Uganda Biogas Initiative:
Empowering farmers and schools for sustainable growth

Public Consultation
By BioFarmers & Eco Kinetics

December 2024

Introduction

Biofarmers and **EK** empower Ugandans with sustainable waste management, clean cooking, fuel savings, and impactful climate solutions.

Looking to structure the activities as the Carbon programme of Activities (PoA) **"Uganda Biogas Initiative Empowering Farmers and Schools for Sustainable Growth"** under the Gold Standard for the Global Goals and act as Coordinating and Managing Entity (CME).

Having access to clean and affordable fuel becomes more important to the people of Uganda. During the COP29 in Baku 159 countries have united in the Global Methane Pledge (GMP) in pursuit to cut methane emissions 30% below 2020 levels.

Existing Condition of Community

Polluted, area with waste

Broken Biodigesters

Cooking on wood or charcoal

Objectives of the Programme

- Capture of eco friendly gas, used for cooking by installing biogas digesters
- Turning manure waste into high quality biofertiliser.
- Health improvements especially for women that are cooking.
- Economic improvements, savings on coal and wood costs

Description of Solutions & Technologies

Biofarmers is committed to rehabilitating inactive biogas systems for schools and local farmers, restoring their full benefits. To make this affordable, Biofarmers uses microfinancing and partnerships with SACCOs (Savings and Credit Cooperative Organisations).

- **Microfinancing**: Offers low-interest, flexible financing to spread rehabilitation costs over time.
- **SACCO Partnerships**: Enables community-driven financing, allowing members to access loans and savings for biogas repairs.
- **BioFarmers** will finance the biodigesters, facilitate financial agreements with users through partners, handle installations, and provide training on usage. Additionally, BioFarmers will ensure regular monthly contact with users to offer support, address concerns, and promote effective and sustained utilisation of the biodigesters

- These collaborations promote clean energy adoption and financial inclusion.

Biogas Systems

Biogas systems convert organic waste into renewable energy for cooking and fertiliser, reducing reliance on firewood and charcoal.

The programme includes:

- **Needs Assessment**: Identifying areas with limited clean cooking energy and high fuel reliance.
- **Site Selection**: Choosing areas with high energy needs, like schools and farms.
- **Community Engagement**: Involving locals in decision-making to ensure the systems meet their needs.
- **Construction/Repair**: Installing and upgrading biogas systems for reliability and efficiency.
- **System Management**: Local councils or cooperatives oversee maintenance for long-term sustainability.

This approach enhances energy access, reduces costs, and improves health while supporting environmental conservation.

Biogas System – Technology

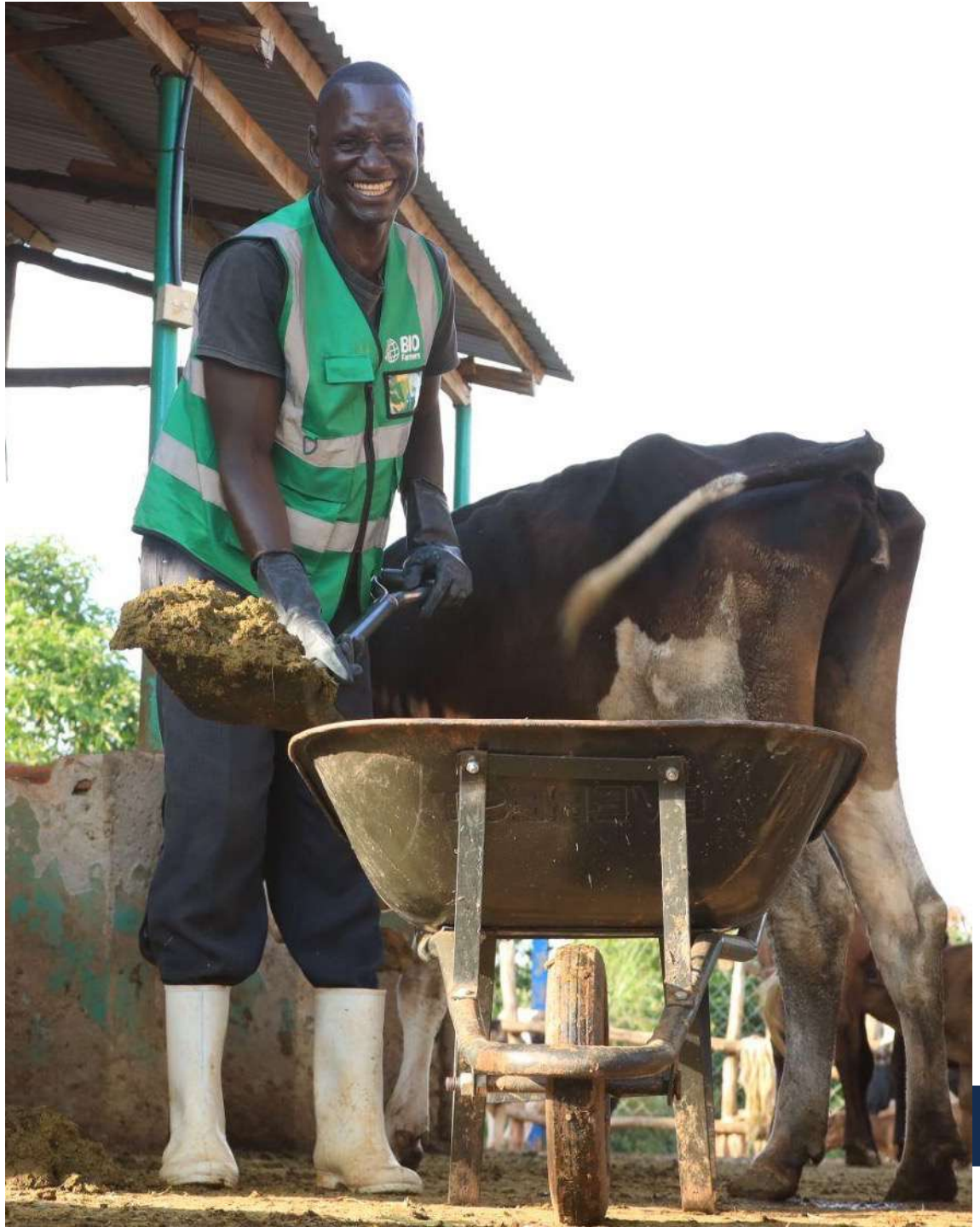
Biogas technology involves converting organic waste into methane-rich biogas through anaerobic digestion. Here's a simplified breakdown:

1. **Anaerobic Digester**: Organic waste is placed in a sealed, oxygen-free container where bacteria break it down.
2. **Microbial Breakdown**: Bacteria convert the waste into methane (CH_4) and carbon dioxide (CO_2) through multiple stages.
3. **Gas Collection**: The biogas rises and is captured for use.
4. **Purification**: The gas is purified to remove impurities like hydrogen sulfide.
5. **Biogas Use**: The purified biogas can be used for cooking, heating, or electricity generation.
6. **Digestate**: The remaining material is nutrient-rich and can be used as fertiliser.
7. **Monitoring**: Sensors optimise the system, ensuring efficient gas production.

Biogas Systems – Continuous Management and Maintenance

Quality control is applied during the construction and rehabilitation of biogas systems to ensure performance, safety, and durability.

- **Construction Standards**: High-quality standards are followed for efficiency, safety, and longevity.
- **Performance Testing**: Systems are inspected regularly to ensure efficient gas production and safe operation.
- **Preventive Maintenance**:
  - **Regular Check-ups**: Scheduled inspections to ensure proper function.
  - **Routine Servicing**: Ongoing maintenance of key components.
  - **Timely Repairs**: Addressing issues quickly to avoid major failures.



Strategic Distribution

Biogas systems are prioritised in areas facing energy challenges, such as:

- **Energy Scarcity**: Areas with limited access to reliable cooking fuel, relying on unsustainable wood and charcoal.
- **High Demand and Limited Resources**: Communities with significant energy needs and few clean energy alternatives.
- **Dependence on Traditional Fuels**: Rural and peri-urban areas where firewood and charcoal are used for daily cooking.

The programme distributes biogas systems to households, schools, and farms, offering:

- **Training**: Educating on system operation, maintenance, and safety to ensure efficient use.
- **Long-Term Support**: Guidance on repairs and component replacement for sustained performance.

This strategy helps transition to clean energy, reducing costs, improving health, and protecting the environment.

BioFarmers Biogas System

1. Collect Organic Waste

Gather organic materials like food scraps, animal manure, or plant waste.

2. Prepare the Waste

Shred or chop the waste into smaller pieces to help the microorganisms break it down more easily.

3. Place in Digester

Put the waste into a sealed container (called a digester) where there is no oxygen.

4. Microorganisms Break It Down

Inside the digester, bacteria break down the waste without oxygen (anaerobic digestion). This creates biogas, which is mainly methane (CH_4) and carbon dioxide (CO_2).

5. Collect Biogas

The biogas rises to the top of the digester and is collected in a storage container.

6. Use the Biogas

The stored biogas can be used for cooking, heating, or even generating electricity.

7. Leftover Material (Digestate)

The remaining material (digestate) is nutrient-rich and can be used as fertiliser for crops.

8. Monitor and Maintain the System

Regularly check the system to ensure everything is working smoothly, such as making sure the digester has enough waste and the gas is being used properly.

9. Environmental Benefits

The system reduces waste, provides renewable energy, and helps reduce greenhouse gas emissions.

Benefits

- Improved Livelihoods: access to clean and more affordable energy, decrease of lung diseases among women.
- Time Saved: saved hours for fetching wood
- Reduced Fuel Consumption: no need for the use of wood and charcoal
- Reduced Environmental Impact: decreased amount of firewood collected from forests.
- Reduced GHG Emissions: no emissions produced from cooking and methane capture.

Alignment with United Nations Sustainable Development Goals

Good Health & Well-being

Quality Education

Gender Equality

Affordable & Clean Energy

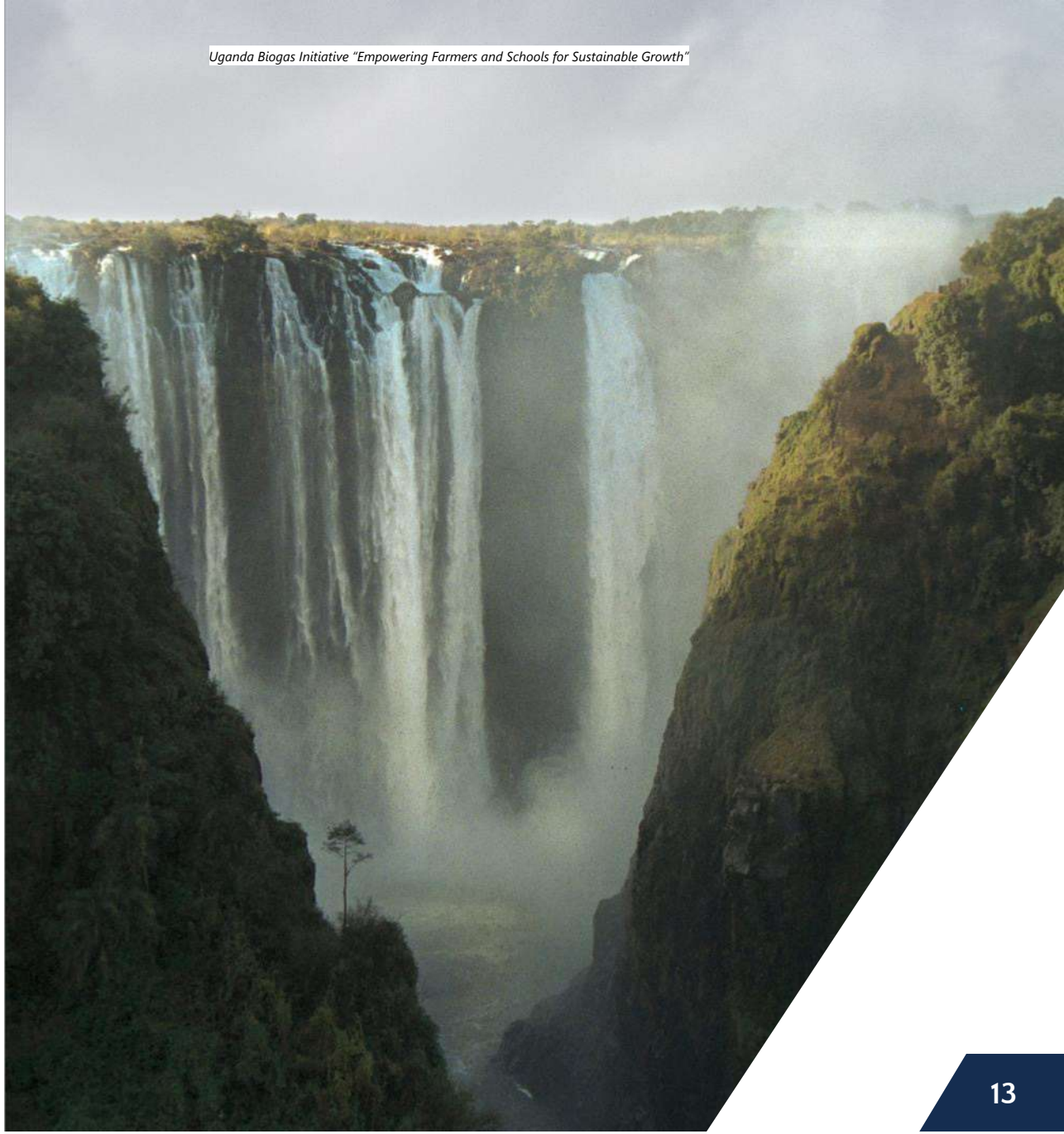
Decent Work & Economic Growth

Responsible Consumption and Production

Climate Action

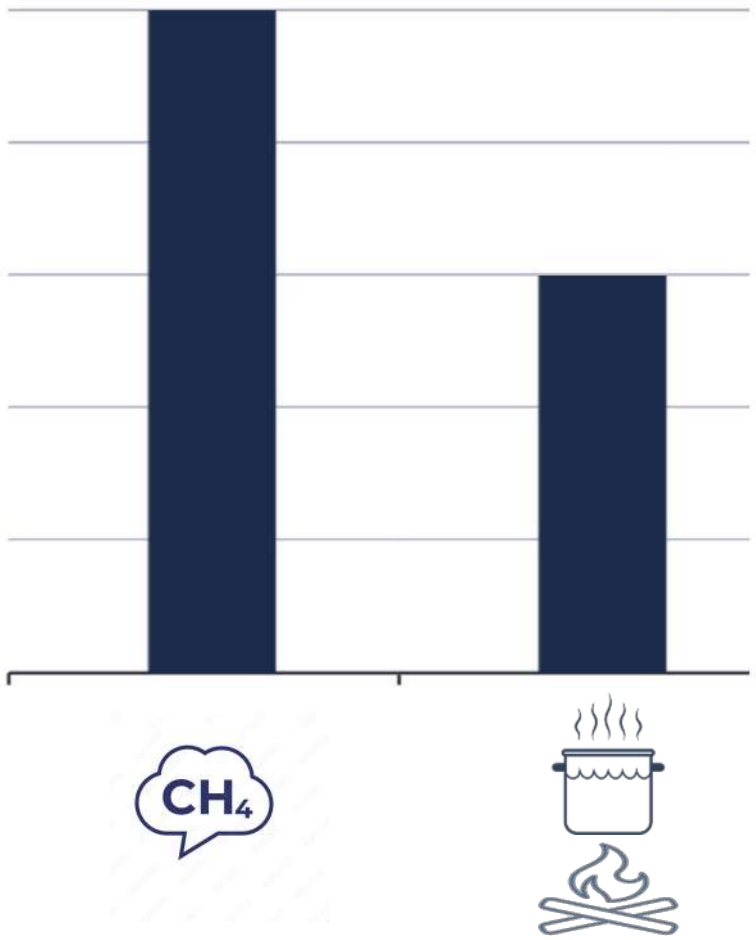
EK & BioFarmers aims to develop the *Uganda Biogas Initiative* as a carbon Programme of Activities (PoA) under the Gold Standard for the Global Goals

Gold Standard® for the Global Goals



Uganda Biogas Initiative "Empowering Farmers and Schools for Sustainable Growth"

Greenhouse Gases (GHG) Emissions Reduction in Biogas system Programme



Emissions reduction = Carbon offsets

What is a Carbon Credit?

1 carbon credit = 1 tCO_2e removed or reduced

A certificate issued by a carbon standard or programme in connection to a carbon project, verified by an independent third-party, representing the right of the holder to claim the achievement of greenhouse gas (GHG) reduction or removal that equals to one metric tone of CO_2 equivalent.

It is also known as **verified emission reduction/removal (VER)**, carbon offset and carbon certificate.

Voluntary Carbon Markets and Offsetting

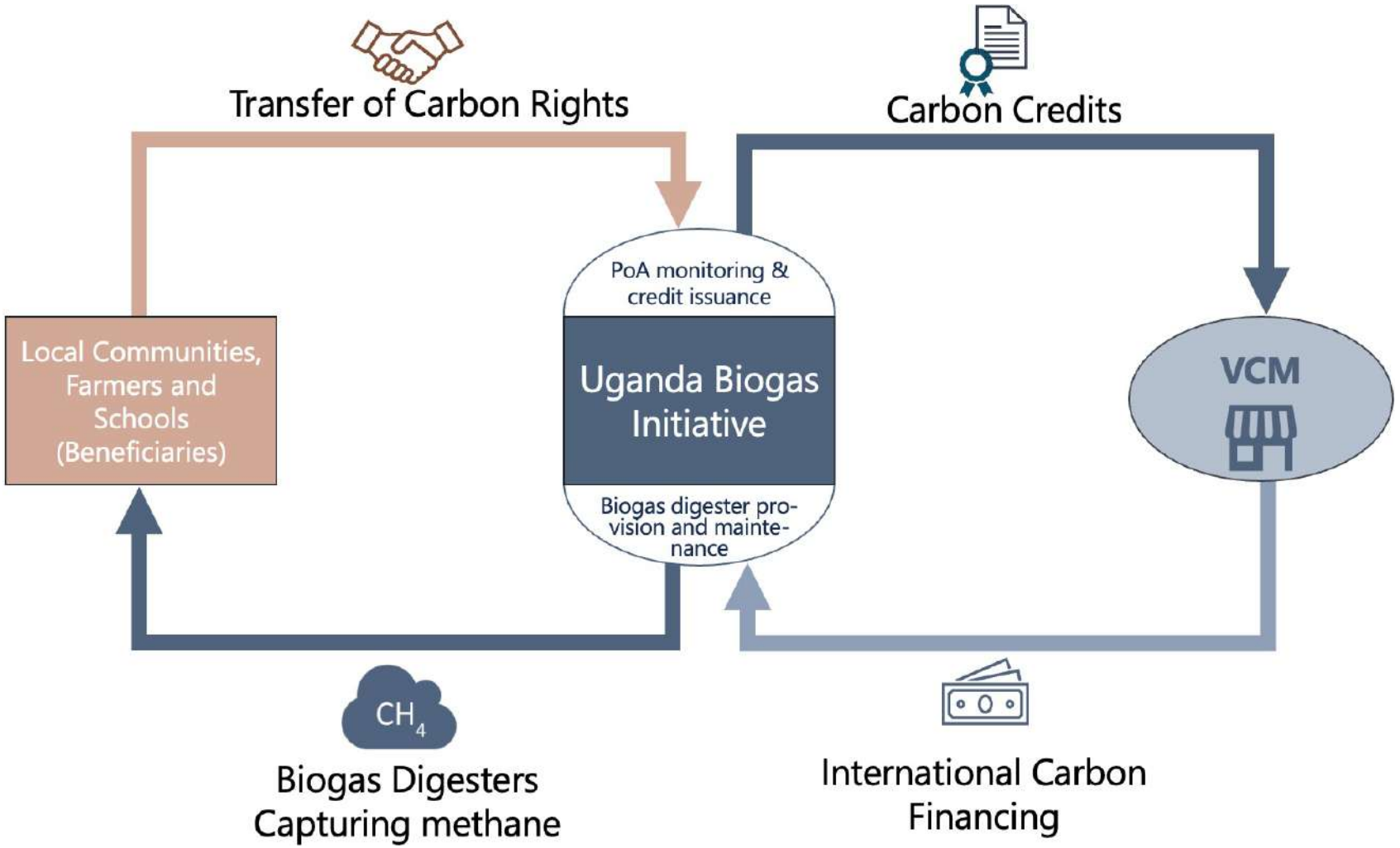
Global purpose of voluntary carbon markets (VCM)

1. Accelerate global emission reductions and removals.
2. Enable flow of climate finance to verified emission reduction and removal projects beyond business as usual.

Reasons for organisations to offset their emissions

1. Net Zero commitments / Science Based Targets: companies need to secure a supply of carbon removals and carbon reductions for beyond value chain mitigation.
2. Internal carbon pricing: to incentivise organisational GHG mitigation in corporate, product and service level accounting.
3. (Pre)compliance: under existing carbon schemes or to anticipate and de-risk potential future obligations, companies invest in strategically located and optimised portfolios of carbon projects.
4. Investor pressure: to satisfy investors and maintain high scores in non-financial disclosures and ratings under the frameworks reporting standard (ESG).
5. Climate leadership: to play a leading role in global transition to clean economy and contribute to Paris Agreement or country NDCs.

Uganda Biogas Initiative and Voluntary Carbon Market (VCM)



Compliance vs Voluntary Carbon Markets

Compliance Carbon Markets

- These markets are established to **comply with legally binding emissions reduction targets** or regulatory requirements set by governments or international agreements.
- Participants in compliance markets are typically entities that have **mandatory emission reduction obligations,** such as large corporations or industries.
- Example: EU ETS – trading emission allowances EUAs.

Voluntary Carbon Markets (VCM)

- These markets are driven by organisations or individuals **voluntarily seeking to offset their carbon footprint** or support emission reduction projects.
- Participants in voluntary markets are not bound by regulatory requirements and **participate out of their own initiative**.
- Example: Gold Standard – trading emission reductions or removals VERs

Voluntary Carbon Standards

ICROA Endorsed Standard

ENDORSED UN AND GOVERNMENT STANDARDS

UNFCCC

Australian Government
Department of the Environment and Energy

Woodland Carbon CO_2de

BRITISH COLUMBIA | Ministry of Environment and Climate Change Strategy

ENDORSED INDEPENDENT STANDARDS*

Verified Carbon Standard

Gold Standard

American Carbon Registry

CLIMATE ACTION RESERVE

PLAN VIVO
For nature, climate and communities

ART
Architecture for REDD+ Transactions

GLOBAL CARBON COUNCIL

puro • earth

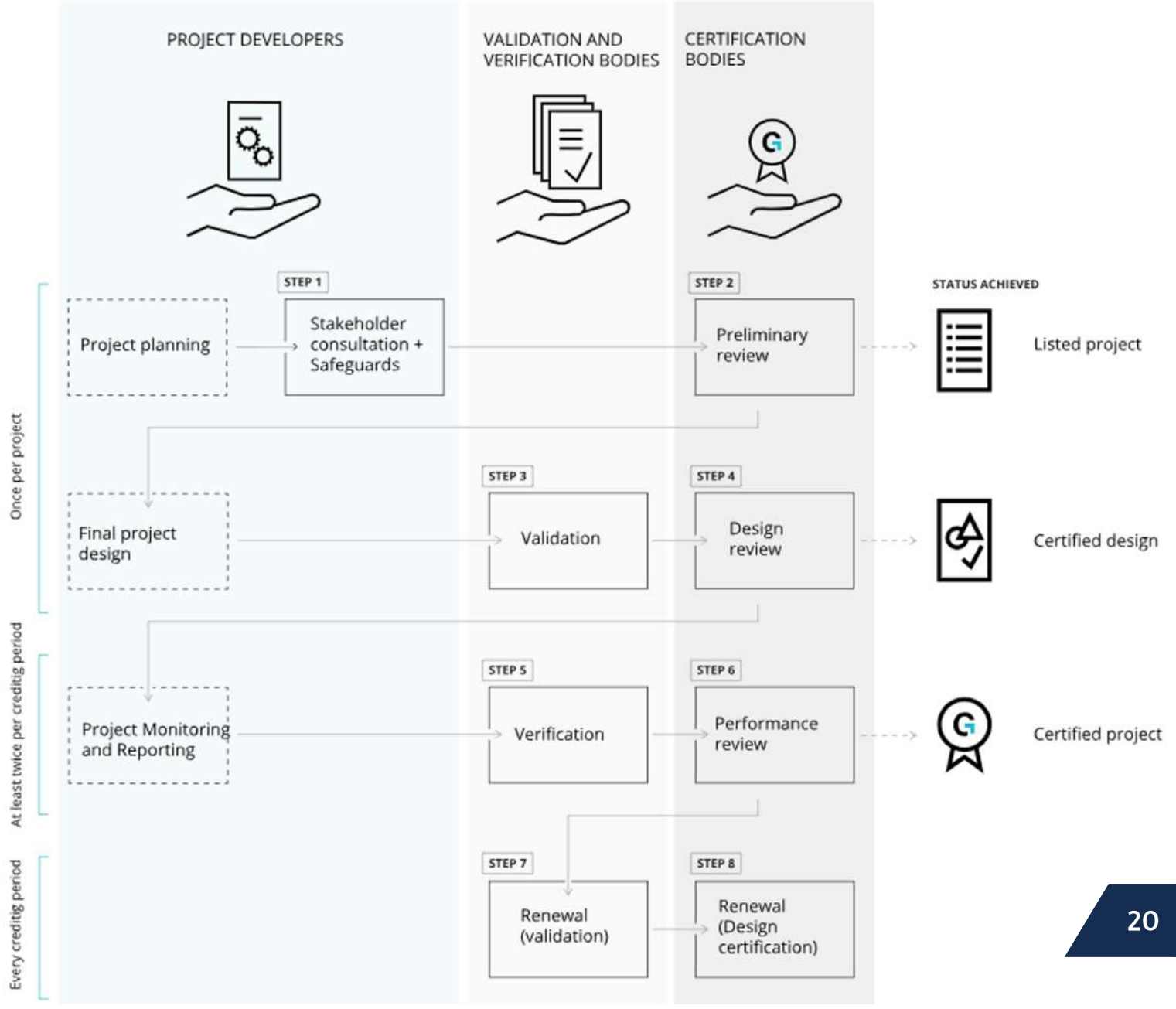
CITY FOREST CREDITS

BioCarbon Registry

CERCARBONO
Certified Carbon Standard

Role of the Gold Standard

- BioFarmers plans to register and certify their initiative as a Programme of Activities under the Gold Standard.
- This process enables the issuance of Verified Emission Reductions (VERs).
- VERs represent the right to claim GHG reduction/removal (equivalent to one metric tonne of CO_2).
- Used by corporations, institutions, and individuals for climate change mitigation claims.



Gold Standard PoA Implementation Plan

On site Public Consultation
December 2024

Online feedback and input
Dec. 2024 – Jan. 2025

Preliminary review request to Gold Standard
End January 2025

PoA and VPA listing
February 2025

PoA and VPA Design Validation & Verification
March – April 2025

PoA and VPA Design and Performance Certification
December 2025

VPA Performance Monitoring & Certification
Continuously

Consultation Timeline

1. **Gold Standard Plan**
2. **Transparent community engagement (FPIC) & SOP**
3. **Creating Safe Zone for Community Sharing**
4. **Grievance Mechanism for immediate reports of the potential issues**

Public Consultation (Stakeholders Engagement)

December 2024

Feedback & Input for Project's

December 2024 / January 2025

- Online Survey/Questionaire
- Consultation's Feedback

Continuous Engagement Process

1. Feedback for monitoring & grievance mechanism

Locations of the Stakeholder Consultation Meetings

19 December

Regional Level (Kamuli Town)

- 09:30 – 13:00 – For regional government leaders, government executives, regional NGOs, biogas experts, community members, other beneficiaries, private sector actors, and development partners engaged in biogas projects and their implementation in regional settings.

19 December

Local Level (Nakabaale, Kamuli)

- 14:00 – 17:00 – For local community members and beneficiaries, women's groups, local leaders, village elders, school headteachers and executives, farmers, farming cooperatives, and financial service groups (MFIs, SACCOs) engaged in biogas initiatives in rural settings

20 December

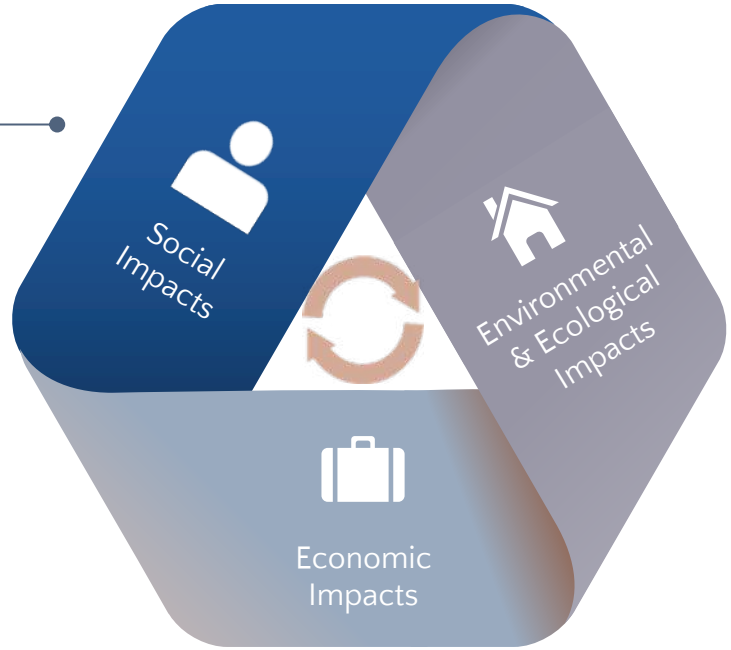
Luuka District

- 09:30 – 14:00 – For governmental institutions, NGOs, CBOs, academia, private sector entities, development partners, media, financial institutions, local communities, international certification bodies, environmental organisations, and other institutional stakeholders focused on biogas projects for Carbon Standards

Safeguards

Social Aspects

1. Human Rights
2. Gender Equality and Women's Empowerment
3. Community Health & Safety
4. Cultural Heritage, Indigenous Peoples, Displacement and Resettlement
5. Anti-Corruption



Environmental & Ecological Aspects

1. Climate & Energy
2. Life on Land
3. Environment

Economic Aspects

1. Promote equitable, sustainable economic growth
2. Fair treatment & prioritise local employment
3. Leave no one behind

Safeguarding Principles Assessment & Mitigation Plan

- Undertake upfront assessment against Safeguarding Principles & Requirements (Social, Economic and Environmental Aspects)
- Implement activities considering social, economic, and environmental factors.
- Include measures in the design documents to minimise and address negative impacts
- Provides information on measures implemented to address the identified risks and status of risk (the monitoring report at each verification.)
- Report any grievances related to compliance and safeguarding principles at any point during the project cycle.

Continuous Input & Grievance Mechanism

1. Public consultation gathers community input
2. Grievance Mechanism & Redress Procedure is shared with stakeholders
3. Grievances reception and resolution
4. Resolution process recorded in Grievance Logbook
5. Resolution results publicly announced

Steps to resolve grievances

EK aims to resolve amicably, providing culturally appropriate response.

Unresolved grievances go to mediation by neutral third party.

If not resolved, may proceed to arbitration/legal action as per relevant laws.

Grievance and input submission

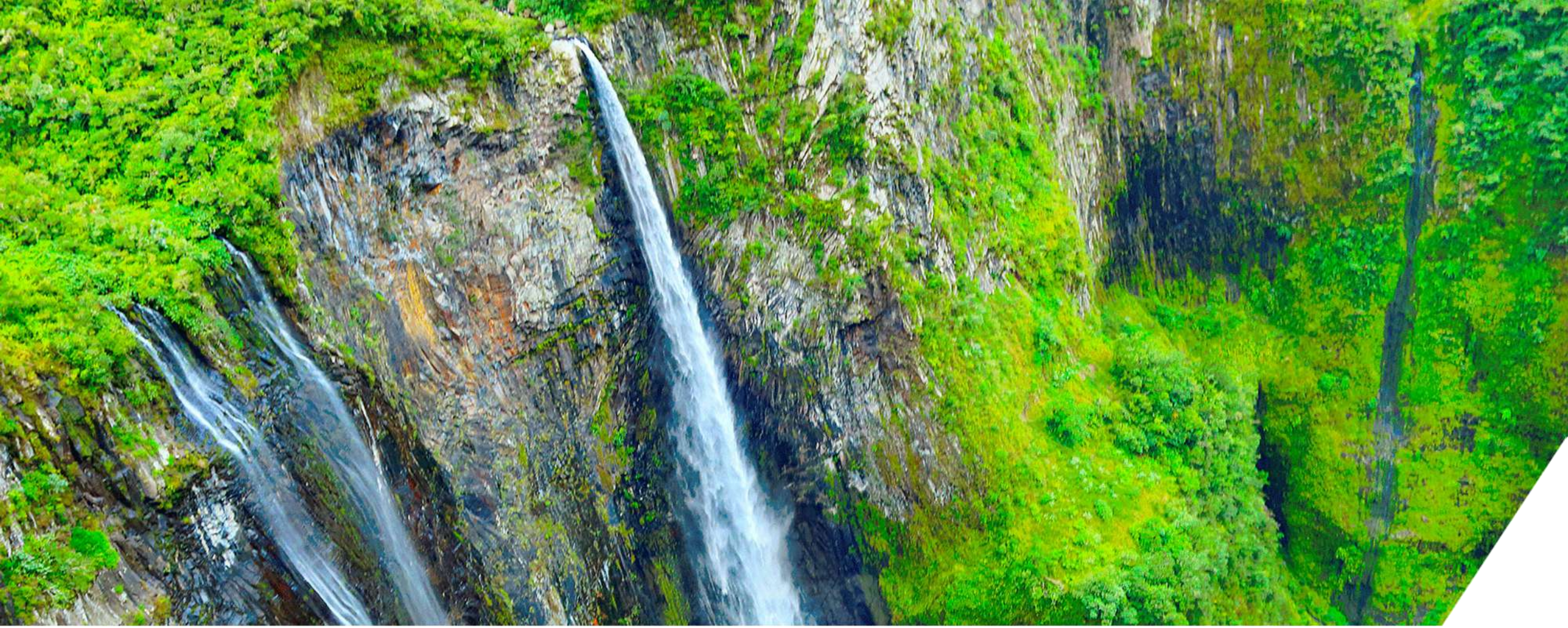
Report submitted in Person **(please come to the addresses provided)** Alipoota eweereddwayo mu Muntu (jjangu ku ndagiriro eweereddwa)	**Kamuli Office, Lubaga road, Buwenge Empya, Kamuli Town, Kamuli (from 9:00 to 17:00)** Office y'eKamuli: oluguudo lw'eLubaga, Buwenge Empya, ekibuga Kamuli, (okuva 9.00 to 17.00) **Buwenge Office, Kyerinda village-Kasalina ward-Buwenge Towncouncil-Jinja district (from 9.00 to 17.00)** Office y'eBuwenge, Kyerinda village-Kasalina ward-Buwenge Towncouncil-Jinja district (okuva 9.00 to 17.00)
Telephone access Okukozesa essimu	+256 755 969 428
Internet/email access Yintaneeti/email	https://ek.eco/grievance-ug Uganda@ek.eco
Gold Standard (GS) Contact Endagiriro y'Omutindo gwa Zaabu	help@goldstandard.org

Evaluation

What is your impression of the meeting?

What do you like about the programme?

What do you not like about the programme?



Questions and Comments