

**EVI-SICEE RESEARCH BRIEF No. 07**

**How Women and Youth-Led Clean Energy Enterprises are driving transformative and climate-relevant change: evidence from grassroots entrepreneurs**

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**By Joyce Gathaci and Tiffany Njoroge**

Design and layout by Peter Ongalo

## Key Messages

- Women and youth are pivotal to Kenya's clean energy transition. Their micro, small, and medium enterprises (MSMEs) deliver affordable, climate-smart solutions that reduce emissions, improve health, and create employment opportunities in rural areas.
- Investing in women and youth multiplies and amplifies social and economic benefits at the family and community levels.
- Grassroots, usually MSMEs, in clean value chains transform livelihoods. Solar mini-grid projects in Kenya have led to a fourfold increase in household incomes and greater women's participation in decision-making.
- Targeted support can unlock untapped potential. Inclusive financing, incubation hubs, simplified licensing, and stronger market linkages are critical to scaling women- and youth-led enterprises.



## Overview

Kenya has set ambitious climate targets under its Nationally Determined Contributions (NDCs) to the Paris Agreement, aiming to reduce greenhouse gas emissions by 32% by 2030 while expanding access to clean and affordable energy. Achieving these targets requires not only large-scale infrastructure but also community-driven solutions that reach the last mile. Women- and youth-led clean energy enterprises are uniquely positioned to deliver such solutions. Operating at the grassroots, these enterprises are already providing accessible and affordable clean energy technologies such as improved cookstoves, solar irrigation systems, mini-grids, and bioenergy. Their work reduces emissions, lowers household energy costs, improves health outcomes, and creates new economic opportunities in rural communities. We draw insights from a workshop (Box 1) held in the Western region of Kenya in May 2025, as part of the EVI-SICEE project, to demonstrate this argument based on the entrepreneurs who participated in this learning event. The following three selected youth and small and women-led micro and small enterprises speak to this argument based on their presentations that highlighted achievements as of May 2025.

- EVORI Clean Energy Enterprise has reached over 4,000 households with affordable cookstoves.
- Ruri Green Technologies Ltd enabled more than 100 farmers to adopt solar irrigation, resulting in up to 200% yield increases.
- Lactone Investments scaled cassava-based bioethanol production, enhancing access to clean cooking while promoting food security.

These enterprises are not only delivering climate-smart solutions but also creating pathways for women and youth to participate in leadership, employment, and innovation. They largely highlight the ensuing triple dividend of climate action, inclusive growth, and rural transformation.

Global scholarships reinforce this picture. Studies show that women entrepreneurs reinvest up to 90% of their earnings in families and communities, compared with 30-40% for men, thereby amplifying social and economic benefits (Pazarbasioglu, 2017; ENERGIA, 2019). Similarly, research on solar mini-grids in Kenya has found that households connected to these systems experienced a fourfold increase in average monthly income, while women gained greater participation in decision-making (Carabajal et al., 2024).

Yet, despite their social, economic, and transformative potential, women and youth-led MSMEs remain underutilised due to financing gaps, capacity constraints, limited incubation support, and regulatory hurdles. Unlocking their full potential requires deliberate policy action (Majumdar and Mittal, 2024).

### **Box 1: Homabay workshop and EVI-SICEE project**

#### **About the workshop:**

A workshop to engage women and youth-led clean energy entrepreneurs in Nyanza, Rift Valley, and Western regions of Kenya was held at Tom Mboya University (TMU). The forum encouraged participation to support the optimisation and scaling of youth-led clean energy enterprises and business models for these grassroots ecosystem actors. A total of 54 participants attended the workshop. Of these, 29 were clean energy entrepreneurs, 18 women and 11 males, while the remaining 25 comprised facilitators and supporting staff. For more, see the [Homa Bay workshop report](#).

About the EVI-SICEE project: **The Evidence for Informing Optimisation and Scaling of Youth and Women-Led Clean Energy Enterprises (EVI-SICEE)** project is a multi-country initiative, led by the African Centre for Technology Studies (ACTS) and running from 2023 to 2026. It operates in Kenya, Uganda, Malawi, and South Africa, with funding from the International Development Research Centre (IDRC). The project's core purpose is to generate strong, actionable evidence to support the growth and scaling of clean energy enterprises (CEEs) that are led by youth and women. It seeks to identify and address systemic barriers, including financial, institutional, social, and cultural barriers, that prevent these groups from accessing opportunities in the clean energy innovation ecosystem.

### **Why Women and Youth Matter in the Clean Energy Ecosystem**

A clean energy ecosystem comprises multiple players that are essential on both the supply side and demand side of this system. Women and youth represent Kenya's most dynamic yet underleveraged demographic groups in the clean energy sector. Together, they bring innovation, adaptability, and strong community networks that make them ideal champions of last-mile energy access.

### ***Women as drivers of change***

Women in rural areas are disproportionately affected by energy poverty. They are often responsible for household cooking and fuel collection, making them direct beneficiaries of clean energy solutions such as improved cookstoves and biofuels. By leading enterprises in this space, women not only improve household health and reduce time spent on fuel collection but also generate income for their families. Research shows that women entrepreneurs reinvest a higher proportion of their income in family welfare, education, and community development than men (ENERGIA, 2019). This creates a multiplier effect, thus directly supporting women-led clean energy enterprises and strengthening social and economic resilience.

The Homabay workshop showcased women-led enterprises that are already addressing these challenges. For example, women entrepreneurs in cookstove production and bioenergy are pioneering solutions that reduce reliance on biomass, lowering household air pollution and improving rural health outcomes.

### ***Youth as innovators and drivers of green transition***

According to the Kenya News Agency (2025), youth make up approximately 75% of Kenya's population and are increasingly drawn to the clean energy sector as a space for innovation, employment, and entrepreneurship (Kingiri et al., 2025). Youth-led enterprises are leveraging technology to deliver scalable solutions, from solar irrigation systems for smallholder farmers to digital platforms that link rural households with energy services.

At the Homabay workshop, youth entrepreneurs demonstrated leadership in designing and deploying renewable technologies. For instance, Ruri Green Technologies Ltd, led by young innovators, has enabled farmers to transition to solar-powered irrigation, doubling productivity and incomes. Such enterprises not only create jobs for young people but also contribute to food security and climate resilience.

### **Unlocking Untapped Potential**

Despite the promising potential of women and youth led MSMEs, evidence from EVI-SICEE project (Box 1) shows that there are persistent structural barriers that need the attention of the wider ecosystem actors. These include:

- Limited access to finance, as many lack collateral or credit histories.

- Capacity and skills gaps, particularly in business development, technical expertise, and scaling strategies.
- Regulatory burdens, with licensing processes often complex and costly.
- Weak market linkages restrict access to suppliers, buyers, and investors.

Addressing these barriers is not just a matter of equity; it is an economic imperative. Harnessing the underutilized potential of women and youth entrepreneurs can accelerate Kenya's clean energy transition, close energy access gaps, and strengthen rural economies.

### **Opportunities and Challenges – learning perspectives from the workshop**

Women and youth-led clean energy enterprises (MSMEs) occupy a unique position in Kenya's energy ecosystem. They bridge the gap between national policy objectives and last-mile communities, offering solutions that combine affordability, sustainability, and inclusivity. The rich deliberations from the workshop exposed both the opportunities and the structural challenges these enterprises face that enhance or constrain their optimal contribution to this ecosystem.

#### **Opportunities**

- Expanding clean energy access: grassroots enterprises bring renewable technologies, such as cookstoves, solar irrigation, and bioenergy, directly to rural households, addressing energy poverty in ways large-scale projects often cannot.
- Job creation and livelihoods: enterprises like Ruri Green Technologies Ltd not only enable farmers to increase yields (by 200% in 2025), but also create new employment opportunities in installation, maintenance, and distribution.
- Gender and social inclusion: women-led enterprises reduce reliance on biomass, cutting indoor air pollution and freeing time for education, caregiving, and income generation.
- Climate resilience: By promoting the adoption of renewable energy, these enterprises contribute to Kenya's NDC targets and reduce deforestation linked to firewood and charcoal use.

#### **Challenges**

- Financing gaps: limited access to affordable credit and investment capital constrain scaling. Women and youth face systemic barriers in securing loans due to a lack of collateral.

- Skills and capacity constraints: MSMEs often lack the technical, financial, and managerial expertise to grow their businesses sustainably.
- Regulatory barriers: complex licensing and regulatory requirements delay scaling and discourage entry into the sector.
- Weak market integration: most MSMEs struggle to connect with formal markets, buyers, and government procurement systems, limiting growth and visibility.

Unless these challenges are addressed, Kenya risks underutilizing a powerful engine of inclusive and just climate action.

### **Policy Opportunities and Strategic Pathways**

Through the voices of grassroots MSMEs during the Homabay workshop, unlocking the potential of clean energy enterprises requires deliberate policy interventions. This implies that key ecosystem actors like national and county governments, the private sector, and development partners all have a role to play. Evidence from the EVI-SICEE project has highlighted the following areas as critical towards optimizing the transformative potential of women and youth-led MSMEs.

1. Inclusive financing: Develop gender-sensitive and youth-responsive financing instruments, such as credit guarantees, blended finance, and targeted grants, to close the persistent capital gap.
2. Integrated capacity strengthening through optimized knowledge-based incubation hubs: Promote and scale up integrated incubation programs to provide technical training, business development services, and mentorship tailored to women and youth entrepreneurs.
3. Streamlined regulatory processes: Simplify licensing and registration for clean energy enterprises to reduce compliance burdens and accelerate time-to-market.
4. Ecosystem coordination: Strengthen collaboration among government agencies, private sector investors, and development partners to create an enabling environment for pro-women and youth-based entrepreneurial innovation and growth.
5. Gender-responsive policy integration: Mainstream gender and youth considerations into Kenya's national and county energy strategies, ensuring that women and youth entrepreneurs are not only beneficiaries but also leaders in shaping clean energy futures.

## Policy Recommendations

In view of the empirical evidence emerging from EVI-SICEE engagement with the grassroots MSMEs, we propose the following recommendations for policy and practice, towards scaling the transformative impact of women and youth-led clean energy enterprises.

1. Expand inclusive financing mechanisms
  - a. Establish targeted loan facilities and grants for women and youth entrepreneurs.
  - b. Promote blended finance approaches to de-risk private sector investments.
2. Strengthen platforms for business incubation and capacity building
  - a. Provide tailored technical training, mentorship, and business development support.
  - b. Expand county-level incubation hubs to reach more rural enterprises.
3. Simplify regulatory and licensing frameworks
  - a. Streamline approval processes for MSMEs in the clean energy sector.
  - b. Introduce a one-stop regulatory platform at the county level to reduce bureaucracy.
4. Promote gender-responsive and youth-inclusive policies
  - a. Integrate women and youth entrepreneurship into national clean energy frameworks.
  - b. Monitor and evaluate progress with gender- and age-disaggregated data.
5. Enhance market integration and partnerships.
  - a. Facilitate linkages between MSMEs and larger enterprises across the value chains to enhance upgrading and innovation in local/domestic value chains.
  - b. Encourage public–private partnerships to expand distribution networks and attract investment.

## Conclusion

Women- and youth-led clean energy enterprises are already powering change in Kenya, from cookstove distribution to solar irrigation and bioethanol production. They are creating jobs, empowering marginalised groups, and advancing Kenya's climate and development agendas simultaneously. However, their potential remains underexploited. With targeted support, through financing, incubation, regulatory reforms, and policy integration, these enterprises can be scaled up into engines of inclusive, climate-smart growth. Investing in women and youth in clean energy is not just about equity; it is about building a resilient, prosperous, and sustainable Kenya.

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# Contact Us

**African Centre for Technology Studies**

2nd Floor, Konza Technopolis Complex

P.O. Box 45917 - 00100

Nairobi- Mombasa Road,

Konza, Kenya.