

Executive Summary

SUSTAINING WATER SERVICES FOR REFUGEES AND HOST COMMUNITIES IN ETHIOPIA AND UGANDA

a decade of experience



IRC

KFW

 **UNHCR**
The UN Refugee Agency

unicef 
for every child

Table of Contents

01

SUMMARY

02

INTRODUCTION

03

CONTEXT

04

METHODOLOGY

05

RESULTS &
DISCUSSION

07

RECOMMENDATIONS
& CONCLUSION

10

ABOUT THE
AUTHORS

00

SUMMARY

The study conducted by the R-WASH Programme (Regional Water Sanitation and Hygiene (WASH) Programme for Refugees, Internally Displaced Persons and Host Communities in East Africa jointly implemented by UNICEF and UNHCR) examines the development and management of water services in refugee and host communities in Itang, Gambella region, Ethiopia, and Rwamwanja, Uganda. It highlights the shift towards sustainable, integrated water supply systems, focusing on the challenges and achievements in infrastructure development, service levels, costs, and financing. The study provides insights into the complexities of ensuring effective and sustainable water supply in refugee-hosting areas. It emphasizes the importance of utility-led models, their impact on the communities, and the strengthening of their social cohesion, offering valuable lessons for similar initiatives in other challenging environments. This comprehensive analysis serves as a resource for stakeholders in the WASH sector, especially in areas with significant refugee populations.



Nyayong Koang is a water kiosk operator in Itang, Gambella region, Ethiopia. Nyayong makes a living selling water while serving her community (©UNICEF Ethiopia/2023/Nahom Tesfaye).

[Sustaining water services for refugees and host communities in Ethiopia and Uganda](#)

01

INTRODUCTION

More than 60 per cent of all refugees are ultimately displaced for decades, served by under-resourced humanitarian systems that are designed for short term responses [1]. Children are typically most affected by the negative impacts of refugee crises, as they face numerous challenges, often because they have few – or no – options to move through safe and regular pathways whether on their own or with their families[2].

Moreover, while children make up less than one third of the global population, they accounted for more than 41% of the world’s refugees in 2022[3]. Humanitarian water supply interventions that need to be deployed quickly and without further adaptation and development, are typically ill-suited to long-term sustainable water services provision. Limited service levels and the relatively high costs of technology options and delivery mechanisms are key constraints. Piped water supplies provide the highest level of service, and offer the most potential for economies of scale in service provision, with professional utilities being the most widespread model for management.

The Itang-Gambella Water Supply Project has been a pioneer in the development of such integrated models for water supply in Ethiopia and the wider region. Key lessons have been the clear preference for piped supply schemes over trucking solutions in protracted refugee situations, the feasibility of integration of water supply in areas with large, displaced communities and sizeable host communities, and the importance of having a reliable client like UNHCR to ensure financial stability for a utility. The integrated model also mitigates social tensions and is believed fostering social cohesion between served community groups. Challenges include identifying and engaging existing utilities and sustainable financing models in vulnerable contexts.



[1] UNHCR/UNICEF. 2020. [Blueprint for joint action: case for investment](#)

[2] UNICEF. [Migrant and displaced children](https://www.unicef.org/migrant-refugee-internally-displaced-children). [https://www.unicef.org/migrant-refugee-internally-displaced-children, accessed April 2024]

[3] UNICEF Data, June 2023. [Child displacement](#)

[https://data.unicef.org/topic/child-migration-and-displacement/displacement/, accessed April 2024]

CONTEXT

GAMBELLA, ETHIOPIA

Ethiopia has hosted refugees from neighbouring countries such as Sudan, South Sudan, Somalia, Eritrea, and Djibouti since the early 1980s. According to UNHCR, there are currently over 1,000,000 refugees living in the country. By 2023, there were 394,000 South Sudanese refugees in the Gambella region, with 62 per cent living in the three camps of Kule, Tierkidi and Nguenyiel located close to the town of Itang. In the camps all the necessary support to maintain a dignified standard of living are provided by UNHCR, WFP, UNICEF, and international implementing partner agencies in close coordination with the government of Ethiopia's Refugees and Returnees Service (RRS).

RWAMWANJA, UGANDA

By May 2024, Uganda was hosting over 1,600,000 refugees, equivalent to 3.5 per cent of the country's total population ⁴. The refugee population has put immense pressure on Uganda's already stretched capacities and resources. To address this challenge, the Government of Uganda (GOU) included refugee management and protection in its second National Development Plan (NDP II) 2015-2020. It shifted its focus from a solely humanitarian approach to recognizing the linkage between humanitarian and development, recommitting to maintaining its open border policy. In 2023, the Rwamwanja settlement hosted 92,764 refugees, mostly fleeing the violence in North and South Kivu in the Democratic Republic of Congo (DRC).

Both the Government of Uganda and Ethiopia have joined the Global Compact for Refugees (GCR) in 2017 and 2018 and have since adopted gradually a more inclusive approach in hosting refugees by ensuring that the fundamental needs of both the host communities and the refugees are met, including access to WASH services, in an integrated manner. Joining the GCR has been instrumental for paradigm shift to a utility managed model for water service provision in refugee-hosting areas.

[4] UNHCR, 2024. Operational Data Portal. [<https://data.unhcr.org/>]

METHODOLOGY

This study summarizes the assessment of experiences over the last decade in transitioning water supply arrangements in contexts with long-term refugee populations. Two case studies are described from locations with integrated models to serve refugees and host communities, and where there has been a transition to management by utilities. These are: the case study from Itang in Gambella region, Ethiopia; and Rwamwanja, Uganda.

This study aims to provide a deeper understanding of the costs of water production and distribution in these cases, as well as possible efficiencies through water metering, billing, and revenue collection. It also provides options and recommendations for financing, seeking to further improve the sustainability of integrated arrangements and utility-led models.

The research methodology involves a desk-based approach supplemented by site visits and interviews. It was built around four steps linked to key research questions (i) gain an understanding of the development of infrastructure and service delivery models; (ii) establish estimates for service levels; (iii) gain an understanding of the economic landscapes of service delivery; and, (iv) develop learning and recommendations.

RESULTS & DISCUSSIONS

The study provides an in-depth analysis of the transition from water trucking towards sustainable, utility-led water service models in two locations with long-term refugee populations over a 10-year period. Key findings are:

01 The transition from emergency measures to sustainable, integrated water service systems

for refugees and their hosts has been marked by the development of resilient infrastructure and necessary policy changes at national and sub-national levels. Consequently, water production and overall service levels have seen marked improvements. In Itang, the investment in the water system has led to a substantial increase in water production from 700 m³ to over 4,000 m³ daily, evolving from a low functioning with frequent breakdowns to a highly reliable and well-functioning system, overseen by a board that enhanced accountability mechanisms. Both in Rwamwanja and Itang, the investments allowed for catering to the growing needs of refugees and host communities with water quality now meeting international drinking standards, and enhanced accessibility reducing collection times, thereby improving the overall health and well-being of the communities involved.

02 Adoption of conflict sensitive and peace building approaches

to develop an integrated system design, and with conflict resolution mechanisms as part of the environmental and social management framework to address disputes or conflicts that may arise during the transition are essential in the success and sustainability of the integrated utility model in conflict-affected contexts.

03 The transition to the sustainable water service delivery systems has brought substantial cost benefits contributing to sustainability.

The Itang case study reveals a dramatic cost reduction in water service delivery, with expenses per cubic meter plunging from \$11.38 to \$0.93 over ten years, a 92% decrease. This was achieved through a phased approach: initially, replacing emergency water trucking with a permanent system managed by an NGO, resulting in a seven-fold cost drop, followed by a transition to utility management, yielding an additional 34% savings. In 2024, solarizing the pumping stations further cut costs significantly. Additionally, diversifying power sources from solely diesel to a mix of solar, grid, and diesel power has not only reduced operational costs but also improved system reliability and lessened dependency on fuel deliveries, which were often hindered by safety-related access restrictions.

04 The utility-led water provision model has proven effective highlighting its potential for long-term sustainability and operational efficiency albeit the need for sustained financing and subsidies being key issues to be addressed

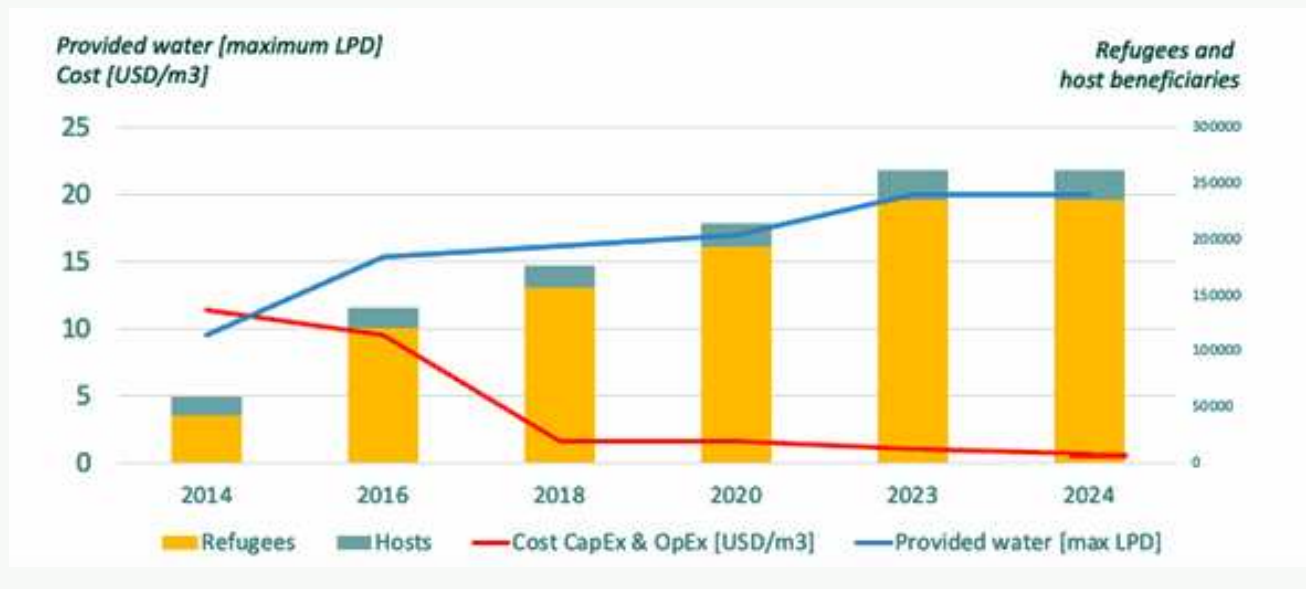
Despite challenges in securing ongoing financing and subsidies, this model facilitates integrated services for refugees and host communities, helping to alleviate conflict and foster social cohesion. Itang's experience shows that strengthening the utility's risk management, through measures like contingency planning and grievance management, has significantly improved stakeholder collaboration and service continuity.

05 Long-term sustained services for refugees and host communities need predictable funding.

Current humanitarian funding is not well suited to this task and new financing solutions must be developed to reduce pressure on emergency budgets which hinders responses elsewhere.

Overview of key results of water service delivery in Itang over time shifting from water trucking to a fully-fledged utility managed water system: number of refugees and hosts, cost evolution in \$US per cube meter (life cycle cost calculation based on both capital investments or “CapEx” and the costs related to operation and maintenance or “OpEx”, and maximum water in liter per person (LPD) per day.

Water Service Delivery - Itang



RECOMMENDATIONS & CONCLUSION

The management of refugee camps, particularly in regions with protracted displacement, poses complex challenges. Among these challenges, the sustainability of essential services, such as utilities, is of critical concern. In areas like the Gambella Region of Ethiopia, where a large population of refugees resides, the delivery of services can be both technically difficult and financially challenging to sustain. Compounding these challenges is the presence of a significantly larger refugee population than the host community in some areas.

To address this issue, a comprehensive transition plan is needed, which balances the immediate needs of refugees with the imperative of long-term financial sustainability. This plan, composed of interlinked and overlapping implementation phases, is designed to ensure that refugees can continue to access vital utility services without putting an unsustainable burden on humanitarian organizations.

We outline a series of essential implementation recommendations that encompass technical, financial and advocacy related solutions. Each of these recommendations represents a critical facet of managing the transition effectively. Through planning, data collection, community engagement, and advocacy, we aim to guide the transition process toward a sustainable and equitable outcome. The welfare of refugees remains at the core of our efforts, as we work to strike the delicate balance between immediate support and long-term self-reliance.

Technical Solutions

Technical solutions include detailed assessments for the permanent water systems to be implemented as well as for the transition towards alternative energy sources like solar, wind, or biomass. This also involves designing infrastructure and management systems that support integrated water service provision, potentially extending to in-camp distribution at kiosks, yards, or household levels.

Financing mechanisms

Assess and develop financing mechanisms for integrated water and sanitation services to refugees and their host communities. The primary analysis on financing mechanisms is based on the situation in Itang, Ethiopia, with additional perspectives from Rwamwanja, Uganda. The operation of the water system is currently predominantly funded by UNHCR, accounting for 95% of the budget, with a minor 5% from local sources. To broaden the financial base for operations, maintenance, and infrastructure renewal, consider the following strategies:

- *Enhance financial contributions from refugees as consumers and/or improve cost recovery via tariffs from institutions and households. Refugee contributions involve policy and institutional reforms, income generation initiatives and require approaches that mitigate potential conflict between the forcibly displaced people and their hosts.*

Financing mechanisms

- *Implement cross-subsidization to offset expenses in refugee-dense regions by merging utilities to serve larger, more varied customer groups, achieving economies of scale.*
- *Obtain subsidies from consistent regional and national budget allocations.*
- *Secure funding from diverse external sources, channelled through a specialized fund or financial facility dedicated to subsidizing water supply operations in areas with enduring refugee settlements. Design and implement targeted assistance programmes, such as direct cash transfers or in-kind support, tailored to the needs of vulnerable groups.*

Advocacy strategy

Implement a comprehensive advocacy strategy that includes targeted outreach to international donors or financing institutions, UN agencies, governments and other relevant stakeholders. Craft compelling messages highlighting the importance of continued external funding and its impact on vulnerable populations.

Continuous innovation

Need for continuous innovation, collaboration, and commitment to the Sustainable Development Goals in water service management.

This analysis serves as a resource for stakeholders in the WASH sector, providing a blueprint for similar initiatives globally and contributing to the broader discourse on humanitarian response in refugee-hosting areas.

About the Authors

J. Pearce (a), L. Verstraete (b), M. Mutswenje (c), L. Katsi (d), P. Magara (a), K. Goyol (b), J. Butterworth (a), D. Mondorf (e), and D. Henrike Klau-Panhans (f)

(a) IRC, Riviervismarkt 5, The Hague, 2513 AM, The Netherlands

(b) UNICEF, Eastern and Southern Africa Regional Office, UN Gigiri, Nairobi, Kenya

(c) UNICEF, Ethiopia Country Office, UNECA Compound, Zambezi-Building, Addis Ababa, Ethiopia

(d) UNHCR, Ethiopia Country Office, Ethio-Chinese Friendship Road, Kirkos Kiflektema Wereda 03, Wollo Safer, Addis Ababa, Ethiopia

(e) UNHCR Regional Bureau for the East and Horn of Africa & the Great Lakes Region, Manga Close, Nairobi, Kenya

(f) KfW, Palmengartenstraße 5-9, 60325 Frankfurt am Main, Germany

Corresponding Author

Lavuun Verstraete, R-WASH Programme Manager, UNICEF

lverstraete@unicef.org

Acknowledgements

We would like to express our sincere gratitude to all individuals and organizations who have contributed to the research paper. UNICEF and UNHCR initiated and funded the research under the Regional WASH Programme for Refugees, IDPs and Host Communities in East Africa (R-WASH) with funding from the German government. UNICEF ESARO Country Offices were instrumental in compiling a significant amount of historical data, support to analyzing results and inputs to the paper.

We extend our appreciation to our research advisors, Lavuun Verstraete and Steven Mudhuviwa, for their invaluable guidance, expertise, and continuous support throughout the research process. Their insights and feedback were crucial in shaping the direction of our work. The authors also extend specific thanks to Luckson Katsi and Patrick Okello from UNHCR Ethiopia, Alemayehu Belay UNICEF Ethiopia and Simon Peter Odong from UNHCR Uganda.

Sustaining water services for refugees and
host communities in Ethiopia and Uganda

10