

# CIRNA (Circularity of Nutrients in Agroecosystems and Co-Benefits for Animal and Human Health).

Source: Regenerate Africa



Agroscope

ILRI



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Vétérinaires  
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Germany

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AFRICA





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## Project Context

In East Africa, smallholder farmers are vital to the region's food security and nutrition. However, these farmers face significant challenges from climate change, animal health concerns, and limited access to fertilizer resources. Livestock manure, a crucial resource for soil fertility and crop productivity, has the potential to alleviate some of these challenges by reducing reliance on costly fertilizers and supporting ecological farming practices. Unfortunately, improper management of manure can lead to nutrient losses through leaching, ammonia, and greenhouse gas emissions, which reduce fertilizer effectiveness and harm the environment. Additionally, poor manure management poses health risks, particularly to women and children who are often tasked with handling manure on smallholder farms.

The CIRNA project was developed to address these critical issues through an integrated approach that enhances nutrient circularity, mitigates climate impact, and improves both animal and human health. By developing and promoting better manure management practices, CIRNA aims to make nutrient resources more accessible and sustainable for smallholder farmers while addressing environmental and health challenges.



Source: ILRI

# Objectives

## **The CIRNA project has set the following objectives:**

1. **Promote Nutrient Circularity:** Develop and implement manure management practices that reduce nutrient loss and recycle nutrients effectively within smallholder agroecosystems.
2. **Enhance Climate Resilience:** Reduce greenhouse gas emissions and improve the climate adaptability of manure management practices for smallholder farms.
3. **Improve Human and Animal Health:** Address health risks associated with manure handling and support practices that mitigate exposure risks for women, children, and livestock.
4. **Encourage Adoption and Economic Feasibility:** Ensure that proposed solutions are economically feasible and align with the social realities and priorities of smallholder farmers, encouraging adoption and sustainable impact.



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Source: RA

## Expected Outputs and Outcomes

### Expected Outputs:

1. Validated, farmer-adopted manure management practices that are ecologically sound and feasible for smallholders.
2. Research publications and data that showcase the benefits of enhanced manure management for nutrient circularity, climate adaptation, and health.
3. Policy briefs and guidelines for sustainable manure management in smallholder agriculture.

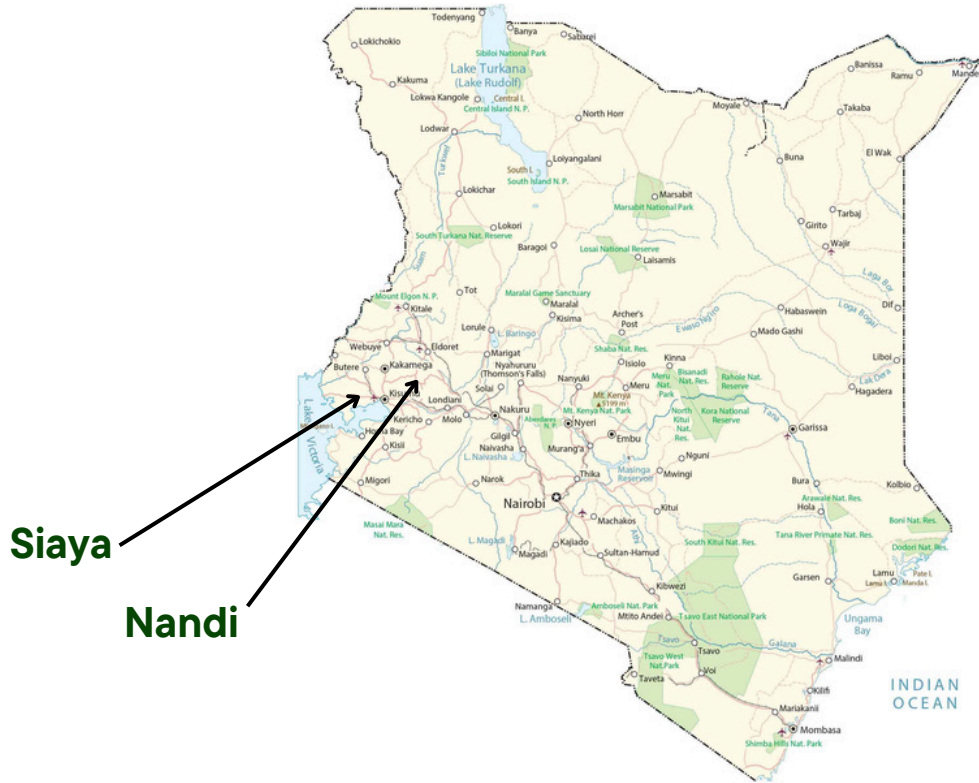
### Expected Outcomes:

1. Increased nutrient retention and soil fertility in smallholder farms through better manure management.
2. Reduced greenhouse gas emissions and nutrient runoff from livestock manure.
3. Improved health and reduced exposure risks for farmers, especially women and children, involved in manure handling.
4. Enhanced capacity of farmers and stakeholders in sustainable nutrient management practices.
5. Influence on policies that support sustainable nutrient management in agroecosystems.

# Project Area



The CIRNA project is active in smallholder farming communities in East Africa, primarily within Kenya (Siaya and Nandi Counties)



Uganda (Mukono, Mpigi and Buikwe districts), where agriculture is a primary livelihood source, and sustainable manure management practices are urgently needed.



**Mpigi Mukono Buikwe**



# Partners Involved



**Agroscope**

Agroscope: Swiss Federal Excellence Centre for Agricultural Research.



International Livestock Research Institute (ILRI):  
Working in Kenya and Uganda to improve livestock-related agricultural practices.



Women Farmers' Association of Kenya:  
Specializes in outreach, empowering women farmers, and promoting sustainable farming



**Vétérinaires  
Sans Frontières  
Germany**

Vétérinaires Sans Frontières Germany (VSFG):  
Provides veterinary and health services to rural communities.



Regenerate Africa:  
Focused on policy influence, capacity building, and knowledge dissemination.





# Role of Regenerate Africa

Regenerate Africa plays a crucial role in the CIRNA project by:

1. Influencing policies to support sustainable manure management across East Africa.
2. Building the capacity of smallholder farmers and community members in nutrient management.
3. Supporting the research by facilitating knowledge dissemination and policy influence, thereby enhancing the project's reach and impact.

## Project Funders



The CIRNA project is funded by a consortium of international donors who are dedicated to advancing sustainable agriculture, environmental conservation, and health outcomes across East Africa.



Solution-oriented Research for Development (SOR4D) programme



Swiss National Science Foundation (SNSF)



## Duration of the Project

**The CIRNA project spans a three-year period May 2024 to April 2027, with activities expected to be completed by 2027.**



## Activities to Date



Source: Regenerate Africa



1. Initial Research and Baseline Assessments: Preliminary studies to understand existing manure management practices, assess health risks, and determine farmer priorities.
2. Consortium Building and Stakeholder Engagement: Establishment of partnerships with local NGOs, research institutions, and smallholder farming communities.
3. Conducted the CIRNA project Inception Workshop that involved participation of key stakeholders and actors, to popularize the project objectives and expected outcomes.'
4. Community Outreach and Knowledge Sharing: Initial sessions conducted with farmers to identify needs, priorities, and potential areas for intervention.

## Planned Activities Going Forward

1. Development and Testing of Manure Management Practices: Implement and monitor best-practice manure management techniques in select smallholder farms.
2. Training and Capacity Building Workshops: Conduct workshops and on-farm demonstrations to teach farmers sustainable manure management methods.
3. Policy Development and Advocacy: Draft and disseminate policy recommendations based on research findings to support sustainable nutrient circularity.
4. Documentation and Knowledge Management: Publish research findings, case studies, and success stories to support further knowledge sharing and adoption.
5. Monitoring and Evaluation: Regular assessment of project impact, measuring nutrient retention, emissions reductions, health outcomes, and farmer adoption rates.





For further information about the CIRNA project ...

Click this link to the project website

CIRNA Circularity Nutrients  
Agroecosystems and Co-benefits Animal  
and Human