to be worth US$8.5 billion in 2008 (UNEP, 2011). There is lack of transparency and accountability in the management and execution of logging concessions in Cameroon. It is estimated that the government of Cameroon losses between US$5 and US$10 million per year in revenue from the felling tax due to illegal logging. This can be in the form of logging by non – registered users or the failure to comply with forest policies by some registered users, who are usually backed by unscrupulous forestry staff (Alemagi, 2011). That notwithstanding, new trade legislation, procurement policies and buyer preferences for legality-verified wood are being developed and enforced both by importing as well as exporting countries. In 2008, the USA passed a legislation (the Lacey Act), which bans the importation and sale

of illegally harvested wood and wood products. In the same light, the European Union (EU) has passed a legislation requiring all entities placing timber products on the EU market to implement management systems that provide assurance that such products have been manufactured legally. Such measures may curb the illegal trade in tropical timber as the government of Cameroon and many export oriented companies are adapting their management systems to meet the demands of these markets. The EU has established a licensing system for legal wood products based on Voluntary Partnership Agreements (VPAs), which are negotiated with timber exporting countries under the Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan. Under the VPAs, exporting countries develop systems to verify the authenticity of their timber exports to the EU (EUFLEGT). Negotiations are still ongoing with Cameroon.

Improving the information on forest assets and inventory will be key. In defining the relative importance to give to the forest sector versus agriculture and other sectors and to the array of forest ecosystem services, Cameroon's forestry authorities need to have better information on forest assets, harvesting and cost benefit distribution. In this light, government funded and donor agency research on environmental services needs to be intensified to reduce the gaps in information and document the role of the forest sector to community livelihoods, the economy, and social development in Cameroon.

It will be important to make PES and REDD+ catalysts for greening the forest sector. Payments for the environmental goods and services of forest through the Clean Development Mechanism (CDM) and REDD+ framework provides an opportunity for countries in the Congo Basin and Cameroon in particular, to capture the value of their forest ecosystem services. The United Nations Development Programmes (UNDP), UNEP and FAO set up the UN-REDD Programme, which is designed at assisting poor countries in addressing certain measures needed in order to efficiently participate in the REDD+ mechanism. These measures include capacity development, governance, engagement of indigenous peoples and technical needs.

4. Conclusion

Cameroon's forest is under significant pressure to meet both private and short-term revenue gains which could compromise its role and function in the transition to a green economy. This paperhighlights the principal challenges and opportunities for more sustainable and equitable management of forest resources and reviewed the current range of green investments in Cameroon's forests and their likely implications on both the timber industry, community livelihoods, and ecosystem goods and services. Some of the core challenges the study identified include a decline in forest cover and deforestation, market, policy and governance failures, and competing land uses. A number of opportunities of the forest sector in a green economy have also been identified. These include the sustainability of forest assets, growth of protected areas, payments for ecosystem services, and a REED+ strategy. We also identified some key green investments options in Cameroon's forest. These include scaling up investments in protected areas, investing in PES and REDD+ schemes, investing in improved forest management and certification, investments in planted forests and agroforestry systems. In order to catalyse these investments, Cameroon's forestry authorities must be proactive. They will need to address illegal logging, undertake policy and regulatory reforms, regularly update the forest inventory, and stimulate REDD+ and PES schemes. Timber exploitation for revenue gains should not be carried out at the expense of the many environmental goods and services provided by Cameroon's forests. The effective and sustainable exploitation of forests assets is imperative for Cameroon's transition to a green economy and to meet the needs of future generations. The government of Cameroon needs to improve effective local control and management of forests assets. The government must play the leading role by mobilising public and private investments in forests through public-private partnerships (PPP) and employ market-based policy instruments to promote green investments and innovation in forests and related sectors such as agriculture, tourism, and fisheries. Adaptive approaches to sustainable forest management will become crucial in the face of global climate change. Healthy forests maintained under SFM, REDD+ and PES, planted forest, agroforestry, and protected areas will be resilient than those depleted by over exploitation where the overall costs can be extremely high.

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