Uganda Soroptimist Solvatten Report

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Background

This report aims to explore the use and impact of Solvatten, a solar-powered water treatment system, among women in rural Uganda. The study is based on interviews conducted in a village near Lira and in Barlonyo, where women have received Solvatten units through the efforts of Soroptimist organizations in Sweden. The report examines how the technology affects daily life, health, and household practices, highlighting both its benefits and challenges in these communities.

Uganda is a country in East Africa with an estimated population of over 45 million people, comprising more than 50 ethnic groups. The economy is primarily based on agriculture, with a large proportion of the population depending on farming, even as the service and industrial sectors continue to grow. Although Uganda has had a steady economic growth over recent decades, poverty remains a crucial challenge. According to the World Bank, the national poverty rate has declined to 16.1% in 2025, down from 20.3% in 2019/2020 (Vaughan et al., 2025). However, this overall figure masks deep regional inequalities. Poverty is far more prevalent in rural areas, where 19.4% of the population lives below the poverty line, compared to 10.3% in urban settings (Allafrica, 2025). Lira, located in Northern Uganda, where most largely rely on subsistence agriculture, with over 80% of households depending on small-scale farming. Barlonyo, a village in Lira District's Ogur sub-county, lies approximately one hour drive from Lira town. The village became tragically well-known during the Lord's Resistance Army insurgency, when rebels attacked an internally displaced persons camp on February 21, 2004, killing over 300 civilians and abducting many more. The massacre left deep social and economic consequences, which still affect development in the area (Wikipedia, 2024).

Solvatten is a portable water treatment and heating system designed for households that lack access to safe and reliable water. The device uses sunlight to purify contaminated water through a combination of ultraviolet radiation, heat, and filtration, eliminating harmful microorganisms. The system consists of a durable, 10 liter plastic container that opens like a book and is filled with water before being placed in direct sunlight. After a few hours, the water becomes safe for drinking, cooking, and hygiene. In addition to improving water quality, Solvatten reduces the need for firewood or charcoal, making it an environmentally sustainable solution. It also plays a critical role in improving health, reducing household costs, and supporting daily life, particularly for women and families in resource-limited rural settings (Solvatten, 2025).

Insights from interviews

The following sections present the perspectives of women who use Solvatten in Lira and Barlonyo. Through interviews and observations, the report explores how the system fits into their daily routines, the health and practical benefits it provides, and the challenges or limitations they face. By highlighting the lived experiences of these women, the report provides insight into the broader social, economic, and environmental impact of Solvatten in rural Uganda.

In the communities visited in Lira and Barlonyo, Solvatten has become an essential part of daily life for the women who use it. Most households operate the device every day when the weather is good, often preparing two to three batches on hot, sunny days. Compared to their previous reliance on firewood and boiling, Solvatten represents a profound shift. Before, women had to spend significant time collecting firewood, a difficult task in areas where much of the land is privately owned, especially for pregnant women who could only gather small branches. They then had to boil the water inside poorly ventilated huts filled with smoke. Today, they simply walk the roughly 15 minutes needed to fetch water, fill the device, and place it in the sun. Although Solvatten requires planning and sometimes an early start to prepare the first batch, the actual purification process is effortless and takes around one to two hours. During that time, women are free to focus on farming, childcare, or household responsibilities. Once the water is ready, they reserve it for later use and immediately start a new batch if needed. Many women describe a sense of pride and dignity in owning a Solvatten, the Ugandan soroptimist Grace states “It’s a special feeling to have Solvatten” and says it promotes their status within the community.

The benefits of Solvatten, as described by the women themselves, are wide-ranging and deeply impactful. The most significant improvement is in health: the treated water reliably eliminates harmful bacteria, and many families in Barlonyo report that stomach illnesses, which were once common, have disappeared entirely. The cleaner water has also reduced health problems in children, particularly infections of the ears and eyes. Solvatten has become especially valuable for maternal and newborn care; since local health facilities often lack electricity, women heat purified water with Solvatten to bathe babies and mothers after childbirth. The device also reduces household smoke exposure, as boiling water over open fires inside traditional huts once increased respiratory diseases. Beyond health, Solvatten greatly eases daily work. It eliminates the need to prepare fires, reduces dishwashing, and saves significant time. The purified hot water is appreciated for everyday use, including making tea, which many women mentioned specifically. Culturally, Solvatten has brought an unexpected social effect: several women shared that the improved health and reduced workload have made them feel more secure and optimistic about expanding their families—some even said that women in the village “want to produce more babies

now." Above all, the device supports both independence and well-being, allowing women to live healthier, safer, and more efficient lives.

Despite its many advantages, the women also highlighted several challenges and areas where Solvatten could be improved. Out of 82 units in Barlonyo, seven have been damaged, often due to cracked glass or broken clips that hold the two sides together - accidents frequently caused by children playing with the device. Another recurring problem is the removable indicator that shows when the water is ready; children sometimes take it out, leaving the user uncertain about proper purification times. Many women wished for a larger capacity, ideally a 20-liter version, as well as a design that keeps the water warm for longer periods. Weather dependency remains a major limitation: the device works well in sunny conditions but poorly on cloudy days. The community leader in Barlongyo suggested integrating solar batteries or alternative energy support to ensure consistent use. Women also requested locks to prevent children from opening the unit, stronger materials, and access to spare parts such as replacement caps.Training in basic repair would further improve longevity. One woman in Borlongyo suggested that every Solvatten box should include extra caps. Additional ideas included the possibility of cooking with Solvatten, or developing parallel community solutions such as funds, uniforms, or complementary solar panels. Because demand is high and many households must share a single unit, the process can be slow and sometimes insufficient for large families. These suggestions reflect both the value placed on Solvatten and the community's desire to strengthen its effectiveness and durability.

Summary

To summarize, this report examines the use and impact of the Solvatten water treatment system based on interviews with women in rural communities in Lira and Barlonyo, northern Uganda. The interviews reveal that Solvatten has become an important part of daily life, significantly reducing the time and labor previously spent collecting firewood and boiling water, while providing reliable access to clean, heated water. Women reported notable health improvements—especially fewer stomach illnesses and reduced infections among children—as well as benefits for maternal and newborn care. At the same time, they identified challenges such as damaged units, lost components, limited capacity, and dependence on sunny weather. Their suggestions for improvement underscore both the value of Solvatten and the desire for more durable, larger, and less weather-dependent designs.

Sources

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