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Opinion

Potentials, drivers and barriers to green economy transition: Implications for Africa

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ABSTRACT: African countries depend majorly on natural resources for livelihood sustenance. Despite many untapped potentials in some sectors of Africa's economy, the continent is still faced with several social, economic and environmental problems. Green economy presents an appealing policy framework to help the continent overcome these challenges and transit to a more environmentally-friendly, low-carbon and resource-efficient economy. Achieving this socially-inclusive viable economy is limited by weak institutions and political will, human and institutional capacity gaps, a paucity of data for impact assessment, poor awareness of the benefits of green economy concepts and poor coordination among green economy actors. This review identifies the potentials, drivers and barriers to a green economy in Africa. Some countries recognised the role of the green economy in sustainable development. However, mainstreaming the right policy mix into national plans across the sectors of society remains a big challenge. This review thus recommends strengthening both public institutions and political will that will help to prioritise policy frameworks, mainstream private sector involvement, close capacity gaps, create sufficient public awareness and build sectoral synergy among green economy actors for an environmentally-sustainable, low-carbon and resource-efficient economy.

Keywords: Environmental sustainability, green economy, green economy initiatives, natural capital assets, sustainable development.

INTRODUCTION

Worsening environmental problems are endangering human civilisation and this has created a "Decoupling Effect," a situation characterised by declining natural resources and increasing human consumption (Anikina et al., 2017). As a way out of these problems, the world community adopted the concept of Green Economy (Mishulina, 2017) as an indispensable strategy to reverse the trends and ensure the safety of humanity. Green Economy adoption arose from a consensus that only collective economic adjustments on a global scale can mitigate the lethal consequences of climate change and environmental degradation (Georgeson et al., 2017).

The idea of the transition to the Green Economy was fundamental to the 2012 United Nations conference in Rio de Janeiro where the ultimate document indicated that each country could determine its transition in accordance with its national plans, strategies and priorities for sustainable development. The selection of "green economy in the context of sustainable development and poverty eradication" as one of the themes at the 2012 United Nations Conference on Sustainable Development (Leggett and Carter, 2012) was also to promote green economic initiatives as avenues of recovery from 2008 financial crisis. Thus, the Green Economy concept presented a far-reaching transition to environmentally-friendly and resource-efficient technologies that will reduce emissions and mitigate climate change impacts (Jänicke, 2012) while at the same time working towards reducing environmental degradation and resource depletion.

Green Economy (GE) as spearheaded by the United Nations Environment Programme is as an economy that results in improved human well-being and social equity with reduced environmental risks and ecological scarcities (UNEP, 2011). This seeks to improve the instrument for achieving sustainable development in a time of great socio-economic and environmental change.

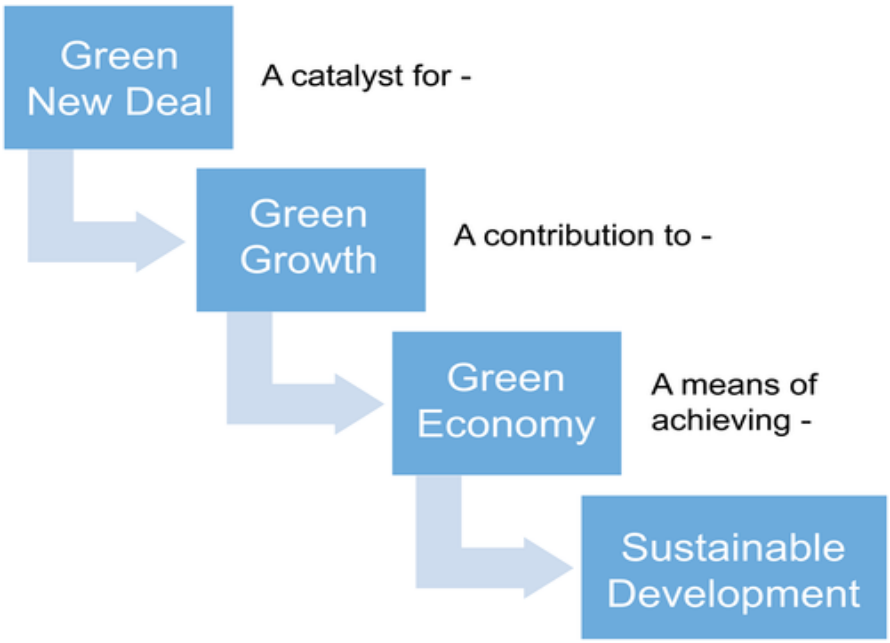

Figure 1. The hierarchy of green economy concepts.
Source: ten Brink et al. (2012).

The United Nations Conference on Sustainable Development (UNCSD) engendered hope that the Rio +20 build-up would generate sufficient political and financial backing or at any rate international recognition of an important role in policy debates (Sierra, 2012; Damon and Sternern, 2012). The Rio+ 20 which singled out poverty eradication as the world's most serious challenge underscored that economies must be made both green and inclusive (Clark, 2013). Many analysts agreed that the UNCSD was a missed opportunity to situate the green economy in international policy debates (Clémençon, 2012; Barbier, 2012). While it was a themed conference, it was short of clear vision (Bernstein, 2013) and the resultant document, *The Future We Want* was not successful in creating a coherent roadmap (Clémençon, 2012).

It should be noted that Green Economy should not stand in isolation; rather it should coexist with other sustainable developments concepts. According to ten Brink et al. (2012), the report of The Economics of Ecosystem and Biodiversity on green economy depicted a clear conceptual consistency and hierarchy with sustainable development represented in Figure 1.

To some degree, the green economy did not get the necessary public support since the "Green New Deals" with a strong focus on economic growth (Barbier, 2015). The Sustainable Development Goals (SDG) could shape green economy development after Rio+ 20 (United Nations, 2014) because the goals and targets could draw attention to green economy practices. SDG shared goals and action plans present the prospects of implementing a green economy in a transformative way in national contexts (Stevens and Kanie, 2016).

Effective implementation of green economy initiatives could result in sustainable development. Employment generation and economic growth are mostly driven by public and private investments that minimise carbon emission and pollution, prevent loss of biodiversity, support balanced ecosystem services, and improve energy and resource efficiency. These investments according to UNEP and UNECA (2011) should be catalysed and supported by targeted public expenditure, policy reforms and regulation changes. Undoubtedly, this concept brings to bear an opportunity for a new economic growth paradigm which is in harmony with ecological systems and also influences poverty alleviation. African countries rely heavily on natural resources for sustenance. What does this mean for the continent especially in its pursuit of a sustainable and resource-efficient economy?

According to Nelson and Behar (2009), the exploitation of these resources supported increased economic growth. Despite the claimed economic performance, African countries continue to face persistent poverty, underemployment and unemployment. The last straw is the potential for future economic growth and development which is at risk as a result of climate change, resource scarcities, environmental degradation, desertification and other environmental risks (UNEP and UNECA, 2011).

For continuous sustenance of millions of livelihood of Africans, the natural capital needs to meet the growing demand for food, water, health while at the same time, reduce poverty and stimulate buoyant economic livelihoods. Therefore, how can Africa's natural resources create more wealth for her citizenry in a beneficial and

resource-efficient manner? What are the challenges faced by African countries in the face of its transition to a green economy and how could these challenges be overcome? These are the question this review addressed while stimulating further discussion and contributing to the body of knowledge.

POTENTIALS OF GREEN ECONOMY

The transition to Green Economy by African countries provides economic opportunities as well as growth potentials for the economies which heavily rely on natural resources. However, economic growth is majorly based on natural resource exploitation and research has shown that adjusting GDP to loss of natural growth leads to lower and sometimes negative growth rates (UNEP, 2011). This challenge is further made worse by poverty, low human development, unemployment and underemployment. Despite these challenges Africa is well-positioned to tap into Green Economy potentials because its economic backbone and important sectors are based on natural resources exploitation and agriculture which according to the Ethiopian Prime Minister at the African Economic Conference are the centre of economic transformation when it comes to green economy (Leke and Signe, 2019). This situation calls for sustainable management of the natural capital of the continent as an important source of income, livelihood and jobs for many Africans as well as a good starting point for the transition to a green economy.

An economic transformation that is fundamental to lifting African countries out of poverty will need key energy resources. The potentials of the green economy in Africa appears more appealing knowing that a large number of the Sub-Saharan African is still with no access to modern energy. According to the 2010 Human Development Report, Africa has immense untapped potential sources of renewable energy that incur minimal opportunity cost and this entails huge prospects for job creation, long-term energy security and economic development. Green economy in African will also aid the development of new industries and the possibility of diversifying local production processes. There is also the potentials for better industrialisation due to access to mature, efficient and sustainable technologies. Based on the following, a comprehensive green energy strategy could lead to sustainable and inclusive growth opportunities.

The challenges of achieving inclusive growth and sustainable development, job creation and poverty reduction while enhancing the conservation of natural resources are enormous and demand a change in the perception of the economic opportunities. The green economy may be perceived as an avenue to attain inclusive and sustainable growth in every economic sector but rather focus on the legal and regulatory framework (Klein et al., 2013*).* To present the true prospects of Green Economy, there is greater need to prioritise initiatives that generate more employment and income while reducing poverty levels, since they stand a better chance of drawing government's attention for subsequent implementation.

The 2010 United Nations Environment Programme report underscored some key sectors to show the potential to combine environmental and economic interests. These key sectors included agriculture, buildings, cities, energy, fisheries, forestry, tourism, manufacturing, water, waste and transport (Figure 2). In understanding the prospects of a green economy, a brief analysis of some of these sectors is essential in the context of Africa's sustainable development.

Agriculture

Agriculture and its other land-related use could facilitate a transition to the green economy. It influences natural resource system with harmful or beneficial effects on the environment and could become a driver of land degradation, climate change, biodiversity, water quality, etc. Agriculture is one of the crucial sectors in African economies especially for employment and sustenance of livelihood. A large number of African population — between 70% in Nigeria and Cameron, 72.7% in Ethiopia, 76.9% in Malawi, 31% in Namibia, etc. (CIA, 2019) — depend on Agriculture for livelihood. However, the sector's contribution to Gross Domestic Product is not inspiring. Benin accounted for 26.1%, Ethiopia 34.8%, Cameroon 16.7%, Namibia 6.8% (due to the Namibia's focus on commercial livestock), Gambia 20.4%, Ghana 18.3%, Kenya 34.5%, Liberia 34%, Rwanda 30.9% and Nigeria 21.1% (CIA, 2017a). While the development of the sector is critical to a successful transition to the green economy, it is often characterised by low productivity, low technology use, reliance on human labour and dominance of small-scale producers practising at subsistence scale. Agriculture is highly vulnerable to the effects of climate change and environmental risks and this offers a strong argument for Green Economy integration into the national development plan.

Forestry

Deforestation and unsustainable forest management may continue to hamper the production of both market and non-market products of the forest. The non-market products which are key to environmental sustainability include regulation of local and regional climates, maintenance of biological diversity, erosion control, watershed protection, regulation of streamflow and velocity, purification of air through absorption of carbon dioxide (Chukwu and Bada, 2019).

Diminishing forest cover could pose a serious challenge to harnessing the gains of the sector except innovative strategies are put in place to revive the industry. In Nigeria

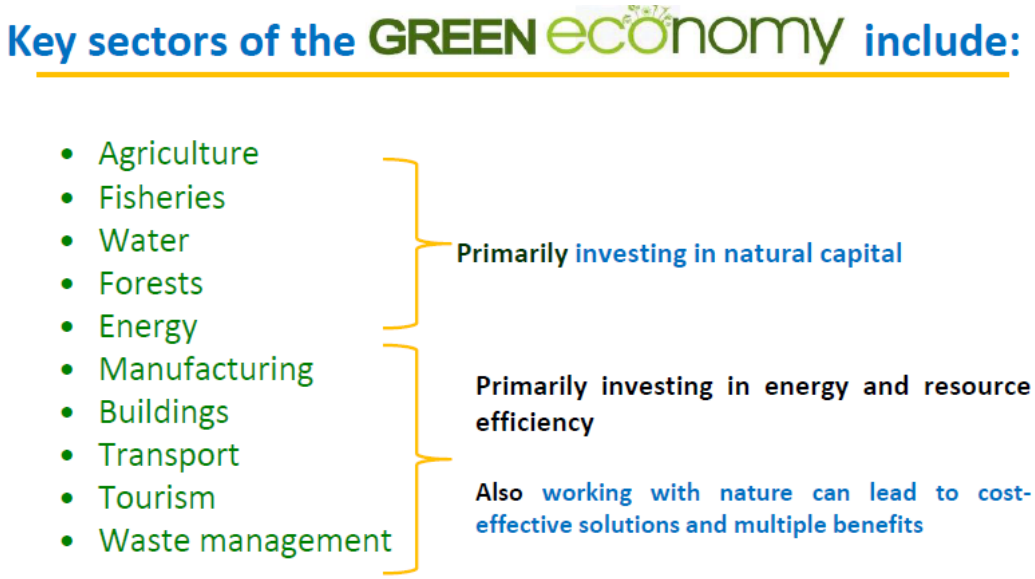

Figure 2. Key sectors of green economy.
Source: UNEP Green Economy Report (2011).

for instance, out of the 99.3 million hectares of land area, only a small 10% is forested. This is not comparable with Ghana's 41%, Liberia's 48%, Senegal's 39% and Sierra Leone's 26% (Okunlola and Akinyele, 2014). Nigeria and other African countries whose forests are less than FAO's 20 to 25% recommendation (countries with seeming minimal or no interest in harnessing the potentials of forest resources) have a long way to go since this sector is key to the effective transition to the green economy. A sustainable and productive forest base can ensure food and environmental security (Chukwu and Bada, 2019), with great potential to create jobs and growth through diversification of new products and services in demand within the green economy.

Unfortunately, the alarming spate of deforestation and loss of biodiversity frustrate every effort at ecological resuscitation. Forests in Nigeria for instance are under serious threat with rising spate of illegal logging, worsened by government participation in the illegal trade. Chukwu and Olajuyigbe (2017) posited that one major concern about forest sustenance and carbon sequestration is the threat of impermanence, a situation where the forest is destroyed through burning or cutting down at any stage for whatever reason, thus, potentially releasing most of the sequestered carbon back into the atmosphere. There is no doubt that sustainable trade in timber and non-timber forest products can significantly aid transparency and tracking of the sector's activities through certification (Chukwu and Olajuyigbe, 2017).

In the last 100 years, West Africa has lost 90% of forest coverage and Ghana and Ivory Coast which used to have large reserves of the forest have nothing outside the reserve. The Forests of the Congo Basin are disappearing fast because of farming activities by smallholder farmers and commodity development (Welle, 2018). In Benin, deforestation reached 80% in the last 20 years and government effort in Ghana has been unsuccessful despite tree planting enforcement initiatives for businesses that exploit forest resources. In Ethiopia and Namibia, while there has been a minimal contribution of this sector in the national accounts, forests have been vital to the provision of ecosystem services (Klein et al., 2013).

Realising the importance of the forest sector, most African countries are making efforts to strengthen and enhance the sector with sustainable green economic initiatives. The upgrading of Benin forest policy on the horizon 2025 is novel as policy instrument geared towards sustainable forest management for cultural, ecological and socioeconomic needs while contributing to food security, poverty reduction and climate change mitigation (MEHU, 2012). The Gabonese government has updated its forest code (Law No 16/01 of 2001) to enhance forest governance and management towards increasing the contribution of the forestry sector to economic and social development and encourage a diversified and efficient wood industry. In line with green economy initiatives, the government has also adopted national-level legislation facilitating investment promotion and establishment of forest funds (Vodouhe and Assagbadjo, 2019).

As a way out of the challenges of deforestation and unsustainable forest management, Community-Based Forest Management offers a sound management option while offering employment and jobs to teeming Africa youths. Nigeria, Ethiopia and Ghana's partnership with the World Bank's Forest Carbon Partnership Facility (FCPF) is a welcome strategy to support the reduction of emissions from deforestation and forest degradation in developing countries. This partnership demands strong political will

and proactive steps to promote conservation, sustainable management of forests while improving forest carbon stocks.

Energy

Access to sustainable energy is one of the challenges facing Africa countries, yet the African continent possesses an immense under-utilised renewable potential. Non-renewable energy sources have many environmental/ecological, social and health implications. Burning of fossil fuels causes global warming and climate change. Development of renewable energy is key to lessening dependence on fossil fuels and helps to improve security and at the same time minimise spate and causes of global warming. Investments and development of renewable energy sector will provide lots of environmental benefits and economic growth and job creation.

The potentials inherent in renewable energy and opportunities created by gaps in energy access better situates African countries to tap into the green economy potentials. Klein et al. (2013) reported that the population that lack access to electricity and modern energy is about 85% in Ethiopia and 45% in Ghana and most African countries depend on energy import. A series of renewable energy programmes are already being developed in most African countries. Morocco, Tunisia, South Africa, Egypt have already adopted wind as alternative power generation sources (Mas'ud et al. 2017). Nigeria, Ethiopia, Namibia, Ghana and South Africa are not left out in the renewable energy initiatives which are still underdeveloped despite their potentials for Green Economy. South Africa has invested so much in wind energy with operational wind farms supplying close to 26,000 GWh annually to the national grid (Mas'ud et al. 2017). Cameroon has no policy plan while Nigeria's implementation of renewable energy policy is slow despite its energy policy and action-plans. Namibia's Ministry of Mines and Energy invested in renewable energy promotion through its Solar Revolving Fund and solar energy shops geared towards creating access to energy in remote areas. Ethiopia's focus has been on Eco-Energy with private sector involvement (Klein et al., 2013). This will promote energy-efficient technologies and build local capacity and linkages abroad for the improvement of the sector.

Access to energy improves the quality of life in every community and has the potential to create employment, provide an avenue for the development of the green economy. More employment could be generated in the rural communities through the installation of renewable energy systems and this has the capacity to result in diversification potential for the remote communities (UNCSD, 2010). In another development, the international market for carbon credits presents a remarkable economic opportunity for African countries.

Manufacturing

The manufacturing sector in Africa appears largely underdeveloped. It has a variety of potential for new product innovation based on natural resources. It could also become a starting point for employing highly skilled labourers while developing new technologies especially because of its labour-intensive nature. A booming manufacturing sector is not only crucial for sustainable job creation, economic growth and productivity in other sectors of the economy. The observed high growth rates in African countries over the last few years have not translated into the desired decline in poverty and unemployment level (Moyo and Jeke, 2019).

The population of African citizens which is projected to reach 1.7 billion by 2030 is an untapped human resource awaiting to be harnessed for a resource-efficient economy. Also, the need to close the infrastructural gaps, key impediments to growth in Africa, also presents opportunities for the green economy. For instance, nearly 600 million Africans have no access to the electricity grid. This shows that Africa has huge green economy potential but it must not be forgotten that Africa's growth is characterised by high dependence on natural resources and low productivity. The 2016 United Nations Economic Report on Africa revealed that the continent's manufacturing sector has been accompanied by high energy and material intensities plus waste generation which drive resource scarcity and lead to high production costs that weaken global competitiveness of the sector. The green economy is both a call and an opportunity for African countries to achieve a structural transformation that results in job creation, inclusive growth and natural resource sustainability. This will deliver a more competitive and resource-efficient industrial sector. Thus, the concept of green manufacturing which according to UNIDO (2013) minimises the number of natural resources needed to produce finished goods through material-efficiency as well as energy-efficient methods. This green economic concept enhances resource-efficiency which promotes competitive advantage and sustainable growth.

Resource efficiency and cleaner production initiatives such as UNIDO's financed project in Namibia should be emulated by other African countries especially because of its environmental and economic benefits. The Ethiopian Cleaner Production Centre designed to reduce generated waste, Namibian Cleaner Production Initiative supported by DANIDA and Ghana's resource efficiency industrial zones should serve as good examples. The idea of cleaner production, resource efficiency and climate change mitigation could form vital national policies for reduced fuel and energy cost.

DRIVERS OF GREEN ECONOMY

As the green economy continues to gain traction among

African leaders, it is crucial to understand key factors driving it since they are relevant to national policies and action plan. Some of the key green economy drivers discussed in this review include natural resource abundance, access to modern and sustainable energy solutions and commitment of political authorities. It is worthy of note that there are other factors that drive the green economy in Africa and they include markets, skills, technologies and public institutions.

Natural resource abundance

Natural resources abundance is a key driver of the green economy. A sustainable management of renewable resources - the forests for instance as well as non-renewable resources such as minerals and oils has the capacity to yield indefinite benefits. The 2011 report of the Organisation for Economic Co-operation and Development (OECD) posited that it's essential to acknowledge natural capital, the revenue generated from non-renewable resources depletion need be assessed as loss of capital instead of income comparable to income derived from renewable resources flows. Together with renewable and non-renewable natural resources, natural capital comprises ecosystem services which as pointed out by Chukwu and Bada (2019), as well as OECD (2011), produces crucial life-support functions. The difficulty encountered in accounting for ecosystem services made it near impossible to draw the attention of policymakers. According to the 2010 report of the International Institute for Sustainable Development (IISD) and Netherlands Environmental Assessment Agency (NEAA), recognising the role of ecosystem services in the sustenance of economies and societies, global efforts should gear towards including ecosystem analysis and accounting in policy making.

Natural resource abundance has immense contribution to fiscal revenue, income and poverty alleviation. Natural resource wealth embodies the wealth of most African nations and thus, a vital aspect of economic development (OECD, 2011), as an essential foundation for society and economy. As evident in Sub-Saharan Africa, natural resource capital is no doubt a key driver of a green economy in Africa. Expectedly, larger chunk, if not the entire populace rely on these resource for basic needs while its exploitation is the fulcrum upon which the national economy sits. Efficient and sustainable utilisation of these resources and improvement of the natural capital base will directly boost income, livelihoods and employment at the local and national level. Natural resources are the fulcrum upon which agriculture, industries and tourism revolve in Africa. Tourism, for instance, thrives on pristine environment and strengthening green and sustainable tourism could become a crucial driver in other areas such as energy and water. The 2012 study of the United Nations Environment Programme revealed that the contribution of biotrade to the economy of Namibia could amount to a 7% increase to GDP over a 10-year-old period. Additionally, the poverty reduction of that country was estimated at 250,000 people with direct income generation. Nigeria has an even higher potential for reaping the benefits of sustainable management of natural resource capital.

Access to modern and sustainable energy solutions

The African continent has remarkably untapped potentials of renewable energy sources which consist of biomass, solar energy and wind— these have some opportunity costs with the possibility of job creation, long-term security and economic development (UNEP, 2011). A large number of the population in Africa are still with no access to modern energy. CIA (2017b) estimated the population of Africans without access to electricity to include 77 million people in Nigeria, 34 million in Uganda, 13 million in Kenya, 39 million in Tanzania, 9 million in South Africa, 1 million in Namibia, 12 million in Zambia, etc. Apart from Namibia with just a million of its citizen lacking access to electricity, a great opportunity exists in other Africa countries to tap into the potentials of the green economy. Examining electricity production in these African countries will reveal that Namibia has only 8% of the total installed capacity of renewable energy apart from hydroelectric plants. Zambia has only 2%, Uganda 12%, Kenya 33%, Tanzania 6% and South Africa have only 10% while Nigeria has 0% of total installed capacity of electricity from renewable sources outside energy generated from hydroelectric plants (CIA, 2017b).

The economic revolution and growth essential to alleviate poverty demand important sources of energy and electricity generation. There are many factors that hamper efforts at achieving sustainable access to electricity. According to Klein et al. (2013), the high cost of linking rural communities to the grid places was hampering effort to decentralise sustainable and renewable energy solutions as a green economy driver. However, with a synergistic approach to the challenges of access to energy, most Africa countries can tap into the huge opportunity presented in the untapped renewable energy sources. To achieve this requires the integration of clean energy policy into national plans and push effective implementation to harness the huge energy reserve. In this regard, Ethiopian Cleaner Production Centre, Namibian Cleaner Production Initiative and Ghana's Resource Efficiency Industrial Zones are great initiatives that will enhance cleaner production, resource efficiency and climate change mitigation.

Commitment of political authorities

The commitment of political stakeholders towards sustainable energy development, mitigation of climate

change and its adaptation could be important drivers for the green economy. The outcome of the Six African Economic Conference revealed that the commitment of political leaders towards renewable and sustainable development is at the early stage. This is evidenced in the sequence of government policies and strategies linking climate change in Ghana, Ethiopia and Namibia's Green Economic Dialogues. While green economy appreciation may be gaining traction in Africa, it suffers setback from poor awareness, capacity gaps and political interests.

Within the context of Africa's sustainable development and poverty eradication, interests of stakeholders and availability of funds are vital drivers of green economy and they have direct bearing to proper implementation of environmentally-friendly, economically-viable and resource-efficient initiatives. Non-governmental organisations are fundamental drivers of the green economy but it's also worthy of note that they often focus on climate change, ecological agriculture, natural resource management, etc. While they could be reckoned with, they might not be ideal partners for entirely economic intervention in Africa's pursuit of a green economy.

Based on this review, constituted political authorities need to understand the existing gap and the potentials inherent in green economy transition and begin to phase out obsolete subsidies, strengthen market infrastructure, provide fresh incentives, reform policies, redirect public investment towards the implementation of sustainable green economy initiatives. They could also focus on investment in human capital and societal infrastructure, mainstream environmental and social integration, enhance innovation and technology transfer, etc. Transiting to a low-carbon and resource-efficient economy can create a good number of jobs across many sectors as an engine of sustainable development. However, achieving the above will be impossible without the commitment of political authorities who truly wish to make an impact.

BARRIERS TO SUSTAINABLE DEVELOPMENT AND GREEN ECONOMY

Recognising the potentials of the green economy in Africa, the government and all development stakeholders need to synergise and strategise towards removing barriers to effective implementation of a green economy. Some of these barriers include lack of awareness, the inadequacy of data, poor coordination among green economy actors as well as human and institutional capacity gaps.

Lack of awareness

Information dissemination and awareness creation on the potentials of the green economy especially as it relates to adoption will eliminate effects of negative perception that may characterise such new concept in Africa. Lack of knowledge on the opportunities of green economy as well as a dearth of skills in the enterprise (Morssy, 2012) could pose several challenges to not only policy formulation but also cross-sectoral adoption of the concept. In Africa, awareness of green economy is generally weak. Political interest of most stakeholders and political authorities are on seemingly non-sustainable developments. In most African countries, there's still no universal consensus, on a national context, on the definition of what green economy entails and how it could harmonise with activities under the climate change and sustainable development umbrella (Klein et al*.,* 2013). Poor awareness hampers public institutional adoption of strategies. This has serious consequences on the citizen and society at large. Concerning the environment, for instance, most citizens are generally unaware of how their actions could impact the local and global environment. Public awareness creation will improve understanding by projecting clear objectives of green economy policy. Developing a knowledge-based green economy will fast-track not only appreciation but also the adoption of green economy initiatives.

The human and institutional capacity gap

There is a general 'inadequacy' of skills in most sectors of the African economy. This is reflected in major gaps in human and institutional capacity in putting to practice the green economy concept. This seems more pronounced in ministries with less involvement in the implementation of sustainable and environmental issues. Where there are obvious crucial actors, one may observe little or no capacity and technical expertise in the green economy. In Africa, there is generally no strong political will among stakeholders to enforce the translation of policies into actions following green economy procedures. Feeble government institutions and limitations in the budget could hamper the implementation of environmental and green economy policies. To ensure proper implementation of green economy programmes, public institutions need to be strengthened to remove institutional barriers, protect the environment and reconcile socio-economic objectives. Thus, the place of public authorities in building and strengthening an inclusive institutional system is very vital.

Poor coordination among green economy actors

If sustainable development and resource-efficient green economy must be achieved, various political institutions and miniseries must agree to a consensus that inter-ministerial cooperation is highly crucial. In Nigeria or instance, the Ministry of Environment champions implementation of Green Economy, it should nurture strong collaboration with other ministries, especially where

this involves growth and economic development. Every stakeholder should encourage integrated coordination as well as pooling of resource, efforts and strategies towards viable green economic activities. Achieving this may need organisational innovation which will establish and strengthen institutions for efficient implementation of green economy initiatives.

Inadequacy of data

Data in some development issues are generally inadequate in most Sub-Saharan African countries. Data that are essential for assessing green economy policies are inadequate. Environmental statistics, in particular, are deficient in most African countries. This poses a great challenge to the measurement of impacts of a green economy on the environment. This is further worsened because there is inadequate information on the costs of environmental degradation and natural resource depletion. The paucity of data will make it near impossible to justify investments and could pose even a greater challenge to potential partners who may need information for decision-making. Designing policy frameworks for green economy initiatives in African countries may lack merits because decisions were not based on actual reality in the field. This will discourage effective partnership, prevent the successful and efficient implementation of national programmes for the resource-efficient economy.

IMPLICATIONS OF AFRICA'S TRANSITION TO GREEN ECONOMY

African countries are on a journey of economic, industrial and environmental transformation and green economy initiatives provide the platform for Africans to scale its transition to a resource-efficient and sustainable future. African Development Bank (AfDB) reported in 2013 that this transformation process recorded a sustained growth but is bedevilled by a weak foundation with many economic, environmental and social challenges. The green economy provides an opportunity to achieve growth targets and development objectives in a more resilient, efficient and sustainable manner (AfDB, 2013). A green economy tied to a transformative agenda could yield positive social impacts especially eradicating poverty. For instance, Kenya's shift in green investment is predicted to result in lifting more 3.1 million citizens out of poverty by 2030 (UNEP, 2014).

With 600 million increase of people in the urban region of Sub-Saharan Africa (FAO, 2012), green sector investment will have a positive impact on the employment generation in the region. Organic agriculture with its labour intensiveness, more than other resource-intensive alternatives, can lead to exponential job creation. The green economy has huge potentials for not only improving human well-being but also enhancing social equity while reducing environmental risks and ecological scarcities. Green investments in Africa can lessen air pollution, boost agricultural yields and increase forest cover. African leaders are at liberty to wake up and take with all seriousness the developmental potentials presented by the continent's transition to a green economy. They must rise to tap into cleaner energy opportunities.

Agriculture is a vibrant and dominant economic sector in most African countries and green investments present a huge opportunity for positive and transformational agricultural yields and revenue. The agricultural sector accounted for 32 per cent of Africa's Gross Domestic Product and supported 65 per cent of her labour force (Alliance for a Green Revolution in Africa, 2013). Focusing on green investment in this sector could result in the highest social impact and long-term economic results. In Senegal for instance, increased green investment resulted in higher agricultural production while green agricultural investments in Uganda yielded an increase in export opportunities in high value-added activities in organic produce (UNEP, 2010).

Eradicating poverty is a critical challenge in Africa and most of her populations rely on the natural resources for livelihood sustenance. World Bank (2014) reported that 48.5% of the Sub-Saharan population live on less than $1.25 per day while 69.9% live on less than $2 per day. The poor population of Africans depend heavily on natural resources. By implication, green economy interventions would have greater positive impacts on them. This is supported by TEEB (2010) which reported that natural resources generated above 50% but no less than 90% of the GDP in developing countries. Increased developments in the green sector are pro-poor and could become a long-term poverty eradication strategy. United Nations Economic Commission for Africa (2016) reported the social benefits of a green economy in Kenya to include a 2% GDP increase in green investment that reduced more poverty than a similar increase in business-as-usual investments scenarios.

Green economy initiatives provide a remarkable avenue for job creation for Africans to thrive. These initiatives serve as a forum for the populace to improve their livelihoods. The current 70% of African youths under 30 who were expected to make their way into the labour market (World Bank, 2014) should depict a critical future for Africa and push her leaders to prioritise the integration of green jobs strategies into national planning processes. There are ambitious green initiatives across African countries. In Tunisia for instance, assuming the implementation of a planned green initiative would result in 80,000 additional jobs by 2025 (UNECA, 2016). This is an 80% boost on already existing 100,000 jobs. A 2016 report of the United Nations Economic Commission for Africa further revealed that South Africa Green Economy Accord sought to create 300,000 new green jobs by 2020. The aforementioned green programmes suggest that

investment in green economy initiatives yield positive outcomes in labour-intensive sectors such as agriculture, renewable energy, etc.

Environmentally, green economy will result in high positive environmental impacts such as lower carbon dioxide emission, increased biological diversity, ecosystem restoration and other positive environmental externalities as expounded by Chukwu and Bada (2019). While African countries are not major emitters of greenhouse gases, they are at the receiving ends of climate change and other environmental risks. The green economy has shown substantial reductions in greenhouse gases compared to conventional investment scenarios. In Senegal, emissions would be 9% lower than in normal case while in Ethiopia, the government targeted limiting emission to 159 million tons per year (250 million tons less CO_2 emission per year) by 2030 (UNECA, 2016).

Forest sector is one of the green transition areas where expectations on positive environmental benefits are high. Investment in forest sector would reverse the spate of environmental degradation with consequent negative impacts. This would also restore the ecosystem functions through air purification and reduction of greenhouse gases especially carbon dioxide. A vibrant sector could enhance watershed protection, reduce water stress, erosion and provide food, shelter and jobs, etc. South Africa saved billions of tons of water by investing in natural resource management especially land restoration (UNEP, 2013).

The natural resource value is increased with investments in the green economy. Communities dependent on natural resources and the ecosystem can tap into biotrade opportunities. Namibia's involvement in biotrade especially Marula oil, Kalahari melon seed oil, Ximenia oil and Manketti oil —in its transition to green economy with associated poverty reduction, economic, social and environmental benefits—resulted in 50% increase in over 10 years with a 7% increase to its GDP (UNEP, 2012). With the high potential of biotrade in African, as another mechanism for green economy transition, her government can introduce investment initiatives that will transform the country's economy.

CONCLUSION

African countries rely majorly on natural resources for sustenance of livelihoods. And there exist several untapped potentials in many sectors of its economy. Green economy could become a sustainable strategy to surmount her many social, economic and ecological challenges and transit to a low-carbon and resource-efficient economy. However, weak political will and institutions, poor awareness creation, the paucity of data, poor coordination among green economy actors as well as human and institutional capacity gaps pose serious challenges to achieving a viable green economy.

Most African countries have recognised the role of green economy and thus, have initiated some national programmes to this end. However, mainstreaming and aligning the right mix of policies and national initiatives across environmental, economic and social aspects of the society is still a challenge. There is thus the need for strong political will that will prioritise policy frameworks, acknowledge private sectors' roles and mainstream the sector's involvements, strengthen existing public institutions, close capacity gaps, create sufficient public awareness and build sectoral synergy among green economy actors for an environmentally-sustainable, viable low-carbon and resource-efficient economy.

CONFLICT OF INTEREST

The author declares that there is no conflict of interest.

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