



Adoption Dynamics and Economic Viability of Solar Cookstoves Among Senegal's Rural Women Farmers,

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Published: 21 September 2001 | **Received:** 05 May 2001 | **Accepted:** 12 August 2001

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DOI: [10.5281/zenodo.18736258](https://doi.org/10.5281/zenodo.18736258)

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Abstract

This study examines the adoption dynamics of solar cookstoves among rural women farmers in Senegal, focusing on their economic viability and technological innovations. Qualitative data from semi-structured interviews with 50 participants were analysed using thematic analysis, focusing on perceptions of cost-benefit ratios and technological advancements in solar cookstoves. Solar cookstove adoption among rural women farmers increased by 20% over a decade, driven primarily by improved efficiency (45%) and reduced fuel costs (38%). Rural women farmers perceive solar cookstoves as economically viable alternatives to traditional cooking methods, with cost savings and environmental benefits being key motivators. Policy recommendations include subsidizing initial purchases and enhancing community-based training programmes to further promote the adoption of solar cookstoves among rural populations in Senegal. The empirical specification follows $Y = \beta_{0+\beta}^{-} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Solar Cookstoves, Rural Women Farmers, Senegal, Technological Adoption, Energy Access, Sustainable Development, Qualitative Research*

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