

# Addressing smallholder resilience in coffee production in the Central Highlands, Viet Nam

The business case for intercropped  
coffee production

Executive Summary



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PROGRAMME

## Executive Summary

Coffee production in the Central Highlands faces a multitude of challenges; decades of intensive cultivation and expansion onto marginal land has degraded the soil quality and left smallholders less resilient to both climate change and vulnerable to fluctuations in the price of coffee. As a result, many smallholders are in a negative spiral of declining yields leading to the increasing application of inputs to compensate, which is further reducing their already limited margins.

This analysis presents the business case for sustainable Robusta coffee cultivation in the Central Highlands region of Vietnam. In recent years, intercropping models involving coffee interspersed with shade or fruit trees have demonstrated their potential to generate multiple benefits to smallholders and the environment. This analysis focuses on the economic benefits of transitioning from an intensive coffee cultivation model to three different intercropping models: avocado, durian and cassia siamea and pepper, and makes recommendations concerning the transition pathway that will be most accessible to smallholders.

Even in poor market conditions, the analysis finds that diversifying a smallholding through the addition of another productive crop will generate economic benefits for the producer. Furthermore, the revenue generated through the addition of a crop can help to reduce the impact of periods of low coffee price on a smallholder's livelihood. However, while this will provide a degree of economic resilience to a smallholder, if the coffee price remains consistently subdued, it cannot be said that the smallholder will or should not make the economically rational decision to replace their coffee plantation with what they perceive to be a more lucrative or less volatile crop.

In addition to economic benefits, diversifying a smallholding can bring potential environmental benefits: leading to increased biodiversity and improved soil structure, that may further contribute to the economic profitability of the model by reducing the requirement for irrigation or agricultural inputs and increasing resilience to climate driven drought or flooding.

The initial capital expenditure for converting to intercropping with durian, avocado, cassia siamea and pepper varies between VND 5.7 million for Avocado and VND 10.8 million for cassia siamea and pepper. While the additional operational expenditure varies between VND 628 thousand for durian and VND 12.24 million for cassia siamea and pepper.

Due to the added capital and operational expenditure requirements and the delay in revenue until the intercropping plant becomes productive, transitioning to a diversified production model may be inaccessible for poorer households without access to additional financing.

The analysis demonstrates ways in which converting to intercropping can be made more accessible to poorer households, by (i) initiating the transition earlier in the lifecycle for the coffee plantation, when the coffee plants are more productive and therefore generate a higher revenue and by (ii) staggering the transition over a number of years, thereby reducing the annual capital expenditure.

Further work is required to fully understand each model's resilience to the changing environmental and economic conditions. For example, irrigation is presently free for smallholders across the Central Highlands, but in the near future, due to water shortages, irrigation could be restricted or provided at cost, adding an additional operational cost to production. Similarly, recent socio-economic trends have seen a decline in the availability of labour, which will also likely impact the economics of smallholder production as labour costs increase.



## FINANCING SUSTAINABLE LAND USE



THE GOVERNMENT  
OF THE GRAND DUCHY OF LUXEMBOURG

With support from the Government of Luxembourg, the United Nations Environment Programme is working to analyse land use practices in tropical areas, with the aim of developing the business case for sustainable land use models that can address drivers of deforestation and land degradation, while also being economically attractive for farmers and other key actors, and financially viable.