

# JUST2CE

A Just Transition to Circular Economy



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# CHAPTER 20

## LABOUR IN THE TRANSITION TO THE CIRCULAR ECONOMY

## Chapter 20. Circular Economy (CE) in African countries

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### Abstract

This article shall highlight the state of CE practices in African countries and more specifically their Technology Readiness Levels (TRL). The challenges of rapid economic growth due to advancements in innovation, has seen the emergence surging of CE as a prominent concept in sustainable science. The World Business Council for Sustainable Development (WBSD) in 2020 argues that, despite the increasing awareness of a need for a more CE, our world is only 8.6% circular; with this number notably below 9.1% in 2018. In Africa circularity is still very low and most of the times CE practices are responding to the developments of CE models in the Northern world because in most situations waste (mostly toxic) is dumped in the GS (GS) from the GN (GN) as second-hand goods sold at a cheaper price. These are dumped after a short period of time, and resulting into waste management challenges: for example used cars in Africa from Europe and Asia. CE practices in Africa need to be known by the world together with their TRLs for a holistic just transition to a CE in the world.

**Keywords:** Circular economy, Sustainability, Environmental justice, Greenwashing

CE practices in most African countries are not known to the world. Despite the strong move towards circularity in some countries, the legacy of environmental injustice is still prevalent in and around CE practices, especially in Africa.

### 20.1 INTRODUCTION

Africa is a continent that is rich in natural resources, yet it remains one of the poorest continent in the world (Agouza & Abu Zaid, 2021). This is largely due to a linear economy that focuses on the extraction, production, consumption, and disposal of goods and services. The linear economy has led to environmental degradation, resource depletion, and social inequality. According to Didenko et al., 2018, the Circular Economy (CE) is an alternative economic model that can help Africa transition to a more sustainable future. The concept of CE is gaining traction globally as a sustainable model for development that seeks to minimize the use of natural resources and reduce waste (resources efficiency). CE has the potential to create a sustainable and prosperous future for both developed and developing economies (Ghufran et al., 2022; Ogunmakinde et al., 2022).

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CE aims to keep materials in use for as long as possible, minimize waste, and reduce environmental impact. In recent years, many countries have started adopting CE initiatives, and Africa is no exception. In Africa, CE presents

a unique opportunity to promote economic growth and create jobs while addressing environmental and social challenges (Wait, 2022). CE principles may also potentially play a strategic role in advancing the African agenda of food security and industrialisation and improving standards of living (Ghufran et al., 2022). However, the implementation of CE practices in Africa face several challenges (Andriamahefazafy & Failler, 2022). This section will provide a comprehensive overview of CE in Africa; including the examination of the current state of CE in Africa, the challenges and opportunities, potential benefits, and the role of stakeholders in promoting its adoption. The inception of CE initiatives in Africa, focusing on the drivers, challenges, and opportunities that exist within the continent will also be explored. Some successful case studies of CE projects in Africa will be highlighted as well as recommendations for the future implementation of CE practices in the region.

## 20.2 BACKGROUND OF CE IN AFRICA

CE is gaining traction worldwide as a promising approach to sustainable development. The concept of CE is based on designing waste out of the system, keeping materials and resources in use, and regenerating natural systems. In Africa, CE initiatives are emerging as a way to address the region's challenges of poverty, inequality, and environmental degradation.

Africa faces significant environmental challenges due to rapid urbanization, industrialization, and population growth. According to the World Bank (2020), only 34% of waste generated in sub-Saharan Africa is collected, and less than 10% is recycled. This situation poses serious health hazards for people living in poverty, who often live in close proximity to waste dumps and landfills. Additionally, Africa has rich natural resources that are underutilized and often wasted because of inefficiencies in the manufacturing processes, leading to economic losses and environmental degradation.

To address these challenges, African countries are increasingly adopting CE approaches. For example, South Africa launched a National Waste Management Strategy (NWMS) in 2014, which aims to promote a CE by reducing waste generation, increasing recycling, and promoting responsible consumption and production (Department of Environment, Forestry and Fisheries, 2019). Ghana has also developed a national policy framework on CE principles, which seeks to promote resource efficiency, innovation, and job creation (UNEP, 2020). In addition, various private sector actors in Africa are implementing CE initiatives. For instance, Ecobank in 2021, a pan-African bank - launched a Green Small and Medium-sized Enterprises (SME) Financing Scheme, which provides financing and technical assistance to SMEs engaged in green projects, including those that promote the CE. Similarly, Coca-Cola Beverages Africa (2021) has committed to collecting and recycling 100% of its packaging by 2030 through its "World without Waste" initiative.

CE initiatives in Africa have the potential to create numerous benefits, including job creation, increased resource efficiency, reduced pollution, and improved health outcomes. However, significant challenges remain, including inadequate infrastructure, limited access to financing, and a lack of awareness and understanding of CE principles. CE initiatives are gaining momentum in Africa as a promising approach to address the region's environmental and economic challenges. While progress has been made, much work remains to be done to scale up CE initiatives and

realize their full potential. With concerted efforts from governments, private sector actors, and civil society organizations (CSOs), CE initiatives can become a key driver of sustainable development in Africa.

Africa has had observations of sustainable economic activities that can be classified as CE and most of them were mainly driven by economic constraints (Dunmade, 2018). The CE activities were encapsulated within the topics of climate change adaptation or sustainable development (Rademaekers et al., 2020). For a while, Africa operated without absolute policies for CE, it was only when the most CE active nations, Nigeria, Rwanda and South Africa in 2017 pushed for a clear agenda on CE that led to the formation of African Circular Economy Alliance – ACEA (Dunmade, 2018 and Rademaekers et al., 2020). ACEA was financially supported by those three nations as well as the World Economic Forum (WEF) and the Global Environment Facility (GEF). The mandate for ACEA at the time was to foster a commitment to retain resources in circulation for as long as practicable. ACEA was an effort to convert concepts into accomplishments with the co-operations among governments, businesses and organizations taking the centre stage to accelerate the circular economy agenda in Africa (Bukhari et al., 2018).

Several organizations have however emerged to promote CE practices in Africa. The African Circular Economy Network (ACEN), for example, was established in 2015 to support the development of CE in Africa through research, advocacy, and collaboration (<http://africancirculareconomy.org/about/>). The Ellen MacArthur Foundation (EMF) has also launched initiatives in Africa, such as the CE in Cities program, which aims to develop circular economies in cities around the world, including Nairobi, Kenya (Ellen Macarthur Foundation -EMF, 2021). The formation of ACEA (that focuses on development of national and local government policies) and the ACEN (that promotes strategic application in business) is expected to increase CE activities in Africa (Desmond & Asamba, 2019). The key step towards CE for Africa was during the 17th African Ministerial Conference on the Environment (AMCEN) in 2019 that advocated for a CE action plan. An evaluation showed that by 2020, the 52 African countries have developed intentional policies that address CE components. A database by Chatham house in 2021 showed 191 CE policies for 52 African countries grouped under five broad categories as shown in **Table 20.1** and **Figure 20.1** (EMF, 2021).

Table 20.4: Description of CE related policy categories in African countries

Policy category	Description of policy and number of African countries implementing the policy
1.	<b>National CE policies</b> include any national CE policies already in place as well as national green growth or sustainable development strategies that integrate CE principles – 7 countries.
2.	<b>Product policies</b> are any policies that support circular practices relating to the design, manufacture, distribution or import of specific products and materials (mostly bans on plastics use or levies) – 32 countries.
3.	<b>EPR policies</b> place the responsibility for the environmental impacts of products throughout the product life cycle on producers and is often applied to the collection, processing and reuse of waste – 15 countries.
4.	<b>Waste management and recycling policies</b> encourage circular practices relating to the management of waste covering generation, segregation, transfer, sorting, treatment, recovery and disposal – 48 countries.

5	<b>Fiscal policies</b> include government tax and spending policies that incentivize circular practices – 12 countries.
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Source :Ellen Macarthur Foundation, 2021

The world over, almost every country at least has a CE related policy as shown on the online world map (<https://circulareconomy.earth>) by the Chatham House Royal Institute of International Affairs, 2020 as referenced by the Ellen Macarthur Foundation (2021). On the African continent, the number of countries implementing policies under a certain category shows the importance of the category for African countries. According to Figure 1, the

focus on waste management and recycling policies by African nations reflects a common challenge in waste management amongst the African Nations. Product policies also present a common issue on the locally produced goods as well as imported goods, which later cause waste management challenges in terms of waste especially their packaging.

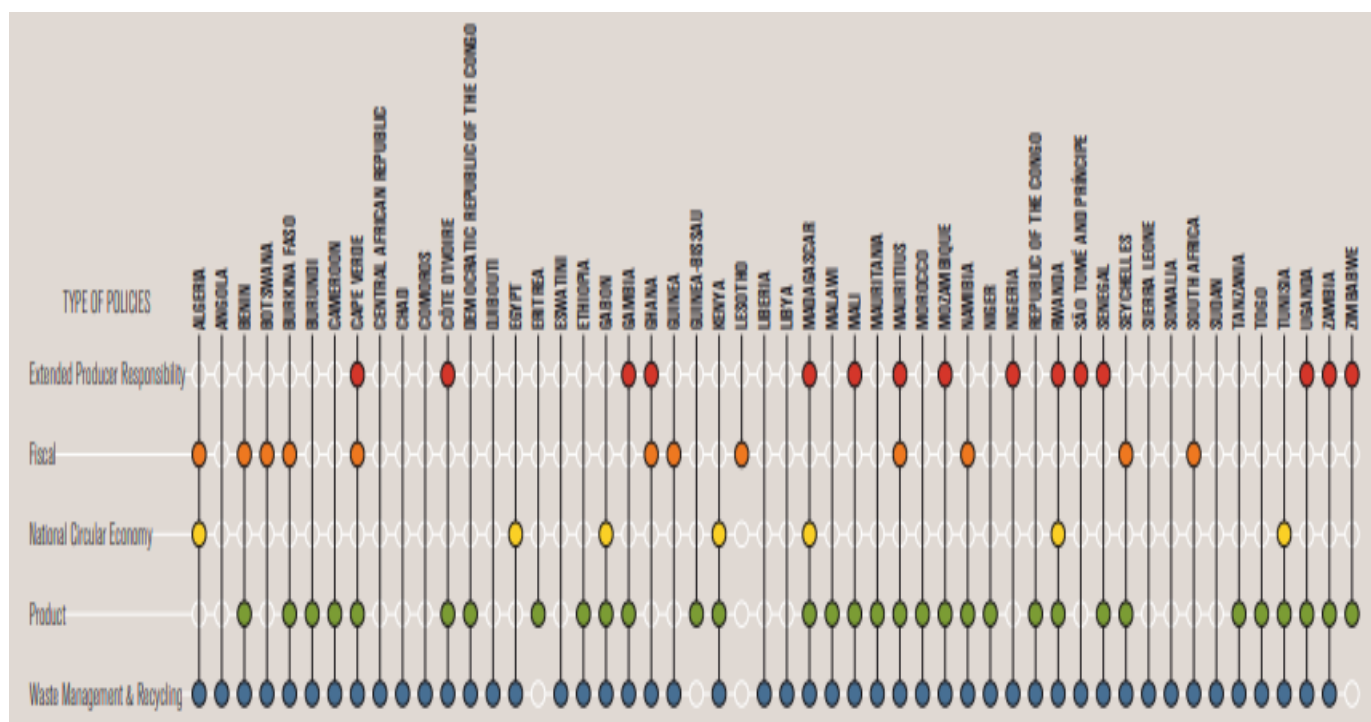


Figure 20. 1 Types of existing CE policies in Africa per country by 2021. Source: GRID-Arendal, ACEN, Footprints Africa and ICLEI, 2021.

In Africa, CE initiatives have been gaining traction in recent years, with several countries implementing policies and programs aimed at transitioning towards a more CE. Historically, many African communities have practiced CE principles for centuries. For example, in rural areas, people often make use of natural resources in a circular manner by reusing waste materials and recycling products. However, as urbanization has increased in Africa, so has the consumption of resources and waste production, leading to a need for more formalized CE initiatives.

The CE has emerged as a crucial strategy for sustainable development in Africa. While many African communities already practice circular principles, there is a growing need for more formalized policies and programs to promote circular practices on a broader scale. As initiatives such as the ACEN and EMF continue to promote the CE in Africa, it is likely that further growth of circular initiatives on the continent in the coming years will be realised.

## 20.2.1 CE categories, strategies and initiatives in Africa

The journey of CE in Africa though in its infancy, is built on the same principles that direct the categorisation of CE activities, which revolve around “Optimal use, Value recovery, and Circular design models” (Dunmade, 2018; Achterberg et al., 2021). Based on the European system there are 14 categories of CE of which Africa in its various efforts to achieve Sustainable Development Goals (SDGs) is implementing, listed hereafter (Hirsch and Schempp, 2020) – Table 2.

Table 20.2: CE models adopted in Africa

Type of CE model	Leverage of the model(s)
Circular design and production models	<ol style="list-style-type: none"> <li>1. Focus is on the designing and production of goods that facilitate CE strategies, such as the use of recyclable or compostable materials</li> <li>2. Generation and installation of process technologies that enable CE approaches</li> <li>3. Development and sustainable production of novel materials (together with bio-based resources) that are reusable, recyclable, or biodegradable</li> <li>4. Significantly decreasing or replacing substances of apprehension in materials and products to facilitate circularity strategies</li> <li>5. A changeover from virgin resources to secondary raw materials and by-products</li> </ol>
Circular use models	<ol style="list-style-type: none"> <li>6. Approaches that promote the 9Rs of waste management for end-of-life or obsolete products and their components preventing their dumping</li> <li>7. The refurbishment and repurposing of end-of design life or terminated fixed structures that includes buildings/infrastructure/facilities.</li> <li>8. Ideas that are hinged on service provision , reuse, and sharing models centred on hiring pay as you go, subscription or deposit return arrangements, that allow CE approaches.</li> <li>9. The rehabilitation and remediation of degraded or abandoned or underutilised brownfield sites to functional state or in preparation for revamping</li> </ol>
Circular value recovery models	<ol style="list-style-type: none"> <li>10. Waste separation and collection, and arrangements that allow for circularity of redundant products, parts and materials</li> <li>11. Aim is to recover materials from waste in an attempt to retain circular value with the exclusion of biomass related materials</li> <li>12. The retrieval and valorisation of biomass waste and residues, and conversion to food, feed, nutrients, bio- fertilisers, and other bio based materials or chemical feedstock</li> <li>13. Wastewater reuse or recycling</li> </ol>
Circular support	<ol style="list-style-type: none"> <li>14. Creation of a platform that fosters the development/deployment of tools, applications, and services of CE strategies</li> </ol>

Source : Hirsch and Schempp, 2020

In recent years, African governments and organizations have started to implement policies and programs aimed at promoting CE practices. The inception of CE initiatives in Africa can be traced back to the early 2000s when some African countries began to promote and implement green economic policies. Since then, several CE initiatives have emerged across the continent. Several case studies illustrate successful CE initiatives in Africa and some of them are shown in Table 3 as documented by Patterson et al., 2021 in a publication called “Circular Economy on the African Continent : Perspectives and potential”.

Table 20.3 Selected CE initiatives in some African countries

Country	Initiative(s) and descriptions
Cameroon	The Eco bricks project involves filling plastic bottles with non-biodegradable waste to create building materials (UNEP, 2020).
Egypt	Responding to the impact of the COVID-19 pandemic, the European Bank for Reconstruction and Development (EBRD), the European Union and the Green Climate Fund are working with local partner banks to offer \$264 million to businesses for green investments in energy, water and resource efficient solutions. These initiatives are aligned with existing policies, for example, the National Action Plan for Sustainable Consumption and Production, supporting Egypt's development efforts in circularity and sustainability in multiple sectors including energy, agriculture, water and waste (Patterson et al., 2021).
Ethiopia	The Shoe Project involves the collection of discarded shoes and refurbishes them for resale, reducing waste and creating jobs.
Ghana	An e-waste recycling company called Blue Ocean Investments ( <a href="https://www.blueoceaninvestmentgh.com/">https://www.blueoceaninvestmentgh.com/</a> ) is working to reduce the impact of e-waste on the environment while creating jobs and generating income. The company processes electronic waste into usable materials such as copper, aluminium, and plastics.
Kenya	The country has implemented policies aimed at reducing waste, such as a ban on plastic bags in 2017 (Standard Digital, 2017).
Nigeria	Lagos State Waste Management Authority (LAWMA) set up a program to collect and recycle electronic waste. The "Waste to Wealth" project promotes waste recovery and recycling by creating jobs and reducing the volume of waste sent to landfills (Ellen Macarthur Foundation (EMF), 2021)
Republic of South Africa	The National Waste Management Strategy (NWMS) by Republic of South Africa includes a goal of achieving zero waste to landfill by 2022. The country also established a textile recycling facility to recycle used clothes and textiles into new products.
	The "Green Cape" program supports small and medium-sized enterprises (SMEs) in adopting CE practices through technical assistance, training, and networking opportunities (Green Cape, 2020).
Rwanda	Rwandan policies such as the Organic Law on Environmental Protection, Conservation & Management No. 04/2005, the National Environment and Climate Change Policy of 2019 and the Law No. 17/2019 explicitly promote CE to: advance sustainable consumption and production patterns, establish the correct procedures for disposal of solid, liquid, hazardous, toxic and electronic waste, prohibit the manufacturing, importation, use and sale of plastic carry bags and single-use plastic in the country. The government has implemented an ambitious CE strategy that includes banning single-use plastics, promoting composting, and building a green industrial park. The strategy has helped to reduce plastic pollution, create new jobs, and support sustainable economic growth (Patterson et al., 2021).
	A company called BBOX ( <a href="https://www.bbox.com/">https://www.bbox.com/</a> ) has developed a solar-powered battery system that allows rural residents to access electricity without relying on fossil fuels. The

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Country	Initiative(s) and descriptions
	company also offers a pay-as-you-go model that makes it easier for low-income families to afford the technology.
Senegal	Via the Plastics Prohibition Law No. 2020-04 (EPR on plastics producers) and the Environment Code 2001 Law No. 2001-01 (ensuring the appropriate recycling and disposal of all types of waste), and Article R30 (conditions for reuse of water), the country has implemented a diverse and large number of CE initiatives particularly in agriculture and waste management ( <i>Patterson et al., 2021</i> ).
Zambia	<p>LUSAKA, 3rd December 2018 – ISSUANCE OF STATUTORY INSTRUMENT NO. 65 ON EXTENDED PRODUCER RESPONSIBILITY (EPR) REGULATIONS</p> <ul style="list-style-type: none"> <li>• The Government of the Republic of Zambia through the Zambia Environmental Management Agency (ZEMA) under the Ministry of Water Development Sanitation and Environmental Protection wishes to inform the nation and the general public that the Environmental Management (EPR) Regulations, Statutory Instrument No. 65 of 2018 (EPR Regulations) came into force on 3rd August, 2018.</li> <li>• The Ministry wishes to inform all stakeholders that in accordance with Section 58 of the Environmental Management Act No. 12 of 2011, the EPR Regulations extends the responsibility of the producer of a product or class of products to the post-consumer stage of the product or class of products.</li> <li>• EPR Regulations is one of the tools that the Government will rely on to manage, in an environmentally sound manner, packaging materials such as plastics and their resultant waste. The EPR Regulations will also regulate non-returnable glass and plastic bottles, cartons, beverage cans, waste oils, pesticides or chemical containers, used tyres, electrical and electronic equipment and their resultant waste.</li> </ul> <p>(Forms et al., 2019)</p>
Zimbabwe	<p>Petrecozim (Pvt) Limited is an initiative that was started by major companies within the beverage and allied industries to address environmental pollution related to Post-Consumer Poly-Ethylene Terephthalate (PCPET) bottles. This was in line with concerns that were flagged by the Environmental Management Agency (EMA) in Zimbabwe. The disposal of PCPET bottles had become a huge problem in the country due to lack of any visible recovery and recycling effort. Various environmental stakeholders including EMA, prompted beverage companies to take the initiative at their expense to address the problem in a visible and significant way, therefore raised serious concerns. These companies use Poly-Ethylene Terephthalate (PET) packaging in their operations in one way or another as converters, bottlers or brand owners and therefore felt a compelling need to participate to fulfil their Extended Producer Responsibility (EPR) obligations.</p> <p>A case of industrial Symbiosis (IS) has been witnessed from a by-product of phosphatic fertilizers manufacturing. Zimphos is the country's sole producer of phosphate fertilizers, aluminium sulphate for municipal water treatment, sulphuric acid and other industrial chemicals. Gypsum is the main by-product of the manufacturing processes. The by-product, which is a waste, has been found to be useful in various productive sectors of the world. A company has been formed and capitalising on the use of gypsum to make ceiling boards, plastering materials,</p>



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Country	Initiative(s) and descriptions
	paints, grout and ceiling designers. The case is one of eco-innovation that works by fostering IS; a form of brokering to bring companies together in innovative collaborations, finding ways to use the waste from one as raw material for another. Many other cement-manufacturing companies in Zimbabwe have realised the value of gypsum in their manufacturing processes and these have added on to the symbiosis.

A review of whether the policies, strategies and initiatives are really making an impact is very vital, hence the need for sustainability assessments. **Figure 20.2** and **20.3** show a summary of other CE initiatives in Africa. The publications are trying to make CE initiatives visible to the world and what is shown in **Figures 20.2** and **20.3** just indicates that at least something is happening in every African country as far as CE is concerned. If funding can be provided to come up with an Atlas of CE practices in Africa, more initiatives can be recorded and added on to the previously recorded ones by organisations like ACEN.

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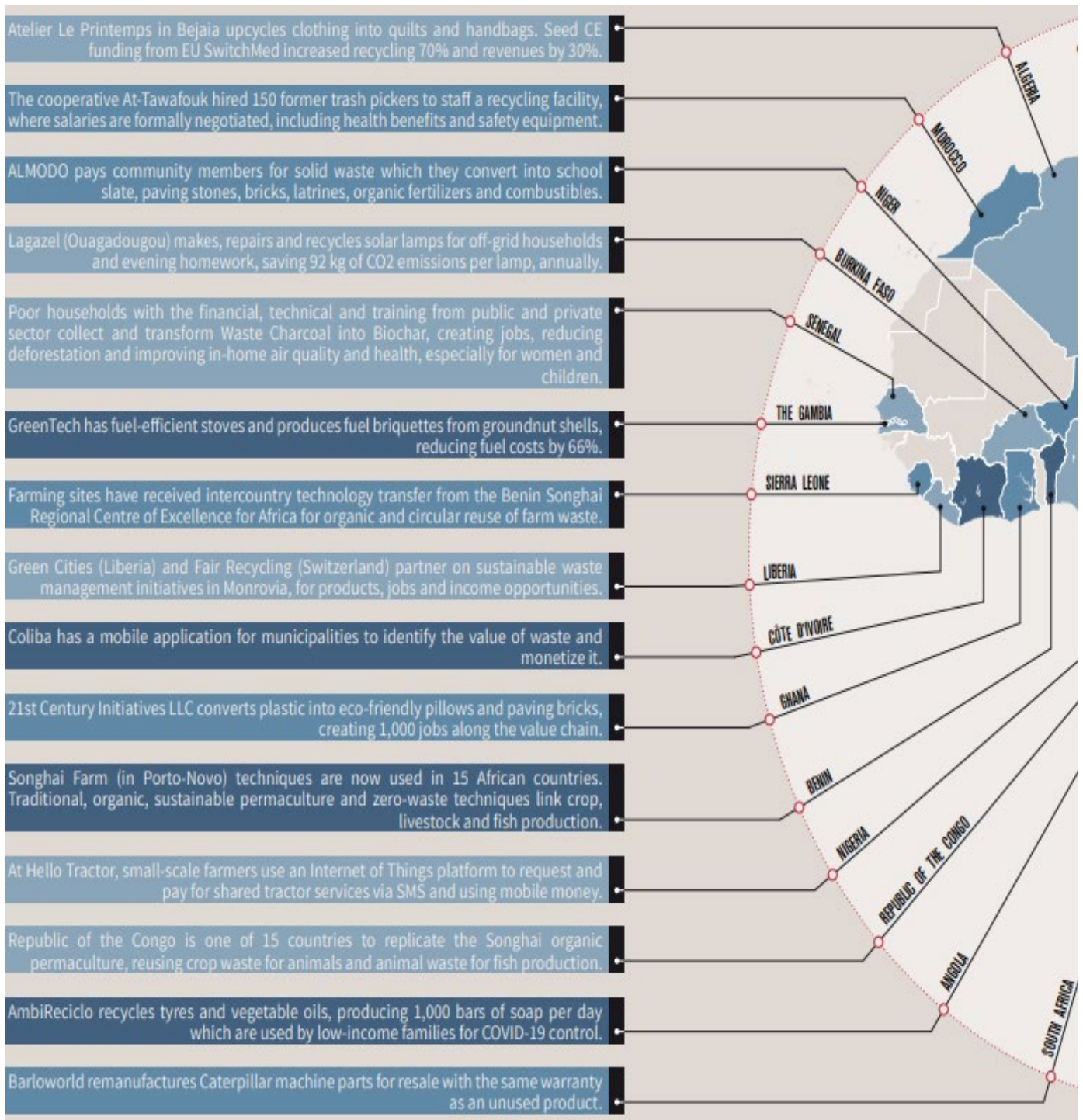


Figure 20.2 CE initiatives in Africa. Source: Patterson et al., 2021

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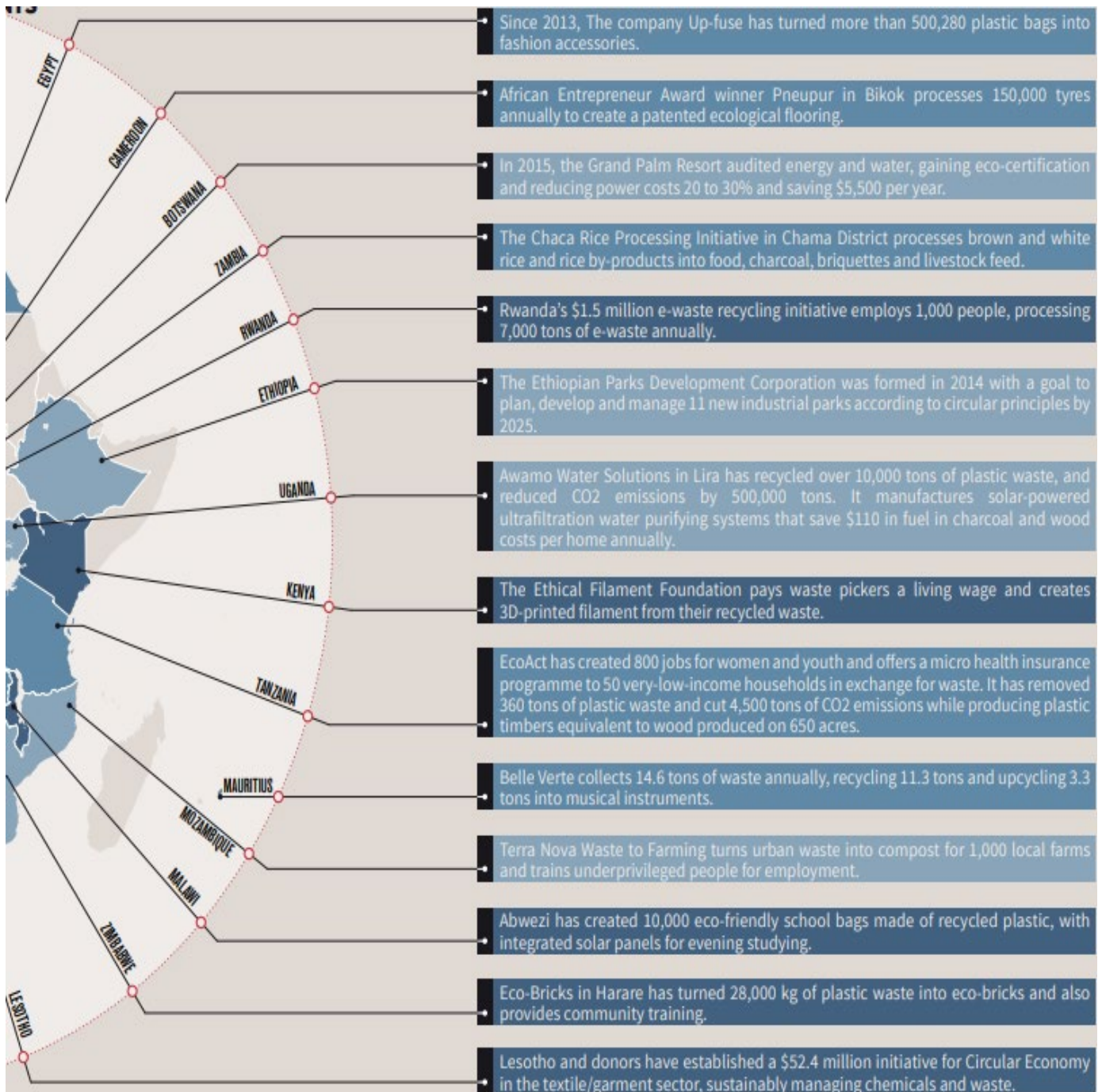


Figure 20.3 CE initiatives in Africa. Source: Patterson et al., 2021.

Some of the CE activities are at very low Technology Readiness Levels (TRL) and not recognised but are very significant in CE value chains, for example plastics bottles picking and sorting. According to Amorim de Oliveira, 2021, waste pickers and informal workers are already integral part of many existing circular systems. They recover and create value from waste – but their contributions are not valued by society. Waste pickers deal with many issues ranging from poor working conditions, poor health, poverty and social stigma. Despite their contributions waste pickers are often considered a social problem. Especially in low-income countries, the number of waste pickers is very high, mostly driven by the lack of better economic opportunities and low human development levels.

## 20.3 Enablers of CE IN AFRICA

### 20.3.1 CE enablers and policies in Africa

Several factors are driving the adoption of CE principles in Africa. One of the main drivers is the need to address environmental challenges such as climate change, pollution, and resource depletion. Africa is particularly vulnerable to these challenges due to its reliance on natural resources for economic growth and development. Therefore, adopting CE practices can help to reduce resource consumption, lower emissions, and minimize waste. Another driver of CE initiatives in Africa is the need for sustainable economic development. Many African countries face significant socio-economic challenges such as poverty, inequality, and unemployment. Implementing CE practices can create new business opportunities, create employment, and promote inclusive growth while minimizing negative environmental impacts.

Furthermore, there is growing awareness among African policymakers, businesses, and civil society organizations about the benefits of circular economy practices. Several international organizations, including the United Nations (UN), the EU, and the EMF, have also been promoting CE initiatives in Africa through funding, technical assistance, and capacity building (UNEP, 2018; EMF, 2013). A number of African countries have policies that speak to waste management and recycling and products (Rademaekers et al., 2020). This provides for a platform for CE to develop from, and thus expand to other sectors of interest such as food systems.

### 20.3.2 Anticipated and realised benefits of CE in Africa

CE provides a viable solution towards sustainable development by focusing on reducing waste and optimizing resource use. According to Christine Mwangi et al., 2023, the universal benefits of the CE are vast, as it represents a triple-win in many cases where environmental, economic, and social advantages are available through policies and measures that are capable of seizing on synergies. The benefits of CE initiatives can be summarised as follows: Environmental Benefits: Africa's natural resources are under significant threat due to unsustainable exploitation, pollution, and degradation. Adopting CE initiatives will reduce the pressure on these resources and promote their conservation. For instance, recycling programs that encourage the collection and processing of waste materials such as plastic, paper, and metals will reduce the amount of waste that ends up in landfills and pollutes the environment. Furthermore, implementing renewable energy solutions such as wind, solar, and hydroelectric power will reduce reliance on fossil fuels and thus mitigate greenhouse gas emissions.

Economic Benefits: CE initiatives in Africa have enormous potential to create jobs and enhance economic growth. The circular economy model promotes the reuse of products and services, which can lead to the creation of new industries and markets. For instance, recycling plants can provide employment opportunities for many people who will be involved in the sorting, processing, and manufacturing processes. Additionally, using renewable energy sources can reduce the cost of electricity production, which in turn can lower the cost of goods and services.

Social Benefits: CE initiatives can also have significant social benefits by improving the livelihoods of communities and promoting social equity. For example, waste collection and recycling programs can provide income-generating

activities for marginalized communities. Additionally, sustainable agriculture practices such as crop rotation and agroforestry can improve soil fertility and enhance food security, particularly in rural areas.

CE presents a viable solution towards sustainable development in Africa. The adoption of CE initiatives can lead to significant environmental, economic, and social benefits. Therefore, policymakers should prioritize the implementation of CE strategies to ensure a more sustainable future for the continent.

## 20.4 Issues of CE in Africa - Challenges and opportunities

### 20.4.1 Challenges of CE in Africa

According to Kirchherr et al., 2017, CE barriers are cultural, market, technological and regulatory related. Studies done in the GN countries have shown that barriers that affect CE advancement are poor communication, lack of support from top management, insufficient technical knowledge, no data integration, no recycling infrastructure, lack of sustainable product design and poor to no customer interest. There are also risks (operational, financial and environmental) that discourage investment in CE. The lack of customer interest, non-existent Environmental Management Systems (EMS), and no product standardisation in the market also act as a barrier to CE success (Gift et al., 2023). The African Development Bank Group 2020 (as cited by Christine Mwangi et al., 2023) postulated that, recently more than 50 per cent of Africa's economic growth has been driven by only five countries – Algeria, Egypt, Morocco, Nigeria and South Africa. Therefore, significant cultural and economic differences exist among African countries that influence their development, economic strategies, and readiness and capacity to adopt circular policies and technologies. However, in the African context, the barriers of transitioning to a CE, as observed from several case studies and literature can be summarised as follows;

- Historically the GN has relied on the cheap and available labour and land of the GS; therefore, economically this is still a viable and profitable arrangement, though environmentally unsustainable as was highlighted by Ahmed Shamira,(2022); Desmond & Asamba, (2019). African countries encounter barriers in implementing CE policies and business models because of power relations and vested interests embedded in global values chains. These value chains tend to create power imbalances and economic inequality in African countries that provide cheap raw materials as inputs for higher value products (Desmond & Asamba, 2019; GRID-Arendal, 2021 as cited in Christine Mwangi et al., 2023).
- The quality of recycled resource materials is currently inferior and costly to use in the production cycle, compared to using new material (World Economic Forum, 2021).
- A number of African countries still have structures that support linear practices through taxes, subsidies and government support which is similar to the findings of the Association of Southeast Asian Nations (ASEAN) (Melati et al., 2021).
- There is still technological disparity between the GN and the GS, whereby African countries are reliant on inefficient technologies to recycle or produce new goods.
- CE in many African countries in this study is largely waste management and recycling which is mainly an informal sector inundated with many social injustices.
- The largest corporates whose transition may have a CE impact are controlled by multinationals in the GN, thus African countries do not have control of the design impact or agenda (Dunmade, 2018). In Ghana the

lack of an enabling environment, including financial and other incentives, is a major constraint for the creation of CE, particularly for entrepreneurs to set up informal repair businesses. The power exercised

through EU Extended Producer Responsibility (EPR) legislation by Northern manufacturers in the value chain will become a greater force for change and localised EPR legislation will be less important (Desmond and Asamba, 2019).

- Some of the technologies brought onto the market are relatively new and their effectiveness to a certain extent is unknown, which sort of serves as a deterrent for their adoption in some African countries (Mhlanga et al., 2022).
- SMEs comprise a large portion of the African countries economy, but these are generally lacking in technical expertise and infrastructural technology as they do not have the investment capital (Melati et al., 2021).

The adoption of CE practices in Africa faces several challenges. However, by addressing these barriers, it is possible to promote sustainable economic growth and resource utilization in Africa.

### 20.4.2 Greenwashing, social and environmental justice issues around CE in Africa

According to Greenpeace ([www.stopgreenwash.org](http://www.stopgreenwash.org)) – “greenwashing is the act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service. It involves use of deceptive and manipulative sustainable claims by companies to portray a superficial eco-friendly image than it actually is, by investing more resources on marketing its products as ‘green’ rather than actually minimizing its adverse impact on the environment (Aggarwal & Kadyan, 2011). Companies portray themselves as environmentally friendly without actually making any substantive changes to their operations. In Africa, this practice is prevalent as companies seek to capitalize on the growing interest in sustainability among consumers and investors. Such companies engage in superficial efforts, such as recycling programs or purchasing carbon offsets, while continuing to operate in ways that harm the environment. These companies have faced criticism for failing to address the root causes of environmental degradation, such as reducing carbon emissions or minimizing waste production.

Another issue associated with CE initiatives in Africa is social justice concerns. While promoting sustainability and reducing waste is critical, it is equally important to ensure that these activities do not exacerbate existing inequalities. According to Schroeder & Barrie, 2022, inclusiveness and social justice are key issues that need to be addressed for a successful CE transition to achieve positive social-ecological outcomes. Without addressing the human and social dimensions of the transition, the CE will not deliver on important social goals such as improved health, decent working conditions, or reduced inequality. It might even prevent a transition from taking place, since unjust and unequal societies are unlikely to be stable in political terms. The good news is that the need to address social issues in circular economy transitions, alongside environmental concerns and building the circular business case, is receiving more attention in the mainstream approaches.

In Africa, many CE initiatives often target informal waste pickers, who are typically vulnerable and economically marginalized. These people often rely on waste collection for their livelihoods but are excluded from formal waste management systems. Furthermore, CE initiatives can displace communities that rely on waste collection, leaving

them without a source of income. This displacement can also lead to conflicts between waste pickers and formal waste management services, as seen in countries like Ghana, Kenya, and Nigeria.

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Applying an environmental justice perspective or framework is an important first step to fill the social gap in the circular economy. The direct impacts of waste dumping and pollution on communities have been documented for decades in the United States, including cases of structural environmental racism. Similarly, in Europe the available data dating back to the 1980s provide consistent indications that waste facilities are disproportionately located in areas with more deprived residents, or from ethnical minorities. The observed inequalities in exposure to waste and toxins, and the health impacts thereof, represent a case of environmental injustice (Martuzzi et al., 2010).

In Africa, environmental injustice is observed most of the times when E-waste from the GN is dumped as second-hand goods that will only work for very short periods and then require disposal. These are not usually disposed of properly yet they contain toxic materials that usually find themselves into the environment causing a health hazard especially to vulnerable groups that rely on surface waters.

While CE initiatives present an opportunity for Africa to promote sustainability and economic development, they must be implemented with caution. Companies must avoid greenwashing and prioritize substantive changes that reduce environmental harm. Similarly, social and environmental justice concerns need to be taken into account to ensure that marginalized communities are not further excluded from the benefits of sustainable development.

## 20.5 CE POTENTIAL IN AFRICA

### 20.5.1 Opportunity areas for CE in Africa

According to the International Resource Panel (2017) as cited in Desmond and Asamba, 2019, the current and projected increase of resource consumption in a globalised linear economy exceeds planetary boundaries. Raworth (2017) also added that the redistribution of wealth from North to South continues to be essential for the 300 million people who live in poverty in countries still classified as low-income, mainly in sub-Saharan Africa. In face of these situations, CE has the potential of producing cost savings and reducing exposure to market price fluctuations, increasing renewable energy and releasing valuable materials and energy in existing products (Ellen MacArthur Foundation, 2013b as cited in Desmond and Asamba, 2019).

CE strategies in the North risk concentrating power and wealth amongst a few actors in global supply chains to the detriment of poor nations. For example, the European Commission's Circular Economy Action Plan (European Commission, 2017) identifies setting eco-design standards for electronic and electrical equipment, addressing hazardous chemicals in material cycles, and improving circularity of plastics, as priorities for Europe's transition to CE. Much of this plan focuses upon the benefits to Europe through greater resource efficiency. However, a more circular economy in Europe can also deliver benefits for people in low-income countries if their needs are better considered when creating inclusive CE policies (Desmond and Asamba, 2019).

As postulated by Desmond and Asamba, 2019, CE may be a means by which greater value can be created in the South such as the remanufacturing of end of life products for re-export to customers in the North e.g. Barloworld's refurbishment of Caterpillar parts in South Africa. In the past many Global Value Chains (GVCs) have relied upon Africa to provide virgin resources for the manufacture of products in the North (e.g. rare earths and minerals from DRC for production of smartphones in China).

There are numerous and significant prospects for amplified circularity in Africa under the themes of food systems, packaging, the built environment, electronics, and fashion and textiles (World Economic Forum, 2021). This is

majorly because Africa has a young and growing population, which will need food and agriculture being the continent's biggest employer (Wachira Rhoda, 2022). The continent still serves as an electronics dumping ground for the GN (Desmond and Asamba, 2019; Wachira Rhoda, 2022). Plastic packaging is the favoured form of packaging making the packaging industry an area of concern and business opportunity for CE in Africa. CE also provides an employment creation opportunity for the growing African population (Mhlanga et al., 2022), but the Green Alliance (Morgan and Mitchell, 2015) has argued that there is no strong evidence that this will be the case in Africa. As a result, the inequality that exists between the very poor without employment and those with permanent jobs may well continue in the CE.

### 20.5.2 Funding and technical support

African Agriculture and Trade Investment Fund (AATIF) has made use of concessional capital, guarantees, risk insurance, technical assistance funds, and design-stage grants as forms of funding. These arrangements attract investments from private sector and public funds. UN Environment (UNE) and Global Environmental Facility (GEF) is supporting activities that are inclined towards public sector financing, technical assistance, and advisory programmes and initiatives as was for the Republic of South Africa, Lesotho and Madagascar.

The African Circular Economy Alliance's (ACEA) main intervention pillars include policy advisory, leadership & advocacy, as well as projects and business scale-up. As the transition to a fully CE, the Alliance aims to harness immediate opportunities in Africa for increased circularity in sectors that will support the economy, jobs, and the environment on the continent in the long-term. Outside the signatory countries, its partners include the African Development Bank (AfDB), Global Environment Facility (GEF), World Economic Forum (WEF), African Circular Economy Network (ACEN), United Nations Environment (UNE), KAS Foundation, Platform for Accelerating the Circular Economy (PACE), and the Government of Finland and its affiliate innovation Sitra.

The African Circular Economy Fund (ACEF) is a multi-donor grants trust fund housed by the Climate Change and Green Growth Department of the AfDB. Its objective is mainstreaming the CE as an inclusive green growth strategy to help African nations to meet the goals of the Paris Agreement, SDGs and the African Union's (AU) Agenda 2063. Strategic Partners include WEF, EU, World Bank, Nordic Development fund, UNDP, the Circular Economy Innovation Partnership (CEIP), and ACEN (Ellen Macarthur Foundation {EMF}, 2021).

### 20.5.3 Policy support

According to a publication by Wetterberg et al., 2022; programmes such as the SWITCH2CE project is working with European and Moroccan stakeholders to pilot Morocco's first Poly-Ethylene (PET) bottle-to bottle recycling process. The professionalization and empowerment of informal waste pickers will be key to ensuring consistent high-quality collection of PET. The pilot will seek to address social justice issues facing informal workers including

- Lack of formal legal recognition, which results in stigmatization and limits their ability to collect waste directly from householders;
- Lack of access to land to legally conduct collection and sorting operations;
- Unequal power relationships with waste traders;
- Exposure to the volatility of the recycled PET market;



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- Lack of worker safety and training; and
- Limited supply chain traceability and transparency.

Other SWITCH programmes, such as SWITCH Africa Green, which is funded by the EU and implemented by the UNEP in partnership with the African Roundtable on Sustainable Consumption and Production (ARSCP), are supporting CE activity in Burkina Faso, Ethiopia, Ghana, Kenya, Mauritius, South Africa and Uganda. Lessons sharing, improvement of regional harmonization of policies, and increasing national level impact in biogas, e-waste management, organic agriculture (which can include reuse of organic materials), green manufacturing, eco-industrial parks and standards in labelling has been the major outcomes. The programme enhances access to green financing and innovative solutions as well as enables the development of policies and standards. It also contributes to awareness raising and facilitates networking.

Some countries are uniting to develop regional policies to advance CE. For instance, in 2015, the East African Community (EAC) announced a ban on imported second-hand clothes from 2019 onwards. The low-priced imports hinder local markets and regional development. However, after complaints from international exporters, who argued that this decision would harm international trade agreements, the proposal is now only for an indirect ban. This compromise includes increasing tariffs, which are intended to disincentivize imports of second-hand clothing, while incentivizing locally produced products and industries. CE policy challenges include untangling policy signals and instruments that may overlap and even contradict one another.

## 20.6 Conclusions and recommendations

The adoption of CE principles can help African countries address environmental challenges, promote sustainable economic development, and create new business opportunities. While several challenges exist in implementing circular economy practices in Africa, there are significant opportunities for growth and innovation in the sector. By implementing supportive policies, strengthening infrastructure, and increasing financing options, Africa can become a leader in the transition to a more circular economy.

According to Desmond & Asamba, 2019, government policy in Africa has a major role to play at both national and local level. There is little CE specific legislation and so regulations and policies in operation and policies are generally focussed on climate change mitigation, the Green Economy (GE), and waste management. Proposals are often presented but are still awaiting promulgation into government policy and legislation. There are few systematic studies of CE policies in Africa and so identification of policies currently relies on informal research approaches. Further research is required to identify the extent and impact of sustainability legislation and policies such as waste management, recycling, extended producer responsibility, repair and renewable energy.

Networks such as the African Circular Economy Alliance (development of national and local government policy) and the Africa Circular Economy Network (strategic application in business) working in collaboration will be able to facilitate this transition process. For Africa to transition from a linear to a circular economy, barriers need to be overcome through extensive collaboration between the various actors who each have a specific role to play (Desmond and Asamba, 2019).

The power of hubs for CE is being recognized globally. CE hubs and their activities that can be summarised by network governance can be found all over the world in different socio-cultural and political environments. Efforts

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are also underway in Africa. Multi-stakeholder CE platforms exist already e.g. in Nigeria (Circular Lagos), Rwanda and South Africa. Having (a) hub(s) in a country is an advantage as it allows them to harness local circular potentials unique for each country or region. Setting up a CE hub can be flexible and should be tailored to local conditions and stakeholders, including public, private, or public-private partnerships (Vesna et al., 2022).

In their publication of the side event on Boosting Circular Economy in Africa through Hubs Learnings from the WCEF 2022, in Kigali – Rwanda, Vesna et al., 2022 identified and documented several activities that hubs could carry out in African countries. They also documented several options on how to establish a CE hub in African countries and who should be the stakeholders. As a final thought Vesna et al., 2022, postulated some of the following selected points

- Africa is having an enormous opportunity to foster truly sustainable development through circular economic proliferation.
- Europe can assist Africa in fostering the CE through close cooperation and sharing best practices. Engaging in fair and inclusive trade with African countries can substantially support their CE - based sustainable development.
- National and regional African hubs would play a crucial role in preserving and upscaling the existing CE practices. For an inclusive transition to a CE, hubs should be a meeting point for all the stakeholders - government, business, knowledge institutes as well as citizens.
- Respecting the socio-economic situation in Africa, a special focus of the hubs should be given to the informal sector and youth. Hubs could support all the actors in addressing social needs through the lens of a CE.

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