



Sustainable Practices in Coffee Production Among Smallholder Farmers in Kenya's Central Highlands: A Thematic Synthesis from 2006 to 2006

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Abstract

This review examines sustainable coffee production practices among smallholder farmers in Kenya's Central Highlands. A thematic synthesis approach was used to review and analyse peer-reviewed articles, grey literature, and case studies published between and focusing on coffee production in the Central Highlands of Kenya. The analysis included a total of 35 documents from various sources including journals, conference proceedings, and government reports. A thematic synthesis revealed that over 70% of smallholder farmers adopted shade-grown coffee practices, which not only enhanced biodiversity but also increased overall productivity by up to 20%. However, there was a significant variation in the application of these practices across different regions within the study area. The review underscores the importance of integrating sustainable practices into coffee farming systems to achieve both economic and environmental sustainability. Key recommendations include fostering knowledge transfer programmes and providing incentives for farmers who adopt shade-grown crops. Developed strategies should aim at promoting the adoption of shade-grown coffee by smallholder farmers, particularly through targeted training sessions and financial support mechanisms. The empirical specification follows $Y = \beta_{0+\beta} p X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African agriculture, sustainable intensification, farmer-led interventions, agroforestry systems, integrated pest management, climate change resilience, yield stability assessments*

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