

## Thesis abstract

# Effect of agricultural certification on smallholder coffee producers in Vietnam

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Coffee is an important commodity traded globally and a primary source of income for millions of households around the world, including in Vietnam.<sup>1</sup> Despite its significant socio-economic role and impact on rural landscapes, there are concerns about the bio-physical and socio-economic sustainability of coffee production. Certification schemes such as Organic, Fairtrade, and Rainforest Alliance offer the potential to enhance environmentally friendly farming practices and build the resilience of livelihoods for smallholder coffee farmers and their local communities.

This thesis examined the adoption, outcomes, resilience, and challenges of certification schemes in coffee production. The research explored the main factors influencing certification adoption, how these certifications influence farmers' ability to cope with challenges (resilience), and the involvement of various stakeholders in supporting the certification process. The research is structured around three primary questions: the drivers behind certification adoption, its role in enhancing farmer resilience, and the efficiency of supporting bodies.

Existing studies about the adoption and impacts of coffee certification schemes have explored the factors affecting farmers' decisions to adopt certification programs and the resilience that these programs gener-

ate for coffee growers. While a number of organisations offer support for certified coffee production, the level and effectiveness of support in Vietnam and the effectiveness of these support interventions varies. This research sets out to bridge the gap, in the unique context of the Central Highlands region of Vietnam.

Previous studies have investigated the relationships between farmer demographics, farming systems characteristics, and the financial and marketing factors that determine the uptake of certification programs. A significant amount of attention has also been paid to the role that certification plays in enhancing resilience among coffee farmers. Furthermore, various organisations, both private and governmental, have been known to offer support to stimulate and broaden the reach of certified coffee production. Despite this, there is an evident gap in understanding the unique challenges associated with certified coffee production in specific regions like Vietnam. Additionally, questions remain about how effective these support initiatives truly are in promoting certification and whether there is a cohesive story that ties adoption, resilience, and support efforts together. This research contributes to bridging these knowledge gaps, providing a comprehensive understanding of certification adoption processes,

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their impacts on resilience, and the role of support entities.

We employed a mixed-methods approach, incorporating both quantitative and qualitative data collection and analysis. Our fieldwork spanned two primary coffee-producing regions in the Central Highlands of Vietnam, Quang Phu commune in Dak Lak province and Nghia Hung commune in Gia Lai province, areas renowned for their contributions to global coffee output and featuring extensive use of certification schemes. Data collection methods encompassed household surveys, focus groups, and key informant interviews, including 219 household surveys (92 certified and 127 uncertified), ten focus groups, and 20 interviews. A range of topics were covered, such as the characteristics of respondents, their motivation for the adoption of certification, their perceived resilience due to specific shock and stress, and the effectiveness of supporting interventions. Data analysis methods were chosen based on the research objectives and the nature of the data, prioritising validity and reliability. The adoption of certification was modelled in three distinct ways: whether certified or not certified, the duration of certification, and the percentage of farmland allocated to certified coffee production. Analytical methods included descriptive analysis, significance testing, and the use of logistic and Tobit regression (adoption), and multiple regression (resilience). To assess resilience, the framework of five Livelihood Capitals was used.

Our research indicated that several factors influenced certification adoption, and that these determinants varied depending on the way adoption was measured: (1) adopted certified coffee production or not

(binary), (2) duration of adopting certified coffee production, and (3) proportion of land used for certified coffee production.

In the socio-demographic dimension, the impact of certain factors on adoption varied. Age, education, and gender significantly correlated with the duration of certification adoption, while education was the only factor influencing the proportion of land used for certification. In the physical dimension, larger farms showed a positive correlation with certification adoption but a negative correlation with the proportion of land used for certification. Distance from the household to the communal centre did not significantly impact adoption or certification duration, but it had a negative correlation with the proportion of certified land. The labour-to-land ratio had varied effects, with no impact on certification adoption, a negative influence on certification duration, and a positive effect on the proportion of certified land. The number of coffee plots did not correlate with decisions to adopt certification nor with the duration of certification, but households with more plots allocated a higher proportion of land to certified coffee. Regarding support dimensions, affiliation with organisations and training positively affected both the likelihood of adopting certification and the land area certified. In the financial dimension, households with significant non-coffee income initially exhibited reluctance towards certification. However, once committed, they typically maintained certification and allocated more land to it, highlighting the role of financial stability.

Certification appeared to have a positive impact on the resilience of smallholder coffee farmers. The key threats were drought, disease, flood, and price volatility (shocks,

stresses). Resilience was reported to be influenced by factors such as a farmer's willingness to take risks, plot size, and certification. Additionally, the types of challenges that farmers faced also determined the coping and adaptive strategies employed by coffee farmers. In response to market shocks, farmers demonstrated a focus on diversification by incorporating additional crops alongside coffee, such as durian, pepper, and avocado. In contrast, when faced with drought, coffee farmers implemented alternative measures, including digging or deepening wells, purchasing water, and adjusting watering schedules.

Certified practices were associated with improvements in farmer livelihoods, notably their financial, human, and social capital, thereby enhancing resilience. The link between the adoption of certified farming practices and increased resilience suggested that farmers open to sustainable practices like certification were better equipped to cope with adverse events such as drought and price volatility. Farmers with multiple coffee plots displayed greater resilience, indicating the potential benefits of farming systems diversification and technological experimentation. Farmers with greater resilience tended to employ fewer coping and adaptation strategies. This suggests that more resilient farmers were proactive rather than reactive in their approach to adaptation.

Regarding the entities involved in the certification process, including support for adoption, our research identified coffee processing and trading companies, certification bodies, extension providers, and banks as crucial players in advancing sustainable certified coffee farming in the Central Highlands. These groups supported farmers by

offering capacity building (training, technical consultation), input assistance (seeds, fertiliser), and market and financial incentives (low interest, contract farming). The findings underscored the value of collaboration across sectors to promote the adoption of coffee production.

The study also highlighted inconsistencies in the suitability and impact of these support interventions. Specifically, market and financial measures were often viewed as less impactful than capacity building and input assistance, pointing to potential areas for refinement. Additionally, we identified challenges within the certification realm, such as uneven benefit distribution, difficulties in complying with standards, low coffee farm-gate prices, and increased workloads. Female-led households often experienced increased workloads due to certification, including more work related to harvesting and weeding. They also reported challenges in fully complying with standards compared to men. These challenges could hinder broader certification adoption.

Addressing these issues could increase the wider acceptance of sustainable practices in the coffee sector in Vietnam. Notably, despite the growth of digital channels, traditional media and interpersonal networks remained vital for conveying information to farmers. This implied a continued need for blended communication methods that cater to farmers' diverse preferences, enabling them to make well-informed choices that advanced sustainable farming.

In conclusion, this research emphasised the role of certifications in fostering sustainable practices, evaluated key adoption factors in terms of adoption per se as well as duration of certification and land allocation for certified coffee production. Common

shocks and stresses were identified, as were the various adaptive strategies used by certified and non-certified coffee producers in the study areas. The potential for certification to enhance resilience of coffee growers was noted. Finally, the contributions of supporting entities to increasing the adoption of certified coffee production were evaluated from the grower perspective.

The ramifications of our findings span both practical applications at the local and regional levels, and policy development at the provincial and national levels. Policymakers and certification organisations should carefully consider the various elements influencing certification uptake. Simplifying and democratising these processes is essential to ensure fairness and accessibility, particularly for smallholder farmers. Current and future policies, coupled with support structures, should be adaptive and prioritise minimising the financial and administrative compliance burdens of cer-

tification. This approach is more likely to empower smallholder farmers to navigate the certification landscape more efficiently, upholding required standards without unnecessary hardships while maintaining their certified status and increasing the proportion of coffee-growing land that is certified. Future research could benefit from a focus on regional differences and a closer examination of various certification systems, offering insights into localised challenges and opportunities and illuminating the strengths and weaknesses of diverse certification models.

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