

LCT PROJECT¹

SURVEY REPORT - Progress, challenges and lessons learnt to date

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Introduction

The low cost energy efficient products for the bottom of the pyramid project, or LCT for short, is a project which focuses the development of energy efficient diagnostic medical technologies, solar e-cookers, water purifiers and solar water pumps. In so doing, it aims to understand the demand from low income consumer segments (notably those labelled ‘the bottom of the pyramid’) with respect to low-cost energy-efficient technologies, and how such products can be sustainably developed and deployed in developing countries to have large-scale impact.

One of the first activities undertaken by the project was a series of consumer surveys to gather data on which aspects of particular technologies are important to the user. The results from these surveys will feed into the design phase of the technologies being promoted. Specifically, the survey was designed using choice modelling methodology which asks respondents to consider what parameters of a technology are important across a series of combinations.

The survey was designed and developed by Gamos Ltd, UK with assistance from the African Centre for Technology Studies (ACTS), Kenya assisting with the collection of survey data. The survey collected data on the two types of technologies being focused on by the project: medical and domestic. As such, two surveys were developed one focused on nurse/clinicians based in resource poor clinics across Kenya, and the other, focused on households in Kenya.

The nurse survey target was 400 nurses or clinicians working in predominately rural clinics across four locations in Kenya (Kirinyaga, Marsabit, Malindi and a national nurses’

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conference in Kisumu) averaging 100 surveys in each place. This medical survey focused on four medical devices relating to essential diagnostics, blood and urine tests, ultrasound and IT solutions for health facilities.

The household survey targeted 400 participants across four locations – Kirinyaga, Marsabit, Malindi and Nairobi – again 100 surveys per location on average. This survey asked questions with regards parameters of solar cookers, solar fridges and to a much lesser extent water purification options. In addition, an additional element was added to the domestic survey focused specifically on farmers based in Kenya’s central region who irrigated their farms from rivers at the bottom of hills. This involved surveying an additional 300 respondents in Kirinyaga county.

The majority of the data collection activities were completed by the close of 2015. By this time, all community surveys (households and farmers) had been completed and half of the health surveys were completed. The health surveys have proven extremely difficult to arrange due to the remoteness of the rural health clinics. In addition, no health surveys were possible in Marsabit in rural clinics because of an increase in insecurity in the county. As such the final health surveys will be completed in January 2016.

This short paper provides an overview of the data collection activities to date and lessons learnt from these activities.

Initial survey activities

Following development of the survey material by Gamos in the UK, members of the Gamos team came to Kenya to train local enumerators in preparation of the implementation of the surveys.

Enumerators

ACTS used its networks to get applications for the enumerator positions. Recruiting for students from Nairobi based universities (Bachelors and Masters students), seven students (four female and three male) were finally selected for training and employment as the survey enumerators. A key recruitment requirement – checked during an interview – was the need to have experience of conducting surveys using a tablet computer. None of the

applicants had this but all had good knowledge of smart phones and android devices which proved sufficient during training.

Training

The training was done at CHAKS Guest house in Nairobi on the Monday 5th October and Tuesday 6th October 2015. The training was conducted by two trainers from Gamos Limited, UK (Nigel Scott and Simon Batchelor) who have expertise in sociological and market research in developing countries especially in energy policy. They were also the developers of the survey software. Gamos has extensive experience using a range of research and survey methodologies.

The two day training was very successful with all enumerators and the ACTS supervisory team (Mourine Cheruiyot, Ann Kingiri and Aschalew Tigabu) being trained, first in the class room and then in the field. The field training also acted as pilot testing of the survey itself. Pilot testing consisted of:

- (i) A two day pilot survey of the domestic survey was conducted at Kawangware open air market in Nairobi and involved six enumerators and one supervisor who oversaw the process. They managed to pilot the survey with 17 respondents with good feedback and several questions raised that were useful for final revision of the survey instrument.

- (ii) The health survey was conducted in Kisumu with two enumerators, one representative from AfricaLics and one representative from Gamos. The survey was conducted at the Kenya National Nurses Association annual end of year meeting. They managed to pilot the survey with 34 respondents though the first day was slow due to the ongoing meeting and the questionnaire taking about 30 minutes for one respondent.
Once the enumerators got used to the questionnaire it started moving faster. It was also helped by the fact respondents started showing interest when they were notified by the conference organisers that there was a survey going on and given permission to talk to us.

A meeting was held after the pilot surveys had been completed as a debriefing on the pilot survey. We found that the choice modelling design used was appropriate and the questions were also in line with the objectives of the survey activity. However, a few editing requirements to the questionnaire were noted together with a need for several very minor adjustments to the way the survey was introduced to potential respondents.

Actual survey

The actual survey started in October 2015 and will be completed by end January 2016. So far, surveys have been completed in Kirinyaga, Marsabit, Malindi and Nairobi. While the surveys have been completed in all locations initially chosen, the number of nurses surveyed are too few and therefore January will be spent 'mopping up' the missing surveys.

In Kirinyaga we managed to interview farmers who have land and use irrigation to water their land. A few interviews took place at the household level although the majority occurred at various local markets (Kutus, Mwea, Mururi market and Kagio markets). We also met farmers at the Chief's Office when they came to collect fertilizers (done twice a week). At the same time we managed to conduct a number of health surveys in peri-urban areas.

In Marsabit the community survey only was conducted. 105 respondents completed the domestic survey. Due to deteriorating security at the time of the survey in Marsabit, we could not do the health survey because of restrictions to movements to rural areas.

In Nairobi we conducted the community survey interviewing around 130 respondents. The markets visited were: Wakulima market, Gikombaa market, Kawangware market, Muthurwa market and Kariokor market.

In Malindi, the health survey was completed by 66 respondents in the rural health facilities while the domestic survey was completed by 106 respondents in Malindi market.

In Kisumu, we managed to conduct the health survey with 77 nurses from rural facilities.

The full breakdown of surveys so far completed is provided in the table below.

REGION	HEALTH SURVEY	DOMESTIC SURVEY	TOTAL
Kirinyaga	70	343	413
Kisumu	77	103	180
Marsabit	0	105	105
Nairobi	0	132	132
Malindi	66	106	172
Isiolo	98	0	98
TOTAL	311	789	
TARGET	400	700	

Challenges faced

- **Time**

The time consumed attending to one respondent was about 30 minutes. Even after survey enumerators got used to the questions, the survey often didn't move much faster because respondents would take quite a bit of time to understand the choice modelling design that was used in the survey.

- **Survey permit**

It has taken quite a long time to get the various permits required. This has delayed the surveys. Managing the expectations of enumerators when these delays have resulted in significant down-time between fieldtrips has been challenging.

However, this also represents a lesson learnt. It is important that we should approach all targeted regions as we initiate the survey rather than cascade permissions as we progress.

- **Incentive**

We provided a very small token of appreciation to respondents on completion of the survey. When respondents knew that there was an incentive being given after the interview it then became the main interest. This at times detracted from the discussions during the survey. As a result, the survey analysis must take into account potential bias that this brings.

- **Market days**

We initially focused our attention on community markets when there was a market being held. We assumed that this would mean that we would have a greater number of potential respondents available and willing to participate. However, market days turn out to be too busy for respondents to accept to take 30 minutes on an interview. It was for this reason that often the enumerators would have to disclose the incentive available.

- **Distance**

During the health survey, distance has proven a problematic issue. The need to travel several kilometres and sometimes more than this, to get from one clinic to another (and therefore one survey respondent to another) exerted great pressure on the team in the field. It also resulted in extra fieldwork costs relating to transportation.

Lessons learnt

1. **Evening meetings**

During fieldwork, the enumerators always hold an evening meeting after they have completed all surveys for the day. This has proven to be really helpful as we have a chance to share experiences and garner clarifications thus making work livelier and easier.

2. **Alternative strategy**

We found that the fieldwork often was beset by logistical problems. Therefore, over time we have learnt the need to always have an alternative strategy to hand just in case a problem arises. For example, we learnt to have a spare tablet available so that if someone's tablet crashed or hung; the enumerators would be able to still continue working and ensuring surveys were completed.

3. **Logistics**

It became apparent early on, especially as a result of our experience gaining access to healthcare staff, that we must make plans early enough to ensure the survey process progressed smoothly. We often had situations where confirmation and permits came through at the last minute meaning a very rushed response. At the same time, we had to rely at times on third parties providing details of our survey to their staff. This at times led to situations where the enumerators would turn up and find no pre-authorisation had been received.

4. Security issues

When identifying regions to conduct the survey, security issues must be looked into very keenly. As with the example of Marasabit, the enumerators were not confident to do the rural clinics survey due to security issues in the area.

5. Questionnaire

The initial survey training was very helpful not just because it gave the enumerators and ACTS' staff a chance to learn the poimapper programme online but also ensured that the project kept to its objectives and milestones agreed. The training sessions provided an opportunity to ask and receive answers to questions that might come up when conducting the surveys in the field.

Conclusion

The survey has been completed to date with a significant amount of success. The final surveys are still to be conducted and this reduces the full extent of the reporting that can be done on this activity at present. That said, a number of points are raised by the proceeding overview of fieldwork encounters:

1. The use of tablet computers for data collection worked extremely well despite the often rural locations in which surveys were being conducted. They help to reduce time spent on data entry. It also provided a means for the technical team to monitor the quality of data collected by the enumerators in real time.
2. All the enumerators have worked with us for the entire period to date. The regular (daily) feedback sessions have proved invaluable in order to overcome challenges. Furthermore, having direct and almost immediate communications with our supervisors during the fieldwork period (giving them a daily update on the progress) also ensured that the fieldwork activities remained on target.
3. In the field we have noticed that people have a positive perception of low-cost, energy-efficient products and they are aware that some products are of poor quality, design and maintenance making them more expensive in the long run. The survey work itself has resulted in awareness raising and started discussions in communities with regards energy efficiency. This should be capitalised on at a later stage of the project when testing and deploying the prioritized products.

4. Finally, the survey has been a success as we did not encounter any major disruptions that could hinder us from completing the process to date.