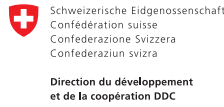




Toolbox for Energy Assessments in Refugee Settlements and Host Communities

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Introduction & Background

1. Introduction

This “Toolbox for Energy Assessments in Refugee Settlements and Host Communities” is a contribution of GIZ Energising Development (EnDev) Uganda to the improvement and harmonization of efforts to assess the energy situation in refugee settings (settlements and host communities) in Uganda.

It is based on experiences gathered during the preparation phase for a pilot on market-based energy access activities in Rhino Camp Settlement and Imvepi Settlement in Arua District. This assessment aimed at understanding the specific settlement and host community conditions, the markets for quality energy products, household energy use and preferences as well as energy vendor activities. For this purpose, EnDev Uganda conducted interviews with 400 household, 30 energy vendors and 9 focus groups.

This toolbox shall inform stakeholders in the humanitarian and development sphere about which tools were applied, how they were applied and what formats were used. For further application, they may be used, adapted and improved.

We intend to contribute to transparency and information sharing between all relevant stakeholders to avoid duplication and improve synergies. Feedback is highly welcome.

2. Background

With more than 1 million refugees, mostly from South Sudan, the Democratic Republic of Congo (DRC), Burundi, Rwanda and Somalia, Uganda is one of the top-most refugee hosting countries worldwide. Due to the ongoing crisis in South Sudan, further refugees are currently crossing the border to Uganda.

Often, emergency response fails to sufficiently consider energy aspects in a sustainable manner. This is due to a lack of resources, the need of rapid response in emergency situations, little consideration of long-term impacts and knowledge of energy issues. Therefore, refugees are not being provided the necessary sustainable energy services that are required for cooking, lighting, phone charging and other energy services. Coping strategies are often harmful to environment, health, safety, household economics and self-reliance.

2.1 Cooking Energy

A lack of cooking fuel results in undercooking and skipping meals, while some households sell food rations in order to buy firewood, thus affecting their nutritional status. Women and girls, who mostly collect firewood, risk being exposed to Sexual and Gender-Based Violence (SGBV). In addition, cooking is done in poorly ventilated kitchens which causes dangerous air pollution, and it predisposes people to health conditions, such as respiratory infections. Deforestation has contributed towards soil exhaustion, flooding, siltation and eutrophication of surrounding water bodies, which impacts upon access to water, agricultural productivity and economic opportunities.



2.2 Electricity

Modern energy services for lighting, phone charging, productive use and others are hardly found in refugee settlements and the surrounding host communities. For lighting people rely on dry cell batteries connected to tiny light bulbs, lit up grass bundles, kerosene lamps, phone torches etc.

The lack of access to modern and sustainable lighting prevents children from studying in the evenings and increases women's vulnerability when navigating camps to use latrines and other services. It is also a bottleneck to evening business operation which limits economic activities within the refugee settlements. The use of unclean fuels for lighting like kerosene has direct health consequences.

Phone charging has to be done in dedicated shops in the market. There is hardly any productive use of appliances using electricity. This hampers security, education, income-generating opportunities et cetera. The use of modern sustainable energy, such as solar energy, is very rare.



With the ongoing refugee crisis and the shift from a purely humanitarian to an integrated development perspective, there is a need to address the energy situation in a more effective and sustainable way.

This document focuses on findings and assessments conducted in two Ugandan refugee settlements and the neighboring host communities in Arua, West-Nile: Rhino Camp Settlement and Imvepi Settlement.



Development of Key Questions

3. Development of Key Questions

Before an assessment tool can be created, the development of key questions is crucial. What do you need to find out? Which areas have already been covered by other assessments? Which additional information do you need? In the following you find the questions that were relevant for the GIZ EnDev Uganda market-based pilot project to be answered.

KEY QUESTIONS FOR ANALYSIS OF THE BASELINE SURVEY

Cooking Energy

1. Cooking habits

- Comparing cooking habits and cultures in different settlements vs. host community
 - Comparing the different types of biomass (fire wood/charcoal/crop residue) used
- a. How many meals per day?
 - b. Reason for skipping meals?
 - c. Cooking inside/outside?
 - d. Who is cooking?
 - e. Time spent on cooking?
 - f. Use of lid?

2. Cooking technology

- a. How many stoves?
- b. Which stoves?
- c. Main stove?
- d. How acquired?
- e. What is liked / disliked?
- f. Replacement: if stove damaged, what would they do?
- g. Awareness of ICS?
- h. What is liked?
- i. Willingness to pay, willingness to work for?

3. Source of fuel

- a. Collected from forests
- b. Collect from on farm
- c. Donations/gifts
- d. Purchased
- e. Others
- f. Daily amount and cost
- g. Weight of bundle/bag
- h. Lasts for how long
- i. Collection of firewood: how many trips, duration, who
- j. Compare household income shares for fuel to other household needs

4. Any interesting links between the above and

- a. Household size
- b. Livelihoods options/Economic activities
- c. Productive use

ELECTRICITY AND LIGHTING

1. Electricity and Lighting

- a. Sources
- b. Where acquired
- c. Problems and advantages
- d. Where used
- e. How long does it last per day?
- f. Lifespan
- g. What other preferred and why
- h. Awareness on improved lighting, known benefits, where learned about it
- i. Willingness to pay, willingness to contribute
- j. Use and charging of cell phone

2. Others:

- a. How has price of energy products/services affected the acquisition of Stoves ICS, Lighting device?

ENERGY VENDORS

1. General

- a. Gender
- b. Sources of income
- c. Purchasing decisions

2. Business activities

Compare distribution of the main energy products in market; which products are dominant; solar lamps vs. disposable torches vs. dry-cell batteries, cook stoves vs. branded ICS etc. Compare in Imvepi and Rhino Camp and Host community.

- a. Products
- b. Services
- c. Pricing
- d. Main sources of income
- e. Access to electricity
- f. Seasonality of income
- g. Purchasing origins
- h. How many people working in business
- i. Desire of other products to sell


3. Skills and Associations

Illustrate the areas of skills and knowledge for the traders/vendors (strengths), e.g. book-keeping, marketing, technology etc. and gaps

- a. What trainings
- b. Trainings received from... in what area...
- c. Where heard about
- d. Training needs
- e. Member of organization
- f. Benefit of membership

4. Challenges and opportunities

- a. State that business is currently in
- b. Challenges
- c. Desire to change what



Energy Assessment

4. Energy Assessment

In order to design appropriate approaches for improved access to sustainable energy in Ugandan refugee settlements¹ and among the host communities, an energy assessment was implemented, conducting 400 household interviews, 30 interviews with energy product vendors and 9 focus group discussions.

This Tool Box serves to share the tools used for conducting the assessments which were done to analyse the current situation of refugees and host communities and identify gaps which can be addressed by market-based energy access interventions.

4.1 Assessment Areas

4.1.1 General Situation

ASSESSMENT AREAS	KEY ELEMENTS	METHOD	ADDITIONAL COMMENTS
HOUSEHOLD CHARACTERISTICS	Average size	Household Interview	
	Chief decision maker		
	Gender composition		
HOUSING/KITCHEN INFRASTRUCTURE	Size of house/Shelter	Observation	
	Kitchen attached or not		
	Size of kitchen		
	Kitchen/house roofing material		
	Floor type		
ECONOMIC STATUS	Activeness in some sort of income generation	Household Interview	
	Receives financial handouts		
	Income category		
	Income received on monthly or weekly basis		

¹ Refugee settlements refer to temporary or permanent locations where refugees find refuge as they flee factors driving them away from their home locations. These settlements are also most often located within a host community of local residents. In comparison to the so-called camps, settlements in Uganda generally offer freedom of movement, freedom of engaging in economic activities.

4.1.2 **Cooking Energy**

ASSESSMENT AREAS	KEY ELEMENTS	METHOD	ADDITIONAL COMMENTS
STOVES	Stove awareness	Household Interview	
	Stove technology/ designs		
	Stove materials availability		
	Stove skills/trainers		
	Past experience using stoves		
	Stove sales businesses		
	Market		
	Price of stoves		
FUEL	Fuel type available	Household Interview	
	Method of fuel acquisition (Fuel purchase or free collec- tion)		
	Quantities (Resource base)		
	Moisture content		
	Price		
	Sources		
	Self-sourced or supplied by humanitarian agency		
	Chief fuel collector/Buyer		
FOOD	Food types (staple)	Household Interview	
	Pots (shape and material)		
	Self-produced or supplied by humanitarian organisation		
	Organisation supplying food		
	Food quantities available to households		

ASSESSMENT AREAS	KEY ELEMENTS	FUTURE DATA APPLICATION	ADDITIONAL COMMENTS
CULTURE OF SETTLEMENT	Personal cooking	Household Interview	
	Person purchasing or gathering fuel		
	Food preservation		
	Cooking done inside/outside		
	Number of meals per day		
	Communal or Individual cooking		
	Restricted movement		Organisations working with refugees
	NFI ² distribution		

4.1.3 Electricity

ASSESSMENT AREAS	KEY ELEMENTS	METHOD	ADDITIONAL COMMENTS
SOURCES AND APPLICATION	Where and How the system was acquired	Household Interview	
	Problems associated with current source		
	Main application of electricity		
	Duration lasting per day		
	System life span		
	Access to technical services (repairs)		
PREFERENCES	Other options types preferred	Household Interview	
	Planned future use		
AWARENESS	Knowledge about improved lighting and benefits	Household Interview	
	Willingness to pay or contribute		
	Application of electricity in cell phone charging		
PRICE	Effects on acquisition	Household Interview	

2 Non-Food Items

In situations of displacement, there is always a loss of personal property. Very often, people flee with little more than the clothes they are wearing. In addition to food, people affected by crisis need basic life-saving non-food items for their survival, including items such as blankets, sleeping mats and plastic sheeting to safeguard them from rain, sun, wind and the cold weather as well as environmental conditions. Kitchen sets, including pans, plates and spoons, are essential items for every family. Soap and washing powder are necessary to ensure personal hygiene, while jerry cans are needed to collect drinking water and to keep it safe from contamination (World Health Organisation – WHO, 2006).

4.1.4 *Business Opportunities*

ASSESSMENT AREAS	KEY ELEMENTS	METHOD	ADDITIONAL COMMENTS
STOVE ARTISAN POTENTIAL (CAPACITY)	Experience with ceramic handworks	Artisan Interviews	
	Education level		
	Communication/marketing skills		
	Physical capabilities (fitness)		
BUSINESS POTENTIAL ELECTRICITY	Preferred product and services options	Business owner interview	
	Willingness to pay or contribute		
	Business skills		
	Storage infrastructure and security for products		
	Awareness and marketing abilities		

4.1.5 *Implementation*

The energy assessment survey for refugee settlements is conducted like any other baseline survey done in the field among the targeted project beneficiaries, however special attention is placed on confidentiality and sufficient prior understanding of the background of the displaced community.

The data collection, entry and analysis process require a dedicated team of enumerators, data clerks and technical project members who have a good understanding of the topic and are sensitive to the wellbeing of the participating households. That therefore calls for training of the various teams taking part in the survey activities.



Training of Enumerators

5. Training of Enumerators

Enumerators are vital to the success of the data collection operations. They should be well prepared and trained before they conduct the interviews since they guarantee data quality (i.e. high respondent rate and accurate responses). Proper comprehension of the survey concept and subject matter helps to ensure proper answers to the questions from respondents. They need to get a good introduction into energy related issues, context issues and should be sensitized concerning certain topics that might be sensitive to the people they meet. Data collection must be informed by a sound understanding of the context within which it is to take place.

5.1 Training content

Project overview and objectives.

Providing the team with an overview of the background, objectives and relevance of the assessment is key to ensure the team becomes engaged and motivated to conduct a high-quality data collection. Conveying the importance of their role in the assessment will allow enumerators to take ownership of the project, a key requirement in ensuring enumerators remain committed throughout the duration of data collection phase. This will be particularly important for projects that are lasting several weeks or requiring a significant amount of travel, both of which can result in enumerator fatigue.

Definition of key terms

Enumerators shall be well conversant with the topics they deal with. This includes knowing and being able to apply the correct terminology, including e.g.:

- Household energy
- Improved cookstove
- Solar lantern, solar home system, electricity
- Energy business

Interviewing skills

Spending some time on practicing interviewing techniques is vital. While the content of this part of the training will depend on the nature of the questionnaire, general tips on how to conduct a good interview will also be helpful. This may include:

- The purpose for the energy assessment exercise should be explained to the local/ traditional leader
- The interviews should be addressed to the head of household (male and female), if not instructed otherwise
- The purpose for the energy assessment exercise should be explained to the beneficiary
- The interview should be conducted in the local language.
- During the interview no local or traditional authorities and if possible, no other household member should be present.
- The more precisely the questionnaire is completed, the more useful the results (and the subsequent report) will be.
- Before going to the field, it is imperative that all enumerators practice interviewing at least twice, both to familiarize themselves with the questionnaire and to receive feedback on their interviewing (and scoring if applicable) by the trainers and project coordinator. Practicing the interviews can take the form of;
 - Team exercise: practicing sections of the questionnaire in pairs or group
 - Mock interviews: conducting group mock interviews with the trainer and holding discussion afterwards.

Define Roles and responsibilities

Depending on the nature of the interview process and the composition of the team, roles and responsibilities shall be defined within the team.

Instructions for using gadgets such as tablets if they are to be used in the field.

Module by module description of questionnaire content

The time dedicated to training on the questionnaire content will depend on the complexity of the questions themselves, the use of scales or experiments etc. It is important that all enumerators will understand the questions in the same way as they are meant to be interpreted. Even relatively straightforward questions can be interpreted differently, particularly if working with people with different levels and types of experience. It is better to dedicate time to going through all questions in the training than to deal with inconsistencies after data collection has begun.

Sensitize on important issues, e.g.:

1. Gender-Based Violence

Collection of firewood can lead to gender-based violence (GBV). Although energy assessments might not always collect data on gender-based violence (GBV), the following insights may be helpful when sensitizing enumerators that are dealing with energy issues ('WFP Handbook on Safe Access to Firewood and alternative Energy (SAFE)', no date): People are often reluctant to confront and describe painful, difficult experiences. Fear of reprisal, as well as trauma, cultural taboos, stigma and shame may prevent survivors of violence from disclosing their experience. Confidentiality and sensitivity are essential. Violating informants' rights to privacy, failing to respect certain cultural values or traditions, or excluding certain groups may result in informants being harmed again. It must also be conducted in accordance with the following ethical and safety principles and standards.

2. Safety

The **safety** of those involved in the assessment exercise is of paramount concern. It should be both guaranteed and continuously monitored.

3. Those providing information must give **informed consent**. They must fully understand the purpose of the exercise, the types and intended uses of the data that are going to be collected, and the potential risks of participating in the study (if any). The consent procedure equips informants with the information they need in order to decide whether to participate. It also ensures that consent, if given, is provided voluntarily and not under duress.

4. They must also be reassured that there will be no repercussions if they choose not to take part.

5. **Benefits** to the participants should outweigh the risks they may face by contributing to the survey/information-gathering.

6. Make sure that interviewees are fully aware of the scope of the interview.

7. Make sure that the interviewees participate absolutely voluntarily.

Possible challenges

Before interviews are to be started, predictable challenges shall be addressed, e.g.:

- *Unavailability of target respondent*

Define, who the target respondent for the interview is. In case this individual is not available, is there an adequate substitute? For example, if the target respondent is the household member who is primarily making decisions about the household expenditure, is there an acceptable alternative respondent, e.g. an adult household member who is very familiar with the household daily activities. The answer to this question depends on the guidance of the responsible organization / consultant.

- *Drop of sampling unit*

Households may have to be dropped, for example in case the sampled household has: moved out of the study area, does not consent to the interview, or is unreachable. You should set up a method for how many times a sampling unit will be revisited before being dropped, in the case that a respondent is unavailable, temporarily or indisposed.

- *Replacement of sampling unit*

If a primary sampling unit is dropped, will it be replaced? This will depend on the sampling frame and type of survey. Typically, replacement is common at baseline surveys and less common for follow up assessments.

Confidentiality and Eliciting good data

Always make sure that respondents understand that their information will be treated with confidentiality. Some respondents are likely to have confidentiality concerns, so it is of utmost importance that the enumerators make it clear throughout the interview. The respondents should be made to understand that the aim of the interview is to learn from them, capture their personal thoughts, opinions and beliefs and not the official or sanctioned versions. This entails;

- Holding all opinions, claims, and other features that can be associated with individuals (confidential information) in trust and confidence.
- Using such confidential information only for the purposes set out for the assessment.
- At the conclusion of the surveys, or upon demand by the survey team, all confidential information including questionnaires, written notes, photographs, memoranda or other types of notes taken are to be returned to the survey or project team
- Confidential information is not to be disclosed to any employee, consultant or third party unless it has been approved by the survey team.

Time management

How long interviews last will vary depending on the questionnaire and the respondent. While it is normal for the duration to vary, time management will be essential if enumerators are to complete their target number of interviews each day. Not only does an overly long interview have the potential to cut short another interview, it also risks not being completed. Enumerators should have an idea of approximately how much they should spend on a section of the questionnaire and should be especially careful with the more complex sections as these risk taking longer if the respondent is not clear on what he or she is being asked. A good understanding of the questions and the concepts underlying each one will allow enumerators to run through the interview at a good pace.

Respondent's fatigue can impact data quality and affect the results of the assessment. It can result from respondents becoming bored, tired, or uninterested with the interview and begin to respond at a substandard level. This can be caused by several things, including an overly long interview, poor interviewing skills, or unease with the questions being asked. Enumerators can prevent this from happening by ensuring the respondents are fully aware of the value of their participation, by keeping the interview within a reasonable time and by interacting with the respondent in an engaging and interesting manner.

5.2 Enumerator selection

Do train more enumerators than will ultimately be needed. Let the full group know in the beginning that their selection into the final team will depend on their performance. Test them early.

Use objective measures of performance such as;

- (i) Active participation in the training
- (ii) punctual arrival everyday
- (iii) Understanding of survey modules and underlying concepts
- (iv) Scores on quizzes
- (v) Performance in interviewing skills
- (vi) Feedback from the field testing (including interviewing skills)
- (vii) Language requirements should be taken into account

Note:

Throughout the training, mistakes may be found in questions, translations or in programming. Take notes each day on necessary changes, and update materials on a daily basis if possible. Do not underestimate the value of

feedback from enumerators whenever they have concerns or issues of understanding, it is likely respondents will too. It might be helpful to include evening meetings of enumerator teams after every day in order to exchange on experiences, revise methodologies and talk about mistakes found.

Sampling

6. Sampling

Because it is impossible to conduct the survey with all the target beneficiaries it is necessary to work with a sample representative of the entire population in the settlement. Therefore, a sample is defined as a selection of a representative part of a population (total) in order to determine parameters or characteristics of the total population. Before determining the sample size, it is necessary to define the sample unit. There are various possibilities of choosing sample units: an individual person, a whole community, key informants or a household³. In a livelihood system approach the standard unit of analysis is the household, and it is used as the sample unit for energy assessments in refugee settlements.

Depending on the homogeneity⁴ or heterogeneity⁵ of the target community in the region to be surveyed, a different sample size has to be taken. In a homogenous community a small sample size is enough to include all household characteristics. In a heterogeneous community, a larger sample size is needed, or a deliberate sampling is done to ensure that all the households with significantly different characteristics are included in the sample. In extreme cases the whole community can be divided into subgroups and treated independently over the whole survey.

A sample from a community should include, if possible, all the different characteristics of the community's groups including the minorities. Only under those circumstances can it be considered representative and valid for a proper survey.

The table below provides a reference for sample size for energy assessment surveys in refugee settlements with a homogenous population.

NUMBER OF HOUSEHOLDS	PERCENTAGE FOR SAMPLE	NUMBER OF SAMPLE
10000	10	1000
5000	12	600
2000	15	300
1000	20	200

In a heterogeneous community, a 5-7 percent increase in the above percentages has to be considered, or alternatively sampling using a stratified (subgroups) approach.

3 A household is defined as all individuals who eat together (share their meals on a daily base)

4 A homogeneous community or group (target population, society, population of a specific region, etc.) has a uniform structure or composition throughout and/or comprises people of the same or similar kind of nature.

5 A heterogeneous community or group consists of dissimilar or diverse ingredients or Constituents. It would typically comprise a mix of different population groups (Host communities, internally displaced persons (IDPs), refugees and returnees) with different traditions, leading to different livelihoods. In addition to those characteristics, some heterogeneous communities have ethnical and religious as well as gender and age disparities, creating specific socio-economic differences.

6.1 Stratified random sampling

This is a sampling method that involves the division of a population into smaller groups known as strata. The members of the strata are formed based on members' shared attributes or characteristics.

Within the refugee settlements scenario, this means identification of the main categories of people and selecting an equal random sample. For example the Elderly, Youth, Women, Men, host communities, business people etc.

6.2 Systematic Sampling

This is the recommended sampling method for energy assessment in refugee settlements. Systematic sampling is used when a prefixed pattern is applied for the selection of a sample. Also here, every unit has an equal chance of being chosen for the sample. This method is easiest to implement and at the same time gives every individual the same chance to be selected.

Example box:

How to select the households to be interviewed:

From a list of 500 refugee households at one location a sample of 25 households is needed. First it is necessary to obtain the frequency factor using the following formula:

$$\frac{\text{Total number of household}}{\text{sample size}} = \text{Frequency factor}$$

For the example given above, the frequency factor is 20. From the list of names, each twentieth name is selected.

Cluster Sampling: This is a method where the survey team divides the entire population into sections or clusters that represent a population. Clusters are identified and included in a sample on the basis of criteria such as age, location, sex, gender etc. which makes it extremely easy for the team to derive effective inference from the feedback.

Purposive or judgemental sampling: This is a strategy in which particular settings, persons or events are selected deliberately in order to provide important information that cannot be obtained from other choices (Maxwell, 1996). It is where the survey team includes cases or participants in the sample because they believe that they warrant inclusion.



Training of Data Entry Clerks

7. Training of Data Entry Clerks

Well trained data entry clerks will help the project to secure accurate data entry. A good data entry clerk for research on energy needs should have a number of specific qualities. When putting up a requirements list for skills that data entry clerks need to have, someone can think of the following:

- Experience with data entry
- Experience with data entry computer programs
- Experience with data collection and scientific research
- Has knowledge of, or experience with the energy topic
- Works accurately
- Asks for help in time, when things aren't clear or when problems occur
- Works independently

In addition, data entry clerks will need to have the ability to focus for long periods in order to eliminate or at least reduce errors. When dealing with sensitive or private information, a person's character and discretion is very relevant.

Data entry clerks must possess competent math and English skills. Data entrants need to be familiar with office software such as word processors, databases, and spreadsheets.

Data cleaning

Before entering the data, each questionnaire should be checked for missing, erroneous and inconsistent data. If the whole data set is not suitable the questionnaires must be discarded. If only part of the questionnaire set is not suitable, the correct information can be gathered at another opportunity or can otherwise be considered as missing data. The quality control of the completed questionnaires should therefore be done by the surveyors and the team leader after each day of field work.

Once back in the office after the field data collection, the person responsible for data entry or the programme manager who is in charge of the whole assessment process has to check again the consistency of the data using a sample of the questionnaires (around ten percent), checking if the responses are realistic and recorded clearly. At that point there is still some time to clarify some doubts because the enumerators or their team leader should still be available.

Data conversion

Before the data entry is done, all data should be converted into a common denominator (change the local measurements into kg or acres,). It is recommended to codify all the responses into numbers because it is quicker to enter numbers compared to names or words and doing so reduces the level of mistakes during data entry. The data entry process therefore becomes automated and the verification of the data entered is easier. For this purpose, a codification list must be prepared beforehand and should be as extensive as possible.



Analysis of Assessment Data

8. Analysis of Assessment Data

Before starting to analyse data it is necessary to be clear about the type of information required. There is a wide range of information available but not all the results are needed or make sense. It is important to organize all the data captured using a computer programme such as excel spreadsheets, Microsoft access (data management), Quantitative analysis packages (SPSS – Statistical software). Use percentages and averages to present the outstanding information. Other measurements include;

- *Frequency*: If you want to know how many respondents answered certain questions.
- *Percentage*: If you want to know the proportion of households which answered in a certain way
- *Mean*: If you want to know the average number
- *Median*: If you want to show the middle value in a range of values
- *Range*: If you want to show the range in answers
- *Standard deviation*: If you want to show the degree to which a response varies from the mean.

Depending on your guiding questions and the target group for your report

- Create small overview tables, charts and graphs
- Where it makes sense, differentiate your analysis between refugees and host, between different Settlements, between new arrivals and refugees who have been in country for longer, between different origins, income, male and female and other possibly relevant attributes
- Include information of focus group discussions and comments made by enumerators
- Describe any significant regional differences

Interpretation and reporting

Through the data analysis process described in the previous section, lots of results can be generated, but not all of them are useful for reporting purposes. Therefore, it is necessary to have a good idea of the logic of the results and the message they are giving. The team should be aware that any kind of survey addressed to a household can produce biased information to a greater or lesser extent. However, during the data interpretation biased information is not necessarily useless; it has to be taken into consideration carefully, and if bias is suspected it must be mentioned in the report.

Be aware of bias. Bias cannot be avoided but should be minimized. Bias can be due to the existence of common opinions, perceived expectations for future funding or others.

At the same time, it is important to keep in mind the objectives of the assessment exercise in addition to the interests and expectations of readers of the final report. But the overall aim is to be able to present as realistic a picture as possible of the situation encountered in the field. If many respondents did not answer a specific question, it can be either because they did not understand the question, or they were not willing or in a position to answer it. This should lead to further re-interpretation of the data and to check the accuracy of the data set gathered in response to the specific question.

It should always be kept in mind that not all readers have knowledge of the situation on the ground and need to be given a complete picture (e.g. donors). Socio-economic information should therefore be included in the reports because it creates a good overall picture of the assessed settlement. Also, information explaining the livelihoods in more detail can be very useful. Even when the results are not meeting the expected objectives,

the most suitable approach is to report what was encountered in the field and explaining why that outcome has been reached.

Additional information:

One way to have additional information on the results obtained is to do a joint interpretation together with the implementing partners or other actors who have a good knowledge of the situation on the ground. Another approach would be to show the results to the community where the information was gathered, asking beneficiaries to comment on the accuracy of information and recording their explanations. Even if this process is time-consuming, it is worth doing it because the community will be very pleased to receive feedback from the exercise and will be more likely to collaborate with further survey work.

Reporting

9. Reporting

Ultimately it is necessary to consider how and to whom the results will be disseminated. It can be done either through a presentation in the energy project working group or in a development projects cluster, or through the distribution of the report to specific selected stakeholders (government institutions, donors, implementing partners), or even through a restitution made at community level where the assessment survey was conducted. This latter option establishes a relationship of trust between interviewers and interviewees which can be built upon for future survey work.

In addition, the methodology and its limitations should be mentioned to give the reader an idea of how the information was gathered. This helps to explain the extent of the accuracy of the information reported. It should also be kept in mind that in most cases the readers will not be specialists in energy.

The structure of the report depends mainly on the format required by the funders of the survey. It is therefore necessary for the authors to design the most suitable report structure.

Example Report Structure:

- Executive summary
- Introduction/ background information
- The assessment
 - Results
 - General aspects
 - Social economic characteristics
 - Household energy access (Cooking energy, electricity)
 - Energy businesses scenario
 - Information about preferences, potentials and opportunities
- Recommendations and lessons learnt
- Conclusion
- Literature
- Annexes

TOOLBOX

10. TOOLBOX

10.1 Household Interviews (Refugees and Host Community)

DATE, LOCATION _____

INTERVIEW CONTEXT _____

FUEL AND STOVE

1. What type/s of cooking fuel does the displaced population use? *[Pick the three most used and list them in order of usage. For example, if firewood is the most commonly used, then put 1 next to it]*

- Firewood/branches
- Charcoal
- Other biomass fuels (agricultural waste, shrubs, roots, etc.)
- Animal dung
- Liquefied Petroleum Gas (LPG)
- Kerosene
- Ethanol
- Other, please specify _____

2. Did they use different cooking fuel/s in the past? *[Yes or No*

3. How is cooking fuel acquired?

- Bought at the market
- Given by the government/a humanitarian agency or other donor
- Collected
- Bartered
- Other, please specify _____

4. Is it different than in the past? *[Yes or No*

5. If fuel is collected, who collects it? *[Check the two most common]*

- Primarily women and girls
- Primarily children
- Primarily men
- Both men and women

6. Is this different from in the past? *[Yes or No*

7. If fuel is collected, where it is collected from?

8. Is the amount of fuel being obtained/distributed sufficient? *[Yes or No*

9. If any, for which other purposes is cooking fuel (household energy) typically needed/used?
[Please specify which fuel you are referring to]
- Heating _____
 - Lighting _____
 - Other _____

10. Which type of cooking device/stove is the displaced population using?
[Briefly describe each one that applies and list them in order of priority.]
- Type 1 _____
 - Type 2 _____
 - Type 3 _____
 - Type 4 _____

11. How was the stove acquired?
- Bought at the market
 - Given by the government, a humanitarian agency or other donor
 - Bartered
 - Built it myself
 - Constructed by an artisan
 - Other, please specify _____

12. Which cooking utensils are used?
[Describe the number, size, shape and material of cooking pots used in the household and their purposes.]
- _____

13. Have any Fuel-Efficient Stoves (FES) programmes (distribution/production etc.) been implemented in this area in the past? *[Yes or No*
- If yes, by whom? Lesson/s learned:
- _____
- _____

14. Is a FES programme (distribution/production, etc.) being implemented in this area at present?
[Yes or No
- If yes, by whom? *[Briefly describe the programme.]*
- _____
- _____

15. What fuel(s)/devices are being used in institutional settings?

- Schools
- Clinics/hospitals, etc.
- Emergency/therapeutic feeding centres
- Other, please specify _____

16. [Briefly describe the type of stove/fuel for each of the above institutions, if applicable.]

How was the institutional stove acquired? [Please specify which stove you are referring to.]

- Bought at the market
- Given by the government, a humanitarian agency or other donor
- Bartered
- Constructed by an artisan
- Other, please specify _____

PROTECTION

17. Are people experiencing problems with the current stoves and source of fuel? [Yes or No

[If yes, check all those that apply listed in order of concern. For Example, if safety is the primary concern, put 1 next to it.]

- High price
- Poor quality
- Safety
- Fuel shortages, please specify _____
- Long distance to collect it
- Competition between groups for access to fuel
- Other, please specify _____

18. For fuel source: if safety is the primary protection concern, what is the cause?

- Ongoing conflict near the settlement/fuel collection area
- Landmines, animals, dangerous terrain, etc.
- Sexual assaults
- Threats from army/police personnel/border guards, etc.
- Threats from militia
- Threats from bandits or opportunists
- Threats from host population or opposing group
- Other, please specify _____

19. Is there any activity in place for the protection of the assisted population in this area? [Yes or No

If yes, by whom?

ENERGY MARKET

20. Are cooking stoves for sale at the local market, or is it possible to have a stove built by a local artisan?

[List the different types of stove.]

- Type 1 _____
- Type 2 _____
- Type 3 _____
- Type 4 _____

21. How much do they cost? *[List the prices in of each type listed above.]*

- Cost type 1 _____
- Cost type 2 _____
- Cost type 3 _____
- Cost type 4 _____

22. Where are the markets located?

- In the camp/settlement
- In the nearby village/town (host communities)
- In a more distant town
- Other, please specify _____

23. How do people move to the market and back?

- Walk
- Bicycle
- Animal (donkey, camels, etc.)
- Ride from others (not paid)
- Paid ride (any means of transport people have to pay for)
- Other, please specify _____

24. What types of cooking fuels are available in the market? *[Check all that apply.]*

- Firewood/branches
- Charcoal
- Other biomass fuels (agricultural waste, shrubs, roots, etc.)
- Liquefied Petroleum Gas (LPG)
- Kerosene
- Ethanol
- Other, please specify _____

25. How much does the fuel cost in high/low seasons? *[List prices of each type listed in the question above.]*

- Cost charcoal (specify unit) _____
- Cost firewood/branches (specify unit) _____
- Cost other biomass fuels (specify type and unit) _____
- Cost Liquefied Petroleum Gas (LPG) (specify unit) _____
- Cost kerosene (specify unit) _____
- Cost other (specify unit) _____

ADDITIONAL QUESTIONS

26. Does the population in the settlements cook indoors or outdoor?

27. Describe the kitchen design and ventilation

*[For example, if the kitchen is indoors, is it separate from other living and sleeping areas?
Does the kitchen have a chimney and/or a window? How much smoke is there in the kitchen?]*

28. What are the health implications of the use of cooking fuel? *[Check all that apply.]*

- Acute respiratory infections
- Eye infections
- Asthma
- Allergies
- Fire hazards
- Foodborne diseases/diarrhoea due to insufficient cooking/boiling
- Other, please specify _____

29. Are there any cultural taboos regarding cooking practices/foods?

[For example, shared cooking not acceptable]

30. At what time/s of day and how often in a day are meals cooked?

How long does the average meal take to cook?

31. Which natural products can people access in the immediate vicinity to use as fuel for cooking?

[Check all that apply.]

- Firewood
- Dung
- Straw/agricultural residues
- Grasses/other biomass
- Other, please specify _____

32. What are the laws/regulations regarding the displaced populations' access to/ability to use/harvest from local land? *[For example, are they allowed to collect firewood? Are they allowed to produce charcoal? Are they allowed to sell firewood or charcoal?]*

33. What is the state of roads, bridges, means of transportation and the level of security in the area(s) of displacement and surrounding areas? *[Please specify URBAN/PERIURBAN/RURAL.]*

34. Is there a potential for medium-term or long-term environmental degradation caused by current cooking-fuel collection/use practices? *[Yes or No*

If YES, are any measures in place to mitigate this risk? *[Check all that apply.]*

- Reforestation activities
By whom? *[government/host community or similar; humanitarian/development agency or similar; affected population (including as Cash/Food for Work Activity); other?]*
- Wood-lot planting/management
Managed by whom? *[government/host community or similar; humanitarian/development agency or similar; affected population (including Cash/Food for Work Activity); other?]*
- Training on sustainable harvesting practices
- Efforts to reduce fuel consumption, please specify _____
- Other, please specify _____

35. What, if any, livelihood activities are under way?

36. Are any livelihood activities particularly fuel-intensive? *[Check all that apply.]*

- Sale of firewood
- Wood/timber-based construction activities
- Brick-making
- Charcoal-making
- Brewing
- Other, please specify _____

37. What are the main coping mechanisms to which people resort in order to address the issue of fuel scarcity? *[Check all that apply.]*

- Food selling/bartering
- Undercooking to save on fuel
- Skipping meals
- Eating less/less quality food
- Other, please specify _____

10.2 Energy Vendor Interview Sheet

Introduction

Have you *(i) explained the purpose of the interview, (ii) covered confidentiality, and (iii) explained that participation is voluntary?* Yes No *Has the interviewee given his/her consent?* Yes No

Country:	District:
Settlement:	Zone:
Village	Name of Interviewer:
Date of Interview:	Start Time: End Time:

Part A: General Information

Business name:									
Business owner name:				Interviewee name:					
Interviewee is business owner:				Yes (1) / No (0) <i>If yes, proceed with business owner only.</i>					
If no, interviewee relation to business owner (wife, child, etc.):									
Business owner gender:				Interviewee gender:					
Male (1)		Female (2)		Male (1)		Female (2)			
Business owner age:				Interviewee age:					
Business owner country of origin:				Interviewee country of origin:					
DRC (1)	Burundi (2)	South Sudan (3)	Uganda (4)	DRC (1)	Burundi (2)	South Sudan (3)	Uganda (4)		
If other (5), please specify:				If other (5), please specify:					
Business owner mother tongue:				Interviewee mother tongue:					
Lugbara (1)	Kiswahili (2)	Arabic (3)	Kakwa (4)	Madi (5)	Lugbara (1)	Kiswahili (2)	Kakwa (3)	Arabic (4)	Madi (5)
If other (6), please specify:				If other (6), please specify:					

Status of Household			
Refugee < 2 years (1)	Refugee 2-5 years (2)	Refugee > 5 years (3)	Host (4)
Does the business owner have additional sources of income?		Yes (1) / No (0)	
If yes, what additional income source(s)?			
Agriculture (1)	Cash transfers (2)	Sale of food (3)	Sale of firewood (4)
If other (5), please specify:			
Does the household have additional sources of income?		Yes (1) / No (0)	
If yes, what additional source(s) of income?			
Agriculture (1)	Cash transfers (2)	Sale of food (3)	Sale of firewood (4)
If other (5), please specify:			

If business owner is a refugee: what was your main income source prior to the crisis?					
Agriculture (1)	Cash transfers (2)	Sale of food (3)	Sale of firewood (4)	Business (5)	
If other (6), please specify:					
Who makes purchasing decisions in your business?					
Female < 18 years (1)	Female 18 - 34 years (2)	Female > 35 years (3)	Male < 18 years (4)	Male 18 - 34 years (5)	Male > 35 years (6)

Part B: Business Activities

When did you start operating this shop (month/year)?					
What motivated you to start this energy business ?					
Would you recommend a friend to engage in the energy business ? Yes (1) / No (0)					
If yes, why? If no, why not?					
What are the main energy products you sell? <i>Tick all that apply. Please specify brand for stoves and solar products and size for batteries (A, AA and AAA).</i>					
Firewood (1)	Charcoal (2)	Stoves (3)	Solar products (4)	Torches (5)	Batteries (6)
If other (7), please specify:					
What is the price of each energy product ? <i>Specify price per size for batteries or indicate price range.</i>					
Product	Unit/Brand		Cost/Unit (UGX)		
Firewood					
Charcoal					
Briquettes					
Kerosene					
Clay stove					
Metal stove					
Solar lantern					
Solar panel					
Bulb					
Torch					
Dry cell battery					
Other:					

What energy services do you offer?					
Phone charging (1)	Printing/ Photocopying (2)	Laminating (3)	Computer training (4)	Internet services (Facebook etc) (5)	Solar lantern rental (6)
If other (7), please specify:					
What is the price of each energy service ?					
Service	Unit			Cost/Unit (UGX)	
Phone charging					
Printing/Photocopying					
Laminating					
Computer Training					
Internet services (Facebook etc)					
Solar lantern rental					
Other:					
What is your main source of income from the energy products and services mentioned above ? <i>Tick all that apply.</i>					
Firewood (1)	Charcoal (2)	Stoves (3)	Solar products (4)	Torches (5)	Batteries (6)
Phone charging (7)	Printing/Photocopying (8)	Laminating (9)	Computer (10)	Solar lantern rental (11)	
If other (12), please specify:					
Is your shop equipped with electricity?				Yes (1) / No (0)	
If yes, is electricity provided by a solar system?				Yes (1) / No (0)	
If yes, do you experience any problem with the solar system?				Yes (1) / No (0)	
If yes, what kind of problems?					
Does your income from the energy business depend on seasonal patterns?				Yes (1) / No (0)	
If yes, how and why?					
Where do you source your energy products ? <i>Specify name if known.</i>					
Middle-men in settlement (1)	Local trading centers (2)	From regional market (Arua, Yumbe, Koboko) (3)		Interregional market (Kampala, Gulu) (4)	
If other (5), please specify:					
Does anyone else participate in your business?				Yes (1) / No (0)	
If yes, who and how many? <i>Please indicate number of people below.</i>					
Female < 18 years (1)	Female 18 - 34 years (2)	Female > 35 years (3)	Male < 18 years (4)	Male 18 - 34 years (5)	Male > 35 years (6)
Which other energy products and services would you like to sell/offer? <i>Please specify.</i>					
Firewood (1)	Charcoal (2)	Stoves (3)	Solar products (4)	Torches (5)	Batteries (6)
Phone charging (7)	Printing/Photocopying (8)	Laminating (9)	Computer (10)	Solar lantern rental (11)	
If other (12), please specify:					
Why would you like to sell/offer these energy services/products ?					

Part C: Business Skills and Associations

<p>You are in the energy business. How did you choose this business and how did you prepare yourself for it? Did you receive any training on business skills or energy topics? Yes (1) / No (0)</p> <p>If yes, (a) from whom and (b) about what? <i>Specify name of NGO/institute if known.</i></p>				
a.	NGO (1)	Relatives (2)	Training institute/University (3)	
If other (7), please specify:				
b.	Finance/book keeping (1)	Marketing (2)	After-sale maintenance service (3)	Stove building skills (5)
If other (6), please specify:				
How did you hear about the training? <i>Specify name of radio station/newspaper/ NGO if known.</i>				
	Radio campaign (1)	Newspaper (2)	Relatives (3)	NGO/UNHCR (4)
If other (5), please specify:				
What further soft skills would be helpful to improve the business? (Please specify)				
<p>Are you part of any farmer association, saving group, cooperative? Yes (1) / No (0)</p> <p>If yes, which one? <i>Specify name if known.</i></p> <p>If yes, what are the benefits of being in this association, group or cooperative?</p>				

Part D: Challenges and Opportunities

How do you judge the current economic situation of your energy business ?			
Weak (1)	Fair (2)	Good (3)	Very good (4)
Do you face any challenges with regard to your business with energy products?			Yes (1) / No (0)
If yes, what are the three most severe problems/challenges you are experiencing with this business?			
Not enough capital (1)			
Low profit margins (2)			
Lack of after-sales support (3)			
Customers cannot afford the product/ service (4)			
Competition from other businesses (5)			
Competition from counterfeit/ bad-quality products (6)			
Customers too far away (7)			
Bad debts/uncertainty (8)			
Lack of customer awareness (9)			
Availability of products (10)			
Seasonality of sales or income (11)			
Legal requirements/and or laws banning sell of charcoal and firewood (12)			
Other (13), please specify:			
Would you like to change anything to strengthen your energy business ?			Yes (1) / No (0)
If yes, what?			
Are you happy with your business that you would like your Children to take over this business in the future?			
Yes (1) No (2)			
If no why?			

Thank you for your participation!

10.3 Focus Group Discussion Questions

Introduction

Have you *(i) explained the purpose of the interview, (ii) covered confidentiality, and (iii) explained that participation is voluntary?* Yes No *Has the interviewee given his/her consent?* Yes No

Please indicate the following details on your answer sheet:

- start and end time of the discussion,
- the total number of people,
- the number of women and men,
- the zone,
- the village,
- and whether the village leader is present.

Warm-up questions and nice story to get the discussion group into a relaxed mood.

For example:

- “Do you find the same trees and plants here compared to your old home?”
- “Are you children going to school?”
- “Have you seen / used the hospital?”

AVOID scenarios in which people feel bad about being here.

PART A: DEMOGRAPHICS

- For how long have people been living in this (part of the) settlement?
- Where do the people come from? (*country, state, province, nearest larger city, etc.*)
- What do people do now (if anything) to earn a living/livelihoods (*e.g. agriculture, trade, collect/produce and sell charcoal/firewood*)
- How much money do they make in a week or month from such activities?
- How about **before the crisis**? What were people doing to earn a living?
- Tell us about your families (*find out if the families have come to the settlement in the same composition as they were in their home country*). Are you all living here as family like back home or did some family members stay behind or move to another place/city?

PART B: COOKING HABITS

- Where do people usually cook?
- What meals do people normally cook?
- How long does it take to cook them?
- How often do they cook in a day? Do you re-heat or boil the food for the next meal?
- Which is their most important meal during the day? (*breakfast, lunch, dinner*)
- How many people in typical home do they cook for?
- Do they do other activities while cooking?
- Is there any difference in the ways they cook now compared to before the displacement?
(*What and how (cooking method) did they cook before and now?*)
Would people consider cooking with their neighbors to save fuel? If not, why?

PART C: STOVE USE

- When cooking a meal do people prefer a particular stove for the meal?
(e.g. which is their preferred stove to cook beans?)
- What types of stoves do people currently use for cooking?
(e.g. 3-stone fire, mud stove, clay stove, improved stove)
 - a) **If 3-stone fire or other traditional method is used, proceed to fuel use.**
 - b) **If improved or mud stove is used:**
- How did they acquire the stove?
- **If purchased:** how much did they pay and where did they buy it?
- **If given out (free handout):** by who and would they be willing to contribute to replacing it/buying a better stove in terms of money or work hours? If yes, how much money/how many working hours?
- **If built:** how and where did they learn to build it (at home or here), did they receive any training on how to make/use it? If yes, who trained them, how long was the training?
- **If trained:** after training and handover of the stove, was there a follow-up by the agency, did people train anyone else in the groups?
- What would people do if the stove broke?

PART D: FUEL USE

- What fuel do people currently use?
 - a) **If firewood:**
 - How and where do people get the firewood?
 - **If collected:** who, how often, how long does the trip take, does the trip take longer than it used to, do they go in groups, where do they go and do they experience any difficulties when collecting firewood?
 - **If purchased:** where do they purchase, how much does a bundle of firewood cost, how long does it last, where do they get the money from, why do people purchase and not collect, did they used to collect it before and if so, what do they do with the extra time, (how) has the cost of firewood changed?
 - b) **If charcoal or other fuel:**
 - How and where do people purchase the charcoal/other fuel?
 - How much do people pay for one unit (bag, basin, bucket, and or heap) of charcoal/other fuel and how long does it last?
 - Do people know where the charcoal is produced? (*within or outside the settlement?*)

PART E: OPINIONS OR PERCEPTIONS ON THE STOVE/COOKING METHOD

- Do people like the stove/cooking method they currently use? If yes, why? If no, why not?
 - a) **If improved stove is used:**
 - What do people consider to be the most important aspect of the stove?
(*e.g. easy to use, durable, portable, uses less fuel, cooks food well, was given out for free, etc.*)
 - What has changed since people started using the improved stove? Do people collect/buy the same amount of fuel as before?
 - What would people like to change about the stove and their cooking methods if they could?
 - b) **If 3-stone fire or other traditional method is used:**
 - Are people aware of the benefits of improved cook stoves? If yes, which benefits?
 - Where did they learn about them?

PART F: ELECTRICITY AND LIGHTING

- What are people's primary sources of lighting?
- How did they acquire their lighting device?
- **If purchased:** how much did they pay and where did they buy it?
- **If given out (free handout):** by who and would they be willing to contribute to replacing it/buying a solar lamp in terms of money or work hours? If yes, how much money/how many working hours?
- What is the life span of their lighting device?
- How many hours of light does the lighting device provide per day?
- What do you people use the lighting for?
- What other sources of lighting would they like to use? (*e.g. solar lamps*)
- Are people aware of solar products and their benefits? If yes, what are their benefits?
- If people have a phone, where and how do they charge it? How much do they pay for a full recharge?

Energising Development

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