



# Solar Cookstoves in Somali Nomadic Communities: A Three-Year Impact Assessment in Senegal

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## Abstract

Solar cookstoves have been introduced to help address energy poverty in nomadic communities, particularly in arid regions where traditional cooking methods are inefficient and time-consuming. Data collection was conducted through structured interviews and focus group discussions involving 150 participants from six randomly selected villages. A mixed-methods approach was used to gather both quantitative data (adoption rates) and qualitative insights into user experiences and challenges. A significant adoption rate of solar cookstoves, with over 60% of households reporting regular use, emerged within the first year. Users noted substantial time savings (average reduction of 2 hours daily) and improved health outcomes due to reduced exposure to smoke from traditional cooking methods. The study underscores the potential for solar cookstoves as a sustainable energy solution in nomadic communities, particularly those facing limited access to conventional fuels. Policy makers should consider subsidizing or providing free solar cookstoves to incentivize wider adoption. Additionally, training programmes on proper usage and maintenance should be implemented to maximise benefits. The empirical specification follows  $Y = \beta_{0+\beta}^{-1} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** African geography, nomadic communities, sustainable energy, adoption studies, solar cookstoves, indigenous knowledge systems, community engagement

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