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Social Perception of the Benefits of Using a Solar Dryer to Conserve Fruits and Vegetables in Rural Communities in Manica - Mozambique

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Abstract : In Mozambique, over 80% of the rural population relies on agriculture, livestock, and silviculture for their livelihoods. Unfortunately, these communities face persistent food shortages, which are exacerbated by natural disasters and post-harvest losses due to inadequate storage facilities. Addressing post-harvest loss is critical not only for ensuring food security but also for preventing financial hardships faced by farmers. The study delves into the perceptions of beneficiary communities regarding the construction of three food dryer models made from metal, wood, and clay brick. These solar dryers are part of the project titled 'Solar Dryer Integrated with Natural Rocks as Energy Storage for Drying Fruits and Vegetables in Mozambique.' The overarching goal is to enhance food availability beyond the typical growing season, particularly for fruits and vegetables, while simultaneously combating hunger. Given the context of climate change impacts on agriculture, this project becomes even more relevant. Structured interviews conducted with 45 members of beneficiary associations in Manica Province—primarily female heads of households—revealed that rural communities are aware of various food drying alternatives. However, reliance on traditional methods often comes at a cost: compromised product quality and reduced shelf life. To address these challenges, the project implemented energy storage solutions like rock-based thermal energy storage for food drying. This result underscores the urgent need to foster innovation and extend these sustainable practices —such as solar dryers integrated with thermal energy-storage systems made of locally abundant and affordable materials— to more local communities, especially those with significant agricultural potential within the country. By taking these actions, we can improve food security and alleviate hunger.

Keywords : solar dryer, food security, rural community, small technology
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