

Challenges of availability and safe access to adequate quantity of clean water in rural refugee settings

Centre for
Agroecology.
Water & Resilience

The case of Water Supply in Nakivale and Oruchinga Refugee Settlements in Uganda

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**EXCELLENCE
WITH IMPACT**

Coventry
University 

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Access and availability of Safe and adequate water supply response in crisis situations

WHO (2008)
(general standards)



- Microbial
- Disinfection
- Chemicals
- Radiological
- Acceptability

SPHERE (2011)
(humanitarian principles)



- Survival needs – water intake (*drinking and food*) 2.5–3 l/h/d
- Basic hygiene practices 2–6 l/h/d
- Basic cooking: 3- 6 l/h/d 3- 6 l/h/d

UNICEF
(humanitarian strategy)



The Human Right to Water and Sanitation

Water: a prerequisite to life, health and dignity > a basic human right <

Aim

To assess challenges of availability and safe access to adequate quantities of clean water in rural refugee settings

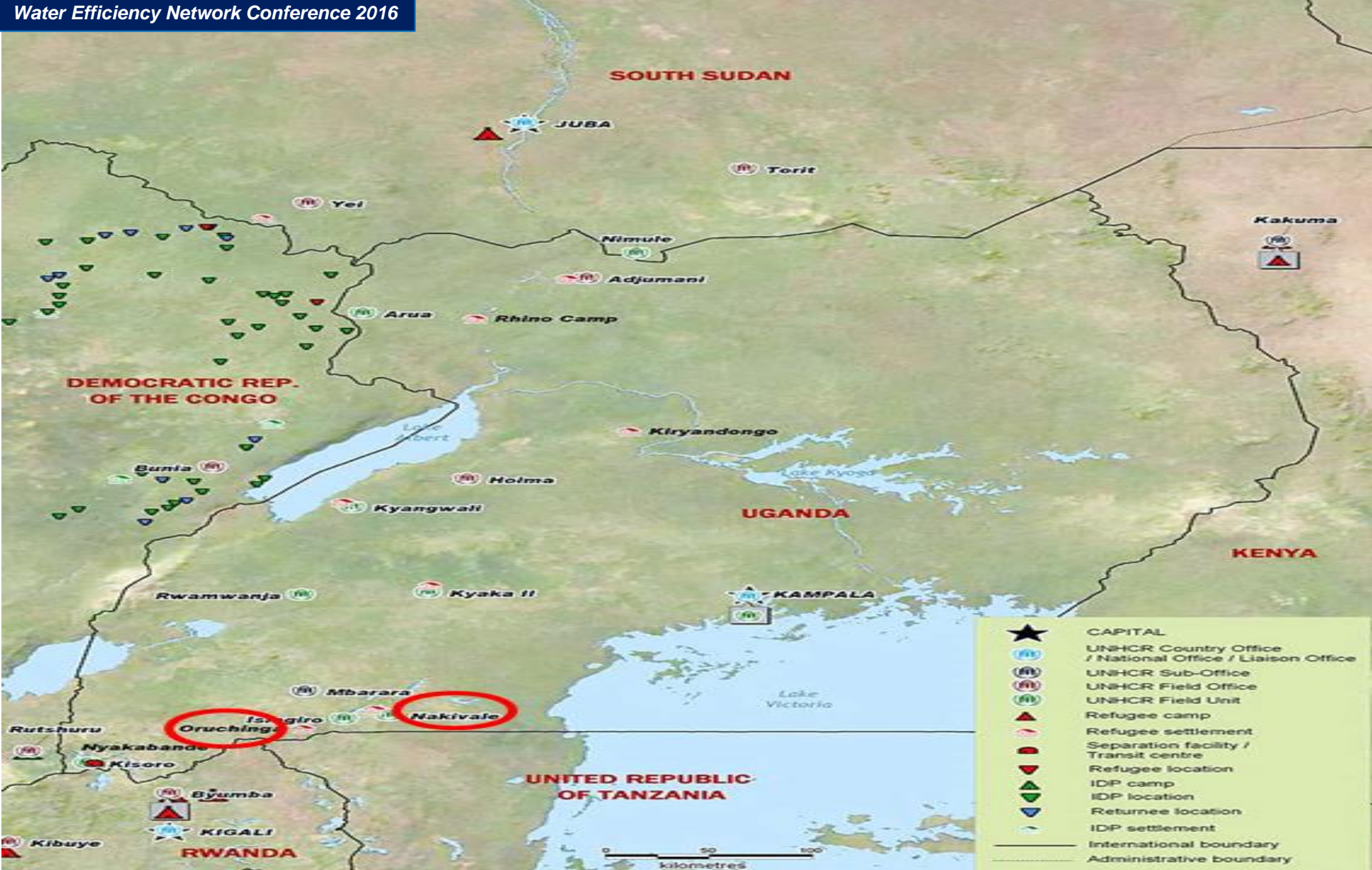
Objectives

Using the case of Nakivale and Oruchinga Refugee settlements:

- **Assess availability and access to safe and adequate water supply;**
- **Identify and evaluate existing coping mechanisms of water supply response in both refugee settings;**
- **Highlight major factors that hinder water supply response;**
- **Suggest further lines for exploration of possible solutions that could lead to a better water supply response in protracted situations.**

Methodology

- **Sampling** of 176 households in Nyarugugu village (Nakivale) and 30 households in Oruchinga → was carried out during the dry and wet seasons for a period of 30 days (July 2014) and 15 days (July and November 2015);
- **Dissimilarity** in terms of area/population sizes did influence the variation in the number of households that were assessed per settlement.
- **Qualitative data** → a combination of transect walks, observations, ethnography and participatory approaches;
- **Quantitative data** ⇒ a semi-structured questionnaire was used for a medium scale assessment of water supply in both settlements.

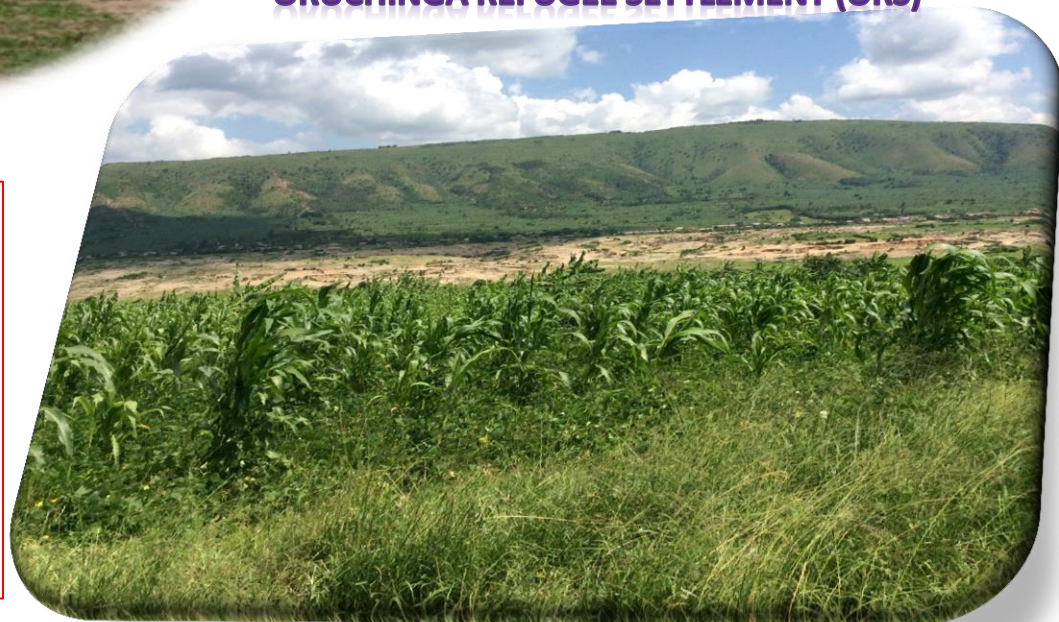


(OPM/UNHCR, 2015)

NAKIVALE REFUGEE SETTLEMENT (NRS)



ORUCHINGA REFUGEE SETTLEMENT (ORS)



- Nakivale RS was officially established in 1960 and Oruchinga RS in 1961;
- Located in the district of Isingiro, South-Western Uganda;
- Remote rural locations;
- A mixture of dry and wet lands.

(Uganda Gazettes No 19 and 1433; UNHCR)

Settlement profile

	Population	Area	Zones	Villages
NRS	95,633 households	185 km ²	3	79 Average of 800-1000 per village
ORS	6,068	8 km ²		15

(Source: UNHCR/OPM, 2015)

Water availability

Water sources	NRS	ORS
Surface water	1	2
Boreholes		4
Shallow wells		9
Rainwater harvesting	V	V

Water accessibility

Water sources	NRS	ORS
Hand pump	50	2
Water points	318	4
Water trucking	Ration	Ration
Mini pools of harvested rain water	3	

Findings

Water availability

- Limited surface water sources ==> Lake Nakivale and its extension
- Deep aquifer;
- Unpredictable rainfalls

Water access

- Deep gap between water supply and demand;
- Refugee population exceed host capacity to response.

(ARC, 2015; Nzamisi, 2015; UNHCR/OPM, 2015)

Water Quality

Surface water	Significant levels of water turbidity and iron
Borehole water	hardness and high contents of elements such as calcium, magnesium, iron, fluoride and manganese
Chemical treatment	Uncertainty over adequate chemical residual at distribution point and household levels
Water treatment and storage	Poor water treatment and storage capacity at household level: <ul style="list-style-type: none">• 75% respondents in NRS reported shortages of handy and adequate water storage utensils;• 90% respondents in ORS reported water treatment at household level (e.g. boiling, sand filtration) too time consuming and expensive.

Major challenges and effects



Constraints	Effects
Inadequate quantities water in both settlements.	Limited water supply at household level; Levels of agricultural outputs influenced by limited access to water for crops irrigation and livestock watering: (In Nyarugugu village, 87% respondents reported heavy loss of crops and poor quality harvest mainly due to limited access to water for crop irrigation)
Acute dry seasons (May-September)	Water scarce → high cost (particularly water tracking to schools, health facilities and households)
High levels of iron and turbidity → chemical treatment.	100% respondents reported unpleasant water tasted → less water intake
Poor water treatment and storage at household level.	85% respondents in NRS and 100% in ORS reported unaffordable high cost of utensils for storing drinking water.

Unpleasant water taste has a negative impact of daily requirement in water intake

Majors challenges and effects

Issues	Effects
Long distance => Households and water points.	<ul style="list-style-type: none"> • Heavy loads for users; • High risk of abuse to vulnerable users; • Limited quality time/education for young children.
Waiting time	80% (NRS) and 92% (ORS) respondents reported an average waiting time of 1hours at water point
Poor harvesting and dangerous use of rain water	Use of untreated water mini pool water and sharing water with domestic and wild animals: ===> Public health hazard

75% respondents in NRS reported a lack of veterinary support for domestic animals



Rain water harvesting and use in Kabazaana (Nakivale)

Conclusion

Major challenges facing humanitarian water supply response in Nakivale and Oruchinga Refugee Settlements:

Water availability

Limited surface water and underground sources and host country limited capacity to respond;

Water access

Longstanding refugee influx that overstretches available water sources and existing coping mechanisms;

Water quality

The significant high levels of water turbidity and elements such as calcium, magnesium, iron, fluoride and manganese; water hardness and other elements that influence the bad taste of water.

Recommendations:

(1 of 2)

A further in-depth exploration of innovative and alternative solutions that enhance existing water supply response in rural refugee settings through mechanisms that presents the potential to improve and/or develop new means of maximizing and protecting available water sources, water access and equity:

- Enhancement of water supply response through the development and/or update of existing policy and implementation strategies in terms of human security, management and protection of water sources, environment and biodiversity;
- Enhancement of existing local knowledge in terms of rainwater harvesting and adequate use, water treatment and water resource management ;



Recommendations:

- new precision and appropriate technologies that support the maximum use of existing water sources
- Beneficiary empowerment



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