

LIVING WITH CLIMATE-RELATED HAZARDS

Impacts on Access to Markets/Small Business in Nyumanzi Refugee Settlement – Adjumani District

Key Messages

- Extreme weather is disrupting Nyumanzi/Dzaipi/Arinyapi markets and small businesses by damaging roads and stalls disrupting supply chains, leaving vendors struggling to access and sell goods.
- As heat, floods and poor drainage make working conditions harsh and unsafe, these extreme weather events can undermine vendors' health, safety and income.
- Community responses to climate hazards affecting markets and small businesses include upgrading stalls, installing drainage, adjusting market hours, planting shade trees, relocating or engaging in mobile vending when market access is disrupted.

Context & Rationale

Uganda, hosting over 1.9 million refugees as of November 2025, is the largest refugee hosting country in Africa. Nyumanzi settlement, established in 2014, is one of the largest of 19 individual settlements that together form the Adjumani settlement in Northern Uganda. It is home to approximately 48,181 refugees.¹ The refugee population, nearly all from South Sudan is predominantly Dinka, while the host community is mainly Madi.²

Nyumanzi settlement faces considerable climate-related challenges, particularly extreme heat, drought and flooding, compounded by a heavy reliance on agriculture and constrained infrastructure capacity. In 2023, floods temporarily displaced over 4,000 people, and the region is projected to experience severe heat risks by the end of the century.³

Extreme weather events have increasingly disrupted market and business operations in Nyumanzi settlement/Dzaipi/Arinyapi sub county and its surrounding areas, affecting the availability, pricing, and transport of essential goods. Prolonged dry spells and floods have damaged roads, reduced local crop yields, and increased transport costs, forcing vendors to source supplies from distant areas. Limited storage infrastructure further heightens losses, particularly for perishable goods, making market trade more fragile and unpredictable.⁴

Assessment Overview

The assessment aims to identify and analyse community-based coping and adaptation strategies to climate-related hazards and climate variability among refugee and host communities in Nyumanzi settlement. More specifically, it aims to:

This brief focuses specifically on the livelihood sector, analysing how climate-related hazards particularly extreme heat, drought, and flooding affect markets and business activities in/around Nyumanzi settlement. It aims to:

- Examine climate impacts on vendors working conditions, seasonal price fluctuations and customer demands.
- Document market/business specific coping and adaptation strategies adopted by market vendors and small business owners.
- Provide context-specific evidence to inform humanitarian and development programming that strengthens climate-resilient livelihoods.

Methodology

The mixed-methods assessment used an Area-Based Assessment (ABA) approach, which offers a holistic picture of climate-related challenges in Nyumanzi by examining the entire geographic area and the different sectors and population groups within it. It also draws on the Community-Based Adaptation (CBA) approach, which supports communities in identifying, designing, and leading their own climate adaptation strategies. This approach emphasizes local knowledge, existing vulnerabilities, and community-driven resilience building. The study integrated both quantitative and qualitative data collection:

- **Quantitative: 887 interviews comprising**
 - 446 refugees
 - 431 host community members
- **Qualitative: 211 participants across**
 - 29 key informant interviews
 - 16 participatory workshops
 - 2 focus group discussions.

The study area covered Nyumanzi and its neighbouring communities, focusing on the experiences of both refugee and host populations. Data analysis incorporated stratification by gender and displacement status, and remote sensing techniques were used to examine hazards such as heat, drought, and flooding. Efforts were made to include persons with disabilities and older individuals to ensure their views and experiences were adequately represented.

Findings reflect the experiences of respondents in Nyumanzi/Dzaipi/Arinyapi and may provide indicative insights for similar contexts, though they are not statistically generalizable beyond the assessed population.

¹ UNHCR, [Operational Data Portal](#), last consulted on 30th October 2025

² IMPACT, [UGA2406_Climate-report](#), April 2025.

³ Monitor - Uganda, [Over 4,000 refugees hit by floods in Adjumani](#), 2023.

⁴ IMPACT, [UGA2406_Climate-report](#), April 2025

KEY FINDINGS:

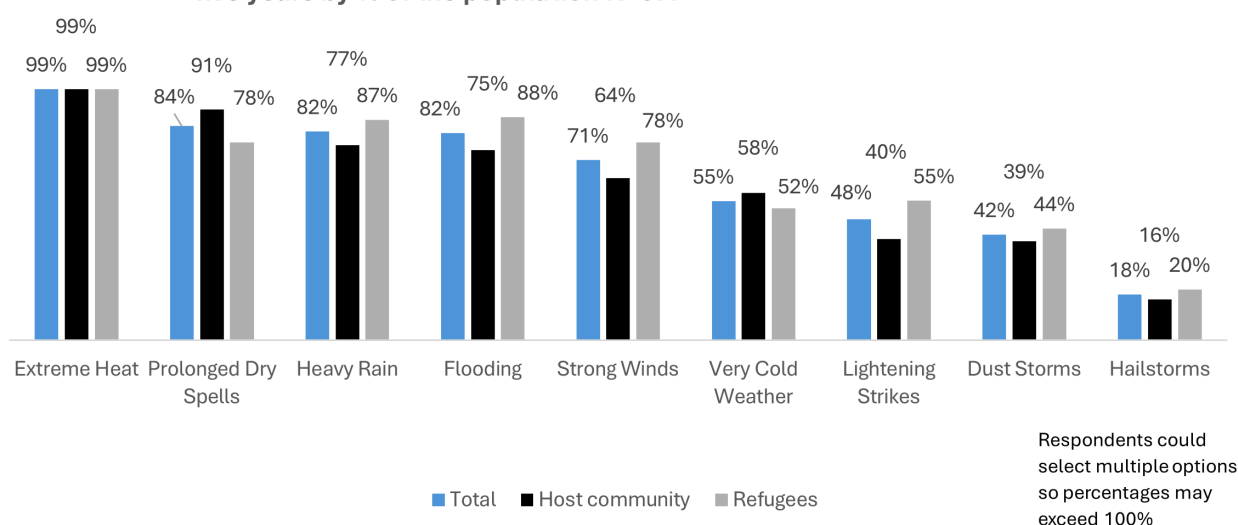
SECTION 1:



Overview of Identified Climate Hazards.

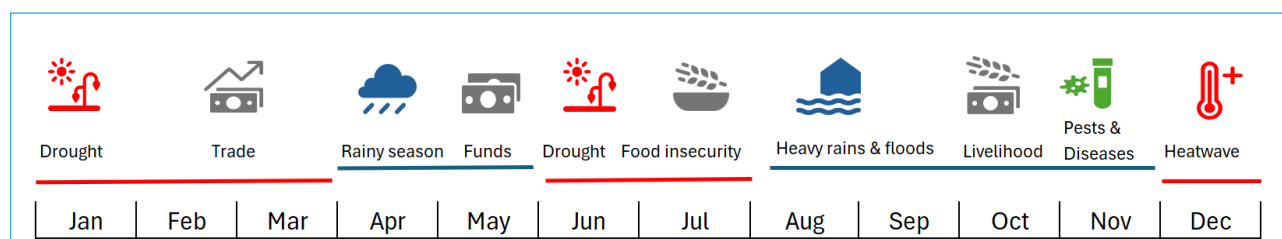
Over the past five years, the population of Nyumanzi faced important climate-related impacts, with **99%** experiencing extreme heat, **84%** enduring prolonged dry spells and **82%** affected by heavy rains and flooding. While these climate events affected both refugees and host communities, they were particularly pronounced among refugees, exacerbating their vulnerabilities.

Climate related hazards reportedly experienced in/around Nyumanzi in the past five years by % of the population N=877



Seasonal Calendar for Nyumanzi Settlement.

The seasonal calendar was created from information gathered through a participatory workshop conducted with both refugees and host community members in Nyumanzi settlement.



Based on the seasonal calendar, trade activity is strongest in February and March, when market supply and household purchasing power are relatively stable. In contrast, June and July show heightened food insecurity, driven by drought conditions that reduce agricultural production, limit market availability, and increase dependency on purchased food.

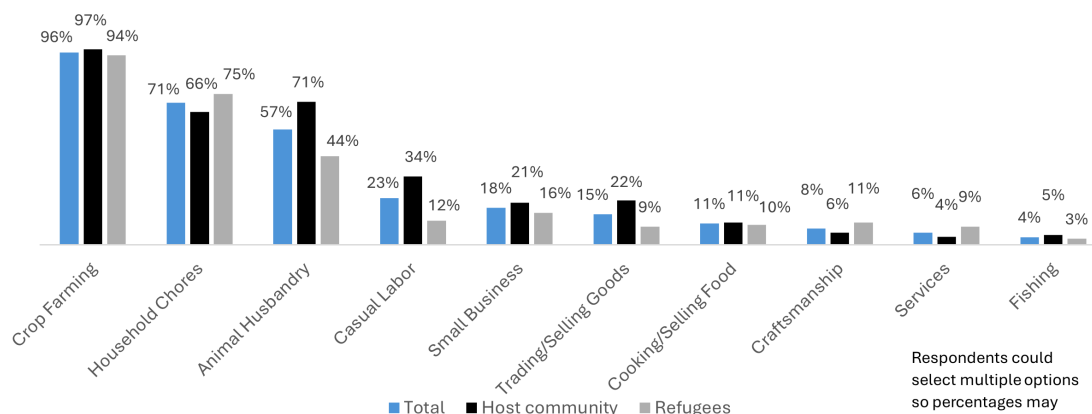
SECTION 2:



Livelihood Impacts

This section explores the various livelihood activities undertaken by communities in/around Nyumanzi settlement. Findings show that 18% of residents engage in small businesses, primarily operating within local marketplaces, as their source of income. Marketplaces play a crucial role in supporting household livelihoods but remain highly vulnerable to economic and climatic shocks.

Main Livelihood activities engaged in over the past 12 months, by % of the population. N=877



Impact on markets and small businesses.

Climatic related hazards have affected markets and businesses in the following ways.

- **Dry spells reduce vegetable yields**, forcing vendors to source from distant towns (Gulu, Pabo, Kampala) hence higher prices in the markets.
- Sourcing from distant lands means **higher costs of transportation and spoilage** from long journeys.
- **Increased competition** for scarce resources further strained small businesses.
- **High temperatures** damaged road conditions, delaying vehicles and disrupting supply chains of produce.
- 34% of respondents affected by **heavy rains/flooding reported missing market days** or losing trading opportunities.

Impact on vendors' working conditions

- High temperatures have caused dehydration, fatigue, dizziness, and heat exhaustion, with elderly vendors most vulnerable.
- Poor drainage during heavy rains led to sanitation issues, spreading diseases like malaria, cholera, and typhoid.
- Floodwaters contaminated fresh produce, raising risks of waterborne diseases for vendors and customers.
- Market stalls (timber/iron sheets) were damaged by strong winds and floods, forcing costly repairs or relocation.
- Dust and wind conditions increased vulnerability to theft; vendors reported money being stolen during windy periods.
- Extreme weather reduced operating hours and earnings.

Seasonal Price Fluctuations and Customer Demand

- During the dry season, prices of vegetables and fruits increase due to scarcity and higher transport costs.
- In the rainy season, vegetable prices dropped due to local abundance.
- Flooded roads reduced customer access, lowering sales.
- Extreme heat discouraged customers from staying long in markets.
- Customers often avoided markets altogether during extreme weather, further reducing sales.

Climate change is expected to make these fluctuations more severe and unpredictable.

SECTION 3:

Community Responses

- Alternate work hours by starting work early or late in the evenings to avoid heat.
- Use of alternative trade routes to improve supply chain resilience during droughts.
- Shift to non-flooded areas to continue operating the businesses.
- In the dry seasons, the vendors would water the vegetables to keep them fresh.



“We have also had to build semi-permanent structures to manage the flooding”.

Market Vendor in Nyumanzi settlement

Recommendations

- **Market & Business Support:** Complementary support should include financial assistance to small-scale vendors and business training to enhance financial resilience.
- **Climate-Resilient Buildings and Infrastructure:** There is need to upgrade road infrastructure to reduce transport disruptions from floods and extreme heat. Construction of flood resistant and insulated market stalls shaded areas for vendors.
- **Climate-adaptive measures,** such as sustainable waste management, and tree planting for heat and rain protection.
- **Improved access to electricity and water** to preserve perishable goods and support daily operations.
- **Enhance market and community security,** including interventions targeting youth gangs to prevent theft, violence, and disruptions to business operations during extreme weather conditions.
- **Strengthen health outreach services in marketplaces,** ensuring regular provision of malaria treatment and other essential medical support during high-risk seasons.

“

Support should be provided in the form of business capital as majority of the vendors are small business owners and are always affected by climate hazards”.

– Market vendor in Nyumanzi settlement



For more information: <https://ulearn-uganda.org/living-with-climate-related-hazards-impacts-and-community-responses-among-refugees-and-hosts-in-nyumanzi-settlement-adjumani-uganda/>