



# Scaling Up Solar-Powered Water Filtration Systems in Rural Senegalese Communities,

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## Abstract

Over the past decade, rural communities in Senegal have faced significant challenges in accessing safe drinking water due to poor infrastructure and financial constraints. A qualitative research design was employed, involving semi-structured interviews with 30 community members from selected villages where solar-powered water filtration systems were installed between and . Data collection methods included focus groups and observations of system usage. Community feedback indicated that the solar-powered water filtration systems significantly improved access to clean water, with over 80% of respondents reporting increased reliability in water supply compared to pre-installation levels. User satisfaction scores averaged above 7 out of 10. The findings suggest a positive impact on community health and well-being through enhanced water quality and more reliable access to safe drinking water, particularly among vulnerable populations such as children and the elderly. Future interventions should focus on expanding the reach of these systems by increasing financial support for communities and improving maintenance training for local service providers. Solar-Powered Water Filtration, Rural Senegal, Community Engagement, User Satisfaction

**Keywords:** *Sub-Saharan, ruralization, sustainability, participatory approach, community empowerment, indigenous knowledge, ethnography*

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