Three-Year Return on Investment Analysis of Smallholder Coffee Crop Diversification Initiatives in Cameroon: A Methodological Framework

Emmanuel Ngaoua[1,2], **Chomba Agbor**[1,3], **Victor Ngoume**[2], **Nkem Ngoum**[2,4]

[1] University of Dschang

[2] Institute of Medical Research and Study of Medicinal Plants (IMPM)

[3] Department of Animal Science, University of Ngaoundere

[4] University of Ngaoundere

Author notes

Emmanuel Ngaoua is affiliated with University of Dschang and focuses on Agriculture research in Africa.
Chomba Agbor is affiliated with Department of Animal Science, University of Ngaoundere and focuses on Agriculture research in Africa.
Victor Ngoume is affiliated with Institute of Medical Research and Study of Medicinal Plants (IMPM) and focuses on Agriculture research in Africa.
Nkem Ngoum is affiliated with University of Ngaoundere and focuses on Agriculture research in Africa.

Abstract

Smallholder coffee farmers in Cameroon often face challenges such as climate variability and market fluctuations, leading to unstable income streams. The study employed a mixed-methods approach combining quantitative data analysis with qualitative case studies. A linear regression model was used to estimate return on investment (ROI) for diversified crops compared to traditional coffee cultivation, accounting for uncertainties through robust standard errors. Diversified crop investments showed an average ROI of 15% over three years, significantly higher than the baseline traditional coffee farm income, with notable increases in cashew and cocoa yields. The methodology framework provided insights into the economic viability of diversifying smallholder coffee farms in Cameroon, highlighting specific crops that yield substantial returns despite initial investment costs. Policy makers should consider incentivizing farmers to adopt diversified crop strategies through targeted subsidies and market access programmes. The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Geographical Indicators of Sub-Saharan Africa, Smallholder Agriculture, Mixed-Methods Research, Sustainability Assessment, Economic Impact Studies, Climate Change Adaptation, Participatory Rural Appraisal*

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