

# Climate Change Adaptation, Green Transition and the Bioeconomy



BDS Donor Coordination  
Group (BDCG)

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MESPT



# Kisumu & Our Shared Future

- A city whose vibrance, warmth and entrepreneurial spirit reflect the future we are working towards.
- A future where communities are empowered, markets are resilient, and prosperity is shared.

**KISUMU COUNTY**

**KENYA**

**Kisumu County** is Kenya's 14th-largest county by population. It is located in the western part of Kenya, and borders Lake Victoria.

Kisumu benefits from Kenya's largely **renewables-based electricity supply**.

However, **access to electricity** remains a challenge. Most of the population still relies heavily on traditional biomass (particularly for cooking).

Expanding **energy access** has been a primary motivation for Kisumu to shift towards and expand its use of renewable energy sources.

Kisumu County is a **deep-dive region** of the 100% Renewables Cities and Regions Roadmap project, and is a signatory of the 100% Renewables Cities and Regions Energy Compact and Network.

Source: Kisumu Initial Status Report; Kenya 2019 Census

**2020–2023**



**100%  
RENEWABLES  
CITIES & REGIONS  
ROADMAP**

Supported by:  
Federal Ministry for Economic Affairs and Climate Action  
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Credit: Evans Dims, Unsplash

**TOTAL ELECTRICITY CONSUMPTION**

**250.3 GWh**

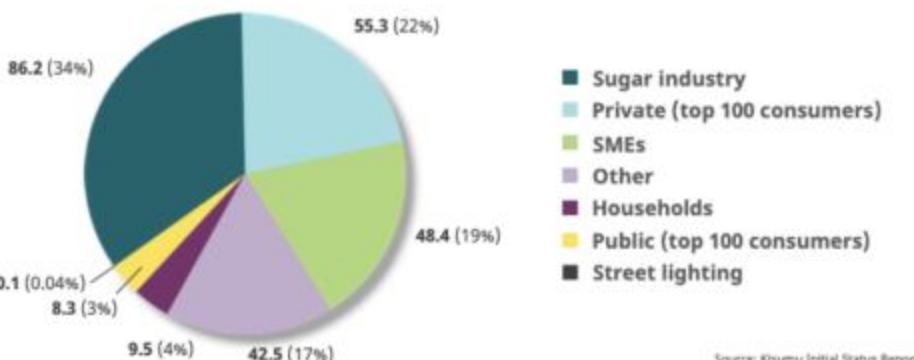
Year: 2019  
Source: CDP-ICLEI Track, 2023

**POPULATION**

**1,155,574**

Year: 2019  
Source: CDP-ICLEI Track, 2023

**TOTAL ELECTRICITY CONSUMPTION BY SECTOR (GWh)**



Source: Kisumu Initial Status Report



**RENEWABLE ELECTRICITY SHARE**

**90%**

Year: 2021  
Source: Kenya, International Energy Agency

**LAND AREA**  
**2009.5 km<sup>2</sup>**



**SUGAR INDUSTRY OWN-GENERATION**  
**86.2 GWh**



**GEOTHERMAL ELECTRICITY SHARE**  
**41%**



Source: Kenya Energy and Petroleum Statistics, 2023; Kisumu County Initial Status Report; International Energy Agency

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# A Defining Moment for Africa

## URGENCY OF CLIMATE IMPACTS

- Africa is experiencing **devastating climate effects**.
- Floods, droughts, and rising temperatures threaten livelihoods.
- Farmers face the deepest impacts, with markets destabilized.
- We must act to mitigate these effects and empower communities for a resilient future.





# Africa's Climate Reality

## TEMPERATURE INCREASE

- Africa is warming faster than the global average.
- The world has just recorded its warmest year in history.
- Over 60% of livelihoods depend on rain-fed agriculture.
- Africa loses an estimated USD 70 billion every year to climate shocks.
- Only 40% of Africans have access to early warning systems.

# Why We Must Act — and Act Together

## FROM EXTRACTION TO REGENERATION

- Transforming an extractive, linear economy into one that is circular, regenerative and bio-driven.
- Building food systems that are productive, sustainable, equitable and resilient.
- Creating markets that work for people and the planet.



# Simple Truths About Our Future

01

## BIO-BASED

The **bio-based economy** utilizes renewable biological resources, transforming them into sustainable products that enhance environmental health and economic stability for communities across Africa.

02

## GREEN

A **green economy** emphasizes sustainability, focusing on resource efficiency and reducing emissions, fostering innovation that creates jobs and promotes social equity within local economies.

03

## CIRCULAR

In a **circular economy**, materials are reused and recycled, minimizing waste and maximizing resource efficiency, which leads to economic growth while protecting the environment for future generations.

# The Green Economy: Smart Economics

01

## RISK REDUCTION

A green economy helps **reduce risks** associated with climate change, ensuring that communities are better prepared for environmental shocks and can swiftly recover from adverse events.

02

## RESOURCE EFFICIENCY

By improving resource efficiency, a green economy minimizes waste, optimizes production processes, and promotes sustainable practices that contribute to the long-term viability of our natural resources.

03

## JOB CREATION

Transitioning to a green economy **creates jobs for youth**, fostering innovation and providing employment opportunities in sectors like renewable energy, sustainable agriculture, and eco-friendly technologies.

# Circular Economy Principles

## REUSE

Reusing products reduces waste and resource extraction, extending the life cycle of materials and fostering a sustainable consumption model.

## RECYCLING

Recycling materials minimizes environmental impact by converting waste into valuable resources, enhancing resource efficiency and supporting circular economic growth.

## RESTORATION

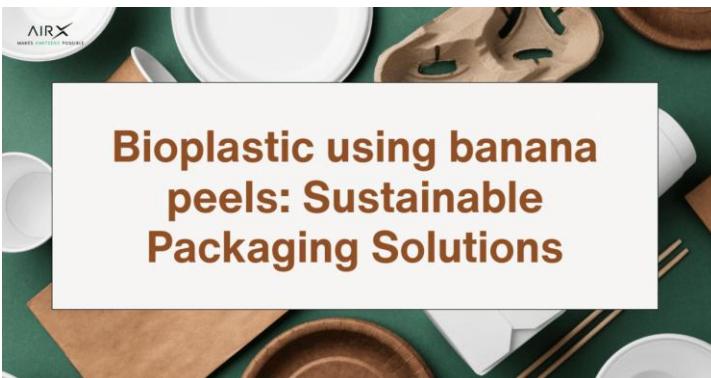
Restoring ecosystems strengthens natural cycles, helping to regenerate materials and create a resilient environment that supports both people and wildlife.

# The Bioeconomy Converts Resources into Value



## BAOBAB

Nutrient-rich powders from dried fruit and seeds



## SORGHUM

Fortified flours derived from local crops

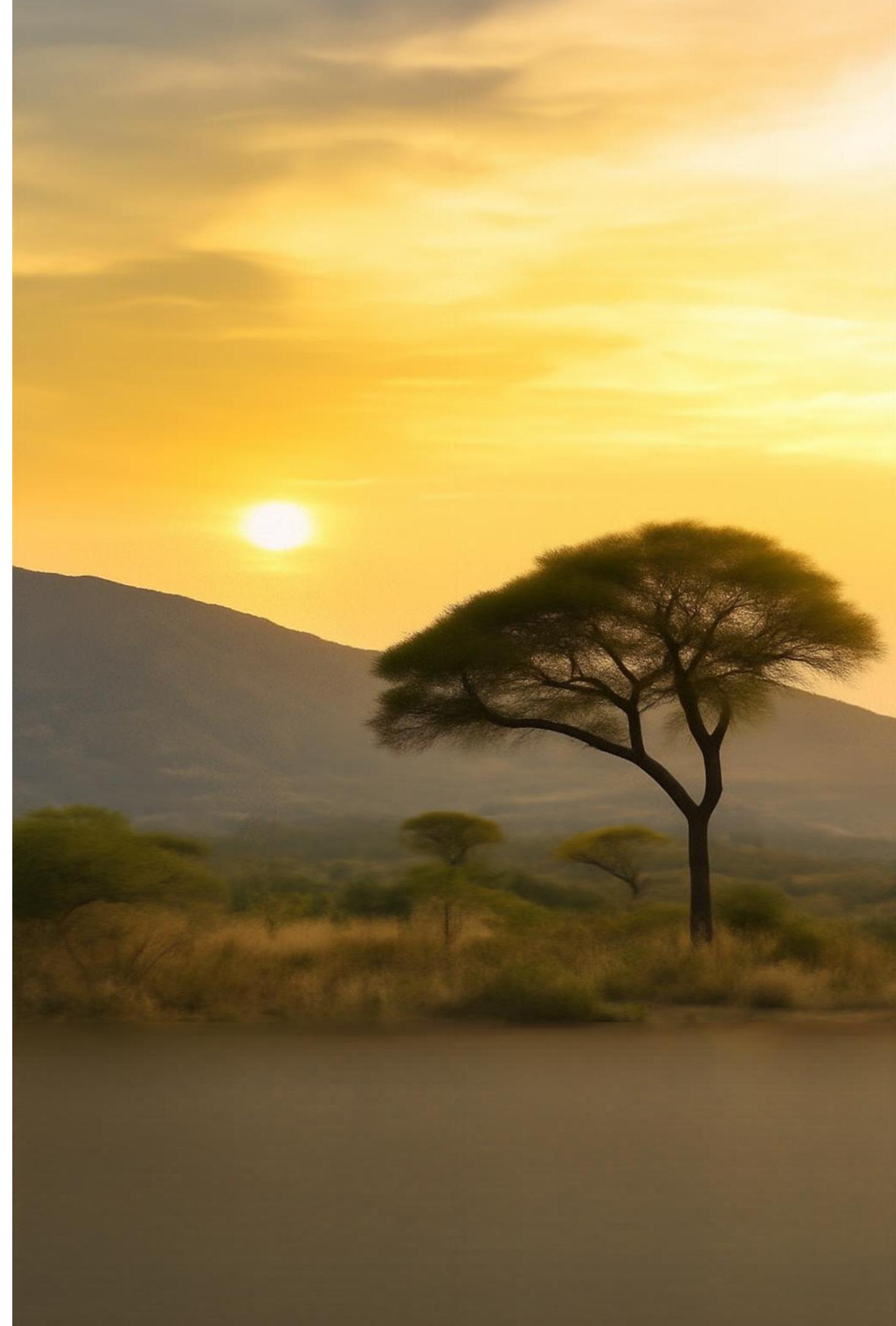
## MORINGA

Health supplements made from leaf extracts

Sisal and banana fibres into biodegradable packaging

# What Kenya Is Doing

- ✓ 15-billion tree-growing programme.
- ✓ National Climate Change Action Plan (NCCAP).
- ✓ Green Economy Strategy (GESIP).
- ✓ Bamboo Strategy for climate mitigation and green livelihoods.
- ✓ Investments in solar, waste-to-energy, clean cooking and sustainable mobility.



# Innovation Beyond Government

- Youth movements, civil society and researchers.
- Private sector actors driving new solutions.
- Electric mobility.
- Solar cold storage.
- Biodegradable materials.
- Community-led restoration.

*A Kenya that puts climate resilience at the centre of its development agenda.*



## YOUTH

Empowering the next generation of leaders



## SUSTAINABILITY

Implementing eco-friendly practices in communities



## INNOVATION

Creating solutions for a greener future

# MESPT's Contribution

Practical solutions that farmers can adopt today and scale tomorrow



## Solar-powered drip irrigation

Efficient water delivery ensures healthy crop growth.

## WATER HARVESTING

Capturing rain supports sustainable agriculture practices.

## DROUGHT RESISTANCE

Resilient crops thrive in changing climates.

- Regenerative soil fertility management.
- Pest surveillance and digital alerts to combat pest threats.



# Digital Climate Advisory Systems

## EMPOWERING FARMERS THROUGH TECHNOLOGY

These systems provide **real-time alerts** and tailored recommendations to help farmers make informed decisions about climate-smart practices and pest management.

# Circularity in MESPT's Work



## SOLAR DRYERS

Efficiently harnessing sunlight to preserve food sustainability.

## COMPOSTING

Transforming organic waste into nutrient-rich soil amendments.

## WASTE TO FEED

Converting waste into high-value feed solutions for livestock.

- Supporting indigenous and underutilised crops.

# Bioeconomy in the Avocado Value Chain

- Regenerative agroforestry.
- Organic certification.
- Composting, mulching and soil regeneration.
- Tree planting for carbon sequestration.

*Markets become resilient when they are rooted in ecosystems that thrive.*



# Africa's Resilience: A Testament to Innovation

## EMBRACING OUR STRENGTHS

Africans are **not victims**, but rather innovators, committed to preserving biodiversity and leveraging ancestral wisdom for sustainable futures.



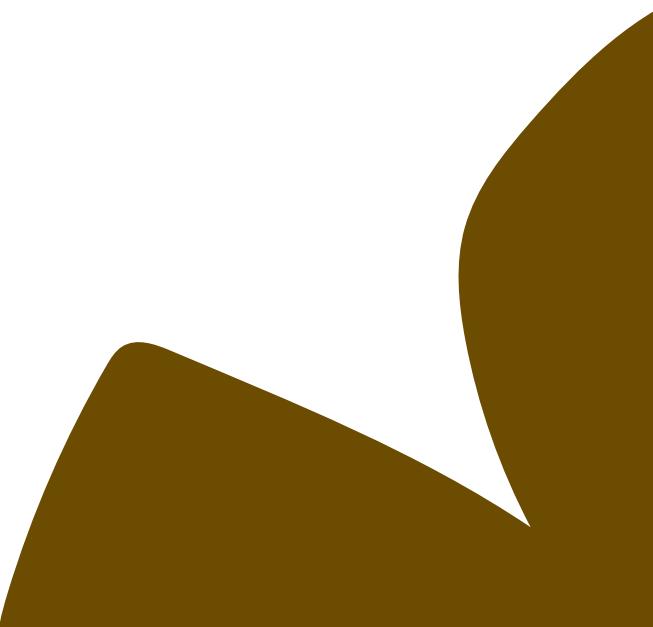
# Collective Action for Resilience

## **SHARED RESPONSIBILITY IS KEY**

**Governments, private sector, farmers, youth, researchers, and partners must collaborate.**

Together, we can create resilient markets.

- Regenerate soils
- Empower local communities
- Enhance sustainable practices
- Foster innovation and shared knowledge





# Embracing Regeneration for a Sustainable Future

Choosing **regeneration over degradation** fosters innovation and hope, empowering communities and creating resilient ecosystems for generations to come.



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# Thank You