Kakuma Refugee Camp:
Household Vulnerability Study

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Acknowledgements

- Commissioned by WFP, UNHCR and partners in Kakuma Camp
- Technical Steering Committee, particularly Yvonne Forsen
- Key informants who offered their time and insights
- Survey team: coordinators, enumerators and interpreters
- Refugee households and community leaders
Aims

After 20 years not all refugees have the same humanitarian assistance needs

- Livelihood opportunities, income sources, differences in socio-economic vulnerability

- Feasibility of targeting assistance based on actual needs and vulnerability
  - “Gold standard” calculations for each HH of cash equivalent consumption expenditure per capita per day
  - Evaluation of different targeting approaches: inclusion and exclusion errors
Methods
Scoping exercise

- Qualitative and contextual information from literature review, stakeholder interviews, focus-group discussions and HH visits

- Secondary quantitative data from UNHCR, WFP and other partners

- HH questionnaire and sampling methodology
**Sampling**

- Administrative units: Sub-camp, Zones, Blocks.
- 126 blocks across 12 zones
- 500 HHs/sub-camp equally divided across the blocks in that camp

<table>
<thead>
<tr>
<th>Camp</th>
<th>Blocks</th>
<th>HHs/block</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1</td>
<td>42</td>
<td>11-12</td>
</tr>
<tr>
<td>K2</td>
<td>19</td>
<td>24-29</td>
</tr>
<tr>
<td>K3</td>
<td>39</td>
<td>11-14</td>
</tr>
<tr>
<td>K4</td>
<td>26</td>
<td>16-26</td>
</tr>
</tbody>
</table>

- 2000 HHs (13,378 people)
Every single block in Kakuma (126) was sampled. 

**First time such a comprehensive HH survey has been done in Kakuma.**
HH survey

• Training workshop (2-6 November)
• Fieldwork (7 November – 4 December)
• Questionnaire sections:
  1. HH details
  2. HH roster
  3. Housing and wealth indicators
  4. Livelihoods and income
  5. Food assistance, Bamba Chakula, NFIs
  6. HH consumption expenditure
  7. HH coping strategies
HH survey results

Demographics
Distribution of the main CoOs

- Similar distribution to UNHCR
- Captured all ethnic groups

<table>
<thead>
<tr>
<th>K1</th>
<th>South Sudanese 52%</th>
<th>Somali 27%</th>
<th>Other 21%</th>
</tr>
</thead>
<tbody>
<tr>
<td>K2</td>
<td>South Sudanese 17%</td>
<td>Somali 50%</td>
<td>Other 33%</td>
</tr>
<tr>
<td>K3</td>
<td>South Sudanese 24%</td>
<td>Somali 56%</td>
<td>Other 20%</td>
</tr>
<tr>
<td>K4</td>
<td>South Sudanese 91%</td>
<td>Somali 0%</td>
<td>Other 9%</td>
</tr>
</tbody>
</table>
Year of arrival

All new arrivals since 2014
Definition of a HH

- UNHCR: Ration card
- Survey: Persons who both live and eat together
  - Range from 1-30 members
  - Median HH size:
    - K1: 7.3
    - K2: 6.8
    - K3: 6.9
    - K4: 5.8
HH size 1

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNHCR Database</td>
<td>33%</td>
</tr>
<tr>
<td>Survey (if assume</td>
<td>22%</td>
</tr>
<tr>
<td>ration card is a HH:</td>
<td></td>
</tr>
<tr>
<td>2,838 HHs)</td>
<td></td>
</tr>
<tr>
<td>Survey (our HH</td>
<td>5%</td>
</tr>
<tr>
<td>definition: 2,000 HHs)</td>
<td></td>
</tr>
</tbody>
</table>

- Of the 22% RC size 1, 82% have joined other HHs
- Of the 1,898 HHs >size 1
  - 28% have more than one RC
  - 17% have had a RC size 1 join them
- Of the “true” HH size 1: about 2/3 are young men under 30 though rates of employment and business ownership are lower than for the total population.
Examples of joining up


2. HH with 6 members all brothers and sisters with 3 ration cards. In K1 from Uganda. Oldest brother arrived in 2013 on one ration card and then younger siblings followed on other ration cards.
HH survey results

Wealth assets
Wealth assets

• 77% of HHs own a mobile phone
  − >80% in K1, K2, and K3
  − 56% in K4

• Key wealth assets: bicycle, TV, wheelbarrow, dining table, solar panels
  − 18% have 1 of these (8% in K4)
  − 12% of HHs have at least 2/5 (2% in K4)
Electricity

- 21% have electricity (85% from community generator)
  - K1: 31%
  - K4: <1%
- Somalis and Ethiopians: Nearly half
- South Sudanese: 2%
HH survey results

Livelihoods
Legal constraints to livelihoods

• Limited freedom of movement
• No access to land for agricultural production
• No access to the credit or saving sector
• Restrictions on livestock ownership
• Can apply for a business license but not a work permit
• Not allowed to travel for business purposes
Previous livelihoods

- Main HH activities before arrival: farming (43%) and livestock rearing (5%)
  - Unskilled labor (22%)
  - Business (8%)

Feasible now?

- Block leaders do not consider farming a sustainable activity due to the harsh climatic conditions in Turkana.
**Vocational training**

- 6% of adults (age 15-64) have received vocational training
  - 10% of English speakers vs. 4% of non-English speakers
Current livelihoods

- Only 20% of HHs have at least one member with some type of employment (includes business; only 6% in K4)
  - Incentive (43% of those with employment; 9% of all HHs)

- Business (40% of those with employment; 8% of all HHs)
  - Mostly K1-K3, only 2% in K4
  - Most arrived before 2011
  - Predominantly shops/kiosks/hawkers
  - Over half operating for one year or less
Proportion of HHs sampled reporting cash income in last 30 days

- 68% had no income; 25% from one source only.
- Only 9% of HHs with an income (3% of all HHs) received >10,000 Ksh
Cash incomes from each source in last 30 days

Minimum, Median and Maximum Income by Source

- Reselling: Minimum 20, Median 145, Maximum 6,000
- Selling other items: Minimum 20, Median 500, Maximum 10,000
- Small jobs: Minimum 20, Median 1,000, Maximum 20,000
- Gifts from inside: Minimum 50, Median 1,500, Maximum 25,000
- Business: Minimum 200, Median 3,000, Maximum 30,000
- Remittances: Minimum 50, Median 5,000, Maximum 54,000
- Employment: Minimum 100, Median 5,000, Maximum 58,000
- Total: Minimum 20, Median 3,000, Maximum 88,000

Log scale: 10, 100, 1,000, 10,000, 100,000
HH survey results

Measuring vulnerability
Vulnerability = food insecurity and poverty

**A highly vulnerable HH would not be able to provide for itself in the absence of, or with cuts to, assistance.**
Indicator = Cash equivalent consumption expenditure per capita per day (CECE pc pd)

**Excludes all gifted and assistance
Includes purchased, own production and in stock food
Includes both consumable and durable NFIs
CECE pc pd
(n=1986)

- 7% HHs had none (45% for food only)
- For all HHs, median was 6.39 Ksh (mean of 17.90)
- Variations by sub-camp, HH size, female-headed etc.
CECE pc pd
6.39 median (17.9 mean); range from 0 to 1260.40 Ksh
CECE pc pd compared to a set of vulnerability thresholds

31% can provide own NFIs (15 Ksh)

15% can provide ½ own food (31 Ksh)

9.1% can provide own NFIs & ½ own food (46 Ksh)

5.7% can provide own food (62 Ksh)

4.2% can provide own food & NFIs (77 Ksh)

1.7%: above Kenyan poverty line (125 Ksh)
### Proportion NOT vulnerable

<table>
<thead>
<tr>
<th></th>
<th>Elimination of all assistance (77 Ksh per capita)</th>
<th>Reduction in food assistance by half (31 Ksh per capita)</th>
<th>Elimination of NFI assistance (15 Ksh per capita)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>4.2%</td>
<td>15%</td>
<td>31%</td>
</tr>
<tr>
<td><strong>K1</strong></td>
<td>7.6%</td>
<td>26%</td>
<td>41%</td>
</tr>
<tr>
<td><strong>K4</strong></td>
<td>1.8%</td>
<td>4.6%</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Ethiopian</strong></td>
<td>15%</td>
<td>35%</td>
<td>57%</td>
</tr>
<tr>
<td><strong>Somali</strong></td>
<td>7.3%</td>
<td>27%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>South Sudanese</strong></td>
<td>1.2%</td>
<td>4.4%</td>
<td>12%</td>
</tr>
</tbody>
</table>
Who are the non-vulnerables?

Vulnerables?

*Based on total basket of 77 Ksh
Who are the non-vulnerables?

- Male headed
- Female headed
- HH size 1
- HH size 2-5
- HH size 6-10
- HH size >10
- No business
- Has business

Vulnerables?

*Based on total basket of 77 Ksh
Vulnerability

Very few could survive without assistance
Targeting
Targeting

Effectiveness: Inclusion/exclusion errors
Costs: Implementation vs. savings

- Categorical
- Proxy means testing
- Community-based targeting
- Self-targeting
Effectiveness: Inclusion and exclusion errors

Inclusion error (leakage rate)

= proportion of those selected for assistance who don’t need it

= \frac{\text{false positives}}{\text{all positives (false positives and true positives)}}.

Exclusion error (undercoverage rate)

= proportion of those who need assistance but which are excluded

= \frac{\text{false negatives}}{\text{all those in need (false negatives and true positives)}}.
Costs: Screening costs for targeting approaches

- **Means testing**: ~US$2.74m ($100 per 27,352 HHs)
- **Proxy means testing (PMT)**: ~1/2
- **Categorical targeting (CT)**: ~5%
- **Community based targeting (CBT)**: ~1%
Targeting Categorical
## Categorical targeting: Effectiveness

<table>
<thead>
<tr>
<th>Elimination of all assistance (77 Ksh)</th>
<th>HHs targeted</th>
<th>False positives</th>
<th>Inclusion error</th>
<th>False negatives</th>
<th>Exclusion error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status quo</td>
<td>2000</td>
<td>83</td>
<td>4.2%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Female-headed</td>
<td>968</td>
<td>19</td>
<td>2.0%</td>
<td>954</td>
<td>50%</td>
</tr>
<tr>
<td>Female, child, disabled or elderly headed</td>
<td>1080</td>
<td>28</td>
<td>2.6%</td>
<td>851</td>
<td>45%</td>
</tr>
<tr>
<td>HH with NO business</td>
<td>1823</td>
<td>52</td>
<td>2.9%</td>
<td>132</td>
<td>6.9%</td>
</tr>
<tr>
<td>HHs with NO business or incentive work</td>
<td>1671</td>
<td>36</td>
<td>2.2%</td>
<td>268</td>
<td>14%</td>
</tr>
<tr>
<td>Female-headed with NO business</td>
<td>923</td>
<td>6</td>
<td>0.7%</td>
<td>1035</td>
<td>53%</td>
</tr>
</tbody>
</table>

| Reduction in food assistance by half (31 Ksh) | | | | | |
|-----------------------------------------------|--------------|-----------------|-----------------|----------------|
| HH with NO business                           | 1823         | 222             | 12%             | 81             | 4.8%           |
Costs and effectiveness of upscaling targeting to HHs with no business

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHs targeted</td>
<td>25,017</td>
<td>27,352 (HHs camp) x 0.9179 (Prop. no business)</td>
</tr>
<tr>
<td>HHs vulnerable</td>
<td>26,209</td>
<td>27,352 (HHs camp) x 0.958 (Prop. vulnerable)</td>
</tr>
<tr>
<td>HHs included by mistake</td>
<td>716</td>
<td>HHs targeted x inclusion error (0.0285)</td>
</tr>
<tr>
<td>HHs excluded by mistake</td>
<td>1819</td>
<td>HHs vulnerable x exclusion error (0.0694)</td>
</tr>
<tr>
<td>HHs not receiving assistance</td>
<td>2245</td>
<td>HHs camp-HHs targeted</td>
</tr>
</tbody>
</table>
Categorical targeting

Inclusion/exclusion errors for business are promising
But ~2,000 HHs (~12,000 people) will be wrongly excluded
Does not fulfill “do no harm”
Targeting

Proxy means testing
Proxy means testing

- 4 models
  - 2 Regression: OLS and Elastic Net
  - 2 Classifier: Logistic Regression and Extremely Random Trees (ERT)

- 2 datasets
  - Comprehensive (23 variables, incl. wealth assets and income)
  - Limited (12 variables, incl. location, CoO, year of arrival, HH size, head of HH, etc.)

- All vulnerability thresholds
Proxy means testing
Limited dataset (HH=1980)

<table>
<thead>
<tr>
<th></th>
<th>Incl. Error</th>
<th>Excl. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elimination of all assistance (77 Ksh)</td>
<td>3.5% 3.9% 0.3% 0.4%</td>
<td>0.9% 0.5% 13% 2.6%</td>
</tr>
<tr>
<td>Reduction of food assistance by half (31 Ksh)</td>
<td>6.1% 6.4% 6.1% 6.9%</td>
<td>17% 15% 21% 12%</td>
</tr>
</tbody>
</table>
Proxy means testing

Regression does not work for many model combinations
ERT produces low errors but ~1,258 HHs (8,415 people) wrongly excluded
Targeting

Community based targeting
Methods

• Further field work
• Interviewed community leaders of 123/126 blocks
• For the surveyed HHs:
  • Knowledge of HHs
  • Business and family ties
  • Rankings: wealth assets, businesses, remittances and overall
  • Ability to survive without assistance
Knowledge of HHs

<table>
<thead>
<tr>
<th>HHs known</th>
<th>% blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>86%</td>
</tr>
<tr>
<td>75%</td>
<td>74%</td>
</tr>
<tr>
<td>90%</td>
<td>55%</td>
</tr>
<tr>
<td>100%</td>
<td>40%</td>
</tr>
</tbody>
</table>

For ranking and analysis, only considered HHs they knew (1,602 HHs)
HH remittances and employment (incl. business)

**Employment**
- All HHs had no employment: 16%
- Uncertain of some or all employment: 7%
- Knew all employment and could rank: 76%

**Remittances**
- All HHs had no remittances: 32%
- Uncertain of some or all remittances: 45%
- Knew all remittances and could rank: 24%
Do block responses match HH survey responses?

<table>
<thead>
<tr>
<th></th>
<th>Employment (incl. business)</th>
<th>Remittances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identified by at least one source</td>
<td>31%</td>
<td>16%</td>
</tr>
<tr>
<td>Which source?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Survey, 40%</td>
<td>Survey, 20%</td>
</tr>
<tr>
<td></td>
<td>CBT, 33%</td>
<td>CBT, 72%</td>
</tr>
<tr>
<td></td>
<td>Both, 27%</td>
<td>Both, 7.5%</td>
</tr>
</tbody>
</table>
Community leaders’ ranking perception
(Blocks=114)

- Comparison of overall wealth ranking by community leaders vs. actual ranking of consumption expenditure for the known HHs.
- Correlation determined using Spearman’s rank correlation coefficient (1.0 indicates identical, -1.0 indicates exact opposite ranking)
- >1/3 had negative correlations. Only 3 blocks had strong correlations (>=0.8)
Which HHs could survive without assistance?

- 10% of available sample (1,599) identified by at least one source

- Only 37% of the 123 community leaders were able to identify at least one HH in their block that could survive without assistance
Community-based targeting FGDs

- Informal redistribution occurs:
  - Wealthier HHs give to the poor
  - Some communities share their food (eg. Dinkas from South Sudan)

- Community leaders are uncomfortable targeting out but would want to help identify vulnerables if they then got more assistance.

- If target in, vulnerables would include: widows, orphans, unaccompanied minors, foster children, single mothers, elderly people and sick people with chronic diseases
Community based targeting

Many HHs are not known to the community leaders
Rankings are poorly correlated with CECE pc pd
Targeting

Self-targeting
Self-targeting out: Options discussed

- Businesses: Loans if directed at individuals; if allowed to leave Kakuma
- Incentive workers: Only if contracts and fixed prices
- Land in new camp: Climate too harsh for farming; fear of insecurity and conflict with local community
Self-targeting out: Concerns

• Link between identity and other services (i.e. health) with ration and ration card: “If you are a refugee you must have your card.”

• Fear that re-registration process will not work properly if business fails or HH loses employment. High risk aversion.
Self-targeting

Most viable option
Incentives may be outside donor control
Common truths, common myths

Who is vulnerable?
Female-headed HHs: truly vulnerable

- 63% are South Sudanese
- 32% are in Kakuma 4
- 41% are recent arrivals

- At a disadvantage along almost every indicator (ability to earn, wealth assets, food security)

<table>
<thead>
<tr>
<th></th>
<th>CECE pc pd</th>
<th>Not vulnerable, 77 Ksh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>4.3</td>
<td>2.0%</td>
</tr>
<tr>
<td>Male</td>
<td>8.9</td>
<td>6.3%</td>
</tr>
</tbody>
</table>
HH size 1: Not as vulnerable as previously thought

- 81% are male
- 42% in Kakuma 4
- 42% are new arrivals

<table>
<thead>
<tr>
<th>HH size</th>
<th>CECE</th>
<th>pc</th>
<th>pd</th>
<th>Not vulnerable, 77 Ksh</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>16</td>
<td></td>
<td>15%</td>
</tr>
<tr>
<td>2-5</td>
<td></td>
<td>7.6</td>
<td></td>
<td>5.9%</td>
</tr>
<tr>
<td>6-10</td>
<td></td>
<td>6.1</td>
<td></td>
<td>2.7%</td>
</tr>
<tr>
<td>&gt;10</td>
<td></td>
<td>3.8</td>
<td></td>
<td>0.8%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>2-5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2-5</td>
<td></td>
<td>6-10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;10</td>
<td></td>
<td>&gt;10</td>
<td></td>
</tr>
</tbody>
</table>
New arrivals vs. established residents

New arrivals: most vulnerable. Residents who have been in the camp longest are not necessarily least vulnerable (though low sample size n=48)
Findings and recommendations
Very few refugees can meet a significant proportion of their basic needs from their own resources.

Without greater economic integration, the opportunities for targeting will remain limited.
1. Continue to provide full assistance to refugees
   - 4.2% inclusion error and 0% exclusion error, “do no harm” policy
   - Targeting options to eliminate assistance would either not work or exclude over 1,250 HHs in need. Self-targeting could be explored.

2. Conduct a HH census to update UNHCR statistics

3. Halt targeting of food assistance based on HH size
   -- HH size 1 are the least vulnerable HH size group
4. Conduct a needs assessment on vocational training requirements and to explore potential livelihoods
   -- English is an important factor in accessing vocational training
   -- Business and employment are not homogenous nor necessarily lucrative

5. NGO and donor organizations should work together to identify a common pay scale for incentive staff.

6. Remittances offer an important area for further research
   – Potentially a very substantial income source but sensitive information
Thank You