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*Inclusive green growth to accelerate socio-economic
development in West Africa*

INCLUSIVE GREEN GROWTH TO ACCELERATE SOCIO-ECONOMIC DEVELOPMENT IN WEST AFRICA

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Table of contents

1.	Introduction	3
2.	Analysis of the potential and challenges to green economy in West Africa	5
2.1	The importance of a green economy based on specific sectors	5
2.2	Analysis of the potential for development from the green economy perspective	7
3.	Evaluation of the impact of the transition to the green economy in West Africa	9
3.1	The impact on poverty and employment.....	9
3.1.1	Impacts of the green economy on poverty	9
3.1.2	Impacts of the green economy on employment	10
3.1.3	Impacts on industry.....	10
4.	Analysis of institutional and financial barriers to a green economy	11
4.1	Analysis of policy and institutional barriers	11
4.1.1	Policies barriers.....	11
4.1.2	Institutional barriers	11
4.2	Analysis of financial barriers	12
4.3	Promoting the green economy against the challenges of adaptation and mitigation to climate change	13
5.	The opportunities and achievements for the green economy for West Africa	16
5.1	Low carbon growth opportunities	16
6.	Conclusions and Recommendations	18

1. Introduction

1. Controversial in its various definitions, the green economy concept is seen as a promoting tool for sustainable development. As of today, it remains at the heart of national and international debates about how to tackle climate change while increasingly generating green jobs. Indeed, more and more interest toward the concept has translated it into the new attracting green growth paradigm, from which policy makers and development practitioners expect to derive the viable solutions against the turmoil of the current model of world economy. The Rio +20 meeting held in June 2012, has given the international community the opportunity to renew its political commitment for sustainable development and meanwhile address new and emerging challenges that are confronting the course of development. It mainly focused towards two specific themes: green economy in the context of poverty eradication and sustainable development, and the institutional framework to support sustainable development.

2. In fact:

- The present world dominant model of development is facing simultaneous multiple crises such as, depletion of natural resources and the market failures that have marked the first decades of the new millennium. The model has been ineffective in enabling a productive and decent employment market. Now coined as the "brown economy", that traditional pathway has exacerbated the phenomena of climate change with its various effects of the types of natural resources depletion , degradation of biodiversity, energy crisis, food security and has even lead to the recent financial system crisis of 2008 . Summed up, above factors have deepened social inequality, underemployment, uncontrolled increase of greenhouse gas emissions, population migrations, etc.; all constituting the actual majors challenges that humanity should overcome if development is to be taken into consideration.
- In parallel, unwisely oriented investments out of environment- friendly sectors, failed the current economic model to create enough decent jobs, which resulted to the inefficient financial system whose costs remained very high for businesses and for workers. Misallocated resources aided abuses to prevail. According to the United Nations Environment Program (UNEP)¹, during the recent decades, large amounts of capital have been invested in real estate, fossil fuels incorporating, financial assets and derivatives, but relatively little in renewable energy, energy efficiency, public transport, and sustainable agriculture, protection of ecosystems and biodiversity and prevention of soil erosion or water management.

¹ 2011, UNEP: "Towards a green economy: for a sustainable development and poverty eradication, Summary for Policymakers" .[www.unep.org / greeneconomy](http://www.unep.org/greeneconomy)

- Most development and economic growth strategies have encouraged rapid accumulation of physical, financial and human capital at the cost of exhausting and/or excessive degradation of natural resources that especially contributed to the sharp decrease in subsistence farming on which about 1.3 billion people depend worldwide. The implications of these planetary crises severely affected economies around the world, but their stigma were mostly noticeable within the fragile developing countries of Africa, particularly in its sub-Saharan part. Within that sub-region of the continent natural capital upon which food security and wealth creation are based, suffered serious deterioration whereas countries have had to deal with increasing demand for energy, water, food, and health care as well as the need to reduce poverty and boost economic activity in order to generate employment and enhance the income levels.
- Although, over the last decade, Africa has globally experienced rapid economic growth with annual domestic growth rates averaging 5 to 6% in some countries which were exceeding observed rates in other regions of the world. Significant drivers of such growth rates can be explained in on part to the concomitant increase of the strong demand which reflected to a hike in the prices of commodities. On the other part, macro-economic reforms conjunctively associated with greater political stability and increasing urbanization have led to a strengthening of the services sector and the emergence of a middle class and a pan Africanist entrepreneurial spirit.
- However, the impressive growth rates also conceal widening inequalities from a region to another, from one country to another and even within the same country, between rural and urban areas. The lack of possibilities toward universal access to energy, health care, education and infrastructures, fuels and strengthen the lingering social precariousness. The weakness of economies is materialized, for example, in the existence of-almost all-informal small businesses with low investment capacity, limited ted skills, and very inefficient technologies resulting in low competitiveness on the world market.
- The urgency for Africa is to ensure a socially inclusive growth that creates economic opportunities its working age population (estimated at about half a billion in 2020, AfDB) of labor intensive sectors. For African economies depend heavily on available natural capital, green growth pathway would enable an equitable exploitation of resources through more productive and efficient investments.
- A transition to a more sustainable and environment-friendly economy is necessary in order to alleviate poverty and enable the development of livelihoods of millions of young people and women who depend primarily on natural resources such as fertile land, forestry, fishing and others. Adopting sustainable ways of production and consumption will re-orient African economies while making them competitive for wealth creation, employment and poverty eradication.
- Green economy concept proposes to break away from the not very effective current model of development and move towards a more sustainable development paradigm that is merely characterized by low carbon emissions, rational use of resources and social inclusiveness. Green growth aims at combating climate change while making of technologies and green industries required for the battle, the driving force for economic growth. UNEP defines green economy as "an economy that brings up

improved human well-being and social equity while significantly reducing environmental risks and lack of resources." In the operationalization course of that type of economy, growth in income and employment must come from public and private investments that are low emitting, efficient in the use of resources including energy, and able of preserving biodiversity and environmental services.

- Consequently, a successful transition into the green economy would necessarily require capacity building in technologies, financing and appropriate policies for West African countries. In that respect, the expected transition through the process of implementing of the green economy for climate change mitigation is expected to create competencies and conditions for the involvement of all stakeholders.

2. Analysis of the potential and challenges to green economy in West Africa

3. According to experts' review of the green economy perspective, the contextual status of West African countries reveals that the sectors of activities that call on natural resources inputs such as agriculture, forestry, mining, fisheries, renewable energy, improved water management and other areas of transport and waste management, are the largest niches for green - job creation for green growth. Cumulatively, the agriculture, forestry, mining and fisheries sectors generate 80% (UNECA 2012) jobs in Africa. In contrary, industry and manufacturing sectors, that could have been the incubators for green economy, are still embryonic and poorly diversified to produce the required range of intermediate and finished products. Within the Economic Community of West African States (ECOWAS), the manufacturing sector is dominated by the agro-industry sub-sector and represented only 7.36% of GDP in 2006².

2.1 The importance of a green economy based on specific sectors

4. The majority of African economies depend mainly on their natural resources wealth. These resources are in turn, highly vulnerable to the effects of climate change. Despite the importance of the services sector's activities, the ECOWAS area economy is driven; on the one hand, by the primary sector including agriculture, fisheries, livestock and forestry that combined account for more than two thirds of the workforce, and on the other hand, by the industrial sector dominated by small and medium enterprises in the mining, manufacturing and agribusiness fields.

✓ The agriculture

5. Agriculture is the largest employer in West Africa as it occupies over 70% of the workforce. The sector contributes up to 33% of GDP in 2009 (AfDB, 2011) and employs a large number of low-paid laborers and subsistence farmers (mostly women). Revenues from farmland compound to a large share of the total wealth of the region. The sector is marginally

² National Accounts of ECOWAS, 1995-2006 - Table 9.1, Page 39

connected to the international market through various cash crops (coffee, cotton, cocoa, groundnuts, etc.).

6. Within ECOWAS, about 80% of food needs are met by regional agricultural production. During the period 2002-2004, the value of its agricultural production exports amounted to \$5.96 billion thereby releasing a positive balance of \$ 522 million of its food trade balance. Somewhat, the region still remains fairly dependent on imports to meet its food needs as shown by the significant amounts (valuated at \$ 5.44 billion in 2002-2004) expended on foodstuffs only³.

7. The livestock sub-sector plays an important role in the economy of the West African states as it contributes for up to 44% of compounded agricultural GDP. Thus, livestock production contributes directly to improving food and nutrition security in West Africa⁴.

8. Undeniably, the forestry sub-sector occupies a prominent place in the local economies of the sub-region with an appreciable contribution to livelihoods from harvesting of wildlife resources to being suitable for environmental services. Beyond their productive function of goods and ecosystem services, forests play a key role in the development of eco-tourism. As a matter of fact, the tourism industry contributes directly and indirectly for 8.3% of GDP and 5.9% of job creation in Africa⁵.

9. The fisheries sub-sector is crucial in for its value added achievements and remains one of the high labor hiring sectors in Africa, particularly in the coastal regions of West Africa. For 10 million African people fisheries is the sole income generating source. Moreover, for thousands of African households, fisheries are a major source of daily food, especially for protein intake.

10. Astonishingly, despite the importance of the agricultural sector, there are still sporadic cases of severe malnutrition in some areas of the region. The sector is negatively affected with natural hazards, climate change, parasites and soil degradation; all of such being real challenges to overcome at the national and regional levels to ensure food security and food sovereignty.

✓ **The energy**

11. Access to modern energy services, is a real driver for economic growth and social development. It can help improving the provision of basic services such as health, education and water supply. Modern energy services for cooking greatly ease the daily lives of women who painfully spent long hours fetching firewood and cooking with not only highly polluting traditional stoves, but also hazardous for their health.

12. Access to renewable energy and to modern energy services, plays an important role in protecting the environment, mitigating climate change and strengthening the resilience or adaptation to it. Opting for effective policies toward the development of renewable energy and energy efficiency can be a real niche to drive the transition to a green economy.

³ FARM: Agricultural Potentialities of West Africa, CEDEA, 2008

⁴ 2009 Adopted orientation notes for the development of livestock in the ECOWAS region and OECD 2013

⁵ UNECA 2012

✓ **The industry**

13. Its low contribution of only 7.4% to the regional GDP reveals that the manufacturing sub-sector does not really help into transforming the agricultural production to increase its value.

2.2 Analysis of the potential for development from the green economy perspective

14. As originally claimed, the promising sectors that could drive green growth orientation in West Africa have been identified as: agriculture, construction, energy, fisheries, forestry, industry, tourism, transport, and urban planning, waste and water. Moreover, given the pace of spreading urbanization in the sub-region, sectors such as sustainable cities, waste management, eco-sustainable construction are significant opportunities for low-carbon emissions development.

15. In addition, commodities and natural resources including mining and energy resources are special economic goods that do not often require transformations before being marketable. When properly extracted and exploited, these are sources of valuable economic benefits in terms of rents. Wisely used, such annuities can boost economic development.

✓ **Niches for green growth in the agriculture sector**

- Sustainable agriculture is organized around activities related to the following systems: organic manure, use of plants as green fertilizers, selection of seeds adapted to the characteristics of the different agro-ecological regions, fallow, improved fallow, crop rotation, crop diversification, integration of livestock and forestry with agriculture, efficient water management, bunds, contour cropping, crop residue recycling - all generally going in the direction of increased system. Accordingly, at the global level, sustainable agriculture would increase employment rate by 4% over the next decade (UNEP, 2011).
- Developing activities in transforming agro food products with high value added potential. Supporting and encouraging entrepreneurship spirit in young people and women for the creation of transformative and or productive agricultural enterprises particularly in rural areas, would better secure the local workforce.
- Promotion of clean farming techniques by developing sustainable practices using less pesticide in agricultural enterprises, family farms to instill successful adaptation to climate change.
- In the forestry sub-sector, it will guarantee land tenure accompanied with policies that support agricultural intensification on already cleared land, or agroforestry and pasture areas.
- The valuation of non-timber forest products and facilitation of their distribution in local and international markets. Establish participatory forest management and dissemination of modern cooking services that consume less wood energy to address the overexploitation of forests.

- The regeneration of forest ecosystems favoring low-carbon options in consideration of the dynamics of voluntary NAMAs. Conservation and reforestation could boost formal employment by 20% in the forestry sector by 2020 (UNEP, 2011).

16. The agricultural sector equally bears potential for mitigation and adaptation to climate change. Clear options for adaptation and mitigation can mobilize several types of funding (national, APD, Private, REDD +, Adaptation Fund, NAMAS, CDM, etc.).

✓ **Niches for green growth in the industry sector**

- Energy efficiency in the industry, technology and low carbon industrial processes. These actions can firstly target manufacturing industries that are credited for up to 17% of health complications related to air pollution, which in turn generates losses equivalent from 1 to 5% of global GDP (UNEP 2011), and then improve the business environment of the mining industry into drastically eliminating its self-indicted conflicts, caused environmental degradation and wide spread air pollution.
- In relation to renewable energy use, and energy efficiency the transformative food and fishing industries, along with the forestry, construction, transport, waste, etc.; boast significant potentials niches for green growth.
- Involving large to medium and small West African enterprises and industries to adopt international labels and standards norms for competitiveness.
- Niches are also in the promotion of recycling.

✓ **Niches for green growth in the energy sector**

- The renewable energy sector embraces important niches for their green jobs and climate change mitigation. The deployment of such technologies will require a critical mass of skilled workforce in areas like manufacturing of materials and equipment, distribution, installation, maintenance and operation of equipment, etc..
- The promotion of energy efficiency. Various experiences from different countries have shown that concerted government efforts to promote energy savings can deliver improved services with less energy. Measures that have a payback of less than 3 years can usually save up to 30% energy. The World Energy Council and ADEME believe that the overall savings in West Africa could be even higher, in equaling up to 40% of current energy consumption⁶.
- Adaptation options are available through the promotion of alternative fuels (LPG, biogas and bio charcoal, etc.) to substitute wood and charcoal, but also in the exploitation and sustainable management of forests through community forest management.
- Promote access for marginalized populations to modern energy services for basic needs (cooking and lighting) with a focus on low-carbon options to enroll in the dynamics of voluntary NAMAs.

⁶ ECREE : (ECOWAS) Energy Efficiency Regional Policy

3. Evaluation of the impact of the transition to the green economy in West Africa

3.1 The impact on poverty and employment

3.1.1 Impacts of the green economy on poverty

17. For a long lasting impact on poverty, relevant actions that are undertaken in the green economy, must be integrated within different sectors of great importance that are targeting the less endowed, including:

- In the context of food security; consideration will be given to the development of the agricultural sector upon which depends the large layer containing the less fortunate people in West Africa. Thus, developing leading green economy activities around this sector would significantly reduce poverty in rural areas but also ensure food security essential to development and well-being. Activities should include, support to small farmers through the promotion and dissemination of sustainable practices. According to UNEP, the study of 286 projects on "best practices" of 12.6 million farms in 57 developing countries found that approaches to resource protection (eg integrated pests, integrated nutrient management, minimum tillage, agroforestry, aquaculture, water control and integration of livestock) resulted in an average yield of 79% and improved the supply of essential environmental services.
- In the context of access to social services and basic infrastructure such as access to drinking water and sanitation. In West Africa, the less fortunate layer of the population has access limited access to safe drinking water and a vast majority of people in rural areas are deprived of adequate sanitation. Therefore, it appears that the development of green businesses around access to safe drinking water, sanitation and safety would significantly influence poverty reduction and would also contribute to the achievement of one of the MDGs, namely, access to water by 2015. A major program of boreholes with hand pumps has also been established at the level of West African Economic and Monetary Union (WAEMU) countries since 2008 to improve access to drinking water and develop income-generating activities in agriculture as market gardening.
- In the framework of increasing access to energy services which is still as of 2012, a major problem for many countries in West Africa. The transition to a green economy in energy must be made in the development of strategies for access to more sustainable modern energy services to help improve the living conditions of people and promote also business development and local economic structures that would guarantee a real impact on poverty. The potential for renewable energy and energy efficiency can allow the area to strengthen its energy mix, particularly through hydro, solar, biomass including biogas, biofuels and agricultural residues.
- As part of the training of human resources. Indeed, West Africa is characterized by its youthful population (60% of the population of the region has less than 35 years and nearly 40% of the workforce is considered young) but also a lack of professional qualification especially in rural areas, the development of skills training for young people, focusing on green jobs to improve the level of training and preparing a skilled workforce will help to significantly reduce poverty but also will decrease the unemployment rate among young people. For example, in management training, we will introduce the corporate social responsibility and in the teaching in tourism, we

will introduce climate change. Similarly, in training of engineers, consideration will be given to life cycle analysis, while waste management and eco-construction could be part of the agenda of the training for building and public works (BTP).

18. Focus on training and building the skills that will match the future demands in green jobs in the perspective of the green economy, is a major challenge for the countries of West Africa. This in fact, is the most needed part of the transition to a green economy that aims to substantially reduce the level of poverty in the medium and long term. The transition won't in the lack of well-trained and skillful workforce.

3.1.2 Impacts of the green economy on employment

19. Several sectors of the economy in which many activities can take place within the green economy concept, have been identified as potential providers of green jobs. These include:

- For agriculture, environment and food; the promotion of activities will born jobs such as nature protection professional, eco-consultant in agriculture, eco-energy in the food industry, or even a environmental lawyer.
- In the waste management: the development of businesses related to the collection, transportation, processing and recycling offers the potential for very important jobs. At first, governments will need to better organize the entire chain of activities from collection to recycling in order to sort out the range of jobs that can be refinanced with the proceeds of a well calibrated recycling program. Thus, in addition to the real and significant contribution that the sector will be bringing in terms of safety, good healthy living conditions and a better urban environment, it will also be at the origin of a new and profitable business concept.
- Water and sanitation: all activities related to the production, control, distribution and management of water and sanitation, but also activities and maintenance works are among the high-impact activities jobs.
- Concerning the Building: trades from design to implementation have many potential uses within the green economy particularly around encouraging innovative and high environmental quality architecture, use of sustainable materials, and engineering of ecological sanitation.
- Transport: some states have affirmed their commitment to develop low CO₂ emissions transportation system. Such innovative urban transportation projects can be of huge potential for jobs creation.
- Energy: the different sectors within the development of renewable energies such as solar, wind, bioenergy and biofuel production both in the advisory services, project design, procurement, installation and maintenance of equipment are depositories for important jobs.

3.1.3 Impacts on industry

20. To confront globalization, different activities to pursue, will involve the processing of agricultural products, market gardening, and arboriculture, fishing and farming. It will then require to meet environmental standards for, inter alia, sub-regional and international marketing. It has also been proved that the mining industry is one of the main ways of West Africa industrial development. Mining developers can arrange to make green direct

investments that use innovative environment-friendly technologies and more importantly, act under Corporate Social Responsibility (CSR) to help boost local dynamics of low-carbon development.

4. Analysis of institutional and financial barriers to a green economy

4.1 Analysis of policy and institutional barriers

4.1.1 Policies barriers

21. Weak and incoherent policy framework and lack of an enabling strategy to orient various actors towards the same objective. A review of domestic sustainable development reveals that up to now, most countries have yet to devise their not all countries have developed their National Strategy for Sustainable Development (NSDS). However, it must be recognized that countries have adopted various policies, strategies and plans to deal with the issues of sustainable development. These include national long-term plans for national and regional development, Poverty Reduction Strategy Papers (PRSPs) and sectoral strategies in the areas of agriculture, environment and natural resources. Currently ongoing multiple planning that are not implemented denote the difficulty of to mobilize an internal cohesion for national ownership.

22. Political instability and conflict have for so long and mostly, compromised peace and security in the region. Indeed, the multiplicity of armed conflict has resulted in the displacement of people and destruction of the socio-economic fabric and resources.

23. Political and economic bad governance is the ultimate enemy of wealth creation. At regional as well as at the national levels, many efforts have been made to address both. Although, extended bureaucracy, complexity and opacity in the judicial system, still are bias to the business environment, which tends to rebut domestic and foreign investment because heavy and discouraging transaction costs in a global economic crisis⁷. Revitalizing the economies of West Africa and especially the industry cannot be done without a strong regional focus. Thus, the simplification and harmonization of procedures and respect of shared communitarian commitments and multilateral control is the first step to regaining the trust of investors.

24. In closing the 14th session of the Conference of African Ministers of Environment, AMCEN, the Ministers have decided to initiate a partnership to embark on the path towards green economy. This commitment to a greener development requires overcoming all the barriers that have traditionally hampered real development in the sub-region.

4.1.2 Institutional barriers

25. A review of the national reports prepared for the meeting known as Rio + 20, unveils that in most countries of West Africa, an institutional mechanism has been implemented in the context of the pursuit of sustainable development. It seemed that everything for has been put in place with enacted laws and regulations, installation of agencies, commissions and other similar committees. A number of countries (Côte d'Ivoire, Senegal) have also created

^{7 7} ECOWAS (2010).- West African Industrial Common Policy. July 2010, 74 p

ministries of environment and sustainable development. The framework for action was being also supplemented by local and municipal authorities in application of the transfer of competencies following the trendy decentralization.

✓ **Lack of coordination among a growing number of institutional arrangements**

26. The multiplicity of these structures just raises a number of issues and the most common is the lack of coordination, even if, as in the case of Cote d'Ivoire, for example, functions are clear. There are also some ministries and structures whose competencies indirectly affect, or are affected with environment and sustainable development forcing to look for to establish an inclusive and coherent approach to the subject.

✓ **Blurring mandates that weaken the regional leadership**

27. At sub-regional and regional levels, institutions have been put in place since around the 70s in the aftermath of particular environmental disaster (locusts invasion, extended drought) to alter vulnerability and restore economic development. Today, sustainable development frameworks are put in place, including the RECs, regional economic communities, and regional centers. This is explained by the fact that initially the mandates of some of these institutions were limited (eg CILSS, AGRHYMET regional center, etc.). It was so difficult for regional institutions to position themselves for leadership in an area that was beyond their competence.

28. In fact, some institutional frameworks have been established to meet the needs of implementation of certain agreements, and not to satisfy the needs of the country.

29. Thus, to pursue the objectives of sustainable development and green economy in the countries of West Africa, and try to overcome various institutional barriers identified here, we can offer the following advises for countries in the region:

- Institutionalization of the integration of sustainable development into programs and actions
- Dissemination of texts and rules for awareness and effective involvement of all stakeholders and sectors
- The provision of material and human resources, through capacity building
- The establishment of a framework for cooperation and consultation

29. In any cases, the regional and sub-regional institutions should play an important role in the promotion and implementation of the green economy in West Africa.

4.2 Analysis of financial barriers

30. Apart from their states' budget West African countries do not have available additional funds dedicated as necessary financial resources for the implementation of sustainable development. Mechanisms put in place under the various multilateral environmental agreements (MEAs) (such as the Clean Development Mechanism (CDM), the national environmental fund, the Global Environment Facility (GEF) at a certain time, etc.) for mobilizing those additional resources are often ineffective, inefficient and not accessible enough. In addition, the financial support from developed countries to the implementation of

projects and programs is still weak and poorly operated. In fact, the financial framework is not yet well defined and barriers to financing the green economy can be numerous. To implement such a framework, many questions need to be raised, namely, for example, what kind of investment it takes to sectors of the green economy? Which financing instruments to what scale?

31. For West Africa countries, financing the transition to green growth will face very limited financial capabilities. There is either no virtually effective domestic instruments for internal resource mobilization for the environment. In addition, provided that resources are available, most countries are confronted with low absorption capacity.

32. Insurance, pension funds and sovereign wealth funds can play an essential role⁸. They can fill the substantial gap funding for green growth in the sub-region of West Africa. The ClimDev implemented by AfDB, ECA and the UN Economic Commission for Africa (UN) as well as the African Green Fund could all, be used as supports for the implementation of schemes for resource mobilization and financing that could go beyond climate change, the initial purpose for which they were created. However, to achieve this, enabling measures should be taken at regional and international levels to overcome obstacles. Indeed, limited access to markets, not yet improved business climate and governance, lack of risk sharing through public-private partnerships, and weak capacity of local businesses to enable them to build partnerships, are all impediments to attracting foreign investments.

33. Regional Major Development Bank such as the African Development Bank (AfDB) and the West African Bank for Development (BOAD) who have so far being good investing in the oil sector, could help countries to engage in green growth by expanding their range of green products and services and helping countries to create leveraged long-term investments.

34. The total mitigation potential in Africa is estimated at 2,800 MtCO₂e and could thus serve as a basis for the financing of its low-carbon growth. However, the financing of mitigation options in Africa is still cited as the major obstacle for the continent to embark on the path of low-carbon development. Consequently, it is necessary to devise innovative solutions to overcome this barrier and take advantage of that significant potential the continent, especially sub-Saharan Africa has available and may just be the solution to this barrier for financing⁹. It is estimated that the cost of financing may well be covered by revenues of up to \$ 41 billion per year by 2030 from mitigation, especially for the forestry, agriculture and energy.

35. However, due to rapid urbanization and population growth, a long-term planning is necessary. The option taken by ECOWAS to integrate energy planning strategies for long-term development at local, national and regional levels is from this perspective, an essential step in optimizing investments.

4.3 Promoting the green economy against the challenges of adaptation and mitigation to climate change

36. The conceptual analysis shows that there is a complementarity between the green economy and adaptation / mitigation of climate change. The green economy can even include

⁸ BARON, Richard, et. al (2010).-Le financement de la croissance verte.- Paris : CEDD, Octobre 2010.- 120 p.

⁹ Grantham Research Institute (2009).- Possibilities for Africa in Global Action on Climate Change. 86p

these two concepts through adaptation actions for low carbon particularly in the agricultural sector.

37. Yet, the areas that may serve as the pillars of the green economy are also vulnerable to climate change as evidenced by countries' National Adaptation Program of Action (NAPA).

✓ **Vulnerability of the agricultural sector**

38. In all its defined sub-sectors, agricultural activities in West Africa depend primarily on weather conditions. This dependence on climate is a major source of vulnerability for the key economic sector. Productivity and agricultural production are particularly sensitive to climate variability. Yet, the main pattern that has characterized climate in West Africa for the last 50 years is the increase in rainfall variability and the frequency and intensity of extreme weather, particularly droughts, winds and downpours.

39. These climatic events have a direct impact on agricultural activities production. They destroy crops, degrade vegetation, including mangrove, which is housing a variety of species exploited in the context of fisheries resources. They also reduce groundwater while drying surface water reservoirs.

40. Beside climatic stimuli, other biophysical, technical and politico-institutional factors affect negatively the performance of agriculture in West Africa. Based on a biophysical view, the agricultural sector suffers from land degradation (erosion and fertility decline), the deficit in the quantity and quality of water resources, the inadequacy of agricultural crops to new climate regime.

41. The productivity of agriculture in West Africa is severely hampered by the lack of mechanical inputs, infrastructure, and technology packages and low carbon performance. The weak capacity of producers in planning and management activities is a significant barrier to adaptation to climate change in agriculture.

✓ **Livestock vulnerability**

42. Livestock is directly affected by climate change. Droughts result in declining quantity and quality of fodder and water resources, which can result in a high mortality and decreased productivity in milk. Rising temperatures, strong winds and torrential rains degrade the health of livestock. The set of constraints leads to a significant decrease in income of farmers.

43. In addition, climate change pushes farmers who face scarcity of green fodder to rely on tree stratum. With cutting of branches, trees do no more help in storing carbon and most plant species do not recover from such an operation.

44. Climate change thus, requires perpetual adjustment of policies, institutions and governance, to adapt to new technical agricultural, livestock, forestry and fisheries production

✓ **Water resources vulnerability**

45. Resources in groundwater and surface water are particularly vulnerable to climate change in West Africa. Droughts and higher temperatures result in a depletion of water

reserves and the degradation of water quality. For example, in May 1985 because of drought, flows of the Niger River in Niamey were completely stopped. In the Groundnut Belt of Senegal, droughts have resulted in salinization of groundwater resources. In addition to the climate, subsoil water and the surface water bodies are affected by the increase in demand due to irrigation development and population growth. The use of pesticides and fertilizers, lack of sanitation and efficient sewage and industrial waste, are also factors of degradation of the quality of surface and groundwater in West Africa.

✓ **Vulnerability of fisheries**

46. By several ways, this sector is also threatened by climate change. Coastal erosion and the degradation of marine ecosystems, flooding from sea over-flows are few among them. Fisheries vulnerability is also merely reinforced by weak political institutions and fishing regulations. Uncontrolled overdue fishing techniques and ineffective technology are unsustainable. The lack of enhanced fishery products, poorly structured marketing system of fisheries products, all affect negatively the market for fish products and explains the low producer prices.

47. Climate change direct impacts and negative side effects on fishing. Natural disasters are not without direct impact on fish nurseries. Countries that suffer most from this are the coastal ones. They mostly experience decrease in production due to changes in wind and upwelling- an extremely important replenishment factor along the Africa's Atlantic Ocean coast line.

✓ **Forest Vulnerability**

48. Through long droughts, climate change particularly reduces the density and diversity of woody areas. In fact, one can notice the transformation of plant formations that become sparse vegetation units, and sometimes a total loss of vegetation cover. Adding up to human activities through agriculture, grazing and timber removal, climatic stimuli induced loss of covered areas.

✓ **Vulnerability industry**

49. Initial reported inventories have shown that due to its low activities intensity, the industrial sector in West Africa is a low emitter in terms of GHG emissions. Generally, emissions from the sector do not exceed 5% of total CO₂ emissions. The industry is dominated by manufacturing, which in turn is highly dependent on resources from agriculture, pastoral, fisheries and forestry. Therefore, the vulnerability of the industry to climate change derives from the above analysis of the vulnerability of the various others sectors that feed it.

50. Apart from climate change, the industry also suffers from the binding legal and tax environment (difficulty in incorporating and/or enterprise establishment, long and costly administrative procedures in money, corruption etc.), the lack of corporate culture in West Africa, and inability to compete in a global context.

5. The opportunities and achievements for the green economy for West Africa

5.1 Low carbon growth opportunities

51. Opportunities for adaptation and mitigation to climate change that are suitable to the agriculture and industry sectors for the green economy are listed in the following table:

Sectors	Opportunities
Agriculture	<ul style="list-style-type: none"> - Integrated approach (water, agriculture and livestock); - Better management of water with pumping systems using renewable energy; - Promoting innovative financing; - Promoting agroforestry and reforestation; - Sustainable management of land; - Soil restoration
Healthy and sustainable agriculture	
Sustainable forestry	<ul style="list-style-type: none"> - Reforestation; - Forest management; - Assisted natural regeneration and agroforestry
Sustainable fisheries	<ul style="list-style-type: none"> - Promote energy efficient equipment for fish processing; - Regenerate mangrove ecosystems; - Build protecting infrastructure for sandy coasts (seawalls, groins, reinforced broadwalk, artificially replenished sand dunes, etc);
Industry	<ul style="list-style-type: none"> - Develop resilient equipment and intrants; - Develop industrial processes using renewable energy; - Promote CSR (Corporate Social Responsibility) within companies

✓ **Institutions for strong sub-regional integration, a framework for the emergence of a green economy**

52. West Africa has established shared and/or common political, economic and monetary institutions. Even better, along to the common monetary policy promoted by WAEMU, ECOWAS has conceived well-functioning agricultural and industrial development policies. These policies aim to fully involve civil society, the private sector and Member States. As such, this contextual change of paradigm is looking for: to create wealth and promote its retention by free reinvestment, to train skilled worker and instill competencies in West Africa, to promote cross-border and communitarian entrepreneurship, to restructure the large industrial entities. For example, ECOWAS and the African Union, in collaboration with development partners, have developed in West Africa, the National System for Strategic Analysis and Knowledge Management (SAKSS) whose objective is to inform and guide the process of implementation of the National Agricultural Investment Program (NAIP). This also includes revisiting the issue of the sustainability of the sector and investigating suitable different activities within the green economy. Moreover, the existence of several political and institutional frameworks for managing hydrographic agencies such as OMVS, is a factor of widespread use of hydroelectric power in West Africa.

✓ **A deposit of renewable energy can provide energy sovereignty and industrial development**

53. When exploited, trans-boundary river basins resources may help to reduce West Africa huge energy gap. For example, the hydropower potentiality of the Republic of Guinea alone is of about 6,000 MW. That potential is likely to supply neighboring countries.

54. The establishment of ECOWAS Regional Policy on Energy Efficiency (ERPEE) and a Renewable Energy Policy (EREP) demonstrates the political will to ensure a smooth energy transition in the region with a long-term vision and ambitious objectives : to reach about 30% of saved electricity consumption through a better management of the demand side versus the supply side throughout ECOWAS by 2030; heighten the share of renewable energy sources (including large hydro) in the electricity generation capacity installed in the region up to 35% in 2020 and 48% in 2030;

✓ **West Africa, a power house for decent green jobs**

55. With the advent of the green economy, West Africa could increase employment rate by promoting sectors with high labor intensity (LI) in environmental, food and energy, and building sectors.

✓ **Greening of the building reduces carbon emissions and energy budget**

56. High temperatures are almost permanent in West Africa. As a result, this translates to increasing energy consumption for cooling requirements (ventilation, air conditioning). Worsening that situation of high energy consumption is that the types of material largely used for construction do not take into account the need to insulate from outside heat. In most cases, buildings are not compliant with architectural standards that promote natural oxygenation. Transition to green building, specifically eco-constructions, will help alleviate the rising rooms' temperatures in houses and public buildings while reducing the consumption and energy costs, which have experienced unprecedented growth in West Africa during the 21st century first decade. This type of construction may also contribute in decreasing climate change induced home degradation especially in rural and suburban areas of West Africa.

✓ **West African high demographic density: a primer for support to green growth from a green industry**

57. Economic transformation in West Africa requires industrial development. The development of any industry needs exploitable opportunities and a strong market base. West Africa consumer market is currently estimated at more than 330 million people (more than 600 million in 2050). Consequently, West African states must leverage this powerful asset to enable the flow of manufactured goods and the promotion of industry. Indeed, sub-regional institutions promote the common market that the industry needs to flourish.

6. Conclusions and Recommendations

58. Demographic challenges, food and energy security, climate change, ecosystem unbalance, healthy growth and equity in the distribution of wealth, call for action upon all actors in West Africa to engage into the trajectories of sustainable development, provided they want to operate the mandatory transition in production, distribution and consumption models. Thus, in accordance with the guidelines of Rio +20, the green economy is a means to achieve sustainable development and to better fight against the drivers of poverty.

59. The urgency for the population living in that part of the continent is to ensure strong , socially inclusive , and environmentally sustainable growth that will create economic opportunities for all that are evolving in intensive labor sectors. Indeed, the reality within the economies of the region is that they are mostly and deeply dependent on natural capital. Green growth to sustain those economies would therefore, allow for a more judicious and inclusive use of natural resources through more productive, efficient and resilient to climate change investments.

60. The current negotiations on the climate aim at reaching a post-2012 agreement. This is an appropriate time for the countries of West Africa to be part of the dynamic green economic transition. Indeed, for once, actors of the sub-region should rally and coalesce around the broader objectives into which the international community is willing to achieve from a development pathway that emit less GHG but more resilient to the effects of climate change. Yet, these negotiations are already bounded in involving the non-Annex I (developing countries) into meeting the goals of reducing GHG emissions as defined by the Convention "Climate" with, in particular, the development of Nationally Appropriate Mitigation Actions measures including their funding and transfer of adjacent technologies that could benefit these countries.

61. Henceforth, as it is in any structural transformation, the transition to the green economy (EV) requires accompanying frameworks and support services targeting the many actors that will be involved with the political and institutional (instruments, institutional leadership / restructuring) crafting, the putting in place of the needed investments or seed funding, who will be undertaking the R&D, training the skilled works in the emerging professions, and spreading the information or instilling awareness for the strategies the new paradigm.

62. Truly this will depend on the political process that each country will undergo to reduce the gaps that constitute an obstacle to sustainable development.

- 1 **Defining a clear political vision and updating of long-term part policies in a context of multiple crises:** Each country must have a long-term vision coupled with a new green growth strategy through sustainable development. This vision and strategy must fit the contours of climate change to guide action towards low carbon and thus stimulate a growing economy contributing to the mitigation of carbon emissions. The establishment of this vision and strategy requires first a conceptual consensus on the content of the green economy and then the participation of all stakeholders through the establishment of consultative framework at regional, national and local. Thus, a mode of political, economic and social applies to all respecting the principle of sovereignty.
- 2 **Policy based on best practices involving adaptation and mitigation in sectors with high labor intensity (LI).** The synergy between adaptation and mitigation can improve the cost-effectiveness of measures and make them more attractive to stakeholders, including potential funding partners. The analysis notes that areas of synergy opportunities Adaptation/Mitigation-development are more important in agriculture, forestry, buildings and urban infrastructure, renewable energy and associated industries; there is so many niches creating decent green jobs and green growth. Many initiatives in

these areas at Community level reveal the need for a change of scale and demonstrate the possibilities for replication, appropriation approaches and instruments.

- 3 **The implementation process for the control of issues, concepts and tools both at local, national and regional levels.** As such, it may be appropriate to set up a regional task force to support the appropriation of concepts and their alignment with the sustainable development process. A group that would relay these country-level and local communities, particularly for countries included in the decentralization process.
- 4 **The development needs of regional and national leadership to overcome the challenges of good governance.**
- 5 **Strengthening territorial holistic approaches to capitalize on endogenous dynamics and potential synergies.** Sectorial Development Approach has finally showed its limits. Today Sustainable Development and to operationalize the green economy urgently require to adopt integrated approaches to take advantage of synergies from different geographic pooling of financial resources, skills and expertise, including indigenous knowledge.
- 6 **Integration of the green economy development strategies in local, national, regional:** The approach of mainstreaming the green economy development strategy requires the provision of tools and breakthrough approaches.
- 7 **"Greening sectors and territories" favoring a 'step by step' within sector or territory (for example).**
- 8 **The search for innovative financing instruments through flexible and appropriate mixing of financial resources including state and local governments.**
- 9 **Strengthening human and institutional capacities to allow the institutional coherence of actions and enable countries to take full advantage of all possible funding.**
- 10 **Establishing monitoring systems, Impact Assessment of the implementation of green economy strategies in order to better assess the actual changes noted in political, social, environmental and institutional.**