



RVE.SOL



KUDURA | the power to change rural life forever

A multi-service approach to poverty eradication

Nyamolo "Irene" Abagi - RVE.SOL - Soluções de Energia Rural Lda.

Overview

Problem

Solution

Sidonge

Technology

Scalability

MNO Business model

Team

Why Invest in KUDURA?



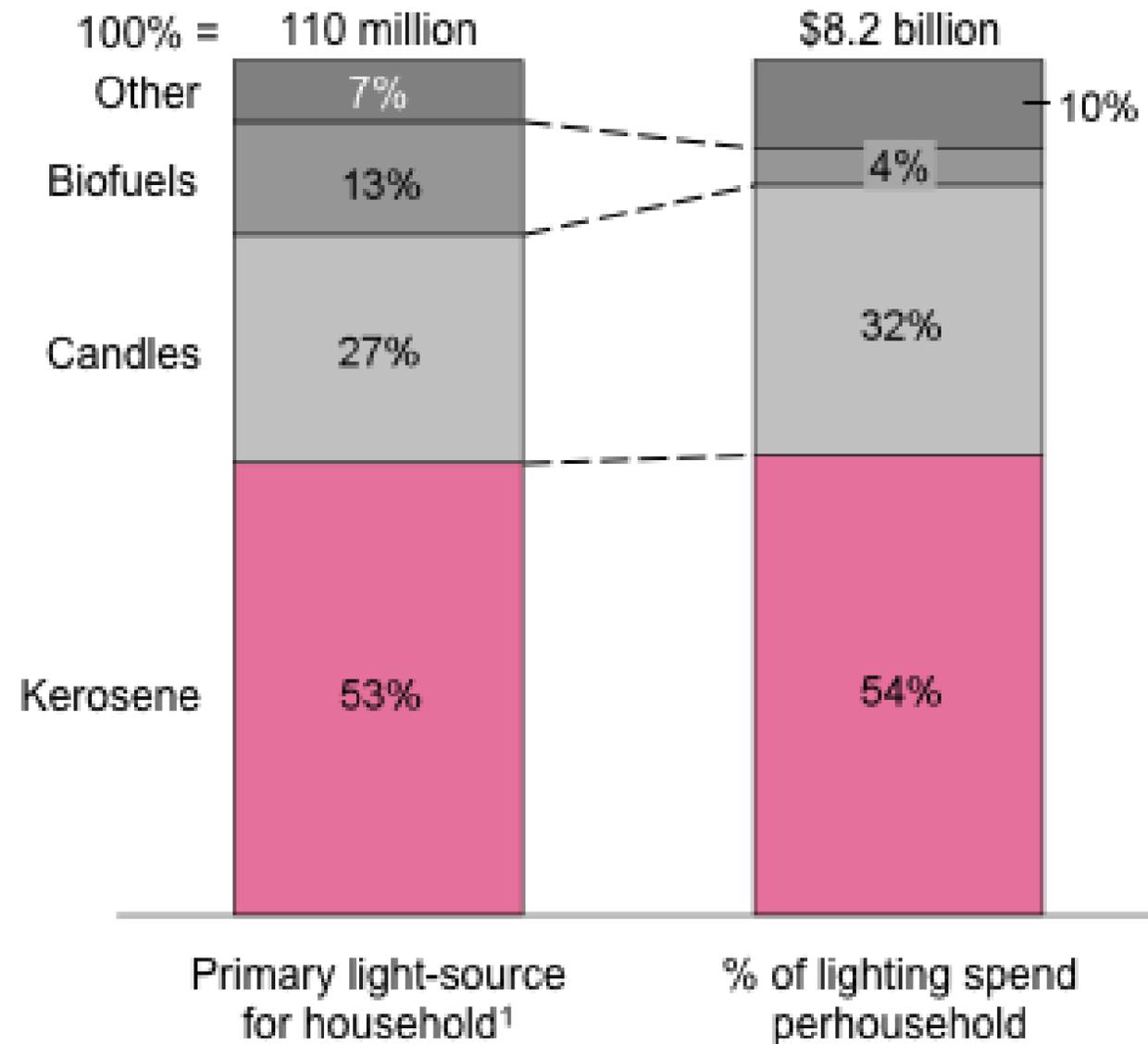


- Meet Janerose Anyango, grandmother, 71 years old
- 6 grandchildren, no parents, a lot of responsibility
- Monthly income: €16
 - 50%+ spent on energy needs
 - Firewood (cooking) and kerosene (light)
- No savings, no way out. Lifelong poverty.
- She and her family are the quintessential Base of the Pyramid demographic
- She has a mobile phone, it is often off.

BoP | a renewable energy market opportunity



Current spend on lighting by off-grid households²



- Janerose is one of 110M such families in Africa
- They spend over 4B\$ per annum on kerosene
- They prefer to have electricity
- And have a high “willingness to pay¹”
- Market growing 25% over 5 years

1. IEG (2008): The welfare impact of rural electrification: A reassessment of the costs and benefits. Washington, DC: Independent Evaluation Group, World Bank
2. Source: Lighting Africa, GTZ, country census data, Dalberg analysis; World Bank



2011

- **Subscribes KUDURA services in her village**
- **Family has light and water at affordable cost**
- **She saves at least 2 hours a day for productive tasks**
- **She now has extra income of €2.50 per month**
- **Her family's health & education will improve**

KUDURA | The Solution



KUDURA provides sustainable, reliable services at a cost within the means of “off the grid” consumers



WATER

Certified safe, clean, drinking water



ELECTRICITY

Reliable, renewable, scalable electricity



BIOGAS

Reliable, safe, efficient replacement for firewood and coal



ORGANIC FERTILISER

Revitalised soils for increased crop output, quality, and quantity



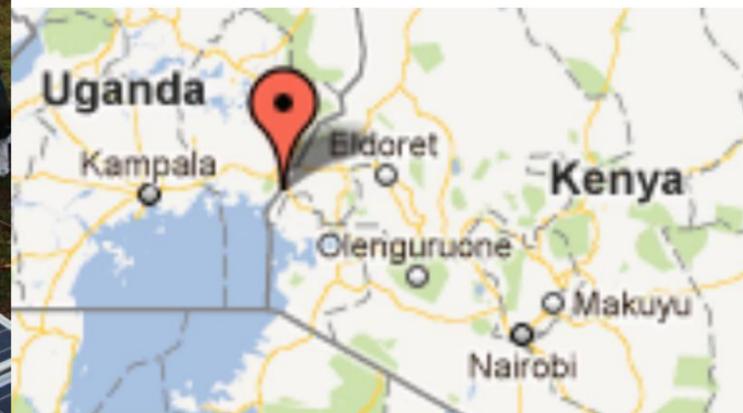
KUDURA | Live in Sidonge, Western Kenya



Potable water



Electricit



Biogas

The Community Benefits



Changing rural life forever

Improve health, education, and possibilities for future income
Reduce disease, GHG emissions, deforestation and need to relocate out of rural areas to cities in search of better livelihood
Power small and medium rural businesses





System Input

Raw Water

Solar Energy

Animal & Bio Waste

RVE System

Water Purification Plant

Solar PV Plant

Biogas Plant

Rural Village Specific Implementation

Consumption Metering & Management

Service Distribution & Payment

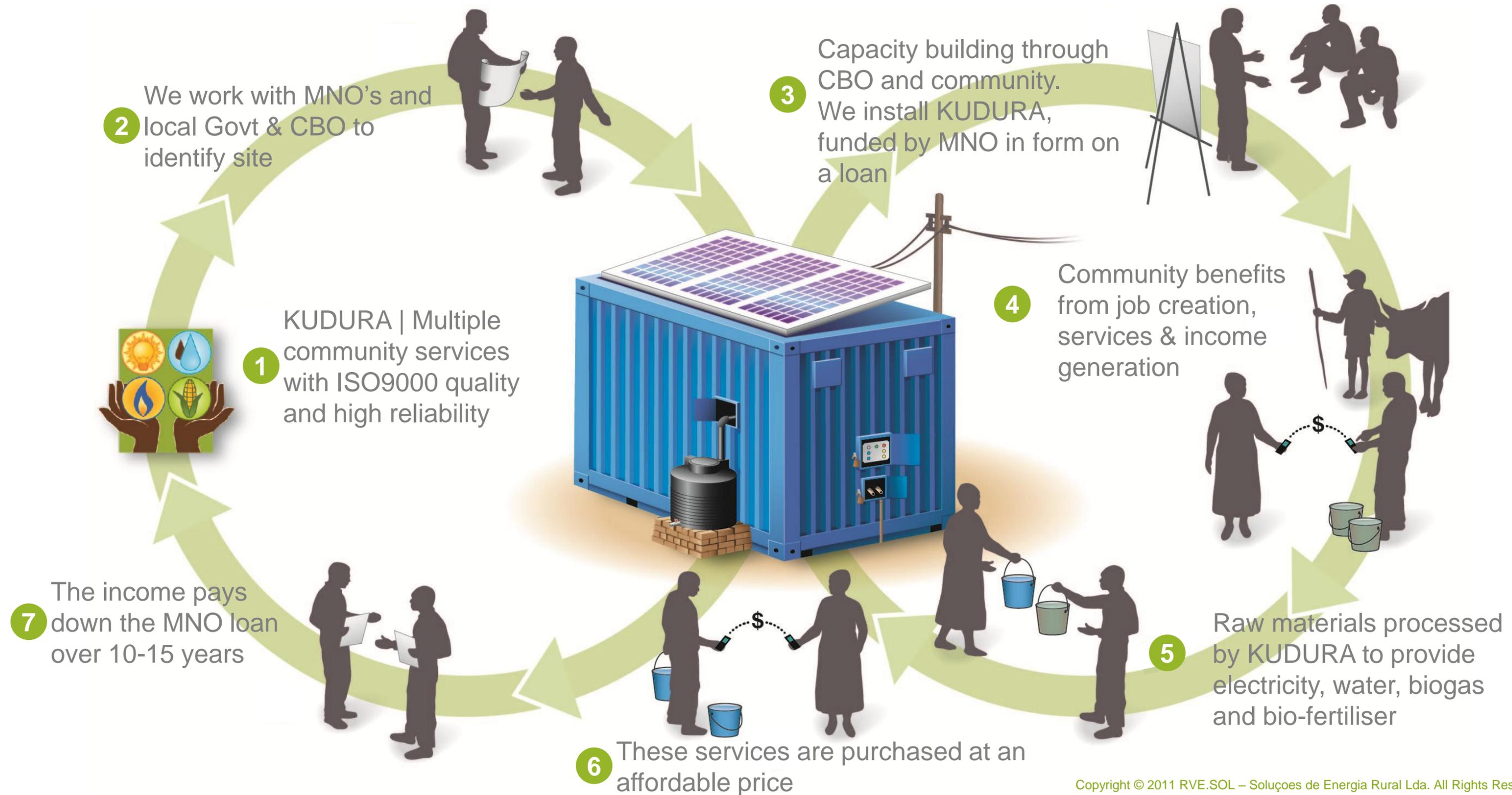
System Output





Resources	Customers served	Comment
Electricity 	30 households / Small Clinic 40 households / Medium Clinic 80 households / Small School 120 households 150 households / Large School	Two versions (220/240VAC, 50/60Hz) <ul style="list-style-type: none"> • 5kW continuous, 6.5kWp • 20kW continuous, 26kWp (Home electronically limited to 25W/50W/100W - customisable)
Potable Water 	1,200 – 110,000 litres/hour Average of 500 people per day at WHO recommended 5l/person/day	Kudura provides a minimum of 1200 liters/hour of certified potable water or enough for 200 people every hour.
Biogas system 	5 m3 / day approx. 10 households @ 3 hours/day Cascadeable system for scaling	Using single burner stoves with a flow rate of 125 litres/hour
Bio-fertilizer 	80-120 litres per day	Biofertiliser, a useful by-product of the biogas process, is rich in nutrients such as nitrates and phosphates. Applied to agriculture correctly, crops yield higher quality and quantity of produce.

KUDURA | Self sustaining business model with measurable social impact



Capacity to execute | Core team



Vivian Vendeirinho

Technology business development professional. Proven revenue generating, sales and business management experience demonstrated Europe, United States, Japan and developing markets including Eastern Europe and South Africa



Maria Burpee

Corporate technology-marketing professional. Creative, integrated marcom campaigns and innovative go-to-market strategies that deliver proven results. Social marketing specialist who owns our marketing plan and web presence.



Dr. Hannington Odame

Dr. Odame, an agriculturalist by vocation, is executive director of CAFE, having built the Kenyan-based NGO up from the ground. CAFE focuses on capacity development and creating access to markets for rural populations in order to help the BoP poor raise themselves out of poverty.



Irene Nyamolo Abagi

Socially focused engineer with extensive rural energy experience in Kenya, Uganda and Rwanda, in solar installations & social impact analysis, capacity building and setting up monitoring, evaluation and reporting systems.



Mario Rodrigues

Founder and owner of EST, Lda, Mario develops, in partnership with clients and providers, technical and economical solutions to satisfy daily problems. The result of this focus and commitment is a series of long lasting partnerships with prestigious entities around the globe



Jose Vendeirinho

Founder and owner of a Portuguese company specialised in consultancy and implementation of industrial process control and automation solutions. Jose has over 30 years of practical project planning, implementation and management experience in Europe and Southern Africa



Adrian Mwai

A Kenyan national, Adrian's expertise is the design and execution of Engineering projects including power plants, pump stations and distribution systems. Mechatronic Eng. Degree from JKUAT, Nairobi. Adrian speaks English and Kiswahili



Paulo Vendeirinho

Over 10 years experience working in European Energy Sector related technology trends, covering remote metering, renewable energy, smart grid and electric vehicles projects. Spotting buying patterns and synthesising direction to manage sales processes.

SUMMARY | Why invest in KUDURA?



- MNO CAPEX investment in:
 - Community social and financial impact
 - Environmental impact
 - Reliable, renewable power for base-station
- Results in significant OPEX savings & CSR results

“We don’t want charity, we want an investment, a chance to create income and at the same time save the planet for our children. KUDURA meaning “the power to change” in Swahili, will give us this opportunity”

Mr. Elsafus Mang’eni
Senior Chief and elder of Sidonge ‘A’ Village, Kenya

THE TRIPLE BOTTOM LINE:

PEOPLE

Rural communities gain independence from outside resources by leveraging their own resources to create jobs, improve education and ultimately increase wealth.

PROFIT

Investors in RVE.SOL and KUDURA benefit from a moderate return on investment while propagating renewable energy and eradication of poverty.

PLANET

Use of local sustainable resources like sunlight and manure eliminates dependence on non- or slow-renewing resources like kerosene and trees. Carbon emissions and soil erosion are reduced.

KUDURA kick starts rural communities out of perpetual poverty by providing holistic, sustainable development impetus that enables small business and productivity and better lives - whether water, deforestation, energy or agriculture.

abagi@rvesol.com
www.rvesol.com

Thank You



RVE.SOL

