



# Energy Survey Report

(A Survey of Energy Access in the Refugee Context in Uganda)

*Imvepi and Rhino Camp Settlements*

TWG Monthly Coordination Meeting

12<sup>th</sup> June 2018, @URC, Kampala



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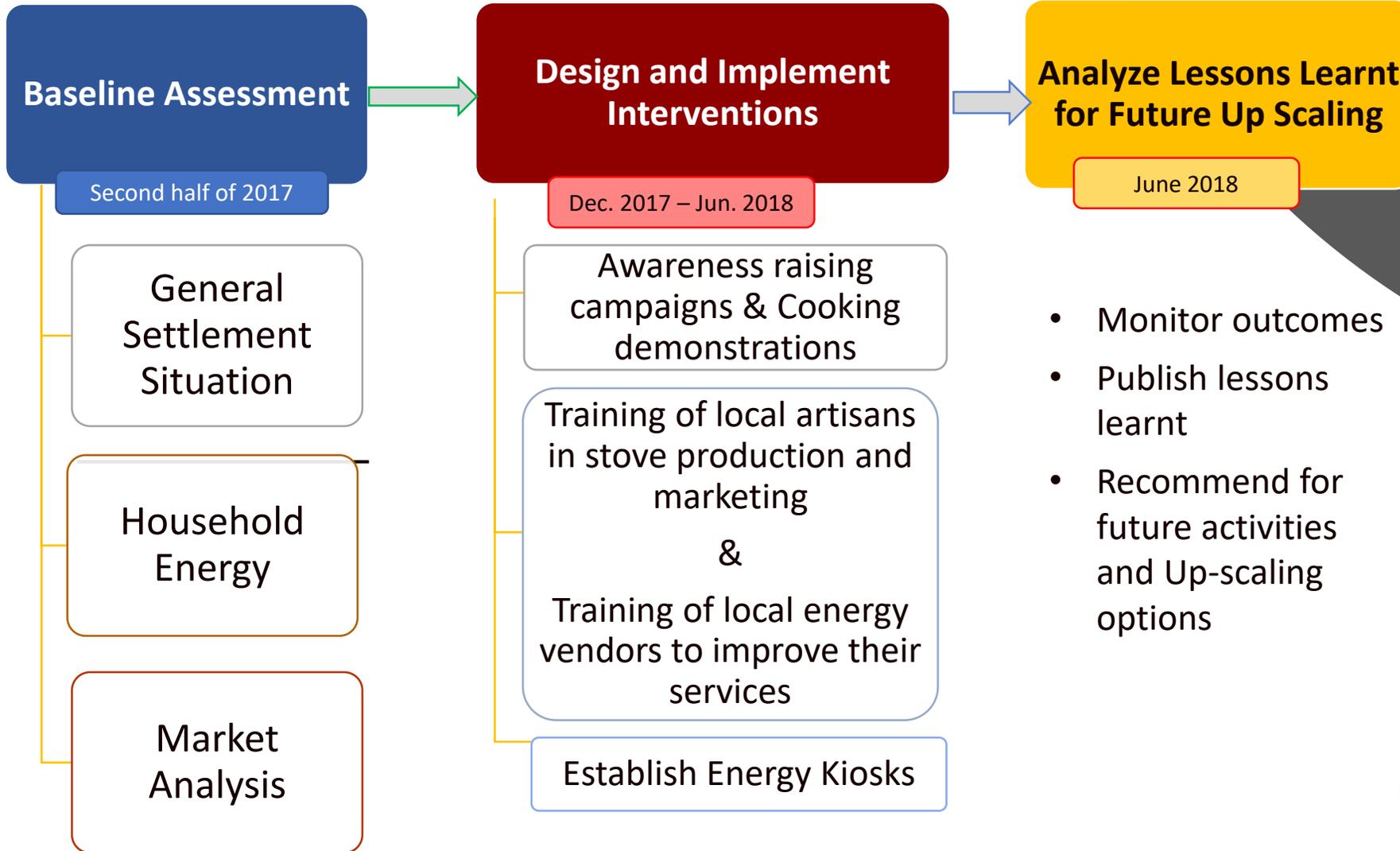
# Content of presentation

1. The Pilot Project
  2. Objectives of the survey
  3. Design of tools and Key question
  4. Survey Area & Sampling
  5. Findings
    - Population Demographics
    - Cooking Habits/cultures
    - Cooking Technology
    - Source and types of Fuels
    - Sources of electricity & Lighting
    - Energy Businesses & ownerships
    - Challenges & opportunities
    - Conclusions & Recommendations
- 



# Create evidence if and in how far market-based approaches work in refugee settings

## Goal and Activities of the Project



# Objectives of the Survey

## Objectives

- Understand level of knowledge, attitude and practices that influence access to energy services for cooking and lighting.
- Assess the factors likely to influence access to clean renewable energy by target beneficiaries
- Assess market systems that facilitate access to clean renewable energy.



## Baseline Assessment Knowledge area

General Settlement Situation

Household Energy needs

Market Analysis

## Key Research Questions to Design and Implement Interventions

### General Information

- Population characteristics, Who are they?
- What do they do to earn living/incomes?
- who makes decisions to spend the incomes?

### Household needs Assessments

- What are cooking technologies in use?
- What are the Cooking habits and practices?
- What cooking fuels used in what quantities and from where ?
- What sources of Electricity and lighting are available to HHs and in settlements?

### Market Assessments

- Are there energy Business? & how is the ownership?
- What energy Business activities?
- Do the owners/proprietors have business skills & associations
- What kinds of products (Cooking, Electricity and lighting) are on market/sources?
- What Challenges and opportunities exist?

# Sampling and sample size

S/N	Survey type	Rhino Camp #HHs	Imvepi # HH Interviewed	Total Interviews
1	Household Interview	210	190	400
2	Market Vendor Interview	20	10	30
3	FGDs Meeting	06	03	09
4	Zones	06	03	09
5	Zones sampled	03	03	06
6	Total	237	206	439

The Qualitative study focused on beneficiaries' perceptions and opinions on the energy services and products

While the Quantitative survey explored critical issues of technologies, microbusinesses, biomass consumption and sources, usage of solar power and electricity related issues.

## Determine Sample Size

Confidence Level:  95%  99%

Confidence Interval:

Population:



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# Demographics

## 1. Rhino Camp

- Existed >(5) years-with highest (60%) refugee arrivals 2013-2016.
- Some refugees (5%) - settled way back in 1999.
- 26% are host integrated living within settlement zones.
- Country of origin; 78% from South Sudan;
- 80% females/children: 39% < below 30 years
- The average size HH 8 members.

## 1. Imvepi Camp

- Relatively newer settlements. Reopened 2016
- Pre-dominantly South Sudanese (89% Kakwa)
- Arabic is sparingly used, Lugbara main language of communication.
- Females- at 65% and also the bread-winners for most households
- The average HH size 7 members.



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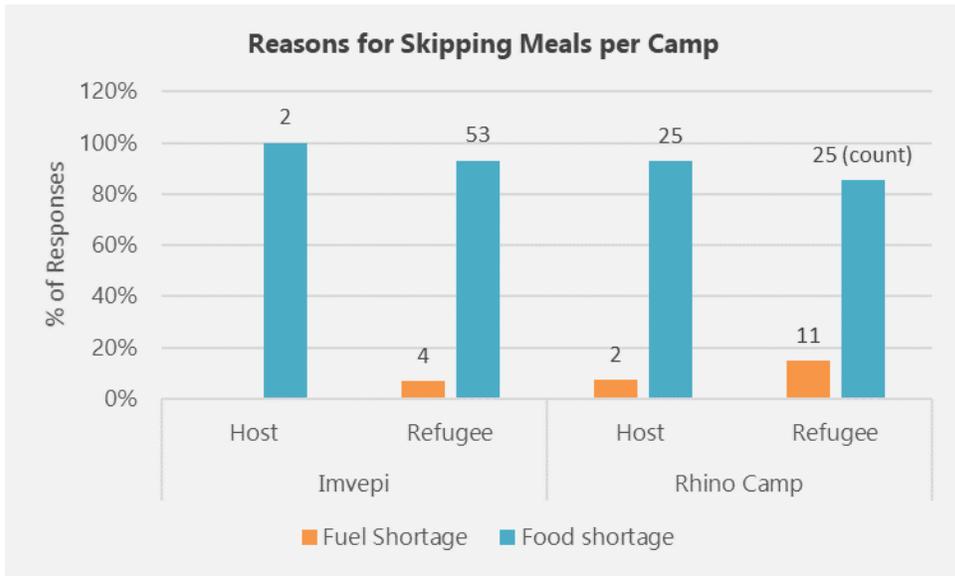
# Cooking Habits & Cultures 1

- 58% of the refugee HHs have enclosed structures
- The household meals are generally prepared by females (18 and 34 years).
- 55% of the refugee HHs prepare 3 hot meals/day
- While only 50% of Host HHs prepare at least 2 hot meals/day.

- 
- Food shortage was the major reason for skipping meals and not fuel (Only 11% sited fuel shortage).
  - The main meals cooked are maize/flour meal +Bean/Green vegetable leaves from wild for lunch/dinner and porridge at mid-morning

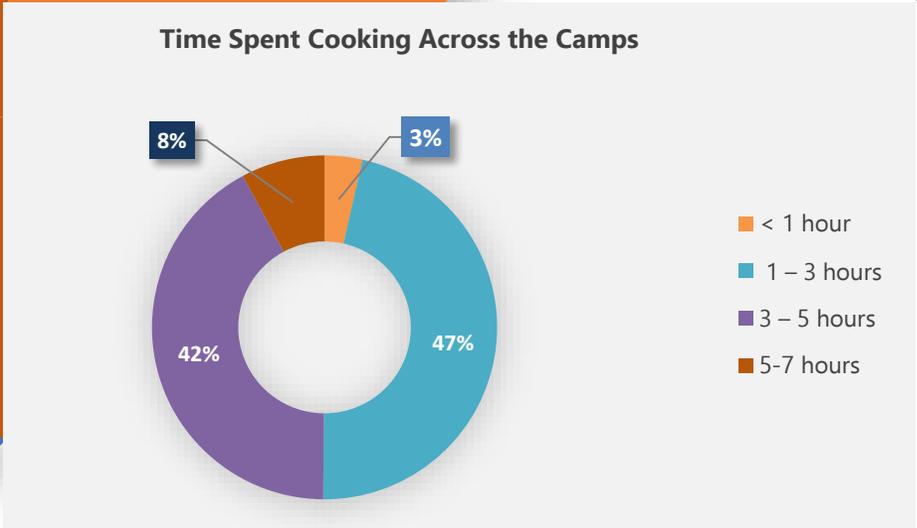


# Cooking Habits & Cultures ...Cont' 3



89%

🕒 Main reasons due to the scarcity of foods NOT fuels

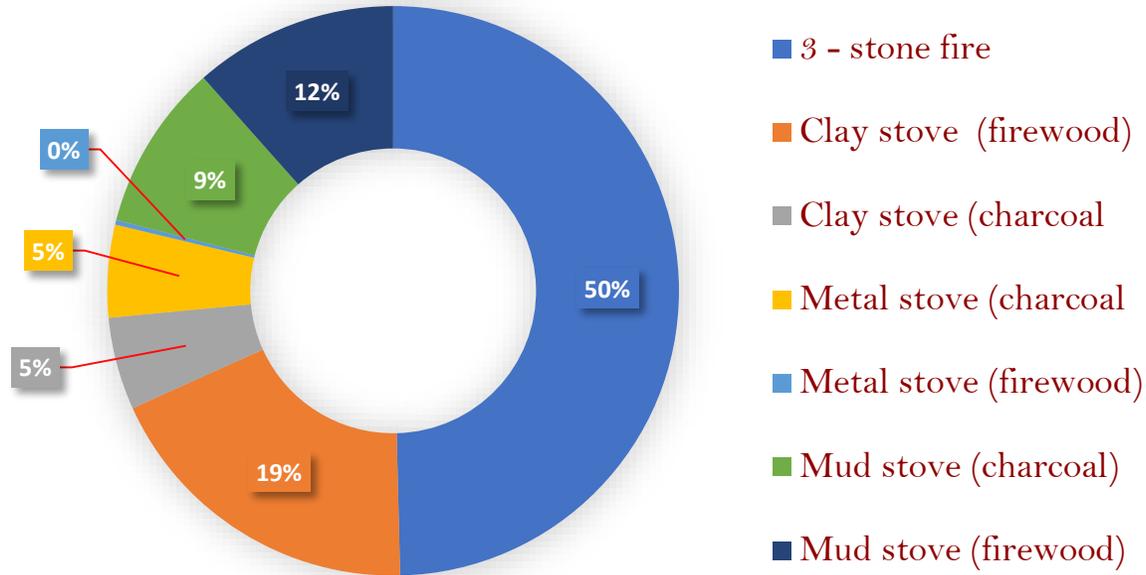


47%

Spend between 1 to 3 hours cooking meals: Main reason is use lids –heat conservation.



## Most Frequently Used Stove



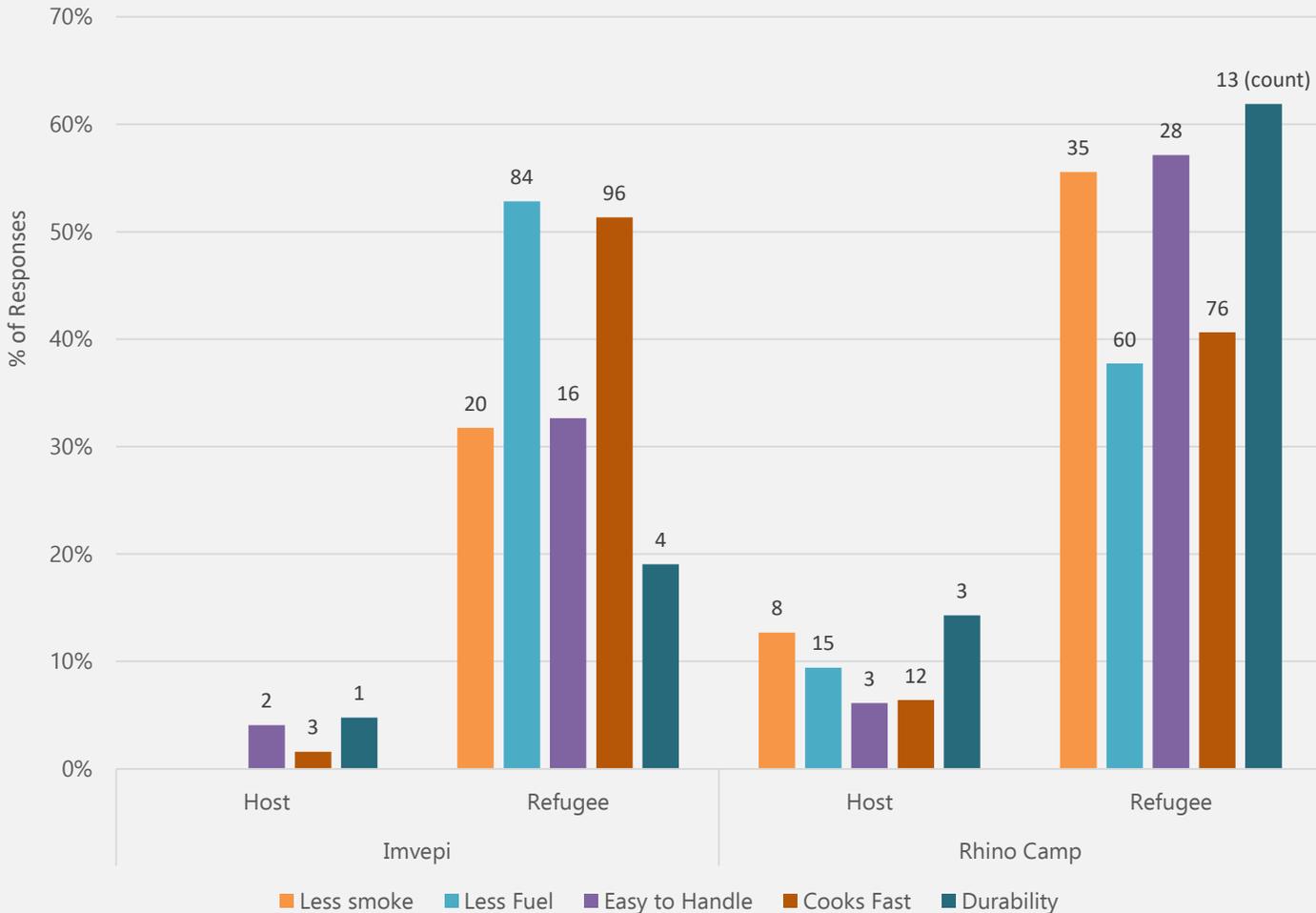
# Cooking Technology (types)

- ❑ 55% use traditional “3-stone fire” and/or metal stove
- ❑ 15% use more than 1-type stove/fuel (both firewood & charcoal)
- ❑ 81% used firewood-based stove, 19% charcoal-based stoves



93% Ever heard about improved cooking systems with 57% acknowledging efficiency, fuel saving and durability as main benefits

Reasons for Liking the Most Preferred Cooking Technology



# Cooking Technology (Knowledge on benefits)





47% Technologies donated



29% bought their cooking technologies.

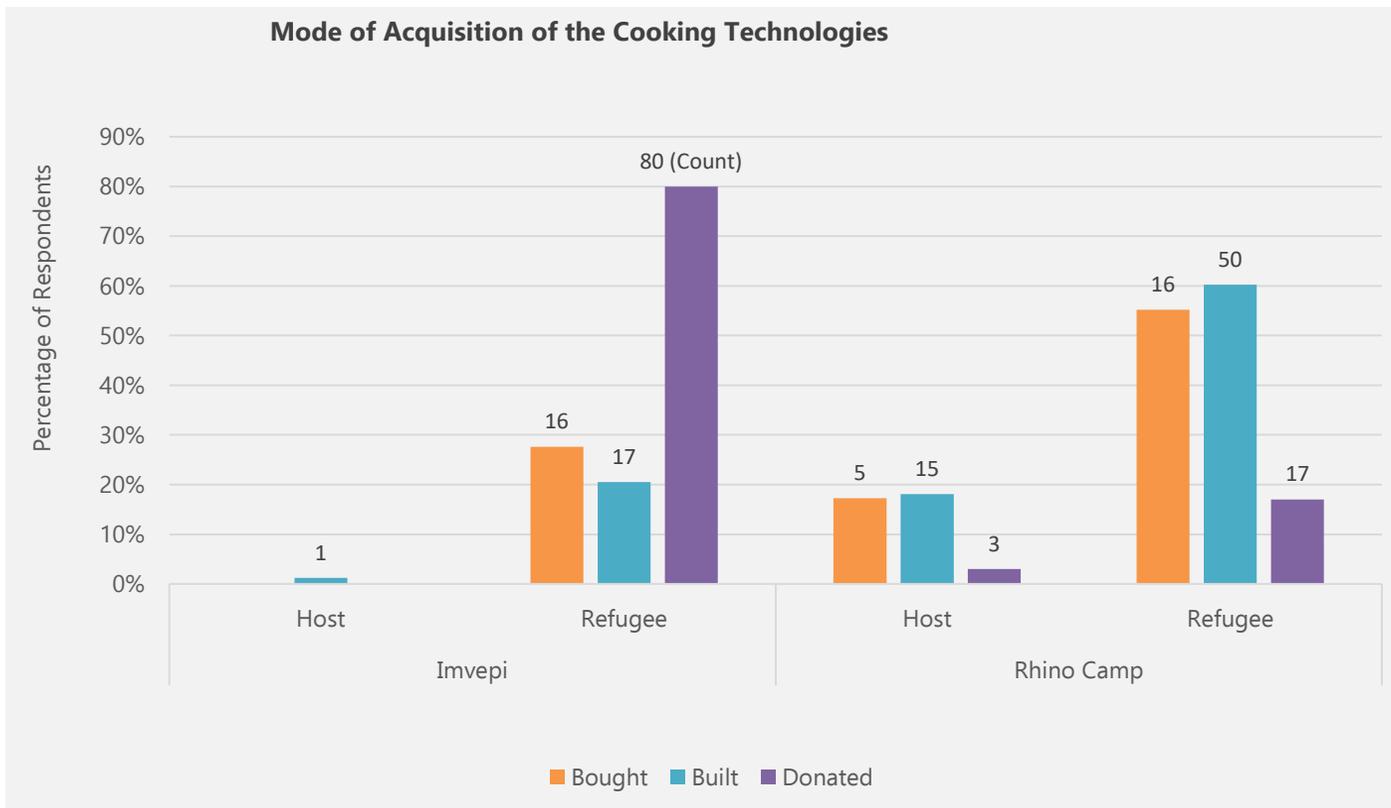


22% built



59% willing to replace when damaged & 25% will still ask NGOs for a replacement

# Cooking Technology (sources)



# Cooking Technology (Willingness to acquire)

**86% showed willingness to pay for energy services**

## 1. Monetary

### Hosts

Are willing to contribute less than UGX. 5,000 to the acquisition of (ICS)

**48%**

### Refugees

Are willing to contribute UGX 5,000-10,000 or more toward acquisition of ICS

## 2. Work-Hours

### Hosts

Are willing to work less than 2-4 hours for acquisition of ICS

**38%**

### Refugees

Are willing to contribute More than 2 – 4 work hours toward acquisition of ICS



## Fuels for Cooking/Heating

- 97% Cooking fuel source is Biomass
- Firewood; 81% fuels & Charcoal 19%
- Others <(Crop residue, briquettes, kerosene for cooking etc.) insignificant



## Average Distance to fuel sources

- Walking time (1.5 -2) hours to fuel source (6-8 km)
- Mainly collected by women and adolescent girls
- Mainly from Hosts, Woodlots, Forest reserves and River banks and small extend from within settlements
- The hosts restrict refugees' access to firewood in exchange for cash or food and NFI items

# Fuel (Sources & Distances)



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## Firewood

- 12.5-15 Kg/ day is the aver. firewood used for cooking and heating for HH size (6-7)
- A bundle/headload of firewood weighs 25-35 kg, cost UGX 3,500-UGX 5,000. Or Battered for 3cups porridge flour & 2cups beans.
- Weekly average consumption for (HH of 6-7)=3 Bundles
- Weekly Average cost of fuel UGX 12,500 for cooking



## Charcoal

- A basin of charcoal is used for 2 day. (HH 6-8)
- Charcoal used in "urban" centers and wet seasons when firewood is scarce.
- A bag of charcoal costs UGX 20,000-25,000 and Bag=6 Basins
- Charcoal is scarce inside the settlement (OPM ban)
- No Restrictions on Hosts (LG By laws not enforced)

# Fuels (types and Unit Cost)

The firewood collected has high (45-55%) moisture content



# Electricity and Lighting

→ 49% of HHs use disposable torches, 26% solar lamps/panels & 25% Dry cell torches

→ 99% of the solar lamps acquired through development partners: In the markets high # of branded products

→ Key parameter considered by beneficiary to buy; Brightness, lighting duration/night, cost and availability.

→ Respondents mostly aware of the benefits of improved lighting sources

→ 47% learned from a neighbor/relative and 25% from developmental agencies, 28% Not sure

→ 30% respondents willingness to buy (monetary) standardized solar lighting devices

→ Over 85% willing to contribute in terms of work hours for solar devices

# Energy Vendors (Business Activities)

There were no service offering for internet, computer and solar lantern rental in Imvepi

78% of energy vendors in Rhino Camp have other people working in their business, while 80% in Imvepi were run by other people rather than the proprietors

No sales of Improved cook stoves by energy vendors recorded

Energy services

proprietorship

60% of energy products on market were counterfeit, 40% were donations that branded products

Most vendors rely on regional markets and branded products

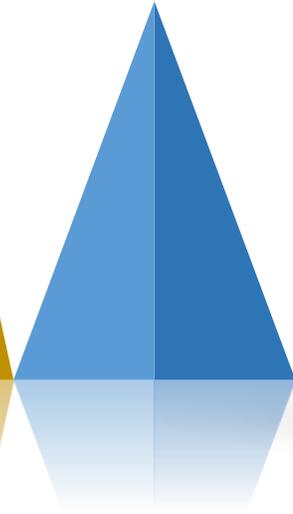
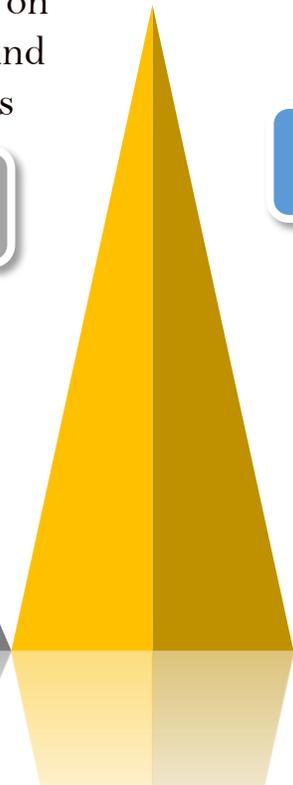
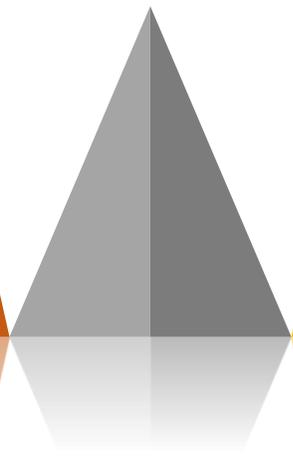
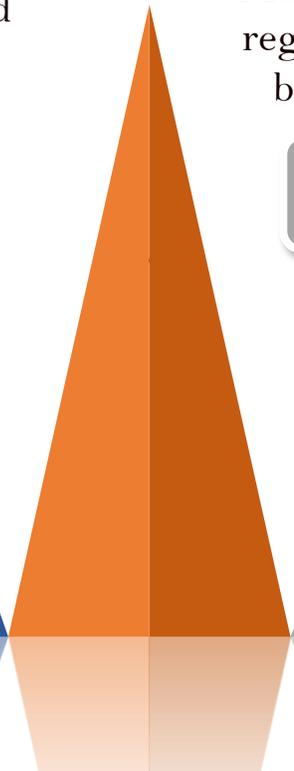
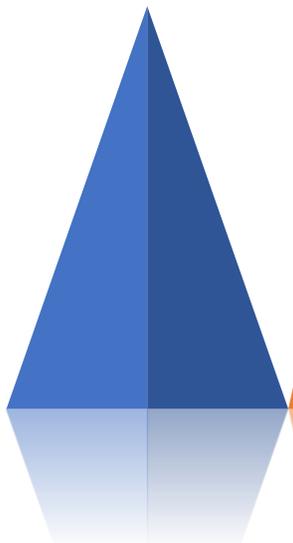
Sales of ICS

Source of products

Quality of products

43% of people working in energy vendor businesses are male 18 to 34yrs as 21% are female over 35 years

Gender and Age



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# Energy Vendors (Skills and Associations)

## Overall

Majority 71% of the energy vendors have never received any formal training on business skills/energy topics.

## Settlement

44% of energy vendors in Rhino Camp have received some form of training from agencies. In Imvepi None

## Source of Knowledge

Relatives and friends are the main providers for sources of training.

## Hosts

Rhino Camp host energy vendors have received training in product installation, finance/book keeping and marketing. In Imvepi None

## Refugees

Rhino Camp refugee energy vendor has received training in finance/book keeping, marketing and in Imvepi none.

## Skills gaps

46% of the energy vendors require training in finance/book keeping and 25% require technical skills training

# Challenges

Overall  
Insufficient level of coordination between stakeholders.

Settlement  
“Distorted” markets

Source of Incomes  
Low purchasing power of households

Markets  
High market saturation with counterfeit products

Vendors Records  
No significant tracks of finance/book keeping, marketing records.

Skills gaps  
Very low technical and business skills

# Conclusions & Recommendations

→ ICS: Limited access to improved cookstoves on market: promote more viable access and solutions through trainings, setup markets

→ **solar products on markets are mainly counterfeit or branded: Need for increased markets awareness**

→ Use of Dry cell batteries and torches-Poor disposal: Increase awareness on environmental degradation and restoration, Adopt rechargeable batteries

→ **Willingness to pay for Energy: Respondents mostly aware of the benefits of improved cooking/lighting sources, Promote livelihoods support for sustainability**

→ ??

→ ???



# Thank you for your attention!

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# Back-up Slides

# RHINO CAMP REFUGEE SETTLEMENT IN ARUA DISTRICT MASTERPLAN

DRAFT VIII As of 29<sup>th</sup> of Jan 2018

The boundaries shown on this map do not imply official endorsement or acceptance by United Nations



Map for Internal use by UNHCR and its Partners

**Total Gross area of Rhino Camp Refugee Settlement = 85.525 Km<sup>2</sup>**

**Total available receiving capacity in Rhino Camp Refugee Settlement Absorption Area - 5.503 Km<sup>2</sup>**

88% of 5.503 = 4.843 Km<sup>2</sup> for Agriculture and Residential.  
12% of 5.503 = 0.660 Km<sup>2</sup> for Roads and Facilities.

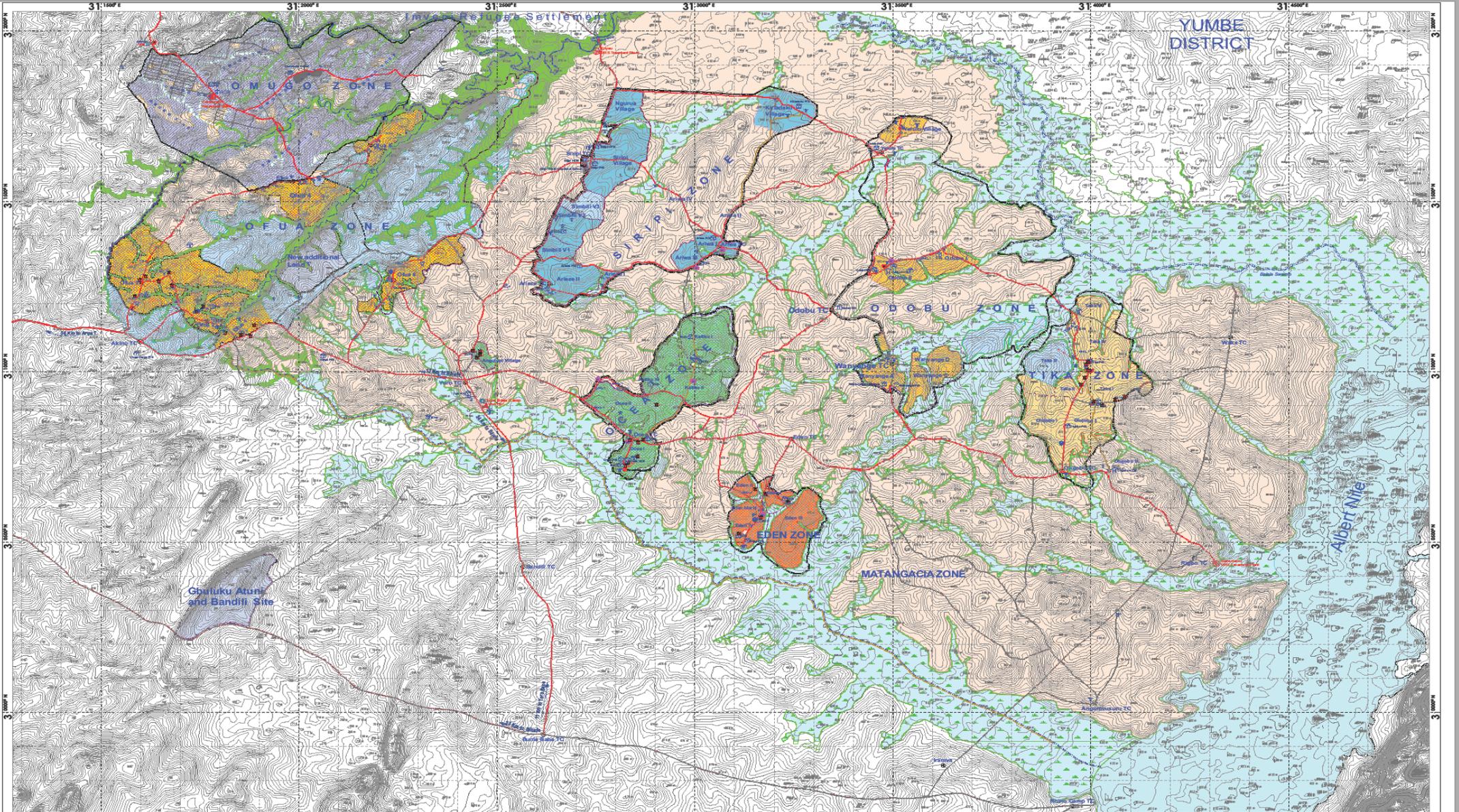
Residential = 4.843/0.0025 = 1,937 Families  
= 1,937 Families x 5 Persons/Family  
**= 9,685 People**

**AVAILABLE ABSORPTION CAPACITY**

OCEA ZONE 1	0.000 Km <sup>2</sup>
SIRIPI ZONE 2	0.000 Km <sup>2</sup>
EDEN ZONE 3	0.000 Km <sup>2</sup>
TIKA ZONE 4	0.000 Km <sup>2</sup>
ODOBU ZONE 5	0.000 Km <sup>2</sup>
OPUA ZONE 1&6	2.007 Km <sup>2</sup>
GBULUKU ATUNI	3.496 Km <sup>2</sup>
<b>TOTAL AREA</b>	<b>5.503 Km<sup>2</sup></b>

**Map Legend Existing Infrastructure**

Manhole	System tanks
Hand pump	Trucking Tanks
<b>GENERAL INFRASTRUCTURE</b>	Police station
Direct Access Rd.	Recreational Facility
Road under UNHCR Improvement	Rhino Camp Reception Centre
Road to be improved	Health Centre
Roads under DANIDA	Child Friendly Space
Zonal Boundaries	Market
Pipes	Food Distribution Point
Existing Culvert / Bridge	Help Desk
School/Play ground	Trading Centre
Early Childhood Development	Nationals
Swamp	Okezi Zone
Okezi Zone	Ebin Zone
Siripi Zone	Tika Zone
Okezi Zone	Possible Absorption Space for UNHCR
Possible Absorption Space for UNHCR	Solar Security Light for UNHCR
Solar Security Light for UNHCR	Solar Security Light for DRC



# IMVEPI REFUGEE SETTLEMENT IN ARUA DISTRICT PROPOSED MASTERPLAN

DRAFT V As of 30<sup>th</sup> of January 2018

The boundaries and names shown and the designation used on this map do not imply official endorsement or acceptance by United Nations



Map for Internal use by UNHCR and its Partners

Total Gross area of Imvepi Refugee Settlement = 56,590 Km<sup>2</sup>  
 Total capacity in Imvepi Refugee Settlement  
 88.4% of 56,590 = 50,0525 Km<sup>2</sup> for Residential and Agriculture  
 11.6% of 56,590 = 6,564 Km<sup>2</sup> for Roads and Facilities.  
 Residential + Agriculture = 50,0525/0.0025 = 20,021 Families  
 = 20,021 Families x 5 Persons/Family = 100,105 People

PLANNING FIGURES in Km <sup>2</sup>	Number of House Holds (HH)
ZONE 01 = 17,482	6,154
ZONE 02 = 17,053	6,003
ZONE 03 = 22,055	7,864
<b>TOTAL AREA = 56,590</b>	<b>= 20,021</b>

REMAINING UNOCCUPIED LAND AREA in Km <sup>2</sup>	Number of House Holds (HH)
ZONE 01 = 0	0
ZONE 02 = 0	0
ZONE 03 = 4,149	1,540
<b>TOTAL AREA = 4,149</b>	<b>= 1,540</b>

Total remaining receiving capacity = 8,200 Individuals



### Map Legend Infrastructure

- Existing**
- WATER, SANITATION & HYGIENE
    - Household
    - Water Tank
    - Water Tap
  - GENERAL INFRASTRUCTURE
    - Road Access Rd.
    - Road Boundaries
    - Considered 10m UNHCR access roads
    - Existing Culvert / Bridge
    - SchoolPlay ground
    - Police station
    - UNHCR Reception Centre
    - Health Centre
    - Primary School
    - Child Friendly Space
    - Secondary School
    - Market
    - Trading Centre
    - Swamp
    - Head Community
    - Regulation Water
    - Public Water Tap
    - Village
  - ZONE 1
  - ZONE 2
  - ZONE 3
  - Unoccupied/land pending M.C.U
  - New absorption Land
  - Proposed 10m access roads
  - Recreational Facility
  - Main Market
  - SchoolPlay ground
  - Proposed Culvert / Bridge
  - Trading Standby Space
  - Childhood Development
  - Trading Public Car
  - Parking
  - Information Support Centre
  - Women Centre
  - Health/Berital
  - Water Security Light (UNHCR) (HL)
  - Water Security Light (ADPR) (HL)
  - Water Security Light (UN-CARE) (HL)

