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"Reconcile land system changes
with planetary health"

Climate change impacts on indigenous and local agricultural knowledge, and shifting gender roles in south eastern Madagascar

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Abstract

Smallholder farmers in Madagascar have long relied on Indigenous and Local Knowledge (ILK) to sustain intricate agricultural systems tailored to specific ecological conditions. Farmers' ILK includes specialised farming and forecasting techniques, with clearly defined gender roles in tasks such as land preparation, planting, harvesting, and processing of the crops. However, climate change—particularly increased weather variability and intensifying extreme events— and adaptation responses, such as migration, livelihood diversification, and the adoption of new agricultural practices, may challenge or reshape the established gendered division of agricultural labour. This study has two objectives: It investigates how farmers perceive the effectiveness of Indigenous and local (IL) farming practices in the face of climate change and explores whether these practices have been adapted or abandoned. It further explores how shifting environmental conditions are perceived to influence the traditional gendered division of labour and how farmers interpret and evaluate these changes. The research employs a two-phase mixed-methods design. The qualitative phase, conducted in the Atsimo Atsinanana region, involved group and semi-structured interviews with male and female farmers across three age groups (<30, 30–50, >50), while the quantitative phase consisted of a household survey, which was conducted with household heads and their spouses across the three regions of Atsimo Atsinanana, Anosy, and Androy. The collected data will be analysed using both descriptive and inferential statistical techniques, such as cross-tabulations and regression analysis, to examine how intersecting socio-economic factors, such as age, gender, education and household composition, influence perceptions of ILK in the face of climate change and related shifts in the gendered division of labour.

Keywords: Adaptation, climate change, gender, indigenous and local knowledge, intersectionality, Madagascar, small-holder agriculture

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