

# The RESOLVE Project

## About our Project

In May 2013 Renewable World launched the Renewable Energy Solutions for Lake Victoria Ecosystems (RESOLVE) project in Kenya. With our partners FASCOBI and OSEIENALA and with funding from Comic Relief we set out to install six microgrids on the shores of Lake Victoria. Our aim was to improve the health, income, education and to diversify the livelihoods for six of the fishing communities in *Ng'ore, Got Kachola, Ragwe, Resira Beach, Tabla* and *Luanda Rombo* by the end of 2016. The long-term project goals were to work in partnership with these communities to help give them access to clean energy, reduce pollution, reduce household energy costs, increase income from micro-businesses, improve access to information and telecommunications and establish the energy hubs as community run enterprises. During the three years we worked alongside these communities to establish 97 new energy connections which are now being used to power households, business enterprises, Beach Management Units (BMU) and other off shoot auxiliary projects.



The communities on the shores of Lake Victoria, Kenya are among the poorest in the country, with approximately 71% of the population living below the poverty line. Most of these communities heavily rely on fishing to generate an income but without access to electricity they are unable to keep their catch fresh which means having to sell off their stock quickly at unfair prices. Due to a limited access to energy there is a lack of income-generating opportunities in these village, therefore many of the people in these communities turn to fishing out of necessity.

Because there is no/very little access to electricity households, fisherman and businesses have to use kerosene lanterns or candles for lighting which is known to cause dizziness, headaches, eye and lung infections from the fumes, as well as being expensive and damaging to the environment.

Our aim was to supply these communities with an alternative, clean, cheap and renewable energy source.



## Project Overview

- Project Manager: Renewable World
- Implementing Partners: FASCOBI & OSEIENALA
- Technical Partner: StemaCo
- Major Donor: Comic Relief
- Financial Partner: RENEWVIA Energy
- Total Budget: £106,953
- Project Start: March 2013 Project End: November 2016

# About Our Project...



With help from FASCOBI, we installed six microgrids in the six communities we were working with. We helped to establish a Community Based Organisation (CBO) to manage and maintain the energy hubs in each community

From the outset of this project we wanted the communities to be fully engaged and involved with all aspects of the Energy Hubs, including the installation and maintenance of the systems and the long-term ownership. The original project plan was to have the BMU as the managing entity of the Energy Hub, but a clear conflict of interest became apparent by having the BMU become both the 'anchor client' as well as the energy supplier. We then supported the six communities in the establishment of a legally registered CBO to take on the role of managing the hubs and they were put in place in the second year of the project. We have worked with partners to provide appropriate training and mentorship to each CBO to ensure that they are fully confident in the upkeep and management of the energy hubs.

Each CBO appointed at least one individual as the Hub Manager who is responsible for the day to day running of the hub. They are responsible for basic maintenance, making sure the hubs are running smoothly, as well monitoring payments made for energy against the energy consumed.

## Key Terms

**MICROGRIDS** - A small discrete solar energy system, owned by the community that provides electricity to households and small businesses. They have a capacity of between 1.5kw and 2.0kw which can support up to 50 connections

### COMMUNITY BASED ORGANISATIONS

**(CBO)** - A fully engaged, elected and registered executive committee which has been set up to manage maintain the energy hubs. CBO's have been set up in all 6 communities, consisting of 11 members, 30% of which are women.

**BEACH MANAGEMENT UNIT (BMU)** - The centre of the fishing community and the primary energy user of the hubs. They provide a steady level income to the CBO's year round. The now have access to freezers to keep their stock fresh, as a result the average income levels of the BMU have increased by 9.4%.

### SAVINGS AND CREDIT COOPERATIVE

**(SACCO)** - All six communities have elected 2 member of their CBO to form the SACCO, which works as an umbrella governing group, created to provide a mechanism that coordinates learning, improves collective savings and cross lending across the communities as well as attracting external financing for the maintenance and development of new energy hubs.



# Project Outcomes

During the three years, we kept a careful track of the impact the project was having within the communities.

The key outcomes we were tracking were improvements to income, health and information and telecommunications. There were a few unexpected outcomes, like the formation of the CBO, the SACCO and the investment in solar lanterns for fishermen, all of which were incredibly positive. Below we have summarized our key outcomes and achievements which have been assessed by an external consultant SAWA, as well as by our own M&E team ACCESS.

## Improved Incomes

There is clear evidence that access to power across these six communities has increased the diversification of income generation opportunities. Households are spending a significantly smaller proportion of their income on energy bills, with the average monthly expenditure on energy for lighting decreasing by more than 50%. Microenterprises report of an increase in income, in some cases over 150%.

The establishment of the CBO's as a management entity for the energy hubs means that the communities are in control of the cash flows, operation and maintenance of the hubs. This means that the energy clients can track their input/output of energy against their running costs more closely. Five out of the six hubs are now making surplus income for operations and maintenance costs and overall we have found that the hubs have been a major achievement and that the viability of running of a community owned energy system is a business model that can be invested in.

## Improved Information and Telecommunications

Mobile phones are used across Kenya even in the most cut off communities, and are a necessity for business, fish trading, communication and M-Pesa\*. Since the energy hubs were set up, mobile phone charging micro-businesses have become the most common new business to arise. Now charging phones is quicker, more accessible, much cheaper and puts the income in the hands of the community.

Six enterprises have invested in a satellite TV and show the news as well as other programmes for a small fee, improving access to news and information, as well as keeping children from getting in trouble.

In Ng'ore and Got Kachola we have helped to establish youth-led communication and information hubs.. These centres are set up with three computers, a printer and an internet connection. This provides access to ICT services, internet, and the chance to learn about modern communication technology and to connect with the wider world.

*\*M-Pesa is the service the CBO uses to receive payments for energy usage from clients. It is a mobile based money transfer service, which allows each new energy consumer to only pay for the energy they need, as they need it. Each financial transaction is transparent and secure as no actual cash changes hands and is used.*

Previous household average monthly spending on lighting in 2013 was KES 1050 (£8.14)

Current household average monthly spending through energy hub is KES 580 (£4.37)

*50% decrease on household spending on lighting*

Some micro-businesses have increased their income by 150%



It costs KES 200 (£1.54) to take a mobile phone to the nearest town by boda-boda (taxi service) and KES20 (£0.15) for charging

Enterprises charging for phone costs in communities will make between KES 400-600 (£3.08 - £4.62) per day (charging at KES20 (£0.15) per charge)

## Improved Health

Traditionally households used kerosene lanterns and candles for lighting households and the fumes cause dizziness, headaches, eye and lung infections. The removal of polluting fuels from the home has had a significant impact on the health of the communities, especially women and children who spend a large portion of their time at home. There has also been a reduction in the number of kerosene spills and related accidents since the installation of the energy connections. The introduction of a suitable solar-charged lantern for night time fishing is also expected to greatly improve the health of the fishermen by removing the kerosene pressure lamps from boats.



Almost 12% decrease in number reporting from heart and respiratory problems in the last 3 years\*

Only 4.5% compared to 20% of the beneficiaries sampled suffered burns from use of kerosene during the project period, a 77% reduction

## Solar Lanterns for Fishermen

Fishing boats that are used by the fisher folk require 5 kerosene pressure lamps every night to provide light, spending on average KES 500 (£3.85) on kerosene alone. This is hugely expensive, has a negative impact on the environment and is damaging to the health of the fishermen. Another aim of the RESOLVE project was to make solar lanterns available for fishermen and we have been testing appropriate lanterns that meet the fishermen's requirements. A total of 20 lanterns have been deployed in Ng'ore community with the Ng'ore Mtakatifu Women's group who are the owners of a new solar lantern rental business. The women's group rent the lanterns to boat owners for KES 50 a night, earning the women's group KES 1000 (£7.70) a month, and cutting costs for the fishermen too. They have developed a business model which means they will have recouped the cost of the lanterns within 10 months, and then profits will be reinvested into buying more lanterns generating an extra source of income for the women's group and greatly improving conditions for the fishermen as well.



## What's Next...

We want to continue work on the **Light Up Lake Victoria Programme** and have already launched the **Kenya Energy Hub Project**. We have installed a second round of Energy Hubs in Ragwe and Ng'ore and we are laying the groundwork to bring Energy Hubs to the communities of Mirunda, Kiwa and Wakawaka. We were delighted at the results of the RESOLVE project and we cannot wait for the new round of connections to be installed.

To find out more about our **Lake Victoria Appeal** go onto our website and follow the link:

<http://renewable-world.org/support-us/lake-victoria/>