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## Water Insecurity in Rural Uganda: Using Community-Made Slow Sand Filtration Systems

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## **Water Insecurity in Rural Uganda: Using Community-Made Slow Sand Filtration Systems**

### **Abstract**

Safe water allows for sustainable growth of communities by improving the health of people, lowering the burden of disease, and increasing economic growth. That is why the United Nations (UN) has created the Sustainable Development Goal (SDG) 6: ensure availability and sustainable management of water and sanitation for all. Target 6.1 of SDG 6 is to achieve universal and equitable access to safe and affordable drinking water for all by the year 2030. We aim to address target 6.1 in Uganda, a country of roughly 44 million people. According to reports from the UN and World Health Organization (WHO), 93% of the Ugandan population does not have access to clean drinking water, with majority found in rural regions.

Uganda's demand-driven approach to water in rural areas requires communities to request a point water source to access potable water. Water user committees (WUCs) oversee the operation and maintenance of point water sources, but due to the voluntary nature of WUCs, dysregulation and low commitment to the point water sources is common. Furthermore, even if the communities are able to access water, lack of proper upkeep makes the water unsafe to drink.

There have been efforts to provide safe drinking water to rural Uganda, such as building wells or filtration systems. However, these are only temporary solutions, highlighting a need for a sustainable innovation that addresses the accessibility to clean drinking water in rural Uganda. We propose a four-phase plan to introduce slow sand filters (SSFs), which pass water through a bed of sand to eliminate microorganisms and can be made from locally sourced materials for about \$4 USD. The first phase will consist of finding community champion(s) and conducting interviews to acquire information on the needs of the community. In phase two we will integrate the feedback from the community members and host workshops on the importance of clean water, sanitation and hygiene and how to make SSFs for personal household use. The third phase will be a follow-up study to determine if the community applied the knowledge from the workshops to create SSFs and how effective they are in removing contaminants. During the final phase we will provide information to the community members on how they can start their own businesses by selling the SSFs, empowering the community and providing a source of income. With this four-phase project, we hope to make a sustainable change in the access to potable water in rural Uganda.