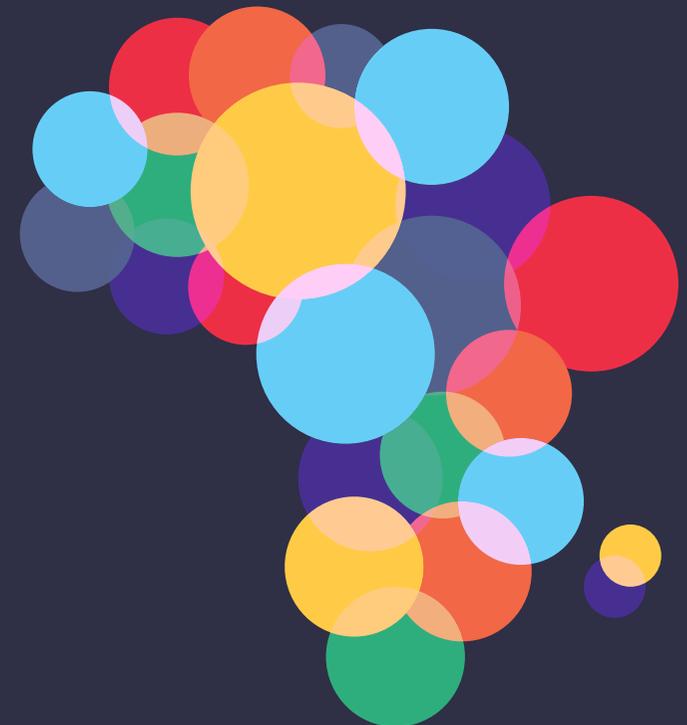


Circular economy in Africa: examples and opportunities

FASHION AND TEXTILES



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This article is part of a collection of insights on the circular economy in Africa. The goal of this collection is to explore the potential of the circular economy in a selection of key economic sectors in African countries and highlight examples of the circular economy in action. The sectors explored in this study are: food and agriculture; fashion and textiles; plastics; e-waste; automotive; and the built environment. The collection also considers the key role of public policy and the financial sector in creating the conditions for the transition to a circular economy.

The collection is the result of a joint effort led by four organisations: Chatham House; the Ellen MacArthur Foundation; ICLEI Africa; and the University of Lagos, who worked closely to combine their complementary knowledge and expertise on this broad topic. While the collection was curated by the Ellen MacArthur Foundation, it reflects a plurality of views and analyses.



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Introduction

Textiles and clothing are a fundamental part of everyday life and an important sector in the global economy.¹ Worldwide, the USD 1.3 trillion clothing industry employs more than 300 million people along the value chain, and the production of cotton alone accounts for almost 7% of all employment in some low-income countries.² Out of the many African countries growing and selling cotton, eleven do so under the label "Cotton made in Africa" (CmiA), representing 40% of African cotton production. Under the "CmiA" initiative, a total of 900,000 small-scale farmers across eleven African countries produce 715,000 tons of sustainable cotton for the international market and benefit from business and agricultural training.³

On the manufacturing side, historically, many African countries had vibrant textile industries, with long-standing links to EU-based brands and retailers.⁴ Although the biggest textile-producing countries today are China and India, "made in Africa" is gaining traction, and many brands are moving their production from Asian to African countries, with Ethiopia positioning itself as a leader in the development of the textile industry in East Africa.⁵ Currently, in sub-Saharan Africa, the combined apparel and footwear market is estimated to be worth USD 31 billion and the textile industry in Africa is estimated to grow at a CAGR of ~5% over the forecast period of 2019–2024.⁶

The demand for African designs, textiles, and garments is increasing within and beyond the continent. With the growing population and expanding middle-classes, the demand for clothing (both local and imported) is expected to rise. African countries, such as Rwanda and South Africa, are planning to revitalise the national textile industry. On the global stage, *African fashion designers* are gaining prominence and for many people, the African fashion industry remains a source of economic inclusion, innovation, and promotion of cultural identity. These encouraging trends for the textile sector are not without challenges.

Firstly, conventional textile manufacture is associated with labour rights violations; unsafe working conditions; excessive consumption of raw materials, water, and energy; use of persistent organic pollutants (POPs) in industrial operations; as well as water and air pollution.⁷ As big brands are increasingly seeing Africa as a new destination for their production facilities, the risks of replicating the same environmental and social negative outcomes seen in some Asian countries are high.

Secondly, downstream, the impact of clothing waste is particularly devastating for African countries, where second-hand clothing is increasingly exported. In the capital of Ghana, Accra Metropolitan Assembly picks up around 70 metric tons of imported clothing waste from Kantamanto market every day, six days a week.⁸ A lack of capacity to collect and recover textiles leads to clothing being

disposed of informally – meaning it is burned and the ashes are swept into the gutters, where it makes its way to the sea; or it is brought to 'informal' dumpsites. The total impact of leaching dyes, chemicals, and microfibres on the environment, people's health, and biodiversity loss is significant.⁹

The case for a thriving textile industry is clearly emerging in Africa, with potential important gains in terms of job creation and skills development. A circular economy holds the key to a prosperous, inclusive, and resilient fashion industry in Africa while avoiding the drawbacks of the current linear system that have detrimental impacts on people's wellbeing and the environment.¹⁰ Below, are key strategies for the circular economy within textile and fashion industries.

FASHION AND TEXTILES

CIRCULAR ECONOMY STRATEGIES



1

Strengthening the existing circular skills and business models to tap into further income generation opportunities

Circular business models in the textile industry are by no means new in Africa – on the contrary, they are culturally embedded and often more advanced than in other contexts. There is a lot of know-how and skills among designers, tailors, and other entrepreneurs across the African continent who design, make, remake, and repair clothes on a daily basis, generating employment across the formal and informal sectors. The practice of made-to-order clothing is ubiquitous in African countries and offers personalised clothing at various price ranges. It is also an important avenue for curbing overproduction and adding value to the garment through quality, durable design, and personal connection with the garment maker. Repairing and remaking garments is also a prevalent business practice, which delivers clothing both for everyday consumers and luxury markets.¹¹ These business models, which keep products and materials in use, ensure that the highest value of products are being retained. In contrast to many industrialised countries – which are currently trying to revive this knowledge, and these skills and enterprises in their own context – these existing circular business models continue to prevail and thrive in African countries.

While not always practised under the banner of circular economy, African designers, tailors, and entrepreneurs are leading the way in circular fashion skills and business models. There is a huge potential in investing in and scaling these circular practices to tap into further income and job creation opportunities. This might include introducing developing education programmes;¹² increasing access to affordable and good quality fabrics in small quantities for SMEs; supporting digital platforms for African designers to reach international consumers; increasing access to finance for circular fashion entrepreneurs; and, where appropriate, introducing new technologies. Digital innovations could also be harnessed to tap into new business models, such as recommerce and rental platforms, and perhaps also to implement traceability¹³ solutions more widely.

2

Eliminating waste and pollution in manufacturing to increase competitiveness and improve the environmental outcomes

Efforts to grow the manufacturing sector in Africa frequently form the cornerstone of national and regional development policy, as reflected in the African Union's Agenda 2063. Manufacturing has and will continue to play an important role in growing the economies of low-income countries. The Rwandan government, for example, has committed to develop local textile firms and phase out the importation of second-hand garments. The strategy includes providing a space for textile firms at the Special Economic Zone (SEZ),¹⁴ encouraging the private sector to invest in the textile industry, and grouping small tailors into firms. Incentives for local textile manufacturing are also provided by Tanzanian, Kenyan, and Ugandan governments. Simultaneously, large companies are moving their production to Africa in search of low input costs, tax breaks, tariff free locations, and proximity to European markets.

More value can be unlocked by taking the circular economy approach to textile manufacturing which by design eliminates hazardous and polluting inputs; improves

process efficiency; and captures, treats, or 'loops' waste emissions.¹⁵ For example, best-practices in the production of lyocell (a type of man-made cellulosic fibre) are capable of reusing more than 99% of the solvents needed to transform wood pulp into fibre, thus preventing it from leaking into the environment.¹⁶ Avoiding path dependency of the linear model and learning from other contexts, governments and businesses in Africa have an opportunity to create regionally scaled processing infrastructure, such as zero liquid discharge facilities, non-toxic dye houses and wet processing equipment that meets strict water regulations. These technologies can offer a competitive advantage and at the same time reduce water pollution, health hazards, and biodiversity loss caused by chemical dyes. **A circular economy to manufacturing encompasses not just the technical processes, but also ensures that the products and materials are designed to be circulated in this system, i.e. designed to be used more, and made to be made again, from safe, recycled, or renewable inputs.**



3

Growing a variety of fibres to rebuild soil health and increase yields

Growing regenerative¹⁷ inputs locally and feeding them into the new manufacturing plants can maximise the benefits of local production while limiting the need for importing raw materials. Eight African countries grew over 4% of global organic cotton production in 2017/18 and experienced a 20% increase over 2016/17.¹⁸ Practices such as organic farming, which rely on natural rather than synthetic inputs, can be considered a starting point in the shift towards regenerative production practices (to learn more about regenerative production, see the Food section).¹⁹ Regeneratively produced cotton is increasingly sought after and governments as well as businesses have an opportunity to respond to market demand by incentivising and investing in growing material inputs in line with biodiversity protection. Using local raw materials in manufacturing can lower climate impacts from transport emissions, increase the traceability in the supply chain, and increase the embedded value of the products. Moreover, cotton by-products provide opportunities to create new income streams for farmers and processors, increase domestic value added, diversify exports, and reduce waste in cotton value chains.²⁰ Projects like Fibershed provide a blueprint for developing regional fibre systems that build soil and protect the health of the biosphere.²¹

Although cotton is grown with prevalence throughout the region, hemp production has been identified as an attractive alternative as it is

easier to grow, it is strong and, like cotton, it can be blended with downgraded fibre. At the moment, Malawi, South Africa, and Zimbabwe are piloting hemp cultivation projects.²² Other cultivations, such as pineapples, bamboo, and coconuts, are abundant in certain African countries²³, and by-products related to their processing have the potential to be turned into innovative fibres such as [Piñatex®](#). For example, Circular Systems is turning agricultural waste into a cotton-like fibre called Agralooop, as part of a process that also yields bio-energy and a natural fertiliser.²⁴ In Uganda, a start-up called TEXFAD, has developed technologies for banana fibre extraction and application into production of high-quality banana fibre textiles and handicrafts.

African countries have the heritage of quality textile production which is in line with biodiversity protection and there is a lot of know-how and indigenous science to build on. This can create a significant opportunity to capture market share by developing materials that meet both the health and environmental specifications of brands, as well as the functional specifications. African designers are already leading the way in using regenerative materials and implementing solutions on the ground, such as for example Achenyo Idachaba-Obaro of MitiMeth, a social enterprise which makes home décor and lifestyle products from invasive aquatic weeds and agricultural residues.



4

Creating employment by eliminating waste and increasing materials circulation

Recent estimates indicate that almost 70% of garments that are donated globally end up on the African continent.²⁵ Although second-hand imports can extend the utilisation of garments and generate income for resellers, there is no system in place to do this efficiently and to deal with the high volumes of garments that are not suitable for reuse or remaking (upcycling, mending, repairing). Instead of being wasted, textiles that cannot be reused or remade could fit into local recycling facilities and produce new (recycled) raw materials for the industry – provided that the textiles are designed for recyclability. This could create opportunities across both the formal and informal sectors.

To capture this opportunity, it is necessary to reduce the amount of second-hand garments exported to Africa, and carry out improvements in the sorting

and recycling infrastructure.²⁶ There are practical, on-the-ground examples of entrepreneurs already embracing this opportunity. In Egypt, Sharabati Denim uses discarded textiles as recycled feedstock for new jeans production. In this factory, post-consumer garments are received, shredded back into fibres, and woven into new fabrics. In South Africa, Rewoven is at the early stages of diverting textile waste produced by clothing manufacturers from landfill and establishing recycling facilities.

Investments into collection, sorting, and revalorisation infrastructure can also create new jobs. There is an existing and established skills base as well as dormant skills which reinforces the opportunity for African countries to become leaders in the production of

goods from recycled content, both for internal markets and for export.²⁷ The value-added element is key – doing only the sorting in African countries is not a solution. The investments in circular economy practices in Africa need to be distributed to prevent the creation of monopolies, and must add value, both to the materials and to the community – ensuring that the technology is built within the community and at a scale that people can manage and maintain.

It is also crucial that financing and policy incentives and business commitments are aligned so that recycling is not incentivised over reuse and repair and that recycling remains the loop of last resort.



Case study

Driving circular economy ambition in textile manufacturing



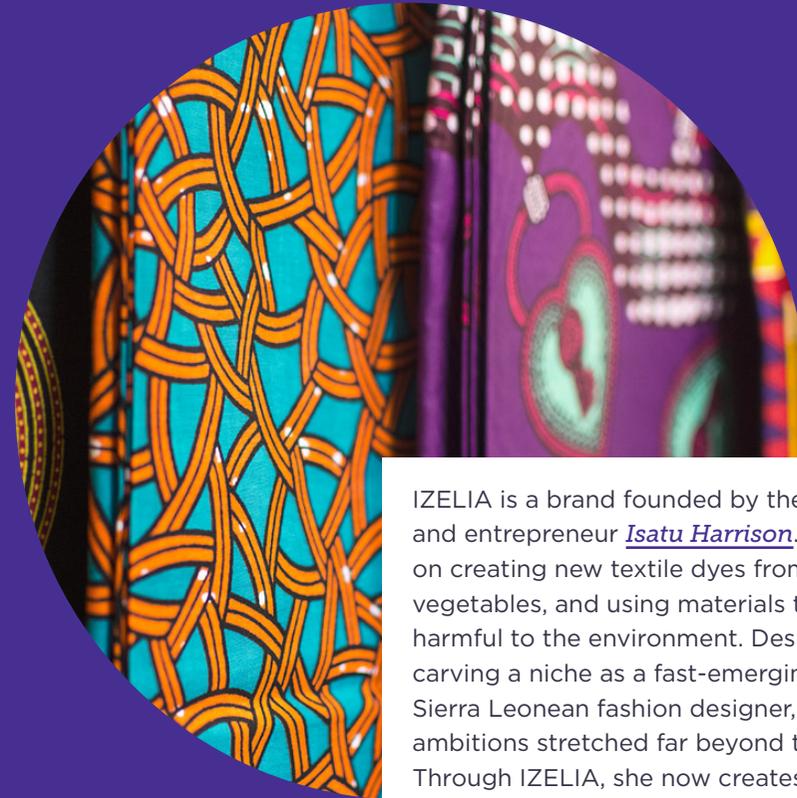
Photo credit:
DEMCO
Souissi Seif



Demco is a jeanswear, sportswear, and knitwear manufacturer based in Tunisia. It works with European, African, and Asian suppliers and hires 3,500 workers across multiple factories located in Tunisia. Demco has a strong sustainability policy roadmap and is driven by a belief that environmental waste equals financial waste. In the manufacturing facilities, more than 50% of the water used is recycled and reused in production, and 100% of the water used is treated. Moreover, 30% of the factories' energy needs are covered by solar panels. All the process waste is sorted, collected, and sold to certified recycling partners. Finally, Demco only uses contamination-free yarns. **The demand for products from manufacturers who champion the circular economy in their operations is on the rise – according to Demco, over the last few years, the demand for organic cotton fabric has increased by 1000% and the demand for recycled fabrics increased by 400%.** Demco has ambitious expansion plans, intending to collect locally as well as to import unsold garments and recycle them in Tunisia in order to meet the growing demand for recycled fabric.

Case study

Harnessing talent and creativity in Sierra Leone

Photo credit:
IZELIA

IZELIA is a brand founded by the designer and entrepreneur [Isatu Harrison](#). Her focus is on creating new textile dyes from plants and vegetables, and using materials that are least harmful to the environment. Despite successfully carving a niche as a fast-emerging UK-based Sierra Leonean fashion designer, Isatu's ambitions stretched far beyond the UK to Africa. Through IZELIA, she now creates employment opportunities and growth in her native Sierra Leone, where she opened a training and textile production space in Freetown. In this creative space, **the natural dyes and made-to-order practices are further shared and scaled up, providing new skills and income generation opportunities to the community.**

Case study

Reclaiming African textiles

Photo credit:
Karingana Wa Karingana



Woogui is a brand established by the designer Wacy Zacarias who is now based in Mozambique. Wacy also established a partnership with designer Djamila de Sousa and together they launched surface and textile design brand Karingana Wa Karingana. Both brands, Woogui and Karingana Wa Karingana, which together form a social enterprise, have a common vision of changing narratives; both are focused on becoming more sustainable and circular, and both have a development focus.

In a recent project delivered with the British Council, Karingana Wa Karingana reclaims the storytelling tradition in African textiles, making sure that people know that there is more to African textiles than imported wax fabric. In their work, Wacy Zacarias and Djamila de Sousa champion the use of cotton fabrics, banana leaf textiles, recycled plastic, plant leather, and straw, as well as using different plants for natural dyes.

- 1 Textiles generally refer to factories involved in activities ranging from wet processes that include spinning, weaving, knitting, dyeing, and finishing. Apparel refers to dry processes that include sewing, knitting, printing, and packaging; some factories span the entire range of these processes.
- 2 Euromonitor International Apparel & Footwear 2016 Edition (volume sales trends 2005–2015); World Wildlife Fund, [Industries: cotton](#); Fashion United, [Global industry fashion statistics: international apparel](#) (2016).
- 3 [Cotton made in Africa Annual Report 2022](#)
- 4 In 1945, Kenya had 75 textile and clothing establishments. The textile sector, peaking in 1984, became the second largest employer after the civil service with 52 operating mills for fabric and yarn production. By 2013, Kenya had only 15 main textile mills in operation. In countries such as Kenya, Nigeria, and South Africa, the vibrant local textile industry has been undermined over the last 20 years by cheaper imports from Asia and second-hand imports from Europe and the US; QuartzAfrica, [Africa's fashion business is using new and traditional methods to reform as a sustainable industry](#) (26th September 2020).
- 5 Fibre2Fashion, [Africa Needs Focus on Infrastructure, Supply Chain, and Skills](#) (February 2021).
- 6 Mordor Intelligence, [Africa textile industry: growth, trends, Covid-19 impact, and forecasts \(2021–2026\)](#).
- 7 UN Environment Programme (2020). Sustainability and Circularity in the Textile Value Chain - Global Stocktaking. Nairobi, Kenya.
- 8 The OR Foundation, Our long recovery: catalyzing a justice-led circular textiles economy In Accra, Ghana (2020).
- 9 Approximately two-thirds of textiles are made from synthetic materials, dominated by plastic-based polyester, polyamide, and acrylic. In recent years, the textiles industry has been identified as a major contributor to the issue of plastic entering the ocean. (Henry, Beverley, Kirsi Laitala, and Ingun Grimstad Klepp. "Microfibres from Apparel and Home Textiles: Prospects for Including Microplastics in Environmental Sustainability Assessment." The Science of the total environment 652 (2019): 483–494).
- 10 Ellen MacArthur Foundation, [Vision for a circular economy for fashion](#) (2020).
- 11 Add circular design guide reference here, the SA designer remaking clothes for Billie.
- 12 Fashion programs such as LISOF School of Fashion in South Africa and Vogue Style School of Fashion and Design in Ghana.
- 13 Traceability is the ability to trace products, components, and materials, as well as the social and environmental conditions in which they were made, along the whole supply chain, including after use.
- 14 A special economic zone (SEZ) is a dedicated zone wherein businesses enjoy simpler tax and easier legal compliances. SEZs are located within a country's national borders. However, they are treated as a foreign territory for tax purposes.
- 15 PA Consulting, [The sustainable manufacturing revolution](#) (2020).
- 16 Cameron Hepburn, et al., [Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change?](#), Oxford Review of Economic Policy (8th May 2020).
- 17 **Regenerative production** is an approach to managing agroecosystems that provides food and materials - be it through agriculture, aquaculture or forestry - in ways that create positive outcomes for nature. These outcomes include, but are not limited to, healthy soils, improved air and water quality, and higher levels of carbon sequestration. They can be achieved through a variety of context-dependent practices and can together help regenerate degraded ecosystems and build resilience on farms and in surrounding landscapes. Farmers may draw on several different schools of thought, such as regenerative agriculture, restorative aquaculture, agroecology, organic, permaculture, agroforestry, and conservation agriculture, to help them apply the most appropriate set of practices to drive regenerative outcomes in their managed agroecosystems.
- 18 TextileExchange, [Cotton in Africa: sustainability at a crossroads](#) (9th June 2020).
- 19 Institute for Global Prosperity, [Farmer-led regenerative agriculture for Africa](#) (2020).
- 20 [According to the International Cotton Advisory Committee \(ICAC\) cotton by-products are underutilised, or even neglected, in LDCs. ICAC estimates the value of unused cottonseed in a group of African LDCs at USD 237 million per year.](#)
- 21 [Fibershed](#) has been working with local talent to source regeneratively grown fibres from within a 150-mile radius of the project's headquarters in California. The project became a movement and the concept of Fibershed has been replicated in various regions across the globe.
- 22 NewFrontierData, [Aiming to bring Africa's abundant, untapped hemp market to bear](#) (7th August 2019).
- 23 Coconuts can be found especially in the African coastal countries like Tanzania, Kenya, Mozambique, Tunisia, Ghana, Morocco, Algeria, Namibia. Bamboo is currently grown in Benin, Burundi, Cameroon, Eritrea, Ethiopia, Ghana, Liberia, Kenya, Malawi, Madagascar, Mozambique, Nigeria, Rwanda, Senegal, Sierra Leone, Tanzania, Togo, and Uganda. Nigeria leads in pineapple production but the plant can also be found in West, Central and East Africa.
- 24 By buying food crop waste and using it to create natural fibres, [Circular Systems](#) provides farmers with extra revenue (from selling the food crop waste) and with natural fertiliser.
- 25 BizCommunity, [Why is used clothing popular in Africa?](#) (10th July 2020).
- 26 The Dutch government has proposed targets to keep at least 10% of clothing designated for reuse within its borders, rather than exporting it.
- 27 The goal is to keep the materials at their highest value and ensure they will be easy to recapture at the end of use. Cascading into lower-value applications, on the other hand, involves minimal processing, whereby these applications are usually the final destination as the recycling is not (economically) feasible and the materials are too difficult to recapture.