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The Pursuit of Circular Economy Goal in Africa: An Exploratory Study on the Activities of the African Union and its Member States

By Israel Dunmade

Abstract
In the world today, the concept of circular economy is gathering a lot of momentum both in the business world and in the political circles. Circular economy (CE) concept is seen as a mechanism for profitable product development, new technology development, improved industry management, and as an approach to effective waste management. While a lot of these activities are concentrated in Europe and China, other parts of the world are following suite. The goal of this study is to examine the position of Africa in the circular global economy, what role the African Union is playing, efforts being made by businesses and countries in Africa to imbibe the concept, and their challenges. The study approach was purely based on literature research involving scholarly publications, information gathered from AU and its affiliate websites, as well as data results from scopus, Google and other search engines. Preliminary results showed that the European Union is supporting AU in promoting the CE concept among African Youth. Information gathered showed that circular economy is at an infancy stage in Africa and that public education especially on mass media as well as conferences would be needed to push the idea forward so that the African business communities and the political class can be informed and imbibe the idea.

Keywords
African Union, Circular Economy, 3Rs, Effective Waste Management,

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1. Introduction

Over three decades ago, it was discovered that sustainable development is the way to ensure the achievement of the much desired living standards while protecting our environment without degrading our socioeconomic progress. Since that time, there has been intensive global effort towards our transition to a sustainable future. Governments, scientists and other categories of stakeholders have devoted enormous resources towards finding lasting solutions to various issues affecting our planet earth and our social well-being while fostering economic growth. Despite the concerted efforts made at addressing the sustainable development issues from the political standpoint and scientific researches on the subject, the attainment of the goal seems elusive because of the divergent definitions of what is sustainable and what is not. Similarly, strategies to achieve sustainable development are also as divergent as the definition of what is sustainable and what is not. Significant number of businesses seem to be paying lip service to achieving sustainability as some of them are only sustainable in their reports while their corporate operations are "business as usual". However, in recent times, governments and businesses are galvanizing around the concept of circular economy as a pathway to harmonize all the various strategies and various research findings towards achieving the much desired sustainable development goals (McKinsey Center for Business and Environment, 2016).

Like any new concept, the term "circular economy" has been defined in various ways by different scholars. Among such definitions are those of Korhonen, Honkasalo and Seppala, (2018) which defined CE as "an approach to economic growth that is in line with sustainable environmental and economic development". Another one is that of Murray, Skene and Haynes, (2017) which defined it as "an economic model wherein planning, resourcing, procurement, production and reprocessing are designed and managed, as both process and output, to maximize ecosystem functioning and human well-being". Although we agree with many definitions of CE, in this research, we adopted Geissdoerfer et al., (2017)'s definition of circular economy as "a regenerative system in which resource inputs, waste, emissions,
and energy leakage are minimized by slowing, closing, and narrowing material and energy loops, which can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling (Fig 1) (Korhonen et al, 2018; Manninen et al, 2018).

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Figure 1 Circular Economy Concept
Source: https://www.pinterest.co.uk/theunschool/circular-economy/

The vision of CE is gaining enormous momentum in the political and business circles. According to Hobson and Lynch (2016), "Programmes and policies for a Circular Economy (CE) are fast becoming key to regional and international plans for creating sustainable futures". Solution & Co (2017) was of the opinion that "the circular economy tackles problems at their roots by reducing our dependence on finite products."

"CE is a model that seem to provide a pathway to decouple economic growth from resource constraints (Niero and Hauschild, 2017). CE is combining sustainability and business (Ritzen and Sandstrom, 2017). It is framed as a technologically driven and economically profitable vision of continued growth in a resource-scarce world.

According to Solution & Co (2017), "CE shifts our economies towards a more virtuous circle, designing out waste at all levels while restoring our manufactured, human, social, natural and financial capital." This new economy also represents a remarkable opportunity to protect the environment while creating jobs and wealth. For example, CE is estimated to worth €1.8 trillion ($2.1 trillion) by 2030 in Europe alone." Though the CE addresses complex problems, it should not be seen as a simple, standardized solution. Rather, it is a collaborative effort in which everyone has a role to play" (Solution & Co, 2017; World Economic Forum, 2017).

Although circular economy is relatively new in its conceptualization and implementation, a number of governments such as European union and China have taken the "bull by the horn" by developing national programs to foster effective implementation of CE. For example, CE is already deeply entrenched in Chinese government development policies and plans. The CE

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concept has also been taken up by the European Commission and global business leaders alike (Hobson and Lynch, 2016). In view of the growing trend in the entrenchment of CE in many national economies and businesses, there is a need to assess where Africa stands in the picture. The purpose of this paper, therefore, is to assess where Africa is in the context of global circular economy, to articulate the potential challenges and opportunities of adopting and implementing circular business model(s) in Africa, and to project the essential roles that various stakeholders need to play in order to achieve the laudable goals of circular economy in Africa ().

In this regard, the paper addresses the following research questions: What is the current state of Africa in the context of global circular economy? What are the various initiatives of African union and African countries' government and businesses towards the promotion of circular economy? What are the potential challenges of implementing circular economic principles in Africa and what are the various benefits of circularity of African economy to Africans?

2. The State of Africa in the Global Circular Economy Context

Coordinated and harmonized circular economy system(s) is generally in an infancy stage in Africa. While there are some pockets of long standing economic activities that falls within the purview of circular economy, majority of them were purely based on economic exigency rather than being a purposeful pursuit.

2.1 Activities of African Union and African governments in the promotion of Circular Economy in Africa

There is no definitive policy of the African union that is targeted at achieving the state of circular economy in the Africa but there are some declaration of aspiration regarding sustainable development in Africa. For example AU Agenda 2036, aspiration 1 item 16 stated in part that "Africa shall address the global challenge of climate change by prioritizing adaptation in all our actions, drawing upon skills of diverse disciplines with adequate support (affordable technology development and transfer, capacity building, financial and technical resources) to ensure implementation of actions for the survival of the most vulnerable populations, including islands states, and for sustainable development and shared prosperity." Item 17 stated that "Africa will participate in global efforts for climate change mitigation that support and broaden the policy space for sustainable development on the continent. Africa shall continue to speak with one voice and unity of purpose in advancing its position and interests on climate change."
Therefore, unlike EU, there is no distinctive policy or initiative by the AU towards the achievement of circularity of African economy.

In the last few years a number of African governments are making concerted efforts at promoting circular economy through their various ministries of environment. The three front runners are Nigeria, Rwanda and South Africa. These three countries, among others, are complimenting the efforts of entrepreneurs and companies in closing their material cycles through the development of supportive policies and initiatives. However, according to Rwandan Ministry of Environment (2017), more coordinated action is needed to fully realize the economic and environmental opportunities involved in the implementation of circular economy practices. The launch of African Circular Economy Alliance (ACEA) during the UN Climate Change

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Conference in Bonn, Germany on 16th November 2017 is one of the efforts of these three African governments to fast-track the adoption of the new model of sustainable development across Africa. The alliance which was founded by the governments of South Africa, Rwanda, and Nigeria was in collaboration with the World Economic Forum and the Global Environment Facility. The alliance informally started working to advance circular economy across Africa about a year before the launch (Biruta, 2017; Luijendijk, 2018). Just like the concept of circular economy, the alliance is a commitment to keep resources in use for as long as possible. It is an effort aimed at turning ideas into action and to foster collaboration among governments, businesses and organizations across the world to fast track the circular economy agenda in Africa (Bukhari et al., 2018; Ethekwini municipality, 2014; Kilian, 2017; Mativenga, 2017; Minirena, 2017; Molewa, 2016; Murray et al, 2017).

2.2 African business communities' efforts in imbibing circular economy concept

For a long time, many entrepreneurs and companies have been involved in the business of converting waste to wealth. Many African businesses are involved in the sales of secondary products that first time users found undesirable to them. In many African countries, it is common to find markets for "second-hand" products such as cars, clothes, footwear, and bags, just to mention a few. A number of businesses are devoted to repair, maintenance and refurbishing of engineering products which elongate the service life of such products. All these entrepreneurial activities are components of circular economy practices. In addition, there is increasing number of private investments in green energy and in green technologies that transform wastes to value added products. An example is the case of Strawtec, a Rwandan company that recycles agricultural waste into high-tech, low cost and carbon neutral construction materials. Such green growth commitment in the private sector are creating jobs and boosting local innovations (Luijendijk, 2018). Another example of how business communities in Africa are promoting circular economy is the series of workshops on "Transitioning to a circular economy in South Africa" that were organized by PETCO (an organization that for PET plastic recycling in South Africa) (PETCO, 2017). There several other similar seminars, workshops and initiatives sponsored by corporate and non-governmental organizations with the aim of educating the business communities on the adoption of circular economic principles in their corporate activities (Bizcommunity, 2018; Velis, 2017; Velis and Mavropoulos, 2016).

2.3 Challenges facing African businesses in imbibing circular economy concept

Although, according to Li (2017), "The African continent has experienced rapid growth since the start of this century due to relative stability which has made it to outperformed global growth trends", many of the African countries' economies are not just natural resources based but they are mono-product dependent. Africa's share of global manufacturing has not only fallen from about 3% in 1970 to less than 2% in 2013 but majority of products manufacturing in Africa is dominated by multinational companies with their headquarters in Britain, France, China, USA, and other European countries (Fig 2). The implication is that product development decisions and their consequent impacts on Africa are largely determined outside the continent. Although a lot of small scale manufacturing firms and upcoming medium scale manufacturing companies that are locally owned are pulling their weights in supplying the need of the populace in their domain.

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Many of these locally owned and operated manufacturing firms are facing stiff competitions with similar and often cheaper products that are imported from Europe and Asia. Market studies revealed that many of these imported products, especially Chinese products, are usually of inferior quality than the locally produced ones. This has led many local manufacturing firms to focus on how to survive the competition by employing tactics that would make their product price comparable to imported ones. This has made a number of these local manufacturing firms unwilling to take risk of pursuing more environmentally friendly approaches that could lead to savings in resources consumption and reduction in waste generation. In addition, the inferior imported products due to their short usage lifespan are contributing significantly to waste accumulation in the region (Hauria, 2015; Makela, 2018).

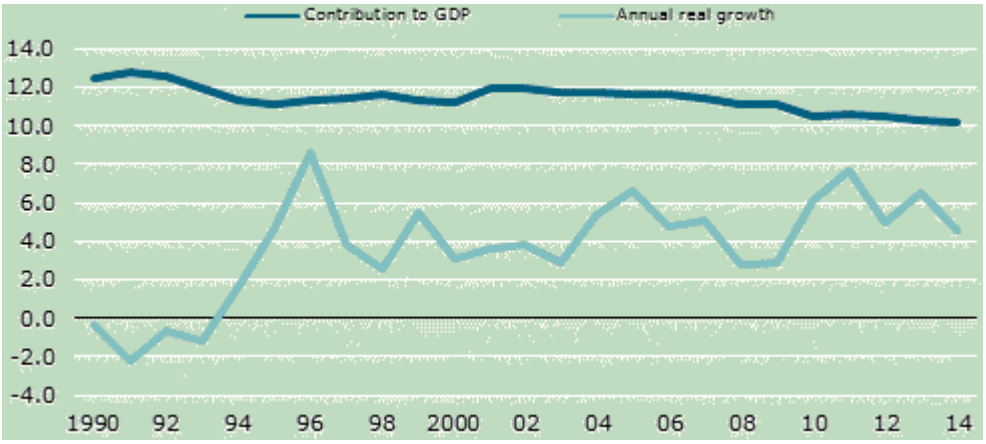

Figure 2 Manufacturing growth in Sub-Saharan Africa (%; the region's 15 largest economies)
Source: The Economist Intelligence Unit (in Aurik, 2016)

3. Current African policies, infrastructure and plans in relation to circular economy principles

Many African governments, based on advice and pressure from international organizations such as IMF, World Bank and other have developed and implemented several economic policies and measures. Among such IMF recommended policies is structural adjustment policies aimed at deregulating African economy, foster free trade and to facilitate economic growth. Most of the policies were not conceived to foster circularity of the economy. In addition, the infrastructure in many African countries, based on their design, would not support circular economy. There is therefore a need for policy changes and infrastructural improvements to facilitate the achievement of circular economy in Africa.

4. Essential changes to foster circular African economy

The current state of manufacturing in Africa, economic plans and policies as well as African infrastructure require fundamental changes to facilitate African transition to circular economy. Some of the necessary changes include:

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4.1 Manufacturing and product marketing policies

According to Li (2017), "Although Africa has great potential to develop its manufacturing sector, the political leaders need to have a clear economic vision to develop sectors in which their respective countries have sources of competitive advantage. Without a conducive environment supported by the relevant economic framework, there are no significant incentives for potential investors to commit themselves.". There is therefore a need for change in manufacturing policies to outlast one government in such a way that there would be continuity. In addition, manufacturing and product marketing policies in Africa would need to be recalibrated to include mandatory extended producer responsibility across the product value chain. Appropriate monitoring and enforcement of compliance by stakeholders to such policies are essential to the progression of African continent to a circular economy (Aurik, 2016; Oguntoya and Evans, 2017).

4.2 Upgrade to infrastructure for efficient reverse logistics

Lack of proper basic infrastructure has been identified as a major impediment to the development of manufacturing in Africa. According to Li (2017), "Access to consistent and reliable sources of public utilities is a major stumbling block, with most African countries suffering from a dire lack of this type of infrastructure. Since manufacturing requires a massive amount of power and water, potential investors in many African countries today must plan to be totally independent and have all their own ancillary activities supporting their main manufacturing operations. These add an enormous extra cost on top of the main investments required". Just as manufacturing sector require a lot of energy and other basic infrastructure, closing the material cycle require good transportation, logistics and connectivity to markets. Accessibility and regularity of amenities for the collection and management of retired products at the end of their lives are necessary to ensure the smooth running of the circular manufacturing system. Achieving the state of affordable access to regular power and other amenities necessary for circular African economy require massive upgrade to the current often unreliable infrastructure (Simelane and Mohee, 2012).

4.3 Sustainability education on consumer behaviour

Sustainability education is another important factor in the transition to circular African economy. There is a need for changes in consumer behaviour in order to achieve successful implementation of a circular economy in Africa. Such public sustainability education include cultural reorientation on how people view/value second hand products and how they view/relate to users of second hand products. This is fundamental to effective marketing of retired products for reuse. In addition, manufacturing workers, local technicians and consumers need to be given sustainability education especially in sustainable manufacturing, operational know-how and local management expertise (Singh et al, 2017).

4.4 Integrative and Evolutionary Technology Development/Adoption

Most of the activities in the African manufacturing sector are labor intensive. This is responsible for high cost of production. For economic sustainability, African manufacturing firms would need to adopt new technology driven reverse logistic integrated manufacturing approach that

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would allow it to incorporate circularity concept in the manufacturing operations. The technology would need to integrate and adapt proven foreign technology to the local situation and it would need to be evolutionary by employing local brain in the integration/adaptation. Taking such step will not only make their products and manufacturing systems to be ecologically sustainable but it will make them economically sustainable and socially acceptable.

4.5 Simplified border procedures and more open trade across African countries

According to United Nations, with the current population growth rate, Africa's population is expected to be about 2.5 billion in 2050. This does not only provide a good potentially large client pool of consumers of African produced goods but more so for sustainability incorporated products that are based on circular manufacturing models. To take the advantage of this potential for patronage of African manufactured sustainable products, there is a need for simplified border procedures and more open trade across the continent (Aurik, 2016). Inotherwords, the African Union would need to move beyond being a "talk shop" to "walk the talk" of becoming United Africa in 2036. Among the ways of doing this would be by African countries patronizing each other in areas of individual strength, pulling resources together for sustainable technology development, pulling down barriers to cross border trades, and showing preference for sister African countries over those from African continent (Murray et al, 2017; Niero and Hauschild, 2017; Solution & Co, 2017).

5. Conclusion

There are a lot of potentials for circular economic development in Africa. Many of the African countries have large populations that can provide full supply of necessary inputs and adequate demand market for outputs of circular economy. With the launch of ACEA, Africa is on the pathway to circular economy. But the journey has just started. A lot of things have to be put in place to ensure steady progression to the envisioned sustainable African economy that would guarantee full benefits of access to education, training, skills and technology, health services, jobs and economic opportunities, recreational and cultural activities as well as financial means and all necessary resources to allow the citizens to realize their full potential. However, attainment of these laudable goals require consistent collaborative effort by all stakeholders in bridging the current gaps. Doing so would enable the continent to be a force to be reckoned with in the realization of the unfolding global circular economy.

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