



LAST-MILE CUSTOMER INSIGHT SERIES

Energy Diaries Research in Uganda **OVERVIEW**



Energy Diaries Research in Uganda

UNCDF would like to thank L-IFT and FSD Uganda for the research partnership. Most of all, UNCDF extends a heartfelt thanks to the research participants for sharing their valuable time and stories with us.

UNITED NATIONS CAPITAL DEVELOPMENT FUND (UNCDF): UNCDF is the UN's capital investment agency for the world's 48 least developed countries. With its capital mandate and instruments, UNCDF offers "last mile" finance models that unlock public and private resources, especially at the domestic level, to reduce poverty and support local economic development. UNCDF is supporting the energy diaries research.

FINANCIAL SECTOR DEEPENING UGANDA (FSD UGANDA): FSD Uganda supports innovation, conducts research and helps promote and improve policy, laws and regulation that shape the financial sector. FSD Uganda is supporting the financial diaries research.

LOW-INCOME FINANCIAL TRANSFORMATION (L-IFT): L-IFT is a research company specialized in diaries research, and the main initiator, implementer and funder of this research. In Uganda, L-IFT first conducted a youth livelihoods diaries in Uganda for MasterCard Foundation.

Reach out with any questions:

Hee Sung Kim, UNCDF
hee.sung.kim@uncdf.org

Anne Marie van Swinderen, L-IFT
aswinderen@l-ift.com

Front cover photo courtesy of UNCDF
All other photos courtesy of L-IFT

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Interviews often happen as respondents go about their daily activities. These are some photos that researchers have shared in their chat group.

Left top: "I found my respondent collecting firewood with her son."
Left bottom: "Daughter of my respondent is cooking using traditional clay stove."



Right top: "My respondent lighting fire on her 3 stone fire stove to prepare lunch"
Right bottom: "Irene is with her respondent in Mpama, Ntungamo District."

WHAT IS AN ENERGY DIARY?

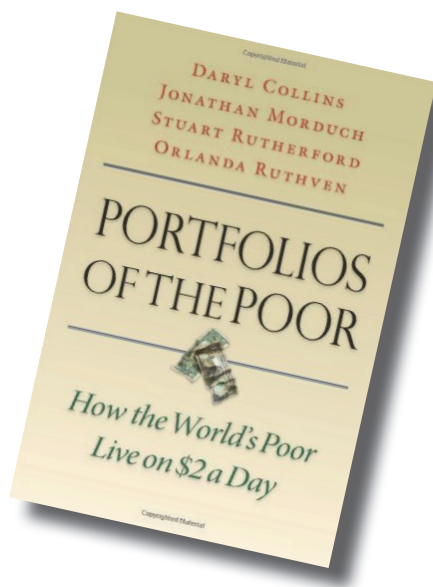
The diaries approach is one where researchers make bi-weekly visits to selected respondents to ask questions about their financial and energy lives. The resulting data gives insight into how people use energy within the context of a broader understanding of how people manage their money.

The diaries approach can be used to start a conversation with customers (existing and potential) in semi-real time about the financial services and energy products they receive, don't receive and would like to receive.

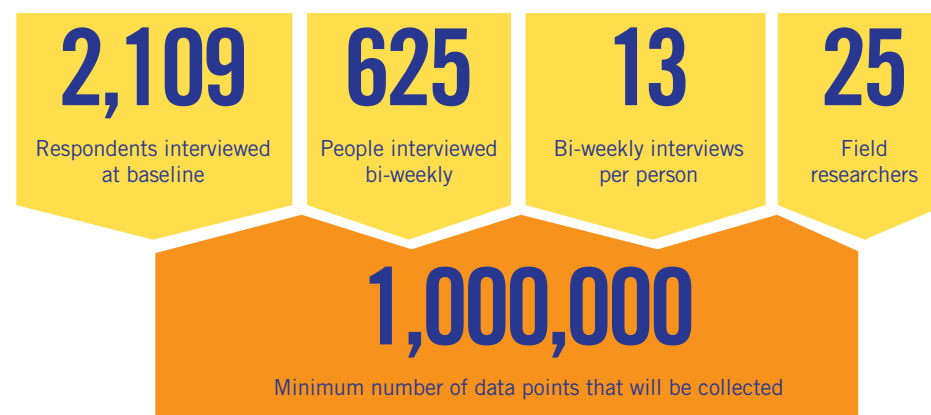
Origins of the 'diaries' approach:

The research methodology was first developed about ten years ago by a team of international researchers consisting of Daryl Collins, Jonathan Morduch, Stuart Rutherford and Orlanda Ruthven.

Over 250 families in Bangladesh, India, and South Africa were interviewed every two weeks over the course of a year, reporting on their most minute financial transactions. This research culminated in a publication called *Portfolios of the Poor: How the World's Poor Live on \$2 a day*.



ENERGY DIARY IN NUMBERS



WHY USE A DIARIES APPROACH?

How people use energy is not so straightforward. The *Portfolios of the Poor* researchers found that “many poor people have surprisingly sophisticated financial lives. The research participants were saving and borrowing with an eye to the future and creating complex ‘financial portfolios’ of formal and informal tools.”

Likewise, people have complex and intricate energy “lives” and use a portfolio of energy solutions. For example, one household could be using two different cook stoves, such as a three-stone fire and traditional charcoal stove, depending on what food they are making. Energy usage, depending on the season and income, also fluctuates over time. And ever wondered what happens after someone has solar power?

The frequent and longitudinal nature of the diaries research helps to capture these complex trends.

Complementary to the repeat questions that are tracked over time, each interview also zooms into one theme that deepens our understanding of the context and people's way of thinking.

WHERE IS THE RESEARCH TAKING PLACE?

Twelve districts were selected for providing a reasonable spread across the so-called “half-moon” shaped zone in Uganda which has the majority of the population. These districts are covered in four clusters.

EASTERN (FAR EAST)

Mbale, Manafwa, Tororo

EASTERN (SOUTH WEST)

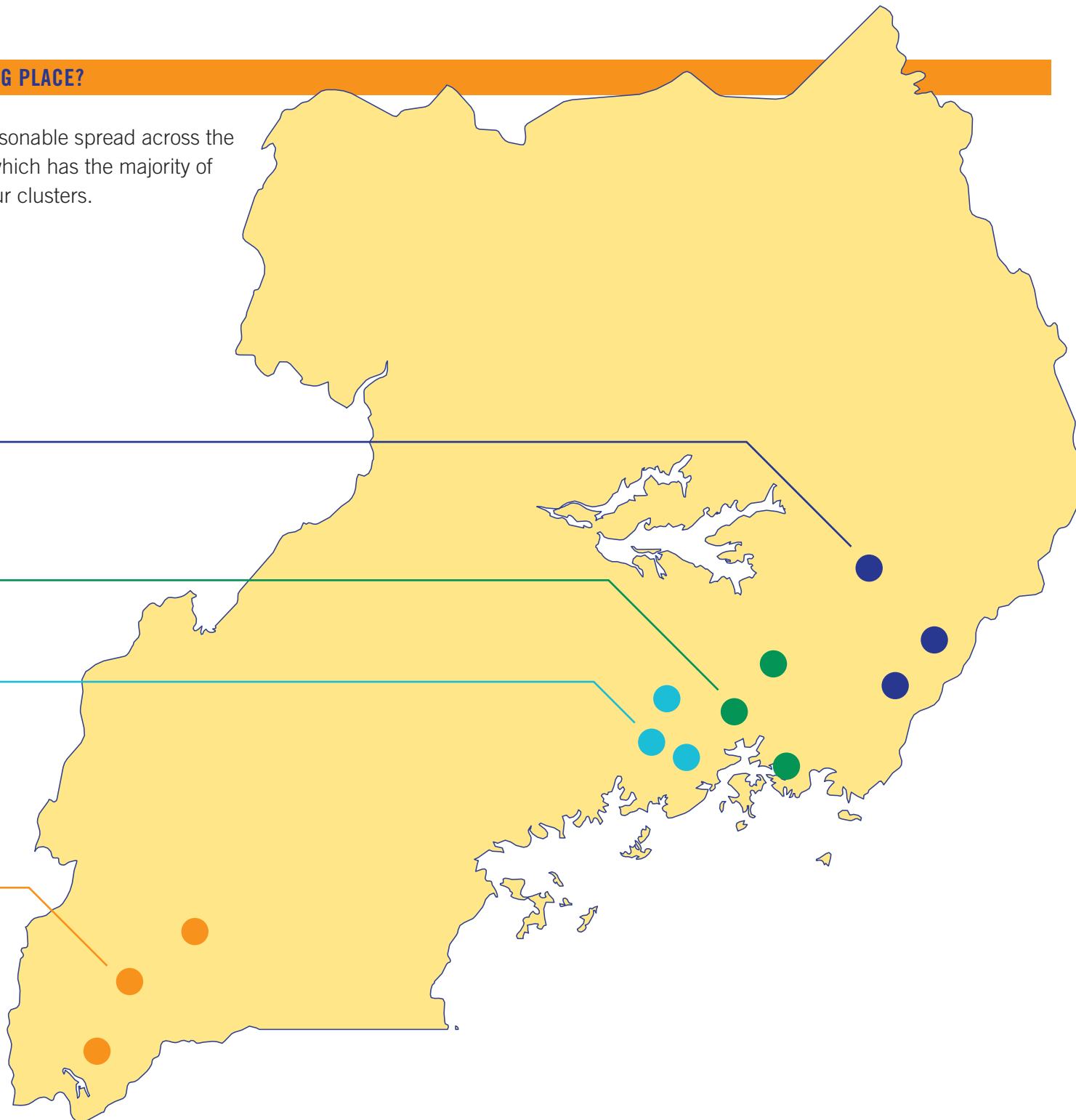
Jinja, Iganga, Mayuge

CENTRAL

Mukono, Buikwe, Kayunga

WESTERN

Mbarara, Ntungamo, Sheema



WHAT KINDS OF QUESTIONS ARE ASKED?

The energy related questions find out:



Energy expenditures on energy (e.g. money spent on light and cooking fuel, electricity bills, mobile phone charging)



Types of **energy sources** used (e.g. wood, charcoal, kerosene...), how they are obtained, and how much these cost in money and/or time



Types of lighting and cooking **equipment and fuels** used and whether all sources are functioning properly



New lighting or cooking fuel or equipment obtained, the **reason for choice**, and the model or brand



Energy usage **habits** (e.g. hours of light) and impact of energy used (e.g. health)



Ownership, usage and recharging of **mobile phones** as well as **technology literacy**

The main financial questions that are asked repeatedly are: “what income sources have you had, and how much earned from each,” “what expenditures have you had and total expenditure per type,” “what savings have you deposited as well as withdrawn” and “what loans have you taken as well as repaid.”

Each biweekly interview also zooms into a selected theme (“specials”), such as savings groups, financial literacy, types of cook stoves willing to purchase, and perception towards pay-as-you-go financing for solar. We also ask questions related to mobile phone use (e.g. ownership, related expenses, usage habits).

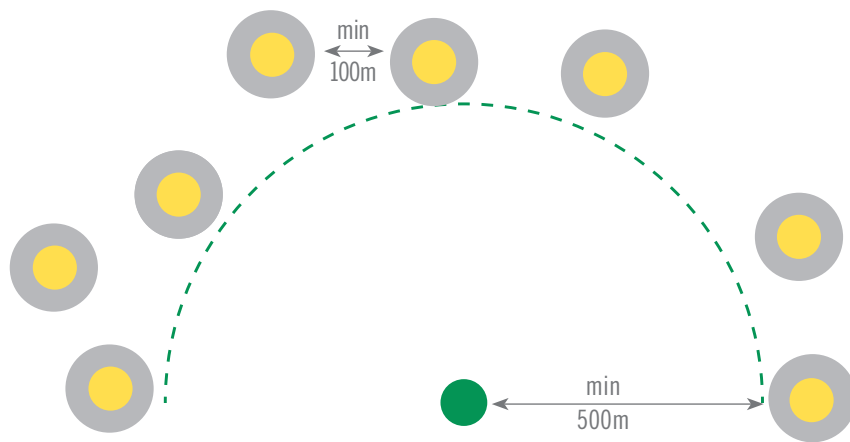


Researchers use a photo catalog of cookstoves and solar products so that respondents can choose the products accurately based on the question asked. This also provides for quite a lively exchange between the respondents and the researchers.

HOW ARE THE RESPONDENTS SAMPLED?

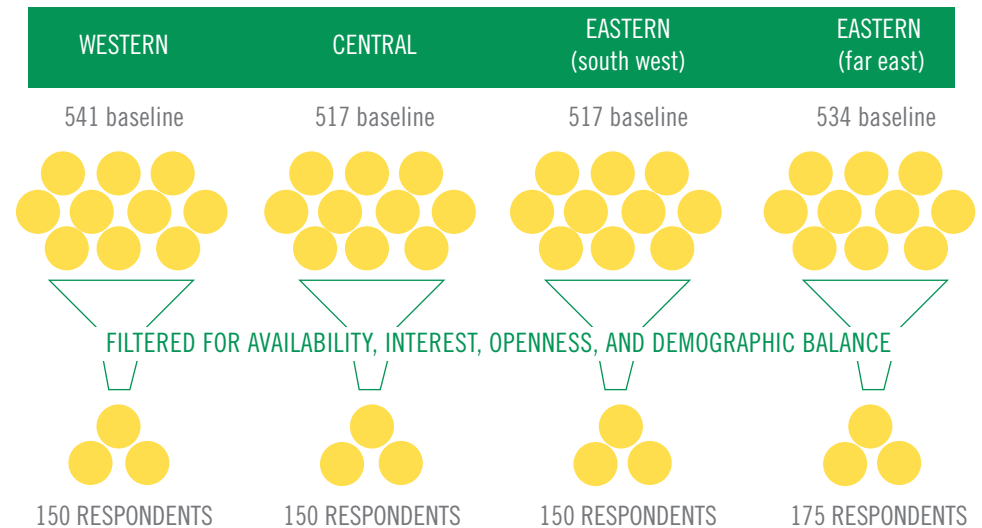
Baseline respondents:

Researchers worked from home so they could do all interviews walking. Their respondents are at least 500 meters from their home. In principle the respondents are roughly in a circle around where the researcher lives. Each household needed to be at least 100 meters away from each other to ensure diversity in respondents beyond just neighbors. London Business School validated that the sample selection would contain acceptable bias.

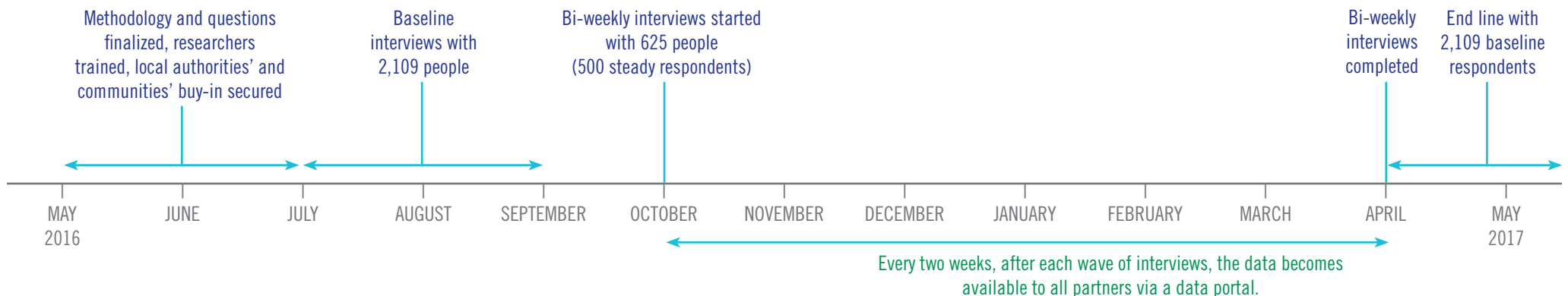


Bi-weekly diaries respondents:

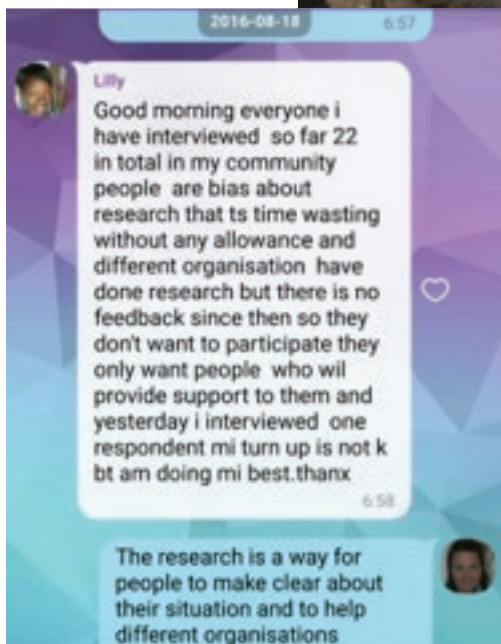
Respondents were selected from the baseline sample based on criteria such as location, willingness, openness, not travelling and demographic features to get a reasonable balance across gender, age, wealth levels.



HOW LONG IS THE RESEARCH?



Below: Researchers have an active chat group on Viber where they send pictures of respondents' daily events, share their stories, and get advice from other researchers.



Above: One way researchers are overcoming people's reluctance to participate in the interviews is simply to take time with the respondent and help out with their tasks. Researcher Hanisa sent this photo saying "helping my respondent peel potatoes."

WHAT ARE THE BENEFITS OF THE DIARIES APPROACH?

1

Trustworthy data and in-depth understanding about people's financial and energy behaviour and their desires, perceptions, and knowledge.

2

Encourages respondents' habit of thinking through financial and energy related decisions and makes them more conscious of their own behaviour.

3

Relationship building with respondents through bi-weekly interviews and researchers who come from the community.

4

Flexible and semi-real time data collection and analysis using digital surveys on smart phones.

5

Mentorship provided to junior field researchers who will be more employable after the research.

HOW IS DATA QUALITY AND PRIVACY ASSURED?

DATA QUALITY

For baseline interviews, the interviews should take a minimum of 15 minutes per respondent (if rushed). All interviews taking less than 15 minutes were discarded because this implies that the respondent did not take their time to answer thoroughly.

Any interviews taking between 15 to 25 minutes have been checked by the supervisors using a verification survey, which includes 10–15 questions from the full survey. Supervisors are given the phone numbers of the respondents and interview them using the verification survey. If the answers match, the interview can still be included for analysis.

GPS coordinates are recorded from the start and researchers are supposed to do the interviews at the respondent's house unless they ask permission to do the interview elsewhere due to a special circumstance. In addition, there is another round of quality check if the location recorded is significantly away from the respondent's home.

Random checks are done for voice recordings taken during the interview to see if the question was asked clearly and if there is a response given.

DATA PRIVACY

Respondents participate voluntarily and they have the choice to drop out of the research at any point. They do not receive any financial compensation for their valuable contributions.

Confidentiality of the individual respondents is strictly adhered to. None of the data should be traceable to individual people. Even though the individual profiles are key to diaries research and the strong fluctuations that individuals face are important to understand, none of the graphs can be traced to a specific name. For pictures, including in this brochure, we



Above: Respondent preparing fire wood.

Below: Respondent who sells charcoal.



ask the people recognizable on the photo whether they want to be in the brochure. If not, we do not publish it.

This research endeavours to give access to the data according to “creative commons” principles. For any publication, we maintain the “creative commons” principles, meaning that our material can be used, as long as sources are recognized and the resulting publication is equally part of the “creative commons.” University students, NGOs, government agencies, energy companies, all have equal access to the body of data. All people interested are encouraged to analyse the data and publish findings or to constructively use the information for any other useful purpose, such as basing a company's strategy on it.

LAST-MILE CUSTOMER INSIGHT SERIES

The Customer Insights Series is a collection of three customer insights research that UNCDF is conducting with research partners in Uganda and Nepal.

ENERGY DIARIES RESEARCH IN UGANDA: This research aims to provide in-depth insights into how people in rural Uganda manage their energy lives through bi-weekly repeat interviews over a period of six months. The Energy Diaries is one of the two components in the Financial and Energy Diaries Uganda (FEDU) research which commenced in July 2016 and will be ongoing until April 2017. This research is implemented in partnership with L-IFT (Low-Income Financial Transformation) and Financial Sector Deepening Trust Uganda.

ENERGY LADDER RESEARCH IN UGANDA: This research aims to provide in-depth insights into how people in rural Uganda buy solar products and whether flexible financing methods accelerate solar energy adoption. The research also investigates whether the use of solar products enhances mobile use in terms of communication and mobile payments. This research commenced in February 2016 and will be on-going until summer of 2017. This research is implemented in partnership with the Schatz Energy Research Center.

IMPACT STUDY IN NEPAL: This research measures how clean energy loans provided by UNCDF's four partner financial service providers affects client's overall energy use and finances. It also measures the quality of services provided by the energy companies. This research commenced in March 2015 and will be on-going until end of 2017. This research is implemented in partnership with Rooster Logic.

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