

Evidence for Informing Scaling and Impact in Youth and Women-Led Clean Energy Enterprises (EVI-SICEE) in Africa

Youth in Clean Energy Entrepreneurship Workshop Report

Dates: 26th - 28th May 2025

Venue: Tom Mboya University, Homabay

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List of acronyms and abbreviations

Acronym	Full Form
ACTS	African Centre for Technology Studies
AI	Artificial Intelligence
BMC	Business Model Canvas
CBO	Community-Based Organization
CEE	Clean Energy Ecosystem
CEO	Chief Executive Officer
CIE	Climate Innovation/Entrepreneurship Ecosystem
CLA	Causal Layered Analysis
DEFT	Drivers, Enablers, Friction, and Turners
EVI-SICEE	Evidence for Information Scaling and Impact in Youth and Women-led Clean Energy Enterprises
G.O.K	Government of Kenya
IDRC	International Development Research Centre
ICT	Information and Communications Technology
KCIC	Kenya Climate Innovation Center
NGO	Non-Governmental Organization
PEST	Political, Economic, Social and Technological
SMEs	Small and Medium enterprises
TMU	Tom Mboya
VUCA	Volatile, Uncertain, Complex and Ambiguous
YEDF	Youth Enterprise Development Fund

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BACKGROUND INFORMATION

The Evidence for Informing Scaling and Impact in Youth and Women-Led Clean Energy Enterprises (EVI-SICEE) project has been under implementation for one and a half years. The motivation behind the project is that the informal, small and medium enterprises (SMEs) that drive economic development in many African countries comprise of a significant population of youth either as clean energy entrepreneurs or employees along the clean energy technologies value chains. This fact makes youth more vulnerable to external shocks like the global economic crisis and the impacts of climate change that do not spare the predominantly informal sector, especially in the rural setting. Further, structural and social-cultural barriers limit their capabilities to access finance, markets and training to grow their businesses/enterprises compared to adult men. The impact is confounded by the African challenge of burgeoning youth populations requiring formal or informal employment. EVI-SICEE project involves a vibrant consortium that has collaboratively engaged in joined-up action research involving actors in the climate innovation/entrepreneurship ecosystem (CIE) to provide evidence for informing the scaling of promising youth-led clean energy enterprises for their transformative impact in the Kenyan context. The overall objective is to understand the systemic factors that enhance or constrain youth's access to entrepreneurial opportunities in clean energy innovation, and how the promising best practices can be scaled up for impact.

Specific Objectives of the project

Objective 1: Map renewable energy value chains to generate evidence on best practices in clean energy enterprises (CEEs) and business models and document the impact on women and youth.

Objective 2: Assess system-level dynamics that contribute to the success or failure of women and youth in accessing business opportunities in CIE.

Objective 3: Optimize and scale best practices through business incubation hubs/demonstration sites.

Objective 4: Promote transdisciplinary in knowledge generation and dissemination for scaled and impactful women and youth led best practices.

To realize the above objectives, the EVI-SIEE project is being implemented through 4 interrelated work packages (WP) as follows:

- WP 1: Transdisciplinary research & related capacity building: This WP has got two dimensions: Research - Mapping of best practices (through gender lens- women and youth) & Capacity Building (master's students/research fellowships)
- WP 2: Business incubation and capacity building: This WP has got two dimensions: Business incubation hubs/Demos sites for scaling of best practices and optimization & Capacity building for youth & women – under the hubs/demos
- WP 3: Transdisciplinary knowledge sharing and learning
- WP 4: Project coordination

The project is being implemented in four countries, Kenya, Malawi, Uganda & South Africa. The consortium members and the project team are drawn from these countries

THE YOUTH IN CLEAN ENERGY ENTREPRENEURSHIP WORKSHOP

This workshop provided a strategic opportunity for ACTS, the YDEF, KCIC, two key consortiums members, and Tom Mboya University (TMU) to engage women and youth led clean energy entrepreneurs to upscale and upgrade their business through integrated business support. Designed as an interactive forum, the workshop brought together stakeholders from the grassroots level in Nyanza, Rift-valley, and Western regions in Kenya to collaboratively generate relevant knowledge aimed at stimulating youth interest in clean energy. The participatory engagement was expected to support the optimization and scaling of youth-led clean energy enterprises and business models. Co-created insights will be compiled into a range of knowledge products, including briefs, case studies, toolkits, and policy summaries, for broad dissemination among Clean Energy Entrepreneurship (CEE) stakeholders. Ultimately, the initiative seeks to inform both policy and practice, demonstrating the transformative potential of youth-led clean energy innovations not only at the community level but also across counties and potentially at national and regional scales.

Specifically, the workshop convened key players in Western Kenya's clean energy landscape to co-create solutions and strategies tailored to the local needs of the region.

Objectives of the workshop

- a) Create awareness about the opportunities for youth presented by clean energy entrepreneurship and innovation because of climate change and other environmental hazards.
- b) Facilitating youth and women participants to identify practical business opportunities in clean energy, enhancing their basic entrepreneurial capacity and helping them craft bankable business plans around identified clean energy opportunities.
- c) Drawing on data and evidence so far generated from this project, deliberate on system's level dynamics that contribute to success or failure by youth in accessing business opportunities in clean energy sector.
- d) Co-develop a concrete roadmap involving future scenarios building for articulating CEE demand and interest by youth and scaling youth led energy enterprises in the Western Kenya region and beyond.
- e) In a participatory manner, identify, crown and commission clean energy champions from each of the participating counties.

The Workshop Format

The workshop was guided by the programme that had been co-developed by the participating institutions, namely KCIC, YDEP and ACTS. The Tom Mboya University provided a venue and a platform for examining youth engagement in climate change and clean energy entrepreneurship. The venue was meticulously organized to ensure a smooth and uninterrupted experience for participants, enabling meaningful dialogue and interactive sessions. Embracing a participatory, bottom-up methodology, all discussions were recorded to capture a wide array of insights, challenges, and ideas.

These recordings are foundational materials for producing various knowledge-based outputs such as research briefs, policy papers, and practical toolkits aimed at promoting evidence-based interventions at the intersection of youth, climate resilience, and clean energy entrepreneurship.

The report documents key highlights of the workshop's deliberations in line with the programme (Annex 1).

1. OPENING AND SETTING THE SCENE

The section documents key deliberations during the opening session.

1.1 Introduction

Ann Kingiri, the project principal investigator from ACTS welcomed all participants to the workshop. She emphasized the importance of fostering collaborative learning and evidence-based dialogue within the clean energy ecosystem. In her remarks, she underscored the critical role that youth and women-led enterprises play in advancing inclusive energy transitions in Africa, particularly through their contributions to last-mile energy access and provision of pro-poor business models. The participants' introduction adopted a format whereby individuals outlined their backgrounds, enterprise focus areas, and specific contributions to the clean energy sector. This interactive session revealed a rich diversity of actors representing various segments of the sector value chain. The group included manufacturers and vendors of clean cookstoves, many of whom work with locally adapted technologies to meet the needs of rural and peri-urban households. Also present were producers and marketers of biomass-based fuels, such as briquettes and pellets, often sourced from agricultural waste and designed to provide cleaner alternatives to traditional charcoal.

Participants included solar home system installers and distributors, who deliver decentralized energy solutions that enhance household electrification, lighting, and productive uses. Several entrepreneurs were engaged in the bioethanol sector, particularly those running distributorships for ethanol-based stoves and liquid fuel, offering affordable, low-emission cooking options. These different enterprises illustrated the dynamic and evolving landscape of clean energy innovation, highlighting both the diversity of technologies and the entrepreneurial models driving adoption and impact across the Kenyan communities.



Figure 1: Ann Kingiri welcoming the participants

1.2. Formal opening and welcome remarks from the host - Tom Mboya University

The Deputy Vice Chancellor, Academic, Research, and Student Affairs, Prof. Elyjoy Muthoni welcomed all the clean energy entrepreneurs to the university. She pointed out that the topic of clean energy is important in our society today particularly in the context of global warming and climate change. She commended ACTS team and the collaborating partners for organizing such a timely workshop, noting the socio-economic benefits of being an entrepreneur in clean energy space. This space offers potential for job creation among the youth, energy independence reducing importation from other nations, and economic development of the country. In her concluding remarks, she extended an open invitation to all attendees to consider Tom Mboya University as a future academic home, particularly for those interested in advancing their studies in energy-related disciplines. She also noted the university's strategic focus on the blue economy, underlining the institution's commitment to integrating clean energy into its core thematic areas of research and training.



Figure 2: Deputy Vice Chancellor delivering her welcome remarks

Prof. Charles Ochola, Vice Chancellor, Tom Mboya University, extended a warm welcome to all participants at the university, expressing the institution's delight as a young institution to host the workshop. He conveyed apologies from the County Governor, Hon. Gladys Wanga, who was unable to attend the workshop due to the ongoing preparations for an upcoming national holiday, which made her schedule particularly demanding. He first recognized and appreciated the initiative of ACTS to organize a training workshop for youth entrepreneurs in clean energy in the new age of sustainable development and job creation as opposed to employment. He challenged the participants to use the knowledge they acquired from the workshop to develop the country.

Additionally, he applauded the KCIC team for translating climate challenges into commercial amenities and heeded the participating entrepreneurs to grab such opportunities to create jobs for themselves and for others. Prof Ochola congratulated the partnering YEDF team for continually betting on the promise of young people in Kenya to move its fortunes forward. He acknowledged that the youth are integral people in developing the country, and the YEDF ensures that they are included in that manner. He concluded his remarks by emphasizing to the attending youth entrepreneurs that they can be the leaders of the present and not wait to take action in the future.



Figure 3: Vice Chancellor, Tom Mboya University delivering his welcome remarks

1.3. Opening and welcome remarks from the CEO, YEDF

Mr. Josiah Moriasi, Chief Executive Officer of YEDF, expressed his gratitude for this partnership with ACTS and KCIC teams to create a platform for youth clean energy entrepreneurs to engage in strong networks that seek to maximize opportunities for them. He pointed out that the YEDF is a government entity that supports the youth in creating their own businesses, as they too recognize that the youth are the leaders of today. Moreover, he committed that the YEDF was ready to listen to clean energy youth entrepreneurs who may need support in growing their businesses. Additionally, he highlighted that the YEDF provides financial, skills, and market information support services for the youth, and they have teams in various counties in the country, should the youth need support. He concluded by appreciating the partnering teams for bringing the YEDF on board for the workshop and looked forward to feedback from the youth on what they need to grow their businesses.



Figure 4: Mr Josiah CEO YEDF delivering his welcome remarks

1.4. Workshop objectives and EVI-SICEE project objectives

Ann Kingiri, the project lead, shared a brief background of ACTS with the participants and highlighted ACTS' vision, which is knowledge for better livelihoods. Moreover, she added that ACTS is a policy think and do tank and that the EVI-SICEE project is generating evidence that will ultimately influence policy makers, the private sector, and clean energy entrepreneurs to engage in the clean energy sector more productively. Ann emphasized the importance of identifying systemic barriers that hinder women and youth from participating in the clean energy ecosystem, in this project, which are often unaddressed by supporting structures.

Towards this end, the EVI-SICEE project is engaged in the following:

- Mapping clean energy value chains across Kenya, recognizing that different sectors (e.g., solar, bioethanol, clean cooking) face unique challenges.
- Engaging stakeholders, including county governments, the private sector, and academia to co-create solutions.
- Supporting small and medium enterprises (SMEs) through tailored interventions, including policy recommendations, research, and business incubation.
- Establishment of Knowledge Incubation Hubs to serve as platforms for nurturing entrepreneurial talent and generating evidence-based insights.

She added that the project is being implemented under several work packages, one of which is to facilitate knowledge exchange and learning through:

- **Business incubation and community hubs** - Creating sites and platforms for training, peer learning, business incubation, and enterprise development
- **Capacity development** - Engaging Master's/PhD fellows to mobilize learning and research and build the much-needed capacity on an inclusive approach to business innovation and entrepreneurship.
- **Hubs/local and national level workshops/trainings** - Disseminate knowledge on gender responsive climate related actions and sensitizing on climate innovation and entrepreneurship through local and national workshops.
- **National and regional policy dialogues**
- **Knowledge exchange visits and bench marking for selected entrepreneurs.**
- **Gender-transformative awareness campaigns** - through print, audio visual media, social media and virtual platforms to sensitize targeted beneficiaries and local community.
- **Training manuals development and dissemination**

Ann encouraged the participants to actively engage in learning during the workshop and enjoy the experience as well.



Figure 5: Ann presenting on EVISICEE project objectives

2. FRAMING THE CONTEXT THAT DEFINE CLEAN ENERGY ENTREPRENEURSHIP IN KENYA

This session had been designed as a setting-the-scene activity to expose the context in which clean energy entrepreneurship is advanced in Kenya.

2.1 Youth Initiatives at the grassroots

The Youth Enterprise Development Fund (YEDF), a state corporation under the Ministry of Youth Affairs, Creative Economy, and Sports, showcased its grassroots-driven approach to youth empowerment, with a strong focus on advancing clean energy and climate innovation. This session was led by Morris Murimi, Head of Partnerships and Resource Mobilization, who elaborated on how the Fund is shaping pathways for young Kenyans to engage in the green economy. YEDF was founded in 2006 and formalized in 2007. YEDF's mission is to stimulate youth-led employment through affordable financing, enterprise development, and strategic partnerships. The Fund currently supports initiatives across varied sectors, including agriculture and agribusiness, trade and services, housing and construction, and the creative and digital economy, offering broad-based opportunities to build skills and livelihoods among Kenyan youths (18-35 years). Despite extensive support, youth involvement in clean energy and climate innovation remains limited in scope and in the early stages of development. Although some are active in climate-smart agriculture, waste-to-energy, eco-friendly cookstoves, and solar technologies, these efforts are still limited in scale and impact.

Key barriers for youth led clean energy entrepreneurship

1. Low awareness of the potential in clean energy entrepreneurship
2. Shortage of technical and business skills tailored to green innovation
3. Difficult processes in accessing financing designed for clean-tech ventures
4. Slow adoption of green technologies among end-users
5. Policy gaps and insufficient youth representation in policy-making forums
6. Fragmented stakeholder coordination, affecting ecosystem support

YEDF perspective on possible solutions to these challenges

The suggested recommendations underscore YEDF's commitment to scaling up youth participation in Kenya's green economy. These include:

- Launch targeted awareness campaigns at grassroots levels to energize youth interest in clean energy.
- Provide specialized training to build technical competence and entrepreneurial acumen.
- Deploy tailored financial products aimed at bridging the funding gap for youth-led green enterprises.
- Embed youth in policymaking, ensuring an inclusive agenda in climate and energy frameworks.
- Strengthen stakeholder collaboration, uniting government, private sector, academia, and civil society to streamline support mechanisms.



Figure 6: Morris from YEDF presenting on youth initiatives in Kenya

2.2. Climate change and entrepreneurship opportunities for youth

The presentation delivered by Vincent, from Kenya Climate Innovation Center (KCIC) focused on the theme “Towards Sustainable Enterprises and Climate Resilient Communities.” It provided a comprehensive overview of KCIC’s strategic approach, current programmes, and the role it continues to play in driving climate entrepreneurship in Kenya. The session opened with a clear articulation of the pressing challenges facing climate-focused enterprises, including limited access to finance and physical infrastructure, low consumer awareness, inadequate policy support, and a persistent skills and knowledge gap. These obstacles, compounded by difficulties in commercialization and scaling of climate solutions, form the backdrop against which KCIC operates.

KCIC’s response to these challenges is grounded in a belief in holistic, country-driven solutions that promote innovation and sustainability. The organization has positioned itself as a central enabler of climate technologies through regional outreach, ecosystem visibility, partnerships, awards, and knowledge-sharing events. This multi-pronged approach ensures not only awareness but also practical support to enterprises at various stages of growth. The presentation spotlighted several core programmes implemented by KCIC including the productive use of sustainable energy (PUSE) which encourages the uptake of sustainable energy technologies by youth and women. Complementary initiatives such as the Climate Launchpad Competition, the Cleantech Competition (designed for student participation), and What Design Can Do (which explores the power of creative design in climate solutions) were also featured as critical drivers of innovation, awareness, and youth engagement.

One of the most significant indicators of impact shared during the session was a 67% commercialization rate among supported enterprises, an impressive achievement that underscores KCIC’s effectiveness in transforming ideas into viable businesses. This impact directly contributes to the realization of various Sustainable Development Goals, particularly those related to clean energy, economic growth, and climate action. Looking ahead, four strategic priorities were outlined: strengthening the climate entrepreneurship ecosystem, expanding regional reach, enhancing research and community-level awareness on climate change, and building institutional resilience. These pillars are designed to ensure that KCIC remains relevant, agile, and impactful in the face of evolving climate and development challenges.

A strong emphasis was also placed on partnerships, recognizing that collaboration is essential for scaling impact. The message was clear: transformative change requires collective effort, and KCIC continues to welcome partnerships that align with its mission.



Figure 7: Vincent presenting on climate change and entrepreneurship opportunities supported by KCIC

2.3. Gender consideration in clean energy sector

Ann Kingiri’s presentation on “Gender Consideration in the Clean Energy Sector” illuminated the pervasive yet often overlooked gender dynamics shaping opportunities and constraints for women in Kenya’s clean energy ecosystem. Drawing on field data and her research, Ann underscored how biases in infrastructure, skills development, analysis, and systems-level approaches reduce women’s ability to benefit from and contribute to the green energy transition.

Key insights from the presentation

- a. *Gender Bias in Design & Infrastructure*: Clean energy installations such as e-mobility charging stations fail to accommodate women’s needs.
- b. *Skills & Literacy Gaps*: Beyond technical proficiency, women require non-technical business skills, including branding, digital innovation, and AI to effectively operate and expand green energy enterprises.
- c. *Time Constraints & Operational Struggles*: Women often juggle entrepreneurship alongside caregiving roles. Services tied to rigid schedules like the one-hour return for e-mobility riders do not align with their realities.
- d. *Health Challenges from Biomass Dependence*: Reliance on biomass fuel negatively affects women’s health and their children’s well-being, both medically and in time lost.
- e. *Marginalization & Data Deficiency*: Women and other disadvantaged gender groups are underrepresented in energy systems due to limited baseline and sex-disaggregated data, hindering targeted interventions.
- f. *Need for Deep Gender Analysis*: She emphasized that gender analysis must go beyond generalization; it should systematically examine “why” and “how” gender roles differ, identify who performs tasks, and pinpoint structural constraints.
- g. *Gender Learning & System Empowerment Frameworks*: She introduced two approaches to consider for gendered and holistic approach to understanding inclusive clean energy ecosystems.
 - Gender Learning: gathering context-specific lessons to adapt interventions locally,
 - System Empowerment: encouraging policymakers, financiers, and entrepreneurs to collaborate, forming a functional ecosystem that supports women throughout the green energy value chain.

Towards a gender sensitive policy and practice, the following key aspects were emphasized.

- Infrastructure: Charging and other facilities need to be female-friendly with safe, flexible, and accessible design.

- **Capacity Building:** Training should include both technical and business literacy to enable women to fully leverage digital and AI tools.
- **Flexibility in Service:** Time-sensitive services must accommodate women's dual responsibilities at home and work.
- **Health Focus:** Reducing biomass dependence is vital to improving health outcomes for women and children.
- **Data-Driven Policy:** Establish robust, sex-disaggregated data systems to inform gender-responsive planning.
- **Rigorous Analysis:** Apply structured gender analysis methods (investigating roles, constraints, and needs).
- **Collaborative Ecosystem:** Promote system-wide coordination across stakeholders to foster sustainable, gender-inclusive transformation.



Figure 8: Ann presenting on gender considerations in clean energy sector

2.4. Evidence for scaling youth and women-led clean energy enterprises: Empirical data from the field

Daniel Musyoka, a research fellow at ACTS presented the baseline study findings from the EVI-SICEE project, highlighting the study's objectives, methodology and key insights. The project aims to generate evidence that supports the growth of youth- and women-led clean energy enterprises (CEEs) in Kenya and other African countries. The initiative places strong emphasis on gender-responsive policies and inclusive frameworks that foster a sustainable, clean, innovative ecosystem.

Methodology

The study employed a mixed-methods research approach. Quantitatively, the research team conducted a structured survey using stratified random sampling techniques, yielding 1,093 valid responses from enterprises operating within the clean cooking and solar energy sectors (with Northeastern Kenya excluded due to logistical constraints). In addition, qualitative data were gathered through 29 key informant interviews with a range of sector stakeholders, including policymakers, entrepreneurs, financiers, and technical experts. These were complemented by detailed case studies that provided contextualized insights into the operational realities, challenges, and innovation dynamics affecting youth- and women-led enterprises in the clean energy sector. The research explored themes such as demographic and enterprise profiles, business models, and perceptions of systemic barriers-laying the groundwork for evidence-informed recommendations aimed at fostering an inclusive and enabling environment for clean energy innovation.

In summary, the youth-and-women-led clean energy enterprises (CEEs) examined in the study are predominantly micro, early-stage ventures characterized by limited startup capital and low annual revenues. Many of these entrepreneurs are driven by a combination of community energy needs and the pursuit of economic opportunity. Despite their potential, they face significant gaps in business development and support most notably a lack of access to incubation, mentorship, and advisory services. Statistical analysis from the study indicates a strong positive correlation between business performance and access to technical assistance, supportive networks, and financing. To conclude, Daniel noted that thirteen enterprises were competitively selected to receive intensive incubation support. These enterprises were chosen based on criteria including youth or women ownership, current growth stage, scalability potential, and lack of prior support. A comprehensive due diligence process was conducted to confirm their eligibility and readiness for participation in the incubation program.

Key Findings

a) Enterprise Scale & Maturity

Youth- and women-led CEEs are mostly micro, early-stage ventures with limited startup capital and low annual revenues (Fig. 9).

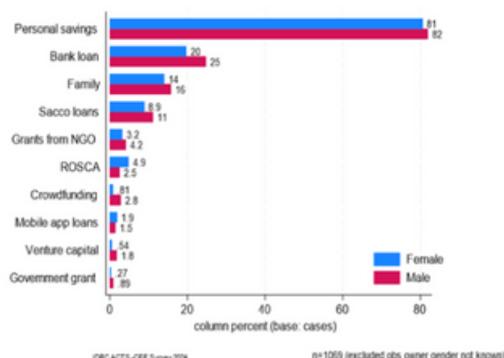


Figure 9: Start-up capital

b) Motivation vs. Support Structures

These entrepreneurs were motivated by community energy needs and economic opportunity. However, they lack essential business support, especially incubation and advisory services (Fig. 10).

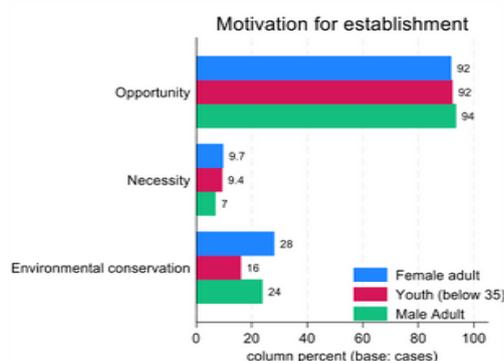


Figure 10: Motivation for business establishment

c). Factors Enabling Success

Statistical analysis revealed that access to technical assistance, supportive networks, and financing strongly correlates with stronger business performance and sustainability.

d). Incubation process

Thirteen enterprises were selected for intensive incubation support based on ownership by youth or women, growth stage, scalability, and no prior support. These will be monitored for six months through a targeted and integrated capacity strengthening incubation support.

Strategic implications

Daniel stressed that engaging youth and women in clean energy innovation is critical for advancing the green economy. Yet, structural socio-economic constraints financing, market access, and insufficient entrepreneurial skills must be systematically addressed. To reduce these barriers, he recommended:

- Promoting Gender-Responsive Policies that actively enable youth and women's participation.
- Scaling Inclusive Incubation Models tailored to the needs of early-stage CEEs.
- Strengthening Stakeholder Coordination across government, private sector, civil society, and academia to provide cohesive ecosystem support.



Figure 11: Daniel presenting on the project's findings

2.5. An interactive Discussion informed by the previous speakers moderated by Jemimah Mawia

This session brought together entrepreneurs and earlier presenters to discuss critical concerns affecting youth-led enterprises. Four main areas emerged: loan options, online job protections, market access, gender dynamics in clean energy, and green technology financing, all anchored in an ecosystem-focused partnership.

Key Highlights from the discussion

a. Financing opportunities offered through YDEF. A comprehensive loan portfolio is offered that includes:

- Vuka Expansion Loan: Up to KES 5 million with an 8% annual interest rate and flexible repayment terms based on amount.
- Interest-Free Group Loans: Options like Rausha, Inua and Smart which are fee-based (5–8%) but carry no interest.
- Go Green Finance Loan: Tailored for eco-ventures with funding ranging from KES 20,000 to 2 million and repayment spans of 6–24 months.

b. **Financial Literacy & Risk Management:** Youth entrepreneurs voiced concerns over default risks and collateral loss. In response, both institutions emphasized the integration of financial literacy training, rigorous business planning, and structured repayment mechanisms as safeguards.

c. **Protection in Online Work:** Participants raised issues surrounding youth being exploited by overseas employers, citing abrupt payment cancellations triggered by technical stipulations. YEDF and KCIC are not equipped to provide contractual guarantees, but they prioritize personal due diligence, digital upskilling, and provision of necessary hardware all while exploring partnerships with vetted platforms.

d. **Market Access Support:** YEDF and KCIC facilitate participation in trade fairs, certifications, value-chain integration, and incubation services. These offerings, available to both beneficiaries and non-beneficiaries, have significantly improved market visibility and enterprise success.

e. **Gender Equality in Clean Energy Roles:** The conversation highlighted persistent gender bias, especially in technical roles like solar installation. To counter this, targeted training, pitching workshops, and deliberate promotion of women's technical achievements are being employed to shift perceptions and empower female entrepreneurs.

f. **Environmental Financing & Carbon Market Readiness:** YEDF supports low-carbon briquette production, stipulating a minimum of 60% carbon emission reduction for financing eligibility. Despite Kenya's nascent carbon market, both bodies are strengthening youth preparedness through commercial forestry and awareness training.

g. **Integrated Institutional Partnership:** Since 2019, YEDF and KCIC have operated under a formalized partnership. This collaboration leverages YEDF's financial resources with KCIC's technical incubation, climate-tech expertise, and market facilitation, enabling youth-driven ventures to scale sustainably.



Figure 12: One of the participants during the interactive question-and-answer session

3. DEEP DIVE INTO THE KENYAN CLEAN ENERGY ECOSYSTEM AND THE ENTREPRENEURIAL CONTEXT FOR YOUTH-LED BUSINESSES- LEARNING SESSION

The session was designed to empower aspiring entrepreneurs with both conceptual clarity and practical tools to transform ideas into viable businesses. It was facilitated by Gerishom from KCIC, who delivered a comprehensive session on Business, Entrepreneurship, and the Business Model Canvas (BMC), offering participants a structured pathway to building sustainable enterprises. Participants were guided through the foundational differences between business and entrepreneurship, the core stages of the entrepreneurial journey, and the application of BMC as a strategic planning tool.

3.1 Introduction to the session

The training began by distinguishing between business and entrepreneurship. While business typically revolves around profit and tried-and-tested models, entrepreneurship was framed as a broader, impact-driven process that combines innovation, risk-taking, and long-term vision. Gerishom emphasized that while every entrepreneur runs a business, not every businessperson is an entrepreneur. True entrepreneurship is marked by creative thinking, bold decision-making, and problem-solving under uncertainty.

A step-by-step breakdown of the entrepreneurial process followed. Participants were taken through five key stages: ideation, feasibility analysis, business planning, execution, and growth. Each phase was discussed in detail, with emphasis placed on market research, customer understanding, resource evaluation, strategic planning, and adaptability. This framework enabled participants to assess the readiness and sustainability of their business ideas and develop structured action plans.

The second half of the session introduced the Business Model Canvas (BMC), a one-page visual tool that helps entrepreneurs organize the critical components of their ventures. Gerishom elaborated on its nine building blocks: customer segments, value proposition, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structure. The BMC was presented as a dynamic guide that not only aids in refining business ideas but also fosters alignment, focus, and risk management for startups.

Throughout the session, clarity, innovation, and customer-centricity were underscored as the cornerstones of successful entrepreneurship. By the end, participants had gained actionable insights into launching and growing businesses, equipped with a practical understanding of strategic planning and entrepreneurial thinking.



Figure 13: Gerishom from KCIC presenting on the BMC

3.2 Key learning insights from the plenary session

Several lessons can be drawn from this training session.

a) Entrepreneurship vs. Business: Entrepreneurship is innovation- and impact-driven, while business often focuses on profit and existing models. Entrepreneurs think long-term and embrace uncertainty.

b) Five Stages of the Entrepreneurial Process:

- Ideation: Identifying problems and generating solutions.
- Feasibility Analysis: Testing the idea's viability.
- Business Planning: Structuring operations and strategies.
- Execution: Launching and managing the venture.
- Growth: Scaling and optimizing the business.

c) Strategic Use of the BMC: Business Model Canvas provides a clear structure to develop and visualize all elements of a business, helping entrepreneurs remain strategic and aligned with their goals.

d) Customer-Centric Approach: Understanding the customer's needs, behaviors, and pain points is essential for crafting effective value propositions and building lasting customer relationships.

e) Innovation and Clarity: Clear planning, combined with innovative thinking, helps reduce business risk and improves the likelihood of success.

f) Confidence Through Knowledge: By demystifying complex business concepts, the session empowered participants to take confident steps toward launching or refining their ventures.

3.3 Group discussion and presentations

During the business and entrepreneurship training session, participating entrepreneurs were divided into five discussion groups, each tasked with exploring and applying the BMC framework. The objective was to help them better understand the practical structure of their business ideas. Each group received a BMC template and was guided through the nine building blocks of BMC, allowing them to reflect on their value proposition, customer segments, channels, and other critical components of a successful business model. The group discussions were interactive and solution-oriented, with participants sharing insights, challenging each other's assumptions, and aligning their models with real market needs.

Summary of key insights from group discussions

a) Strong Partnerships are Critical for Growth

- All enterprises rely heavily on partnerships with government, NGOs, banks, and suppliers to access capital, training, and markets.
- Lesson: Collaboration with external stakeholders enhances credibility, financing, and customer reach, essential for scaling clean energy ventures.

b) Value Propositions Must Be Clear and Community-Centered

- Groups emphasize affordability, health benefits, sustainability, and productivity (e.g., clean cooking, bio-slurry fertilizer, solar irrigation).
- Lesson: Innovations succeed when they solve real community problems like indoor pollution, high fuel costs, or food security.

c) Multiple Revenue Streams Build Resilience

- Enterprises earn through direct product sales, installation fees, after-sales services, training, and even brokerage.
- Lesson: Diversifying revenue sources protects against market fluctuations and strengthens long-term sustainability.

d) Customer Relationships Require Trust and Follow-Up

- Strategies include after-sales services, personalized consultations, retraining, and community education.
- Lesson: In clean energy, ongoing support builds trust, ensures product adoption, and encourages repeat business.

e) Financing and Capital Remain Major Constraints

- Heavy reliance on loans, savings, and NGO support shows that most enterprises lack strong internal financial bases.
- Lesson: Affordable financing models are crucial, as high upfront costs (equipment, transport, wages) limit business expansion.

f) Local Distribution and Marketing Channels are Key

- Channels include direct sales, social media, roadshows, demonstration farms, and referrals.
- Lesson: Blending traditional outreach (roadshows, demos) with modern tools (social media, online platforms) increases visibility and customer acquisition.

g) High-Cost Structures Reduce Competitiveness

- Common expenses include transport, wages, machine maintenance, taxes, and marketing.
- Lesson: To scale, enterprises must find ways to optimize costs, for example, through local sourcing, shared transport, or cooperative models.

h) Empowerment and Inclusion Drive Social Impact

- Some models explicitly integrate women and youth training, community empowerment, and gender roles.
- Lesson: Embedding social impact strengthens not only adoption but also access to donor and government support.



Figure 14: Participants in group discussions

4 FUTURE/FORESIGHT TRAINING: RE-IMAGINING YOUTH AND CLEAN ENERGY ENTREPRENEURSHIP FUTURES

This session was designed to elicit futuristic thinking around climate innovation and entrepreneurship among the participants. The motivation was based on the immense potential to organize human activity differently and imagine opportunities generated around images like new relationships between humans and technology, the emergence of new intergenerational relationships, new forms of knowledge and understanding. The range of questions that trigger conversation include: what kinds of opportunities? For whom, by whom? How can youth tap into the numerous opportunities arising from climate innovation? The session was facilitated by Dr. Julius Gatune, a future and scenarios building expert.

4.1 Introduction to foresight/futures thinking

Julius began his presentation by introducing the concept of foresight and futures thinking within the context of an increasingly volatile, uncertain, complex, and ambiguous (VUCA) world. Focusing solely on the present obscures underlying patterns and may blind us to emerging inflection points. However, cultivating foresight helps us break free from present bias, uncover early signals of change, and anticipate critical shifts that can profoundly reshape an economy.

Further, Julius highlighted many other benefits of foresight thinking, including:

- Explores more unorthodox trends and ideas, and challenges deeply held assumptions
- Improves awareness of the changing external environment
- Creates a platform for new thinking about strategy, policy, and innovation
- Better understands a whole system, patterns of change, and the complexity within it
- Thinks in a more diverse, open, balanced, and non-biased way
- Focuses on the ‘right’ questions and problems more clearly
- Being more aware of assumptions and mental models
- Anticipating change and avoiding surprise
- Producing more creative, broader, and deeper insights
- Identifying a wider range of opportunities and options
- Prioritizing and making better and more robust decisions
- Constructing pathways from the present to the future that enable rehearsing.

He emphasized that the future success of clean energy entrepreneur’s hinges on adopting new modes of thinking. Human judgment is often shaped by biases, past experiences, and fixed assumptions, factors that can leave us vulnerable in the face of radical change. Yet entrepreneurs can build adaptability by actively scanning signals of change, rigorously challenging their own beliefs, and exploring multiple future scenarios. Moreover, he mentioned key areas experiencing mega shifts, including Digitization of numerous platforms, social-economic changes like change in role of women, green economy shifts with the rise of climate change and geo-politics shaping trading and investment flows as an example of how things change over time.

Julius concluded by introducing key frameworks and tools used in foresight methodology. These include steps such as scoping for the current and historical context, scanning for trends and drivers, identifying uncertainties, constructing plausible future scenarios, and translating those into actionable strategies.

He then relayed the foresight tools used for the foresight approach, which included Futures Literacy Laboratory, Futures Wheel, Morphological Scenarios, Causal Layered Analysis (CLA), and Modelling Platforms. These tools, he noted, support structured exploration of alternative futures and enable stakeholders to model and rehearse responses to complex, emergent challenges. He highlighted global megatrends such as digitization, shifting socio-economic roles, the rise of the green economy, and changing geopolitical dynamics as key domains where foresight thinking is particularly vital.



Figure 15: Julius training on futures



Figure 16: Participant from the County government contributing to the futures discussion

4.2 Climate change/Environmental scanning -Signals, trends and drivers

Julius introduced the concept of a signal as a “specific example of the future in the present”. To identify such signals in the clean energy ecosystem, he challenged the participants to consider the following questions.

1. What kind of change does this ecosystem represent? - Determine the change that is taking place
2. What is driving this change? - Identify the root force driving the change
3. What will the world look like in ten years if this signal is common and widespread? - Consider the long-term impact
4. Is this a future we want to help make? Determine whether you are excited or alarmed about the change and why.

Trend was defined as a visible effect of a force of change, often identified through time-series data. The underlying force in this matter, he explained, is known as "drivers of change." Further, he emphasized that though trends may not have momentum on their own, they persist as long as the driving forces do. A singular trend may be influenced by multiple drivers, and a trend may be a driver of other trends. Therefore, he highlighted that it is important to understand those dynamics for anticipating future development and making informed choices.

Drivers and Trends Analysis

The steps towards conducting a trend analysis were demonstrated.

- Identify an ongoing, important, external, specific trend that is influencing and will continue to influence the clean energy business.
- Look backwards - Analyze the history of a trend and how it has changed or matured up to date
- Look forward - Project the trend you have identified 10 years into the future and analyze the future outcomes and how it impact the clean energy business.
- Deft analysis - A DEFT framework comprises of Drivers- forces that create and sustain a trend; Enablers- catalysts that support the Drivers; Friction- resistance that impedes a trend and Turners- events that actively block a trend. DEFT is done to check reliability as a guide for the future. Consider if the DEFT framework suggests any adjustments to your projection.
- Define trend - Begin to define a robust forward view, based on all our DEFT-tested trends.

The essence of the DEFT analysis is to allow a broader systematic view of change, enabling us to see unexpected consequences.

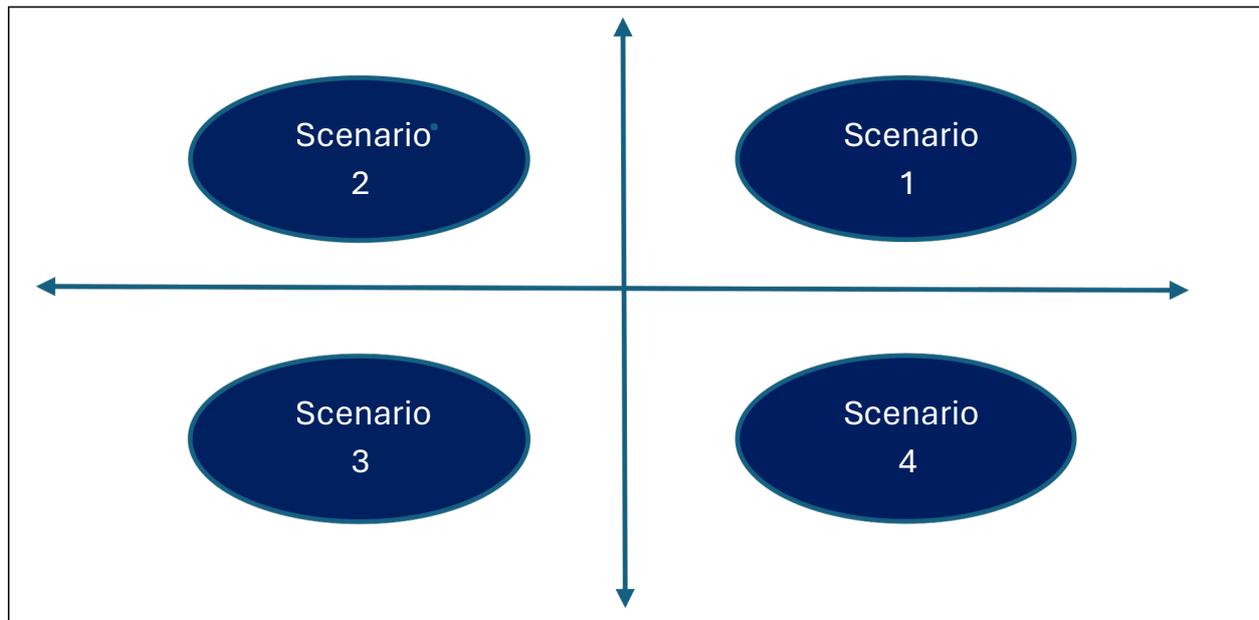


Figure 17: Participants in group discussions on DEFT Analysis

4.3 Youth and clean entrepreneurship: Scenario Mapping

In scenario development, it's crucial to establish a framework that guides the creation of future narratives. He explained the steps as follows.

- i. Begin by identifying drivers that are in the high uncertainty/high impact part of the uncertainty/impact matrix.
- ii. Ensure that the factors should not be dependent, meaning they do not share the same category in the PEST (Political, Economic, Social, Technological) acronym.
- iii. Select two fundamental projections of each factor and put them on axes of a matrix.
- iv. The two axes should not represent timelines but two extreme states.
- v. Describe the combination of both projections to develop various potential future scenarios (4 quadrants - below).



4.4 Back casting –Developing Strategic Pathways

Julius explained that back casting invites people to come together to articulate a shared intention about a different future they want to create and then find new ways of working together to achieve it. The process involves several key stages:

- i) Awareness- Identify opportunities, future risks, new ways of doing things
- ii) Create a compelling vision- Build a compelling vision of the future and baseline of the current state
- iii) Take action- Brainstorm potential actions and prioritizing them by evaluating how they can help move towards the compelling vision

He concluded this topic by emphasizing that back casting helps to identify opportunities, future risks and explores new ways of doing things, which is valuable for long-term planning and sustainable growth.

4.4 Choosing Actions 3 horizons Framework

Julius defined the three horizons framework as a structure that stimulates strategic conversation about systematic change, preferred future and the interventions needed to shift systems. Further, he highlighted that it is a conceptual model that aids people's thinking about current assumptions, emerging changes, and possible and desired futures.

4.5 Key insights from the futures session

Why Foresight Matters

- The world is increasingly VUCA (volatile, uncertain, complex, ambiguous), making short-term thinking risky.
- Foresight helps anticipate change, reveal hidden patterns, and prepare for disruption.
- Entrepreneurs can't rely only on past experiences and assumptions — they must scan signals, challenge biases, and build adaptability.

Benefits of Futures Thinking

- Challenges deep-rooted assumptions and opens space for new ideas.
- Improves awareness of external change drivers.
- Encourages systemic thinking, seeing interconnections and complexity.
- Promotes more creative, diverse, and balanced decision-making.
- Helps identify a wider range of opportunities and risks.
- Strengthens the ability to anticipate and rehearse future pathways.

Mega Shifts Affecting Clean Energy Entrepreneurship

- Digitization across industries.
- Socio-economic changes (e.g., evolving roles of women, intergenerational dynamics).
- Green economy transitions responding to climate change.
- Geopolitical shifts shaping trade, investment, and resource flows.

Tools & Frameworks for Foresight

- Futures Literacy Laboratory – builds capacity for imagining alternative futures.
- Futures Wheel – explores ripple effects of change.
- Morphological Scenarios & Causal Layered Analysis (CLA) – test multiple futures.
- Modelling platforms – simulate change pathways.

Signals, Trends, and Drivers

- Signals -early signs of change already visible.
- Trends -observable patterns influenced by multiple drivers.
- Drivers of change - underlying forces shaping future developments.
- DEFT analysis (Drivers, Enablers, Friction, Turners)- helps assess trend reliability and implications.

Scenario Mapping for Youth in Clean Energy

- Identify high-uncertainty/high-impact drivers.
- Use scenario axes to explore four plausible futures.
- Test strategies against multiple futures, not just one prediction.

Back casting – Creating Pathways to Preferred Futures

- Start with a compelling vision of a desirable future.
- Work backward to define the steps, opportunities, and risks leading there.
- Encourages long-term, sustainable strategic planning.

Three Horizons Framework

- Horizon 1: Current assumptions and practices.
- Horizon 2: Emerging changes and innovations.
- Horizon 3: Desired future state.
- Provides structure for navigating transition and aligning actions with long-term goals.

5. ENTREPRENEURS PITCHING AND JUDGING

The session was designed to provide clean energy entrepreneurs with a platform to showcase their innovative business ideas while also strengthening their pitching skills. Its purpose was to equip participants with practical knowledge on how to structure and deliver effective pitch decks, present their business models and value propositions before expert judges and peers, and receive constructive feedback.

During the session, participants were guided on the purpose and structure of a pitch deck, including best practices for clearly communicating their innovations. They were then tasked with developing and presenting their pitch decks for evaluation. A total of eight clean energy entrepreneurs pitched their ideas before a panel of three expert judges, with fellow participants observing and offering peer support.

The presentations highlighted a wide range of creative business solutions addressing challenges of energy access, sustainability, and clean technology adoption. Following careful evaluation based on clarity, innovation, scalability, and potential impact, the panel recognized five entrepreneurs whose pitches ranked highest. These top performers were awarded small appreciation tokens in recognition of their excellence, creativity, and potential to drive transformative impact in the clean energy sector.

5.1 Pitching and judging exercise

The session showcased innovative clean energy enterprises led by entrepreneurs across Western Kenya. This was an interactive session and involved individual entrepreneurs and group discussions. The judges drawn from ACTS and KCIC used a criteria that had been shared in advance. The details of the profiles of the enterprises and the assessment outcome are presented under Annexes (Annex 3 and Annex 4).

Each enterprise was tackling pressing challenges such as reliance on biomass, deforestation, indoor air pollution, high fuel costs, and limited access to electricity. The showcased models ranged from clean cookstoves and solar irrigation systems to bioethanol, briquettes, and biodigesters, all with strong community impact. The enterprises demonstrated how local innovation can simultaneously address health, environmental sustainability, energy poverty, food security, and livelihoods. Many highlighted the need for funding, partnerships, and technical support to expand their reach and impact.

Cross-Cutting Highlights

The series of presentations showcased a dynamic cohort of clean energy enterprises across Western Kenya; each uniquely committed to solving the country's pressing energy and environmental challenges. Despite differing approach, scale, and product focus, these enterprises converge on a shared mission to provide sustainable, inclusive, and scalable solutions to energy poverty, climate change, and economic vulnerability. From improved cookstoves and solar-powered irrigation systems to biodigesters and biomass briquettes, the enterprises presented in the pitching exercise offer practical, locally rooted innovations that reduce dependence on harmful fuels, enhance community health, and foster environmental stewardship.

These technologies directly address critical development issues of deforestation, indoor air pollution, high fuel costs, and unreliable energy access, while creating green jobs, empowering women and youth, and supporting sustainable livelihoods. The following captured key cross cutting aspects of the enterprises.

- **Strong Social Impact:** All enterprises integrate women/youth training, job creation, and community empowerment.
- **Environmental Benefits:** Significant contributions to reducing deforestation, cutting emissions, and promoting sustainable agriculture.
- **Financial Needs:** Most enterprises require capital injection (KES 200,000 – 32.5M) for scaling operations, infrastructure, and distribution.
- **Innovation Diversity:** Models span clean cooking, solar irrigation, biogas, and biofuels, showing the breadth of Kenya’s clean energy ecosystem.
- **Challenges:** Access to finance, technical capacity, and distribution remain common barriers.

5.2 Crowning and commissioning the Clean Energy champions

This activity marked a defining moment in the Clean Energy and Entrepreneurship Workshop. Through this symbolic act, youth participants were officially recognized and empowered to serve as advocates of climate action and green enterprise in their respective counties. The commissioning represented a transition from learning to leadership, elevating the participants from trainees to ambassadors of sustainability, equipped to promote clean energy solutions and community-driven innovation.

Over the course of the workshop, participants took part in structured activities that included idea development, hands-on practical learning, and business pitching sessions, all aimed at fostering innovative solutions in the clean energy sector. The commissioning ceremony formally acknowledged their growth and readiness to transition from trainees to active contributors, both as emerging entrepreneurs and as community leaders dedicated to promoting climate resilience and sustainable development.

5.3 Recognition and Awards

As part of the commissioning proceedings, all workshop participants were presented with certificates of participation and commissioning, officially acknowledging their successful completion of the program. The certificates signified their transition into the role of Clean Energy Champions, affirming their capacity to lead climate action, advocate for clean energy adoption, and contribute meaningfully to youth-led innovation within their communities.



Figure 18: The participants awarded with certificates

Following the certification, facilitators recognized exemplary entrepreneurial efforts from the pitching exercises conducted during the workshop. Three participants were singled out as top entrepreneurs, having presented the most compelling and impactful clean energy business ideas. These individuals were awarded for their innovation, clarity of vision, and the potential scalability of their solutions.

In addition, five other participants were presented with tokens of appreciation in recognition of their promising ideas and thoughtful presentations. This recognition aimed to inspire continued commitment to idea development and to encourage all participants to pursue their entrepreneurial goals with greater confidence and ambition.



Figure 19: Top 3 participants from the pitch deck being awarded cash vouchers

5.4 Key insights from the session

The commissioning ceremony was marked by a series of insightful reflections delivered by Mr. Josiah CEO of YDEF, who officiated the commissioning. His address combined inspiration with practical guidance, offering a clear roadmap for the participants as they transition into their roles as Clean Energy Champions. Several key insights stood out from his remarks:

Youth as Climate Ambassadors: The title of Clean Energy Champion comes with a sense of responsibility. Participants were reminded that they are now expected to take the lead in educating their communities, advocating for clean energy, and implementing practical climate solutions at the grassroots level. Their collective voices and actions, he noted, would be essential in advancing Kenya’s climate agenda.

Balancing Passion with Purpose: To illustrate the importance of maintaining focus, the CEO shared a metaphor involving the praying mantis, highlighting how initial excitement in any venture must be tempered with discipline and clarity of purpose. He urged the youth to pursue their passions, but with a grounded and thoughtful approach that avoids losing direction in moments of enthusiasm.

Access to Institutional Support: Participants were reassured of continued institutional backing from the Youth Fund.

In particular, he introduced the Go Green Loan Product, a financing option specifically designed for youth-led initiatives in the green economy. He encouraged the champions to take full advantage of such opportunities to grow and scale their businesses.

Impact Monitoring and Follow-Up: The workshop is not a standalone event. The Youth Fund, along with its partners, would monitor participant progress, tracking how many individuals successfully convert their training into viable projects or become fund beneficiaries. This follow-up mechanism was presented to ensure accountability, long-term engagement, and measurable impact.

Opportunities in Aggregation and Green Supply Chains: Aggregation was presented as a promising business model, especially in agriculture. A success story was shared involving a participant who, with support from the Youth Fund, had established a cassava supply chain serving as a major buyer, demonstrating the potential of such models in creating value and scaling impact.

Inclusivity and Representation: Importance of inclusive participation. One standout example was a young mother who attended the entire workshop while caring for her child. Her dedication was acknowledged as a powerful testament to the critical role that women and, particularly, mothers can play in green entrepreneurship. The moment served as a broader reminder of the need to support and uplift diverse voices in the climate and enterprise space.

Overall, the key insights from the session reinforced a message of action, accountability, and inclusive leadership, encouraging all participants to step boldly into their new roles with purpose and commitment.

6. WORKSHOP FINAL AND CLOSING REMARKS AND NEXT STEPS

6.1. Closing remarks

Ann Kingiri concluded the Clean Energy and Entrepreneurship Workshop by expressing deep gratitude to God for the smooth and successful execution of the two-and-a-half-day event. She acknowledged the favorable weather, the high level of participation, and the shared enthusiasm that defined the experience. Emphasizing that the workshop was not the end but rather the beginning of an ongoing journey, she called on participants to actively apply the knowledge gained. She highlighted that the project still had two more years and affirmed that continued engagement was expected. Ann also shared plans to return with a gender expert to facilitate further training aimed at reshaping perceptions around women, persons with disabilities, and other marginalized groups.

She reflected on the strong partnerships that had emerged during the workshop, both among participants and between them and the facilitators. This mutual exchange of ideas, she noted, had enriched the experience for all involved and laid the foundation for lasting collaboration. Dr. Ann reported that approximately 80% of the workshop's objectives had been achieved, particularly in fostering clean energy entrepreneurship and encouraging

long-term, legacy-minded thinking. She urged participants to keep this momentum, continue thinking beyond the immediate future, and apply visionary planning in their work. A major development she announced was the planned establishment of a Knowledge Incubation Hub at the host university. This platform, backed by the Vice Chancellor, would bring together entrepreneurs, students, researchers, and county actors to foster integrated learning and collaborative problem-solving. In her acknowledgments, Ann thanked the Youth Enterprise Development Fund and KCIC for their critical support, with a special mention to Mr. Chris Oketch, for his outstanding coordination through Tom Mboya University. She also expressed appreciation to her internal team, the committed participants, and the IDRC for supporting the project's broader mission. She concluded by encouraging participants to stay active, make use of the networks formed, and translate their training into meaningful action, reminding them that while financial support may be limited, human connection and mentorship would be powerful tools for long-term impact.

6.2. Thank you note

Caroline, speaking on behalf of the participants, expressed heartfelt appreciation for the learning opportunity and the valuable experience gained over the two and a half days. She noted that the workshop had not only equipped them with practical knowledge on clean energy and entrepreneurship but also fostered strong networks among the youth. Emphasizing the importance of applying the lessons learned, she encouraged her peers to become true ambassadors in their communities and to take meaningful action beyond the training. Drawing from her work with rural communities, she highlighted the need for post-training implementation, urging the participants not to let the knowledge go unused. Caroline extended her gratitude to the organizers and partners for their dedication and support, acknowledging the sacrifices made to ensure the event's success, and reaffirmed the participants' commitment to using what they had learned to drive positive and transformative change in their counties.



Figure 20: Ann giving the closing remarks and Caroline, a thank you note

7. ANNEXES

7.1. Annex 1: Workshop Programme

YOUTH IN CLEAN ENERGY ENTREPRENEURSHIP WORKSHOP

26 – 28 May 2025

Venue, Tom Mboya University, Homabay

EVIDENCE FOR INFORMING SCALING AND IMPACT IN YOUTH AND WOMEN LED CLEAN ENERGY ENTERPRISES (EVI-SICEE) IN KENYA PROJECT

Background

The EVI-SICEE project has been under implementation for the last one year. The motivation behind the project is that the informal, small and medium enterprises (SMEs) that drive economic development in many African countries comprise of a significant population of youth either as clean energy entrepreneurs or employees along the clean energy technologies value chains. This fact makes youth more vulnerable to external shocks like the global economic crisis and the impacts of climate change that do not spare the predominantly informal sector especially in the rural setting. Further, structural and social-cultural barriers limit their capabilities to access finance, markets and training to grow their businesses/enterprises compared to adult men. The impact is confounded by the African challenge of burgeoning youth populations requiring formal or informal employment. EVI-SICEE project involves a vibrant consortium that has collaboratively engaged in joined-up action research involving actors in the climate innovation/entrepreneurship ecosystem (CIE) to provide evidence for informing scaling of promising youth-led clean energy enterprises for their transformative impact in the Kenyan context. The overall objective is to understand the systemic factors that enhance or constrain youth's access to entrepreneurial opportunities in clean energy innovation, and how the promising best practices can be scaled up for impact.

The Youth in Clean Energy Entrepreneurship Workshop: Objectives

The workshop creates an opportunity for The African Centre for Technology Studies (ACTS), the Youth Enterprise Development Fund, one of the key Consortium members and Tom Mboya University (TMU) to engage youth in the clean energy ecosystem (CEE). The workshop intends to create an interactive space for CE ecosystem stakeholders in the grassroots level (Western part of Kenya) to co-create relevant knowledge that will positively generate interest among youth and progressively shape the optimization and scaling of youth led clean energy enterprises and business models. The co-created knowledge will be incorporated into appropriate knowledge products that will be shared widely with the clean energy ecosystem stakeholders. The ultimate goal is to inform policy and practice relating to scaling and transformative potential of youth led clean energy enterprises and business models at the grassroots level, across counties, and beyond. Specifically, this youth engagement workshop will bring together the CEE stakeholders in the Western Kenya region to:

a) Create awareness about the opportunities for youth presented by clean energy entrepreneurship and innovation because of climate change and other environmental hazards.

- b) Facilitating youth and women participants to identify practical business opportunities in clean energy, enhancing their basic entrepreneurial capacity and helping them craft bankable business plans around identified clean energy opportunities.
 - c) Drawing on data and evidence so far generated from this project, deliberate on system's level dynamics that contribute to success or failure by youth in accessing business opportunities in clean energy sector.
 - d) Co-develop a concrete roadmap involving future scenarios building for articulating CEE demand and interest by youth and scaling youth led energy enterprises in the Western Kenya region and beyond.
- e) In a participatory manner, Identify, Crown and Commission Clean Energy Champions from each of the participating counties.

Out of the expected 30-40 participants, 25 slots for young clean energy entrepreneurs or prospective entrepreneurs. These will be selected competitively by the project team including YEDF staff, ACTS and KCIC.

Workshop Format

The workshop will be highly interactive, adopting a bottom up and participatory approach. All sessions will be recorded to help with capturing all ideas deliberated on towards packaging knowledge products for research, policy, and practice, as well as evidence-based awareness creation in the youth, climate change and clean energy entrepreneurship nexus.

Expected outputs/outcomes

1. Develop a road map for publicizing, training and sharing knowledge about youth led clean energy innovations and entrepreneurship.
2. Basic understanding about practical guidelines on developing a business plan for a clean Energy enterprise.
3. New perspectives about opportunities for transformative clean energy enterprises and innovations.
4. Create a platform for match making and mentorship targeting youth entrepreneurs and post graduate level students (Clean Energy youth-student connect initiative).
5. Establish a pilot business incubation hub at Tom Mboya University.
6. Participants are exposed to futures thinking/foresight as a complementary tool to thinking about climate and clean energy from a entrepreneurship and business perspective.

PROGRAMME

DAY1:Monday 26 May 2025

Time	Activity	Description	Facilitator/Speaker
8:30- 8:45	Registration	-	ACTS
Opening session - Welcome and introduction- Moderator: Mourine Cheruiyot - ACTS			
9.00 – 10:00	Introduction Welcome Remarks	-Welcome remarks from TMU -Welcome remarks from ACTS -Welcome remarks from IDRC -Welcome remarks from YEDF -Welcome remarks from Homabay County	-Prof. Charles O. Ochola, Vice Chancellor -Prof. Tom Ogada, ACTS -Dr. Paul Okwi, IDRC -Mr. Josiah Moriasi, CEO - YEDF -Dr. John Agili: Minister for Water, Sanitation, Environment, Energy, Forestry and Climate Change
10:30-11:00	Workshops objectives & EVI-SICEE Project objectives		Ann Kingiri
11:00 - 11:30 – Tea break plus group photo			
Day 1- Session1: Setting the scene - Moderator – Jemimah Mawai, YEDF			
11:00 -11:25	Youth initiatives at the grassroots		Morris Murimi, YEDF
11:25-11:50	Climate change and entrepreneurship opportunities for y		Vincent Ogaya - KCIC
11:50-12:15	Gender consideration in clean energy sector		Ann Kingiri
12:15-12:40	Evidence for scaling youth and women led clean energy e		Daniel Musyoka, ACTS
12:40-13:00	Discussion		Jemimah Mawai, YEDF
13:00 - 14:00 – Lunch break			
Day 1: Sesson 2: The Kenya’s clean energy ecosystem and the entrepreneurial context for youth led businesses Moderator: Samuel Njue, YEDF and Facilitators: KCIC			
14:00-15:15	-Introduction to basic entrepreneurship concepts and conceptualizing business ideas-leaning towards innovation in clean energy -Introduction to Business Planning and Business Model Canvas for clean energy entrepreneurship -Entrepreneurs Pitching		

15:15 -16:30	Group discussions and presentations
16:30-17:00	Climate change and green entrepreneurship. Prof. Ben Muok, Homabay County
17:00	Tea Break and Adjourn for the day

DAY 2: 27 MAY 2025 – Futures/Foresight Workshop: Re-imagining Youth and Clean Energy Entrepreneurship futures

Background: There is immense potential to organize human activity differently, it is up to us to imagine such opportunities. When we start to imagine the future, we often generate images that include, for instance, new relationships between humans and technology, the emergence of new intergenerational relationships, new forms of knowledge and understanding. The future of climate innovation and entrepreneurship is such a rich topic, giving rise to a range of questions, such as: what kinds of opportunities? For whom, by whom? how can youth tap into the numerous opportunities arising from climate innovation?

Facilitator - Dr. Julius Gatune – Futures and scenarios building expert

08:30 – 09:00	Registration and Networking
09:00 – 09:30	Introduction to foresight/futures thinking - Why Foresight/futures? The Foresight Process
09:30 – 11:00	Climate change/Environmental scanning - Signals, Trends, Drivers - Group work
10:00 – 11:30	Tea/Coffee Break
11:30 – 13:00	Drivers and Trends Analysis - Introduction to DEFT Analysis Introduction to Scenario cross - Group Work (DEFT Analysis) - Drivers’ matrix Prioritizing drivers
13:00 – 14:00	Lunch Break
14:00 – 15:30	Youth and clean energy entrepreneurship: Scenario Mapping - Critical uncertainties - Scenario cross - Scenario narratives
15:30 – 15:45	Tea/Coffee Break
15:45 – 17:00	Back casting – Developing Strategic Pathways - 3 Horizons framework - Back casting - Group work - Acton plans - Defining next steps

**DAY 3: 28 MAY 2025 – Consolidating Learning and Next Steps, plus Closing Ceremony
– Moderator Morris Murimi - YEDF**

8:30 -10:30	Entrepreneurs pitching and judging	Gerishom Manyengo and Vincent Ogaya
10:30-11:00	Tea/Coffee Break	
11:00-12:00	Crowning and Commissioning the Clean Energy champions	All
12:00-12:15	Workshop Final remarks and next steps	Ann Kingiri
12:15-13:00	Closing remarks (ACTS, YEDF, TMU).	
13:00 - 14:00	Lunch and Departures	

Logistics

The EVI-SICEE project is funded by IDRC, together with additional in-kind and financial support from TMU and YEDF the participants will get the following:

Workshop Venue

Tom Mboya University

Accommodation

Accommodation will be provided for attendees traveling from outside Homabay and environs.

Meals and refreshments

Meals and refreshments will be provided for all participants.

For all enquiries pertaining to travel and accommodation logistics, please contact **Yvonne Gitu** on **Y.Gitu@acts-net.org**

7.2. Annex 2: List of participants

Names of attendant clean energy entrepreneurs	Organization	Gender (Female - F/Male-M)
Paulyne Nakhumwa	ACTS	F
Oriso Everline	ISAK	F
Debra Achieng Odhiambo	ISAK	F
Lilian Wanjiru Ndun'gu	ACTS	F
Pauline Anyango	ACTS	F

Alto Belly Audi	ISAK/GIZ	F
Elimu Wasonga Odhiambo	ISAK	F
Rolixe Otieno Ochieng	ISAK	F
Elvine Saline Odongo	ACTS	F
Florence Anyango Onyango	ACTS	F
Felix Onyango Otieno	Ruri green/GIZ	M
William Okello	ACTS	M
Oyieko Eric Ochieng	ISAK	M
Abuor Onyango David	ISAK	M
Okuku Susan Atieno	ISAK/GIZ	F
Nancy Awour	WICCARE Africa Ltd	F
Roseline Owak	ISAK	F
Daniel Abonyo	ISAK	M
Chris Okech	TMU/Moi university	M
Millicent Anyango Odira	ISAK	F
Beldin A. Amuka	ISAK	F
Eric Oriso	ISAK	M
James Obura Ongono	ISAK	M
James Omollo	Kisumu Solar	M
Carolyne Okong'o	CGK-DAILF	F
Opiyo Ondiek	ISAK	M
Achieng Agutu	ISAK	F
Erik Otieno	ISAK	M
Roseline Awour	ISAK	F

Names of facilitators and supporting staff	Organization	Gender (Female - F/Male-M)
Prof. Charles Ocholo	TMU	M
Prof. Eljoy Micheni	TMU	F
Daniel Musyoka	ACTS	M
Gerishom Manyengo	KCIC	M
Ronald. O Momanyi	YEDF	M
Felista Moraa	YEDF	F
Judith Orero	YEDF	F
Mercy Owaka	YEDF	F
Lydia Odongo	YEDF	F
Samuel K. Njue	YEDF	M
Joyce Gathaci	ACTS	F
Tiffany Njoroge	ACTS	F
Mourine Chepkemoi	ACTS	F
Lucas Olewe	YEDF	M
Ben Carson	YEDF	M
Jackline Atieno	YEDF	F
Yvonne Gitu	ACTS	F
Nelvin Otieno	YEDF	M
Dr. Julius Gatune	ACTS	M
Jemima Maisia	YEDF	F
Vincent Ogaya	KCIC	M
Morris Murimi	YEDF	M
Emily Auma Okudha	TMU	F
Robert Omolloh	Media/Gbza	M
Andige Zedeluah	Media/Ramogi	F
Aly Abich	Media/Star	F

7.3 Annex 3: Summary of discussions within groups during the business and entrepreneurship training session

Group One: Biodigester

<u>Key Partners</u> County government NGOs and development agencies	<u>Key Activities</u> Awareness creation and training Design construction and installation of biodigesters	<u>Value Proposition</u> Organic bio-slurry as fertilizer to boost crop yields Affordable, clean and sustainable energy from waste.	<u>Customer Relationships</u> Personalized consultation and system design Community-based education and training	<u>Customer Segments</u> Direct sales and community outreach. Demonstration farms and local exhibitions.
	<u>Key Resources</u> Equipment, tools, and construction materials. Skilled technicians and mobilizers Training materials and manuals		<u>Channels</u> Direct sales and community outreach Demonstrate farms and local exhibitions.	
<u>Cost Structure</u> Materials and equipment for digester construction Labor and technical staff wages Transport and logistics Marketing and training Administration and monitoring expenses		<u>Revenue Streams</u> Sale and installation of biodigesters Sale of excess bio-slurry(fertilizer) Payment method (cash and mpesa)		

Group Two: Beshima Cooking Stove Enterprise

<u>Key Partners</u> Equity bank County government Homabay Neema GIZ/ACT/Ender	<u>Key Activities</u> Production Installation Fabrication Marketing Training Transport service	<u>Value Proposition</u> Upishi bora Afya bora Controlling indoor air pollution Liners insert Giving products on offer	<u>Customer Relationships</u> Effective communication Cost reduction Customer feedback Upselling and cross selling	<u>Customer Segments</u> Household Restaurant Schools Catering Aid Organization
	<u>Key Resources</u> Capital Human workforce Leasing Machines		<u>Channels</u> Social media Road shows Brochures Direct sales Delivery	
<u>Cost Structure</u> Transport cost Machine maintenance cost		<u>Revenue Streams</u> Brokerage Leasing Mpesa		

Group Three: Wicare Ltd

<u>Key Partners</u> Migori county GVT Mimi moto Biochar. Life Local Authorities Mama Ochilo Foundation Local NGOs, foundations, CBOs and Women Groups	<u>Key Activities</u> Production of briquettes, pellets and organic biochar fertilizer. Marketing and selling of the above. Value addition.	<u>Value Proposition</u> Organic biochar fertilizers. Women empowerment community. Aftersales services	<u>Customer Relationships</u> Institutions, i.e. schools, hotels, hospitals. Farmers Rural settlers' households that use firewood and charcoal.	<u>Customer Segments</u> Institutions i.e. Schools, hotels, hospitals Farmers Rural settlers: households that use firewood and charcoal.
	<u>Key Resources</u> Financial resources Human resources Physical resources		<u>Channels</u> Online Direct sales Distributors Market Activation	
<u>Cost Structure</u> Machine cost Production cost Marketing cost Operation cost/ salaries		<u>Revenue Streams</u> Sales Profit - Cash sales, cheques and mpesa Profit payment		

Group Four: Ruri Green Tec Ltd

<u>Key Partners</u> G.I.Z, EQUITY BANK, G.O.K chloride Solar gen Sun culture Capacity Building Reimbursing Training Linkages	<u>Key Activities</u> Installation of solar panels Servicing Technical skills transfer Marketing	<u>Value Proposition</u> Helping farmers to optimize production through solar irrigation thus ensuring food security.	<u>Customer Relationships</u> After sales services including delivery, installation, maintenance and repair	<u>Customer Segments</u> Farmers and households
	<u>Key Resources</u> Funding(capital) Technicians Office space Solar panels and accessories		<u>Channels</u> Direct sales Online Home deliveries	
<u>Cost Structure</u> Rent Licenses and business permit Tax and bills Wages Procurement Cost Location cost Installation cost(labor) Transport cost		<u>Revenue Streams</u> Profits from sales of products Servicing Cash and mobile banking Upfront		

Group Five: Danshel Enterprises

<u>Key Partners</u> Schools Other business partners Permits Licenses The government The county government Suppliers ACTS GIZ	<u>Key Activities</u> Installation of improved cook stoves Source the brigades from other producers Capacity building to	<u>Value Proposition</u> · Empowering communities through clean and efficient stoves · Optimize productivity to farmers · Reduces the cost of electricity	<u>Customer Relationships</u> · Do follow-up on product performance · Retrain customers on product use	<u>Customer Segments</u> · Poultry farming · House holds · Learning institutions · Institutions like hotels, schools and churches · Farmers · Domestic · Institutions
<u>Key Resources</u> · Staff · Brand · Capital savings or loans · material liners			<u>Channels</u> · Direct sales · Social media platforms · Public forums · Referrals · Online	
<u>Cost Structure</u> · Transport · Marketing · Rent · Making calls · Taxes · Licenses			<u>Revenue Streams</u> § Multiple methods – jikos and brigades § Cash or Mpesa till § Profit from sales § Pay upfront § Maintenance for 12 months	

7.4 Annex 4: Detailed profiles of the entrepreneurs who pitched

1) EVORI Clean Energy Enterprise – Homabay County

Tagline: *Empowering communities with clean cooking solutions*

Overview: Founded in January 2024 and located in Homabay Town, EVORI offers affordable, efficient cook stoves designed to reduce smoke inhalation and fuel use. The enterprise promotes climate-smart cooking alternatives in rural households and institutions.

Key Highlights:

- Reached 4,000 households and trained 1,500 women and youth.
- Cook stoves save 50–70% fuel and reduce 60–80% smoke.
- Financial Ask: KES 200,000 for expansion and storage.
- Impact: Reduced health risks, deforestation, and improved livelihoods.

2) Kisumu Solar Solutions – Kisumu County

Tagline: *Harvesting Tomorrow's Energy Today*

Overview: A solar energy provider addressing rural electrification through affordable solar lighting, water pumping, and power solutions. Focused on last-mile delivery and community training.

Key Highlights:

- 215 clients, 100+ students trained in solar installation.
- Offers PAYGO systems and institutional power solutions.
- Financial Ask: KES 8,000,000 for stock, transport, and staff development.
- Impact: Improved energy access, local employment, and ag productivity.

Overview: Utilizes cassava to produce bioethanol cooking fuel, enhancing food security and reducing reliance on unsustainable biomass energy.

Key Highlights:

- Established 12 acres under cassava farming.
- Annual projected bioethanol production: 393,300 liters.
- Financial Ask: KES 21 million for equipment and operations.
- Impact: Cleaner cooking, rural jobs, food-energy nexus solutions.

4) WICCARE Ltd – Migori County

Tagline: *Turning Waste into Energy, and Energy into Empowerment*

Overview: Transforms agricultural waste into briquettes, pellets, and biochar organic fertilizer. The model integrates clean energy, soil health, and community development.

Key Highlights:

- 20,000 cookstoves distributed; MOU signed for biochar sales.
- Borehole drilled for community water access.
- Financial Ask: KES 15 million for power infrastructure and logistics.
- Impact: Environmental restoration, women’s empowerment, clean cooking access.

5) Ruri Green Technologies Ltd – Kisii County

Tagline: *Empowering Farmers with Solar-Powered Water Solutions*

Overview: Offers solar-powered irrigation and water solutions tailored for smallholder farmers. Supports food security, sustainable agriculture, and energy independence.

Key Highlights:

- Designed off-grid solar water systems with smart features.
- Focused on women-led and youth cooperatives.
- Financial model: Direct sales and training-based deployment.
- Funding Requirement: USD 250,000 (approx. KES 32.5 million).

Impact:

- 100+ farmers shifted to solar irrigation.
- 200% increase in yields.
- Boosted household income and food resilience.

6) Danshei Enterprises – Homabay County

Tagline: *Integrated Climate Protection through Clean Cooking Solutions*

Overview: Danshei Enterprises is a clean energy social enterprise focused on the production, installation, fabrication, and marketing of improved cookstoves. The business aims to tackle both environmental degradation and energy poverty by promoting more efficient biomass use for cooking, especially in underserved rural and institutional settings.

Problem Addressed:

- Over 69% of Kenyan households rely on polluting fuels like firewood and charcoal.
- Inefficient traditional cookstoves waste up to 75% of heat energy.
- Negative impacts include deforestation, greenhouse gas emissions, and respiratory health issues, particularly for women and children.

Solution:

Danshei's improved cookstoves offer:

- Up to 70% reduction in emissions.
- Fuel efficiency, cutting firewood use and costs.
- Cleaner indoor air, leading to better health outcomes.
- Economic and environmental benefits, including potential carbon credits.

Target Market:

- Rural and peri-urban households
- Institutions (e.g., schools, refugee camps)
- Fish vendors and small-scale farmers

Value Proposition:

- After-sales support and door-to-door delivery
- Integration of environmental benefits (e.g., seedling distribution)
- Custom training and installation services

Business Model:

- Revenue through product sales, training, and carbon financing
- Partnering with livelihood organizations, schools, and local networks for customer acquisition
- Service-based income from cookstove installations

Milestones & Traction:

- 3200 households now using clean cookstoves
- 126 individuals (45 women, 56 youth, 25 producers) trained
- Expansion plans include integration with schools and organizations, and development of a carbon credit model

Impact:

- Reduction of indoor air pollution and related diseases
- Sustainable biomass use reduces pressure on forests
- Empowerment of women and youth through training and employment

7) Agripro Biogas Initiative – Clean Energy from Organic Waste

Tagline: *Waste to Energy for Rural Livelihoods*

Location: Rural Kenya

Overview: Agripro promotes biodigester systems that convert animal, kitchen, and human waste into clean biogas for cooking and lighting, and bio-slurry for use as organic fertilizer. The business addresses both energy and agricultural needs in rural communities.

Problem Addressed:

- Heavy dependence on firewood and charcoal causes deforestation and respiratory diseases.
- Organic waste remains underutilized.
- High fuel costs for off-grid households and institutions.

Solution:

- Affordable biodigesters that provide: Biogas for clean cooking and lighting, and Bio-slurry to boost soil fertility and crop yields.
- Sustainable energy generation using local organic waste.

Target Market:

- Livestock-owning rural households
- Smallholder farmers
- Off-grid schools, health centers, and other institutions

Value Proposition:

- Dual benefit: clean energy + organic fertilizer
- Saves fuel costs and reduces environmental degradation
- Creates local employment through youth artisan networks

Business Model:

- Revenue through the sale and installation of biodigesters
- Services: maintenance, training, and community sensitization
- Strategic partnerships with SACCOs, NGOs, and the government
- Funding through grants, carbon credits, and cost-sharing models

Financial Forecast:

- **Total Budget:** USD 50,000 ;70% for construction & installation,15% for training & outreach,10% for admin & operations, 5% for marketing & follow-up

The Team:

- Elimu Wasonga Odhiambo – Founder & Lead
- Daniel – Technical Coordinator
- Koyo – Training & Outreach Lead
- Stephen Okwany – Operations Lead
- 20+ youth artisans trained and engaged locally

Impact:

- Benefit 5,000+ rural households
- Save 20,000+ trees over 5 years
- Create 100+ green jobs
- Improve agricultural output via enriched soil fertility

8) Debaque's Green Energy Enterprises – Affordable, Durable Cookstoves

Tagline: *Empowering Kenyan Homes with Clean and Durable Cooking Solutions*

Location: Nyang'uela, Homabay County

Legal Structure: Sole Proprietorship

Founder: Debra Achieng' Odhiambo

Overview: Debaque's Green Energy Enterprises is dedicated to improving lives through affordable, low-smoke, fuel-efficient cookstoves designed for Kenyan households. The enterprise focuses on sustainable cooking solutions that enhance indoor air quality, reduce household energy costs, and stimulate local job creation through local manufacturing.

Problem Addressed:

- 80% of Kenyan households rely on firewood or charcoal, contributing to deforestation.
- Indoor air pollution causes over 21,500 deaths annually, mostly affecting women and children.
- Families spend up to 30% of their income on cooking fuels.

Solution:

- Cookstoves that reduce fuel use by up to 50%
- Very low smoke emission, improving household air quality
- Locally manufactured, ensuring affordability and accessibility
- Designed to last 5–7 years, offering long-term value

Value Proposition:

Saves money and time

Promotes safer and healthier indoor environments

Stimulates local economies through job creation and local sourcing

Target Market:

- Rural and urban households
- Micro and small enterprises (MSMEs)
- Institutions requiring bulk orders
- Communities underserved by existing energy solutions

Business Model:

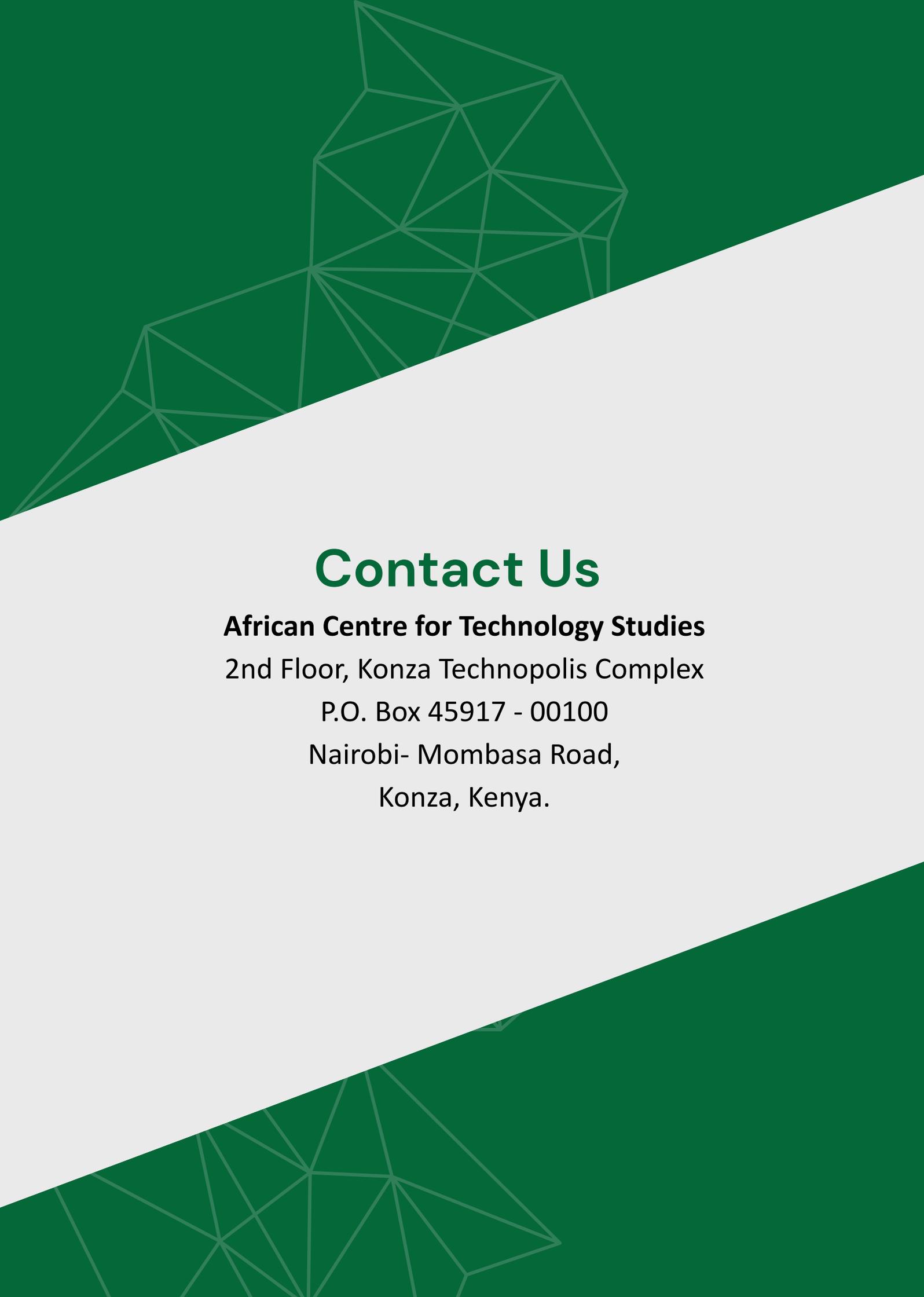
- Direct retail and sales
- Institutional supply in bulk
- Partnerships with NGOs, women's groups, and SACCOs
- Exploring carbon credit registration for additional revenue

Growth Opportunities:

- Over 8 million households still use solid fuels in Kenya
- Market value projected at KES 30 billion by 2030
- Strong government and donor support for clean cooking

Strategic Growth Pillars:

- Expand production with modern facilities
- Enhance distribution networks through logistics and partnerships
- Innovate the product line to meet evolving user needs
- Secure additional funding through grants and strategic investment



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