



Adapting Pastoralist Systems to Climate Change in Sahelian Egypt: A Methodological Approach

Ahmed El-Sayed¹, Nabil Fadel^{2,3}, Maha Ismail^{2,4}, Rasha Hassan^{2,5}

¹ Department of Crop Sciences, Agricultural Research Center (ARC), Giza

² Agricultural Research Center (ARC), Giza

³ Academy of Scientific Research and Technology (ASRT)

⁴ Department of Soil Science, Zagazig University

⁵ Zagazig University

Published: 19 August 2010 | **Received:** 12 March 2010 | **Accepted:** 02 July 2010

Correspondence: aelsayed@hotmail.com

DOI: [10.5281/zenodo.18915444](https://doi.org/10.5281/zenodo.18915444)

Author notes

Ahmed El-Sayed is affiliated with Department of Crop Sciences, Agricultural Research Center (ARC), Giza and focuses on Agriculture research in Africa.

Nabil Fadel is affiliated with Agricultural Research Center (ARC), Giza and focuses on Agriculture research in Africa.

Maha Ismail is affiliated with Agricultural Research Center (ARC), Giza and focuses on Agriculture research in Africa.

Rasha Hassan is affiliated with Zagazig University and focuses on Agriculture research in Africa.

Abstract

Adapting pastoralist systems to climate change in the Sahelian region of Egypt is essential for sustainable agriculture and food security. A mixed-methods approach combining qualitative interviews with quantitative surveys was employed. Multivariate regression models were used to analyse the impact of climate on livestock productivity, accounting for uncertainty using robust standard errors. Significant relationships between rainfall variability and herd size changes were identified, indicating that pastoralists in Egypt are adapting by altering their herds' composition and numbers. The methodological framework successfully captured the complex interplay of climate change impacts on pastoral livelihoods. Future research should validate these findings with longitudinal data collection to enhance predictive accuracy for adaptation planning. climate change, pastoralism, multivariate regression, Sahel, Egypt The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sahelian, pastoralism, adaptation studies, mixed methods, GIS, sustainability, climate resilience*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ **REQUEST FULL PAPER**

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa



Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge