



KILIFI SOLAR

Supporting female renewable energy entrepreneurs and adoption of solar power in Kilifi, Kenya.

BACKGROUND

In September 2015, the UN General Assembly adopted the 2030 Agenda for Sustainable Development (SDGs), which contains 17 global goals including ending poverty and hunger, improving health and education, combating climate change and protecting the environment. **Increasing access to reliable, efficient and renewable energy can contribute to many of these goals** and any national efforts to achieve the goals will generate a high demand for increasing electricity distribution and scaling up of energy services.

Renewable energy has strong impacts on the SDG for three reasons. First, it provides energy which can increase economic growth and thus reduce poverty; can make

agriculture more productive and thus contribute to food security; and has been shown to improve education and even to enhance gender equality. Second, renewable energy provides a healthier and more sustainable alternative to traditional biomass and coal energy by replacing the source of indoor air pollution, improving local air pollution, and promoting the sustainable use of ecosystems – particularly forests. It could also improve the welfare of women as the burden of indoor air pollution and collection of firewood is disproportionately born by girls and women. Finally, renewable energy has a much smaller carbon footprint, thus mitigating climate change and providing strategies to avert damaging climate impacts.

GLOBAL ENERGY LANDSCAPE

In 2014, 1.1 billion people still did not have access to electricity (roughly 15% of the global population) and 3 billion people relied on solid fuels and kerosene for cooking and heating.¹ The electricity deficit is primarily concentrated in Sub-Saharan Africa where more than 600 million people do not have access to electricity.² Those that do have energy access rely on a very expensive, low-quality supply. It is estimated that those living off-grid spend close to \$USD27 billion/year on lighting and mobile phone charging.³ Traditional alternatives, such as kerosene, candles, car batteries, and biomass fuels (i.e. wood and animal dung)

are typically expensive, dangerous and environmentally harmful.⁴ They also add to the heavy domestic work burdens of women and girls, and the collection of wood can put young girls at risk of abuse. It is projected that 1 billion people in Sub-Saharan Africa will gain electricity access by 2040, yet due to population growth, there's still be more than 530 million people in the region who will not have access.⁵ Meeting growing energy demands and ensuring universal access to modern sustainable energy services are thus one of the principal goals of African countries.

SOLAR IN KENYA, AFRICA

According to the World Bank's World Development Indicators, as of 2012, only 23% of Kenya's population has access to electricity.⁶ For rural communities without access to the grid, diesel generators and other fuels such as kerosene are often the only means of lighting their homes and businesses. Kerosene use has a significant economic burden on rural families comprising 25–30% of family income and burning kerosene is a major cause of air pollution.

The key challenges affecting off grid solar resource exploitation in Kenya includes high up-front system costs; difficulties in distribution to more rural households; lack of understanding of the benefits of home solar productions; a lack of clarity regarding electricity grid extension plans that makes consumers and businesses uncertain about whether to invest in solar home systems (SHSs); a lack of SHS businesses with trained staff operating in rural areas; a lack of reliable knowledge about the technology; and capital constraints for SHS businesses.



SNAPSHOT OF KILIFI SOLAR

Young women in Kenya often have no savings, as they spend most of their income on their children's food, health and education, and face challenges in accessing formal credit, since they have no assets to serve as collateral to obtain a loan. In Kenya, poverty influences parents to take sons to school rather than daughters in circumstances of economic constraints. When a community is faced with a high poverty level, young women's education is compromised, leading to early pregnancy and forced marriage. Early and forced marriage usually marks the end of a girl's education, diminishing her long-term opportunities and sentencing her and her children to lifelong hardships. Often isolated to the domestic sphere, married girls rarely engage in income generating activity, and will have no control over household income, no awareness of market systems, and no buffer for weathering economic shocks.

Since 2004,
Plan International
has supported
1.3 MILLION+
MEMBERS
— in —
59,000
SAVINGS GROUPS
— in —
28
COUNTRIES
...
Of these,
82%
ARE WOMEN

Savings groups can be a first step to financial inclusion for vulnerable girls and young women, as they provide a mechanism to save money while building financial knowledge and skills. Savings groups – a low-risk form of microfinance based on members' own savings, often known as Village Savings and Loans Associations (VSLA) – are a key strategy employed by Plan International to enhance the economic security of households.

Savings groups have been shown to be instrumental in helping ultra-poor households become more stable, and

show sustained shifts in self-employment, earnings and self-reported happiness long after project support had ended. Independent evaluations of savings groups have highlighted an improvement in financial inclusion, household business outcomes, and women's empowerment as well as evidence of improved resilience in villages affected by drought where households experienced improved food security and income.

Plan International's **Kilifi Solar Project** aims to provide affordable solar home systems (SHS) to households, most of whom are members of VSLAs. On top of providing SHSs, this project ultimately looks at increasing women's agency within their households and communities through means of economic empowerment and personal empowerment. This in turn will support women in strengthening their position and condition within their community.



The challenge of access to renewable energy projects is tackled through an innovative partnership between Plan International, national solar distributors, a local financial institution, and IFC/Lighting Africa. Through this partnership, female renewable energy entrepreneurs are trained on financial literacy, life skills, and mentorship on sales, distribution, and technical expertise on solar products. By connecting skilled renewable energy agents, connected to both pro-poor financial instruments and high quality affordable solar products, with communities with increased savings capacity, the project has succeeded in significantly increasing the distribution and access of energy products in this challenging environment. This model has resulted in the highest sales success rate for energy distributors in the county, with entrepreneurs receiving sufficient commission to transform their lives.

This project builds individual and household resilience by strengthening financial safety nets through the development of savings groups, most of the participants being women. Participation in the VSLAs contributes to improved livelihood and entrepreneurship opportunities for young women while also increasing access and use of clean renewable energy solutions for vulnerable girls and boys and their families in the poorest households. Promoting female entrepreneurship and expansion of market structures into rural villages provides opportunities for economic self-sufficiency and business education for women; the promotion of solar power energy technologies will improve education, safety and protection of vulnerable girls and boys and help build resilience of their families. This project contributes to promoting environmental and resilience building co-benefits by building adaptive capacity of targeted families and to reduce emission.

CASE STUDY: ZUBEDA MWINYI MWAKIHUTU

Meet Zubeda Mwinyi Mwakihutu and her husband Chengo Baya Toya. Zubeda is a trained female entrepreneur with Kilifi Solar. She is heavily invested in developing her personal entrepreneurship skills, and Chengo is extremely supportive of her business success.

Zubeda became a female entrepreneur to help her family earn a living, as well as replicate the benefits of solar lighting to other families so they also experience the benefits of SHSs. With her own SHS, Zubeda and Chengo no longer use money to purchase kerosene and save finances for other living expenses. She has experienced great success selling solar home kits and her customers are very happy because they no longer have the added expense of kerosene.

Chengo supports Zubeda with her solar entrepreneurship. They both work together to ensure the household runs well, and they market together to cover larger ground. He faces backlash from the community because he supports Zubeda, however, he “closes his ears” to the chatter. When Zubeda

is marketing her solar product, he prepares food for the family, assists with fetching water, and asks his children to contribute their time to the household as a whole family effort. He has developed a strong relationship with his children by spending more time with them.

Chengo is happy with his daughters' changed perception towards what women can do and achieve within their community because they are experiencing firsthand the benefits of their mother's entrepreneurship. At times, community chatter will have them question their mother's business ventures, but he “won't entertain negative feedback from his children.”



When asked, what he would say to other men in the community who think women should not participate in business, he responded:

“IN THE COMMUNITY, A LOT OF MEN WHO HAVE THAT CHARACTER – NOT ALLOWING WOMEN TO WORK – I ADVISE THEM, WHEN YOU MARRY, YOU'RE NOT BUYING A POSSESSION. YOU SHOULD NOT RESTRICT HER FROM ACHIEVING HER FULL POTENTIAL.”



Chengo is happy Zubeda can earn a living and financially support their family. Zubeda's hard work and profits benefit the whole home. Chengo believes, “when a woman is given the opportunity to earn her own income, she builds self-esteem because she has her own money and no longer has to borrow from her husband.” Zubeda is thankful for Chengo's engaged support while she develops her entrepreneurship skillset to support herself, and her family. This solar initiative provides Zubeda with increased feelings of security and control over her environment, as she experiences improved mobility, health, freedom from violence and time.

CASE STUDY: MAMA NZINGO DENA MASHA

Mama Nzingo Dena Masha comes from Konjara Village in Kilifi County, Kenya. She is a mother of 8 children, 3 boys and 5 girls. Mama Nzingo and her husband do not have formal employment, and they depend on their 12-acre farm for their livelihood.

Throughout her life, she has never been able to connect her home with the Kenya Power and Lighting Company national grid because the cost of installing electricity in her home is beyond her financial reach. In good seasons, she has enough money to buy kerosene from the nearby trading centre for her children and grandchildren to study at night. However, due to the cost of school fees and other household needs, she is not able to ensure lighting after dark. She worried the lack of lighting at night time for her children and grandchildren would impact their education as they were unable to complete homework in the dark.



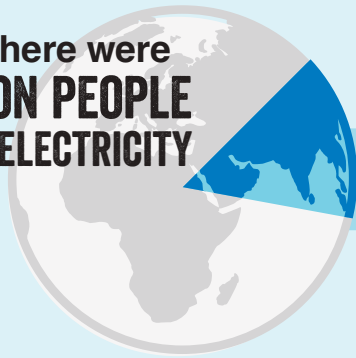
Mama Nzingo Dena Masha joined the Faida VSLA. She trained on affordable SHSs and advised on how to take loans from her local VSLAs to enable the purchase of SHSs. With the help of her children, she purchased a SHS for her home. With the new SHS installed, Mama Nzingo Dena Masha experienced multiple benefits: she can ensure lighting for her children and grandchildren at night; she saves money by charging her mobile phone at home; she earns an income from neighbours who utilize her SHS to charge their own mobile phones; and she no longer purchases Kerosene which allows for financial savings.

This project supports Mama Nzingo Dena Masha by building individual and household resilience through providing tools to strengthen her entrepreneurial skillset, strengthen her personal and economic empowerment, and increase her decision-making power. Mama Nzingo's homestead is now changed. Her family's social status within the village is elevated as there is light in her home. Her participation in the VSLA contributes to an improved livelihood for her whole family, strengthens entrepreneurship opportunities, and creates access to clean renewable energy solutions.



TRANSFORMING LIVES THROUGH SOLAR ENERGY

In 2014, there were **1.1 BILLION PEOPLE WITHOUT ELECTRICITY**



SDG 7 AFFORDABLE & CLEAN ENERGY

Affordable renewable energy offers a new path to ensure girls and boys can achieve their rights



BETTER FOR THE ENVIRONMENT

CHEAPER

SAFER

MORE RELIABLE

CLEANER

BENEFITS OF SOLAR ENERGY

BENEFITS OF TRADITIONAL ENERGY

Renewable energy is a catalyst to **transform lives, stimulate economic growth, improve health & education, support gender equality** & other sustainable development goals:

3 GOOD HEALTH & WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

8 DECENT WORK & ECONOMIC GROWTH

13 CLIMATE ACTION



- Reduced burns
- Indoor air pollution
- Safer deliveries
- Improved cold-chains



- Completion rates increase
- More study hours
- Safer spaces for young people



- Business opportunities for women
- Reduced time collecting wood
- Shared resource for the house



- Employ 1.8M in Africa
- Improve efficiencies of business
- ICT links
- Improve agriculture production & value addition



- Reduction in GHG
- Pathway to adaptation
- Equivalent impact on cars



Learn more and get involved at plancanada.ca



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