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ENERGY EFFICIENCY FOR DEVELOPMENT PROGRAM (EE4D)

ENERGY EMPOWERS EAST AFRICA: UGANDA SURVEY RESULTS

INTRODUCTION

USAID and Berkeley Lab are implementing the Energy Empowers East Africa program to increase the inclusion of women in electrification programs.

The team partnered with a local implementer, Clean Energy Enthusiasts (CEE), to design and conduct a participatory survey to collect baseline data and information on the current state of access to efficient and productive use of energy (PUE).

Findings from the survey provided the foundations to develop:

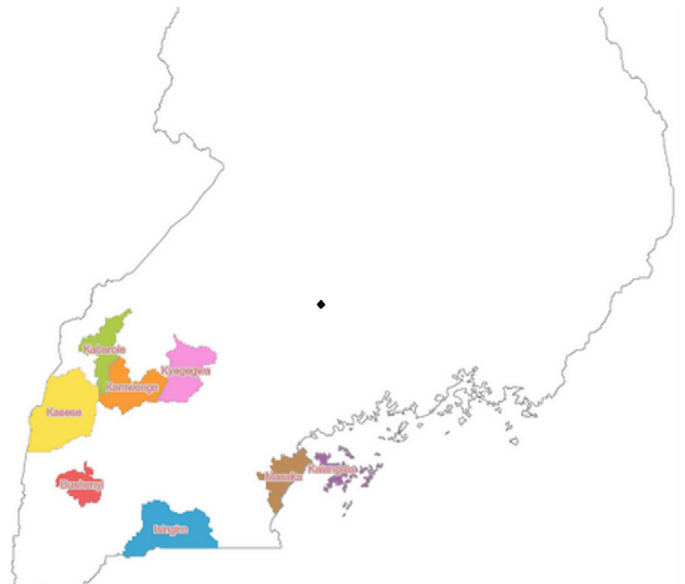
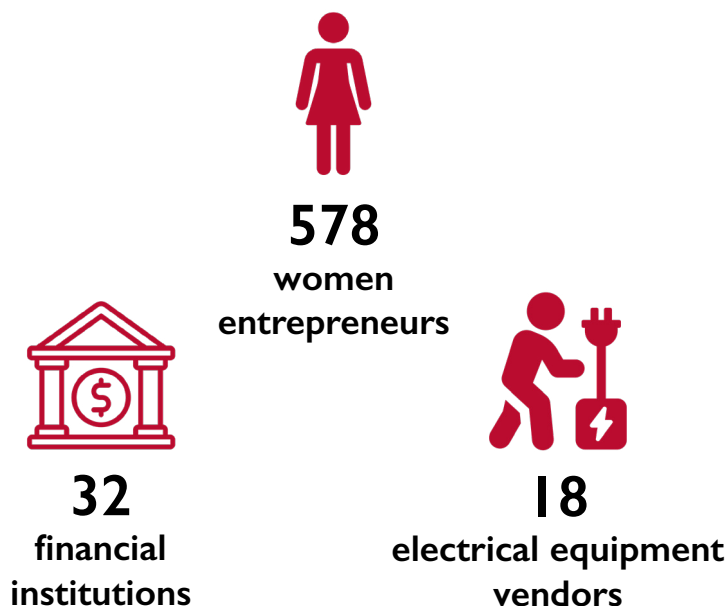
- Training materials for capacity building.
- Case studies profiling businesses for potential intervention.
- Cost benefit assessment to develop business plans to better access financing.



Figure 1. A woman attending her retail shop in Masaka district during the survey process.

The survey was conducted in eight districts in Uganda during May-June 2022. Three questionnaires were developed to assess the barriers surrounding access to efficient and productive electric equipment.

The survey reached:



WHO IS SHE?

Women entrepreneurs in Uganda are young (the average age of respondents was **34 years old**), with a limited educational background (fig. 2). 66% of them are married, and 75% of them said they must often juggle household and childcare responsibilities in addition to their entrepreneurship duties. The survey found that 48% of businesses operate in the retail industry, trading a wide range of food products, and selling household items. Other sectors include the beauty industry (17%), small-scale apparel (9%), and others (fig. 3).

Fig. 2: Highest educational levels

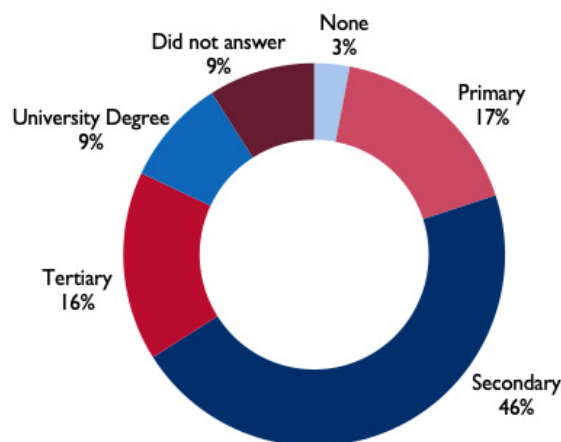
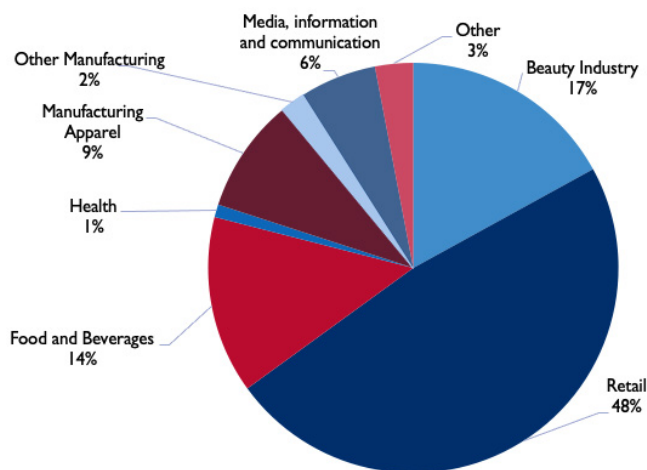


Fig. 3: Business sectors divided by category



For both graphs, $n = 578$ respondents

PRODUCTIVE USE OF ELECTRICITY

- **PUE adoption remains low**, with **low electricity consumption levels** across the businesses, averaging at **50kWh** per month. Despite the low levels of electricity utilization, there is **high interest from the participants in electric equipment**, such as in refrigerators (double door and chest freezers), juice extractors, hair dryers, electric kettles, photocopiers and printers, and electric sewing machines.
- **81% (466) of the respondents** would like additional efficient and PUE equipment to support their business expansion. Most of the existing PUE equipment in use is bought **second-hand** and is very **old** and **inefficient**. Because of the old, refurbished equipment, most respondents complained of high-power consumption and frequent repairs due to breakdowns.

99%

of the businesses are connected to the grid

Monthly consumption:
50kWh (~US\$13)

Maximum registered consumption:
480kWh (~US \$130)

EFFICIENCY CONSIDERATIONS

- The survey found that **54% have never done anything to save energy** in their businesses besides reducing the number of hours of use of the equipment. This is primarily because of a lack of knowledge on energy-saving tips.
- Of those that know energy efficiency, over **97%** of the respondents just switch off their equipment to save on energy bills, while **only 3% have installed solar systems**, primarily for lighting.
- The survey found that **98%** of the respondents have never been offered any energy efficiency tips by their power utility companies, and **99% of them did not have any energy management plans**.

78%

of the respondents think electric equipment would lead to an increase in sales and profit.

98%

of the respondents have never been offered any energy efficiency tips.

BUSINESS SKILLS

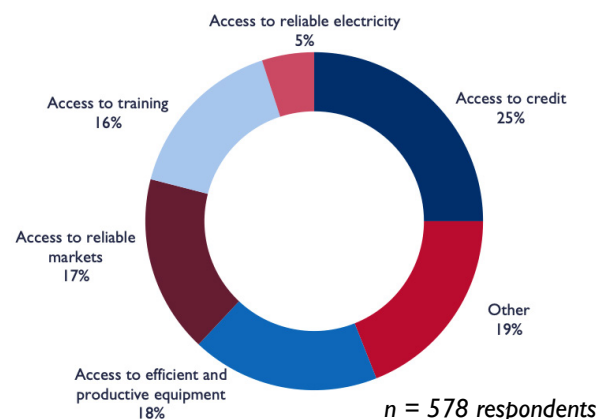
- Only **23%** of respondents have had some sort of business development training.
- **95%** said they would like training and hands-on assistance to develop a business plan.
- The survey found that only **24%** of the women entrepreneurs are members of a business association.

ACCESS TO FINANCE

- Most businesswomen have commercial bank accounts (**66%**).
- **92%** of financial institutions (FI) target women in their lending and **61%** of them offer energy-access loans.
- **86%** of FI offer asset financing- PUE loans can be sourced here.

Even with the high number of women entrepreneurs holding bank accounts, the survey found a low loan penetration level. About **48%** of women entrepreneurs have never applied for a loan. Of those that have previously applied, **52%** found the application process easy, **21%** consider the interest rates to be high; **12%** found the application process to be difficult, and **10%** found the repayment process for the loan too difficult.

Fig. 4: Challenges currently faced by businesses surveyed



BUSINESS PROFILE: RACHEAL TAREMWA

Racheal Taremwa runs a maize milling business in the middle of Kasese town in Kasese District. She owns a grain mill that was initially used as a lending tool for other grain owners to bring and mill in her facilities. After attending a business seminar for women by a local bank, Racheal discovered she could get more returns by buying maize grain, soya and rice from farmers and then adding value by milling and packaging it. Racheal now processes millet, posho (maize/corn), rice, and soya, and produces different types of nutritious flours. She has different packaging materials and sizes in the range of 250g, 500g, 1kg, 5kg, 10kgs, and 25kgs. She utilizes waste to make animal feeds. So far, the business has a steady market including schools, shops, and supermarket chains in the region.



Business: Maize milling
Entrepreneur: Racheal Tarwema
District: Kasese, Uganda

Challenges

Racheal has an old milling machine and a small rice husking machine which are both inefficient and break down a lot. She is exploring more efficient and feasible alternatives.

Opportunities

- Support Racheal to develop a bankable business plan to secure an automated production line with milling, measuring, and packaging machines.
- Provide structural and design support to identify good and standard storage and transportation facilities for an expanded business
- Introduce Racheal to financing institutions and link to self-help networks for continuous learning.
- Support with introductions to secure Certification with the Uganda National Bureau of Standards (UNBS) for quality control and confidence on the market.

BUSINESS PROFILE:TAHINDO MIREMBE

Tahindo Mirembe is a silverfish vendor who has been in the business for over 10 years. She buys silverfish from fishermen, then sun dries it, and wholesales it to vendors in Masaka, Kampala, Democratic Republic of Congo, and Kenya. It is only during the rainy season when business is slow that she sells it to retailers. A bucket (approx. 10kg) of silverfish costs approx. \$10. After sun-drying, she sells for approx. \$18 per bucket. She can work on 10 buckets per day, with daily earnings of \$180 (more than 60% profit). In the peak season, Tahindo can sell 1,000kg of dried silverfish, earning more than \$800.



Business: Dry silverfish vendor
Entrepreneur: Tahundo Mirembe
District: Kalangala, Uganda

Challenges

Sun-drying the silverfish is a arduous and long process that requires a large amount of space. Tahindo must cover it with tarpaulins during the rainy season which takes longer to dry. Also, there is a lack of uniformity in drying (moisture content) due to the variation in solar radiation. She also experienced significant spoilage and lacks knowledge on opportunities for more efficient and productive equipment.

Opportunities

- Support Tahindo to acquire a fish dryer to enable the sustainability and consistency of her business.
- Train Tahindo in better business management.
- Assist Tahindo in preparing a business plan for her business.
- Provide Tahindo with information and possible connections with financial institutions.
- Provide information and link Tahindo to PUE equipment vendors (possible solar dryer).

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