

# Five Big Bets for Africa's path to circularity

We are supporting five industries that offer immediate opportunities for increased circularity in sectors that will improve **the economy, jobs, and the environment on the continent in the long term.**



## Food waste conversion industry

Converting food waste to organic fertilizer to increase circularity in food systems.



## Plastic waste recycling

Recycling plastic packaging to increase circularity within the packaging industry.



## E-waste recycling industry

Promoting circularity in the large and growing electronics sector through substantial recycling and collection facilities.



## Recycled garments industry

Converting fashion and textiles waste into garments for commercial export markets.



## Mass timber industry

Redesigning how we build by using mass timber as a more sustainable input resource for expanding the built environment.



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# Food systems & the circular economy in Africa

COVID-19 is putting African agriculture at a critical crossroad. Circular solutions are key to improve food security, health, environmental outcomes, growth and employment on the continent.



Africa's food systems will be valued at **trillions of dollars by 2030**



Agriculture employs **60% of the Sub-Saharan workforce**



Agriculture makes up **23% of the continent's GDP**

➤ **10 million**

African farmers' livelihoods could be affected due to COVID-19

➤ **\$1 - \$5 billion**

in export value is at risk for 2020 due to supply disruptions



## How to make Africa's food systems more circular?



### PRODUCTION

Training farmers in post-harvest handling and recovering wastewater for irrigation will help shift production to more climate-smart models.



### PROCESSING & DISTRIBUTION

Converting distribution-related waste into compost/soil enhancer and into energy can improve competitiveness and green manufacturing.



### CONSUMPTION

Improving cuisines by minimizing waste and resource intensity will slow flows in consumption and create new loops for food diversion programs.



### POST-CONSUMPTION

Converting waste into compost/soil enhancer and into energy will create additional and new loops for increased productivity and soil health.

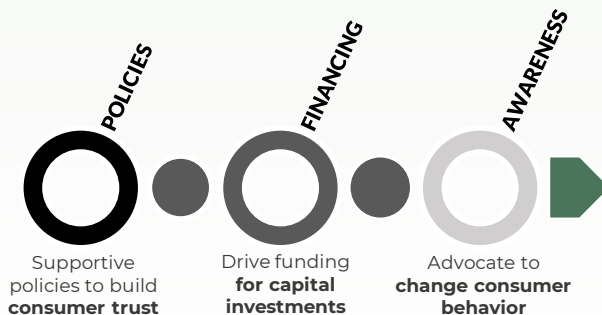


## The immediate opportunity

Convert food waste into organic fertilizer to increase circularity in food systems

## Enablers & impact

The transition from synthetic fertilizer to carbon-negative compost fertilizer (biochar) requires policies, financing and awareness-building. The impact is new green jobs due to the labor-intensive nature of roles in handling and waste collection, resilience to global supply shocks for fertilizer, reduced emissions and improved soil renewal.



# Packaging & the circular economy in Africa

Demand for plastic packaging in Africa is growing, driven by low costs and several application areas. Recycling has emerged as a solution to mitigate the environmental effects but must be scaled to have significant impact.



In 50 years, global plastic production has surged from **15 to +350 Mn tonnes**



In 2015, global plastic packaging volumes **increased from 17% to 25%**



13% of municipal solid waste in Africa is plastic, and is **dumped instead of recycled**

➤ **90%**

of waste in African countries is disposed of in uncontrolled dumpsites and landfills

➤ **\$80 – \$120 bn**

is the annual loss to the global economy of reduced plastic value after initial use



## How to make the packaging industry in Africa **more circular?**



### PRODUCTION

Explore the production of bioplastics using plant-based material as an alternative, rather than petroleum used in conventional plastics.



### PROCESSING & DISTRIBUTION

Develop global, industry-wide standards for plastic product design such as the use of mono-material or production of clear (non-colored) plastics.



### CONSUMPTION

Utilize reusable business-to-business (B2B) packaging that can be used in pooled systems across companies and industries.



### POST-CONSUMPTION

Increase recycling through innovative bottle deposit systems and incentivize investments in recycling facilities through legislation and tax incentives.

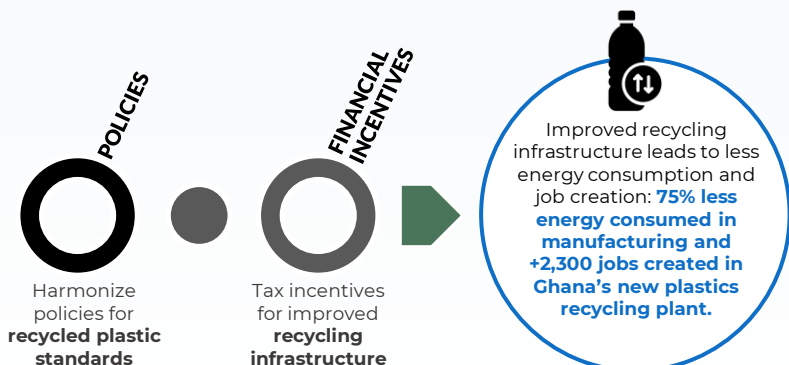


## The immediate **opportunity**

Recycle plastic packaging to increase circularity within the industry

## Enablers & impact

PET plastics offer unlimited recyclability. The transition requires policies allowing recycled plastic use in other forms of packaging and regional trade standards. Financial incentives, such as tax breaks, can help to reduce energy consumption in manufacturing and drive new green job creation.



# Electronics & the circular economy in Africa

E-waste management has become a major challenge facing many African countries because of lack of awareness, environmental legislation and limited financial resources. Attracting more investment for recycling e-waste will support green job creation and increased value capture.



In 5 years, the frequency of new product rollouts for major brands **increased by as much as 66%**



In Ghana, 150,000+ secondhand electronics are **imported every year**



The value of raw materials in Africa's e-waste is **approximately USD 3.2 Bn**

## ➤ Only one-fourth ➤ ~ 100 000

of the countries in Africa have a national e-waste legislation or policy in place

Nigerians work in the country's informal e-waste sector – but activities are dominated by male workers



## How to make Africa's electronics sector **more circular?**



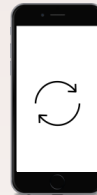
### PRODUCTION

Incentivize manufacturers to reduce the use of toxic substances such as lead and Cadmium in the design of products.



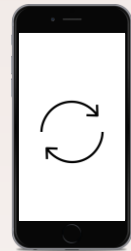
### PROCESSING & DISTRIBUTION

Incentivize processors to improve the manufacture of products to ensure longer life cycles and smarter upgrade process.



### CONSUMPTION

Achieve a high product utilization rate by ensuring that product lifetime is maximized through repair and refurbishment.



### POST-CONSUMPTION

Create and enforce legislation to limit foreign e-waste imports and build recycling and collection facilities for domestic e-waste.

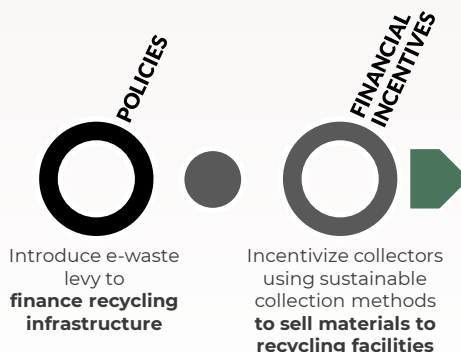


## The immediate **opportunity**

Develop the e-waste recycling industry and substantial collection facilities

## Enablers & impact

The development of e-waste recycling and collection facilities requires policy and financial incentives to build proper recycling infrastructure. The impact is the creation of more green jobs with reduced health risks and increased value capture of precious commodities like gold retrieved from effective recycling and collection.



# Fashion, textile & the circular economy in Africa

The current system for producing, distributing, and using clothing operates on a predominantly take-make-dispose model. A new textiles economy – based on circular economy principles – would lead to better outcomes.



The global fashion industry is accountable for **20% of global wastewater**



73% of material going into the clothing system is **lost after final garment use**



Local communities suffer from the industry's **poor environmental practices**



## < 1%

of material used to produce clothing is recycled – a loss of +\$100 bn annually



## 342 million

barrels of oil are used every year to produce plastic-based fibers for textiles



### How to make the fashion industry in Africa **more circular?**



#### PRODUCTION

Use regenerative and restorative agricultural practices that utilize organic inputs for retaining and restoring nutrients in the soil when growing cotton.



#### PROCESSING & DISTRIBUTION

Establish green textiles industries that use resources efficiently and renewable energy as well as use recycled waste materials to minimize the use of virgin resources.



#### CONSUMPTION

Shift from fast fashion to timeless fashion through campaigns and consumer incentives. If the number of times a garment is worn doubled, emissions would be cut in half.



#### POST-CONSUMPTION

Develop commercial recycling industries that recycle clothes back into yarns or upcycle secondhand clothing to added value fabrics and other products.

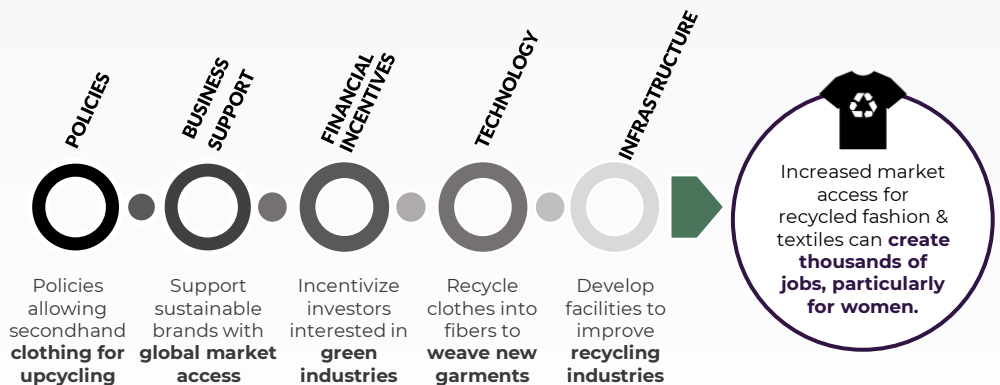


### The immediate **opportunity**

Convert fashion and textiles waste into garments for commercial export markets

### Enablers & impact

Commercializing the recycling and upcycling of secondhand clothing helps to ensure circularity in the industry while reducing resource intensity from the use of virgin raw materials. This opportunity taps into a growing market for sustainable fashion and green job creation.



# Built Environment & the circular economy in Africa

As African cities grow, so do emissions. Greenhouse gas emissions in Africa are projected to increase by over 2.5 times to 10% of global emissions by 2050, driven by large transformations in urbanization, industrialization and electrification. Abating these emissions is possible through the promotion of low-carbon infrastructure.



African cities are growing at an average annual rate of 4% - **twice the global average**



Manufacturing is growing rapidly, with some countries' **output growing >10% per year**



1.6 TW of power generation is needed by 2030, with **~600 m people needing electricity**

▶ **59%**

of the region's population will live in urban areas by 2050

▶ **2.5 billion**

people will live in Africa in 2050, up from 1.2 Bn in 2018



How to make the African built environment **more circular?**

## DESIGN

Designing circular buildings must speak to the importance of ecological custodianship and evolve toward a "planet-centric design" for sustainability.

## BUILDING MATERIALS

Use alternative building materials such as mass timber for construction. Other materials include fly ash, recycled aggregate concrete and other more sustainable alternatives.

## FITTING & FIXTURES

Scale secondhand markets for materials and build circular models for fixtures and fittings – such as a product-as-a-service, leakage monitoring, and clean energy technologies.

## WASTE MANAGEMENT

Use waste materials to create affordable building materials, e.g. plastic for bricks and tiles for floors, and use regenerative approaches to manage garbage and wastewater.

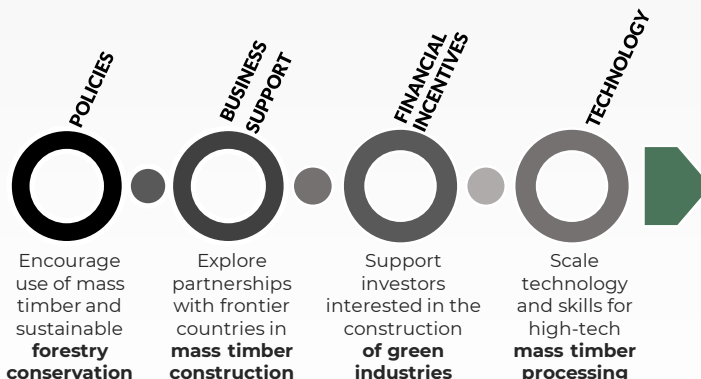


## The immediate opportunity

Use mass timber as a more sustainable input/resource in built environments.

## Enablers & impact

Using mass timber for construction is a promising solution for increased circularity in the built environment. Forestry conservation will create millions of jobs for youth and will reduce CO<sub>2</sub> emissions significantly compared to conventional construction materials.



Globally, forest conservation could create **16 million jobs from planting, cutting, and maintaining the forest resources.**