



# The Role of High-Value Agriculture in Capability Expansion: Qualitative Insights into Smallholder Cash Crop Production in Nepal, Laos and Rwanda

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## Abstract

High-value agriculture contributes to rural incomes, but does it also contribute to expanding “human capabilities” (Sen, *Development as freedom*, Knopf, New York, 1999) in a durable way? Through long-term qualitative fieldwork in three land-locked LDCs—Nepal, Rwanda and Laos—resulting in over 150 interviews, we found expansions of the three analysed capabilities: paid work, mobility and social relations. Yet, those improvements were characterised by precariousness: they were mostly not resilient in the face of the economic and environmental risks that high-value agriculture entails. The only example of a durable capability expansion was found in Nepal, where women claimed social spaces through collective organisation. All three study sites showed remarkable consistency in that the considerable risk involved in cash crop production was mainly borne by farmers and rural labourers. Research on mechanisms to guard against these risks at household or individual level is warranted.

**Keywords** Capabilities approach · Cardamom · Coffee · Commercialisation · Gender · Employment · Agricultural labour · Risk

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## Résumé

L'agriculture à haute valeur ajoutée contribue aux revenus ruraux, mais contribue-t-elle également à l'expansion des "capabilités humaines" (Sen, 1999) de manière durable ? Grâce à un travail de terrain qualitatif à long terme dans trois PMA enclavés - Népal, Rwanda et Laos - résultant en plus de 150 entretiens, nous avons constaté des expansions des trois capacités analysées : travail rémunéré, mobilité et relations sociales. Cependant, ces améliorations étaient caractérisées par la précarité : elles n'étaient généralement pas résilientes face aux risques économiques et environnementaux que l'agriculture à haute valeur ajoutée implique. Le seul exemple d'une expansion durable des capacités a été trouvé au Népal, où les femmes revendiquaient des espaces sociaux par le biais d'une organisation collective. Les trois sites d'étude ont montré une remarquable cohérence en ce que le risque considérable impliqué dans la production de cultures de rente était principalement supporté par les agriculteurs/trices et les travailleurs/euses ruraux. Des recherches sur les mécanismes pour se prémunir contre ces risques au niveau des ménages ou des individus sont nécessaires.

## Resumen

La agricultura de alto valor contribuye a los ingresos rurales, pero ¿también contribuye a expandir las "capacidades humanas" (Sen, 1999) de una manera duradera? A través de un trabajo de campo cualitativo a largo plazo en tres países menos desarrollados sin acceso al mar: Nepal, Ruanda y Laos, resultando en más de 150 entrevistas, encontramos expansiones de las tres capacidades analizadas: trabajo remunerado, movilidad y relaciones sociales. Sin embargo, esas mejoras se caracterizaron por su precariedad: en su mayoría no eran resilientes frente a los riesgos económicos y ambientales que conlleva la agricultura de alto valor. El único ejemplo de una expansión de capacidad duradera se encontró en Nepal, donde las mujeres reclamaron espacios sociales a través de la organización colectiva. Los tres sitios de estudio mostraron una consistencia notable en que el considerable riesgo involucrado en la producción de cultivos de efectivo era principalmente asumido por los agricultores/oras y los trabajadores/oras rurales. Se justifica la investigación sobre mecanismos para protegerse contra estos riesgos a nivel de hogar o individual.

## Introduction

Agriculture is the backbone of most low-income economies, accounting for almost 60% of employment (FAO 2021). High-value agriculture (HVA) in particular has shown great promise for development, offering a pathway out of poverty via employment in the sector (Ogotu and Qaim 2019; Kaffle et al. 2022). Yet, apart from the fact that HVA does not always meet its promise in terms of job creation for local populations (Nanhthavong et al. 2022), HVA is likely to increase not only profits but also financial, livelihood and environmental risk (Riwthong et al. 2017; Walsh-Dilley 2020). Hence, for sustainable agricultural development,



strengthening rural people's resilience—i.e. their capacity to absorb disturbance and to reorganise while maintaining essential functions (Walker et al. 2004)—is essential.

Economic prosperity is an important driver of development in low-income countries; however, the focus on economic growth tends to become an end in itself, instead of the means to achieve positive change (Sen 1999; Kenny 2011; Saad-Filho 2011). Originating in the seminal works of Sen (1999) and Nussbaum (2011), the capabilities approach (CA) and its further developments (e.g. Robeyns 2003) have stimulated a much-needed debate on the nature of the envisaged change and the ingredients—beyond income—to achieve it. CA literature rapidly gained traction in development studies after empirical evidence increasingly failed to support the Washington Consensus-driven strategies (Lopez-Fogues and Cin 2018; Fine and Saad-Filho 2014). The CA distinguishes between *functionings*—“the various things a person may value doing or being”—and *capabilities*—“the substantive freedom to achieve alternative functioning combinations” (Sen 1999, p. 75). To cite Sen's most prominent example, it is important to differentiate between a person who is starving, i.e. without the capability to eat enough food, and a person who is fasting. The fasting person chooses to eat very little, and even if s/he has a poor nutritional status, only the starving person can be considered deprived. Development, according to Sen, should not focus on maximising functionings but on expanding capabilities, thus increasing people's freedom to make their own choices.

Critical voices have highlighted shortcomings such as the approach's focus on individual capabilities at the expense of institutional and collective structures (Andreoni et al. 2021) or the implicit reproduction of power dynamics (Telleria 2022). Nevertheless, established terms for large-scale and comparative analyses of non-monetary dimensions of development such as the HDI and the MPI are conceptually rooted in the CA, and they have shaped the debate considerably (see Alkire 2008; Joshi 2021; World Bank 2023). To become operational, the CA-derived indices draw upon functionings as proxies for capabilities—thereby conflating the fasting person with the starving person. Yet, at the core of the CA lies the notion of ‘freedom to combine functionings’ according to an individual's value preference; in other words, to distinguish between what and how much someone is eating (functioning), and the level of freedom to make nutritional choices (capability). Notably, most qualitative CA research also operates at the level of functionings, especially in relation to agriculture. While the CA has been used extensively to investigate development-related issues like digitalisation or health (e.g. Chakraborty et al. 2020; Fahmi and Savira 2023), agriculture has received relatively little attention. This is noteworthy given the importance of agriculture in most low-income economies. The qualitative or mixed-methods agricultural capability studies known to us—Jack et al. (2022) being an exception—use the CA as a conceptual framework for analysing development outcomes in which changes in functionings appear to be the main epistemic interest (e.g. Burchi et al 2015; Eichsteller et al. 2022; Llopis et al. 2022).

While multidimensional analyses of agricultural development outcomes are undoubtedly important in complementing income-based approaches, our research pursues a different goal. We aim to understand both the visible development outcomes (functionings) and the underlying changes in substantive freedoms



(capabilities). This is challenging, as capabilities “represent a set of potential outcomes and as such are difficult to identify empirically” (Ruggeri Laderchi et al. 2003, p. 255).

Our research contributes to the literature through its attempt to push the analyses beyond functionings. The data emerging from our three-country research design offer rich material to inform a capabilities development analysis. Secondly, we elucidate capability changes in the context of agricultural development, an important subject in global development that has received surprisingly little attention in capability research. Thirdly, considering the nature of high-value crop agriculture, the new dependencies created—whereby the risk is entirely borne by the smallholders and agricultural labourers—we employ the notion of resilience to assess the durability of the identified capability changes. Finally, we employ a unique research design, highlighting case studies from Nepal, Laos and Rwanda. Using gender and class as variables, we offer a rich qualitative account of capability changes.

## Research Design

In this paper, our objective was to go beyond functionings and reveal the extent to which HVA has contributed to increasing the “substantive freedom [...] of people to lead the lives they value and have reason to value and to enhance the *real choices* they have” (Sen 1999, p. 293, italics added). With this in mind, we revisited the gender-sensitive capability list developed by Robeyns (2003) and expanded her capability definitions to match the agricultural contexts we were working in. This section outlines how we operationalised three capabilities that are intricately linked with HVA: paid work, mobility and social relations.

- Robeyns defines paid work as “being able to work in the labor market” (Robeyns 2003, p. 72). In the context of HVA, we contend that this must include all forms of remunerated work, whether self-employed or employed by others, paid in cash or in kind, including disguised employment forms such as sharecropping. Most importantly, for a life people have reason to value, this economic activity must meet minimum decent working conditions such as offering a living wage and not being health-threatening (see ILO 2019). To accommodate these considerations, we defined the paid work capability as the *ability to gain sufficient income in a decent way*.
- Robeyns’ definition of the mobility capability is straightforward: “being able to be mobile” (2003, p. 72). Like Robeyns, we limited our analysis to the *ability to move between geographic locations* (as opposed to social mobility), focusing on the everyday spatial mobility of people involved in HVA production. This capability requires material access (a road and a means of transport), financial access (money to buy fuel or a bus ticket), a social setting that allows the use of the means of transport, and the necessary knowledge and skills, such as knowing how to drive. Once these conditions are met, people have the capability to be mobile—regardless of the degree to which they choose to transform this capability into a functioning, i.e. into observed mobility.



**Table 1** Overview of key national statistics in the study countries

	Nepal	Lao PDR	Rwanda
GDP share of agriculture <sup>a</sup>	21.58%	15.17%	23.54%
Share of agricultural employment <sup>b</sup>	64%	61%	62%
Share of MPI poor <sup>c</sup>	18%	23%	54%
Global Gender Gap Rank <sup>d</sup>	106	36	7
People per km <sup>2e</sup>	205	32	516

<sup>a</sup>[https://www.theglobaleconomy.com/rankings/Share\\_of\\_agriculture/](https://www.theglobaleconomy.com/rankings/Share_of_agriculture/), accessed 05/21/2022

<sup>b</sup><https://ilostat.ilo.org/>, data retrieved 01/19/2022

<sup>c</sup><https://ophi.org.uk/global-mpi-report-2021/>, accessed 05/21/2022

<sup>d</sup><https://www.weforum.org/reports/global-gender-gap-report-2021/>, accessed 05/21/2022

<sup>e</sup><https://worldpopulationreview.com/country-rankings/countries-by-density/>, accessed 05/21/2022

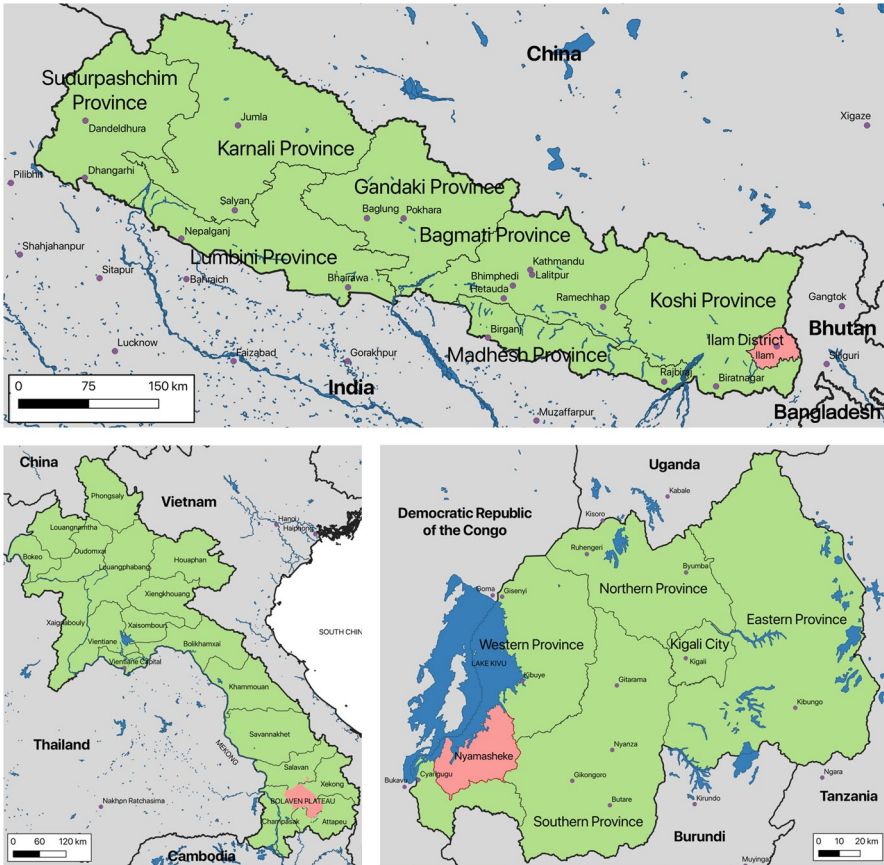
- The social relations capability is defined as “being able to be part of social networks and to give and receive social support” (Robeyns 2003, p. 72). We retained Robeyn’s definition but limited our investigation to social relations that were directly related to HVA. We included agricultural cooperatives, savings groups that enabled members to make agricultural investments, as well as informal support networks that provided emergency support, for instance when a household ran out of food.

This article is based on rich original qualitative data from Nepal, Laos and Rwanda. We selected study sites in these countries for the Feminization, Agricultural Transition and Rural Employment (FATE) project, a research-for-development initiative funded by the Swiss National Science Foundation and the Swiss Agency for Development and Cooperation. The three selected mountainous, landlocked “Least Developed Countries” (LDCs, see UNCTAD 2021) with a high share of agricultural GDP (see Table 1) have not been frontrunners in export agriculture, not least due to their geography.

At the national level, the three countries share a particular policy focus on HVA, fostering the production of cash crops such as cardamom and coffee to boost growth in agriculture and to catch up with neighbouring country competitors (Bieri 2014, see also the online appendix for a comprehensive policy overview). Important differences that influence the development outcomes of their specific agricultural strategies include a dense population (Nepal and Rwanda) and land scarcity versus land abundance (Laos, although this is increasingly changing due to foreign direct investment). Politically, these countries have centralised, both de-jure and de-facto one-party systems (Laos, Rwanda) versus more democratic structures with respective freedoms (Nepal).

The steep forested hills of the Rong 6 village area in Ilam district, **eastern Nepal** (see Fig. 1), are a site of significant recent agricultural change. Three decades ago, the first large cardamom (*Amomum subulatum* Roxb.) saplings were brought across





**Fig. 1** Locations of Ilam district in Nepal, Bolaven Plateau in Laos and Nyamasheke district in Rwanda. Maps created by authors using GIS data from DIVA-GIS (2021), Natural Earth (2021, 2023) and Government of Nepal (2023)

the border from India, and the cultivation of this high-value crop spread rapidly to the three villages of Salakpur, Jirmale and Rambeng of Rong 6 (KC 2019). Thanks to the high market value of cardamom, rural incomes increased significantly until 2015, when price shocks started posing new challenges. In Nyamasheke, **western Rwanda** and the Bolaven Plateau, **southern Laos**, the major cash crop is coffee. While the crop itself is not new to farmers—in Rwanda, coffee has been produced since 1904 (Guariso et al. 2012) and in Laos since around 1920 (Galindo, Sallée 2007)—rural lives have changed as a result of agricultural modernisation programmes, including green revolution-style policies in Rwanda (Ansoms et al. 2018) and the promotion of large-scale land concessions in Laos (Kenney-Lazar et al. 2018).

In all three study sites, cash crop production is a major income source for the rural population, albeit at markedly different income levels (see Table 2). As over



**Table 2** Socio-economic sample statistics

	Nepal	Lao PDR	Rwanda
Average income from cardamom/coffee sale in previous harvest per producer household	US\$ 1130	US\$ 6713	US\$ 119
Average daily wage for agricultural labourers in the last year	US\$ 3.67	US\$ 6.07	US\$ 0.82
Share of adults pursuing economic activity outside own-account farming (male, female)	20% (28%, 13%)	29% (33%, 25%)	35% (40%, 31%)
Share of literate adults (male, female)	72% (76%, 67%)	77% (86%, 67%)	68% (74%, 63%)
Average household size	5.5	5.3	4.6
Sample size	514	714	233

Data were collected in 2018 by the FATE project in the context of a larger survey. For more information, see Subedi and Upreti (2019) and Illien et al. (2022a).

90% of coffee and cardamom are exported, farmers' incomes depend significantly on fluctuating world market prices. Incomes of agricultural labourers are generally low and labour opportunities vary by season. In addition, HVA has created seasonal job opportunities in the processing sector. For cardamom, this includes curing, calyx cutting, and cleaning. Coffee processing methods include drying with or without the pulp as well as wet processing which involves pulping, fermentation, and washing. Roasting is not common in either Laos or Rwanda as coffee is largely exported as green bean coffee. Prior to being exported, both cash crops are graded, packaged and labelled. Our analysis mainly concentrates on changes in functionings and capabilities associated with HVA production, occasionally referring to processing.

This study uses data generated during long-term fieldwork in the three study areas. Findings are based on 101 interviews, 10 short case stories and 4 focus group discussions from Nepal; 23 interviews, 13 focus group discussions and 2 life histories from Laos and 30 interviews as well as 3 life histories from Rwanda. Previous publications by the authors and their colleagues give detailed accounts of study sites, sampling and data collection in the three locations (Bieri 2014; Seneduangdeth et al. 2018; Subedi and Upreti 2019; Acharya et al. 2020; Matthys et al. 2021; Illien et al. 2022a, b). For this paper, the interviews from Nepal constituted the core data while data from the other two countries were used to contextualise and compare the findings.

Initially, the data were collected and analysed to gain an in-depth understanding of the effects of agricultural transformation processes within each country. In this paper, our intention was to move beyond the single-country case study and compare findings across countries (see Hantrais 2009). Using CA as an analytical tool, we re-analysed the existing data using four systematic questions. First, we summarised *changes in functionings*, thus demonstrating observable changes in the respondents' lives which have occurred in the study regions. Second, we traced *changes in capabilities*. Teasing out whether the substantive freedoms underlying respondents' actions have changed is not straightforward, especially as direct questions about capabilities mostly do not yield the desired results because the concepts are too abstract (Lienert and Burger, 2015). Therefore, we carefully checked coded



interview transcripts for signs of respondents' increased freedoms—regardless of changes in functionings. We illustrated the identified patterns with respondents' original quotes in the results section, reduced to a minimum due to space constraints. Third, we assessed the *link to high-value agriculture*, investigating how cash crop production affected capabilities. Fourth, we investigated *capability resilience*, defining a capability expansion as *resilient* when it is durable despite changing economic, social, and environmental farming conditions. Inspired by Robeyns (2003), we differentiated our data by gender on both the functioning and the capability level. In addition, wherever possible, we differentiated between upper and the lower socio-economic strata, bearing in mind potential intersections with gender.

The project design involved case studies in three different countries which, despite certain similarities, involved highly heterogeneous context variables. We re-analysed original data collected by the FATE project team using the CA as a conceptual framework. The CA lens gave us a new perspective on understanding whether the CA could be used to synthesise research results across national contexts and justify a certain degree of generalisability. Importantly, our aim was not to provide an exhaustive analysis of a full capabilities list but rather to exemplify the approach using in-depth descriptions of three selected capabilities affected by agricultural change: paid work, mobility, and social relations. What we offer is, firstly, an example of how the capabilities approach can be used for cross-country synthesis of qualitative data and, secondly, analytical insights into the gendered capability outcomes of agricultural development.

## Results and Discussion

### Paid Work: Being Able to Gain Sufficient Income in a Decent Way

The shift to cardamom production in the Nepali study region fundamentally altered agricultural labour market opportunities. Cultivating cardamom involves various manual agricultural tasks (e.g. weeding, harvesting, etc.) for which larger family farms need additional labour. Agricultural labourers mostly farm on a small piece of land, but their revenue is insufficient to meet household needs, so they depend on paid agricultural labour. Compared with pre-cardamom times, today it is easier to find employment and the pay is better, as a female labourer explained: “Before, we used to get 150 to 200 rupees per day, but now, in cardamom, the daily wage is 300 to 350 rupees”. While women and men reported the same daily wages for specific tasks, the heavier and riskier activities such as drying and transporting cardamom were carried out almost exclusively by men and were rewarded with a higher wage (400–500 NPR for drying, 1000 NPR for transporting). On average, female labourers earned less than male labourers because of their disproportionate involvement in lower-paid work.

Working in cardamom may have adverse health effects. Firstly, harvesting takes place in the rainy season, and both farmers and labourers reported flu-like symptoms, back pain and joint pain linked to the weather conditions. A female farmer explained: “I like the work in the cardamom because the income is higher [laughs].





But we also face hardship in this cardamom. [...] Harvesting takes place in the monsoon season and while working we suffer from the cold". A second challenge is the work at the on-farm drying plants, which is considered too risky for women, as a widowed farmer explained: "I always hire men for [...] drying cardamom. I and other women in the village prefer not to do this work for safety reasons. The process of cardamom drying takes 24 h or more, the drying plant is separate from home and the work requires us to stay outside during the night". A female labourer described a third challenge related to processing: "We suffer from severe sneezing, common cold, fevers and headaches while working in head-and-tail cutting. [...] I am doing this job to make a living rather than out of choice". On the other hand, the increased income from cardamom production helps both farmers and labourers to cover hospital bills. Wealthy farmers even take their family members to expensive private hospitals.

For self-employed farmers, household incomes significantly increased after the introduction of cardamom. Until 2015, prices rose steadily, but a sharp price drop in the following years posed a challenge to many. Consequently, numerous households maximised family labour to reduce production cost. Another coping strategy pursued by farming families was out-migration of male family members to offset the decreased farm revenue with non-farm income. These families required more help on their farms so the demand for casual labour remained high. Overall, despite the lower market price and high production costs, it is still valuable to produce cardamom, a female farmer summarised: "Even though the cardamom price is lower now [...] it is still a high amount compared with other cash crops, even after paying the labourers".

In addition to price fluctuations, plant diseases have caused a decline in cardamom production. Several farmers with small plots have returned to subsistence farming to ensure household food supply. While diseases are yet to spread across the entire region, rumours have spread everywhere, as a female farmer explained: "Everyone from the lower part of the village says the diseases are spreading there. [...] I don't think there is a future for cardamom". However, to date, cardamom remains the primary income source.

In the study sites in Laos and Rwanda, HVA likewise is the main income source for the rural population. In the context of land scarcity in Rwanda, agricultural wage labour is particularly important: over 80% of the households in the study region own less than 0.25 ha of operational landholdings (Illien et al. 2022b), meaning that own-account farming is insufficient to meet household needs. Seasonal jobs in coffee processing stations or casual labour on larger farms are therefore welcome opportunities, even though the working conditions pose challenges in their own right: the daily wage of less than a dollar per day is insufficient to cover basic needs.

In a context of widespread food insecurity, even sick and elderly people try to find casual employment in coffee farms. Elderly people are sometimes paid less than the young, if they are hired at all: "go home, you're old, you can't do anything" are words an elderly male respondent often hears when he is looking for job opportunities. An elderly widow explained her difficult situation: "I didn't manage to find a job so that I can provide food for my family, because I am sick, and nobody is willing to hire me when I am not in good health". A healthy body is apparently a



precondition for accessing paid work even though it is difficult to recover from illness and regain strength when there is not enough food.

Even if they are healthy, women are excluded from the higher-paid male-dominated construction and transportation sectors, and in agriculture they receive a lower daily wage than men (700 RWF vs. 750 RWF). Hence, women face the triple burden of labour market discrimination, own-account farming, and care work.

Larger landowners usually employ labourers and work in more stable jobs in the non-agricultural sector. Many lease out parts of their land in unequal sharecropping arrangements in which half of the harvest is owed to the landowner. Still, only a fraction of the larger farmers earns enough from coffee production to re-invest and grow the businesses. Most of the population remains dependent on a precarious combination of marginal farming and informal wage employment, which does not enable year-round food security, let alone investment.

This situation is further aggravated by fluctuating world market prices. The price for coffee had dropped from about 300 USD/lb in 2011 to less than 100 USD/lb in 2018,<sup>1</sup> with implications at farmgate level. Even though Rwanda has instituted a minimum coffee price, its level was too low to enable the majority of coffee farmers to live decently. A wealthy farmer involved in coffee trading recalled: “The farmgate price has been decreasing [...]. Farmers are not happy with that, and they are not motivated at all”. He emphasised the farmers’ need for stability and forecasted that if the price keeps falling, “some will start to cut down their coffee trees and plant cassava instead from which they can benefit more”. Nevertheless, government-mandated farmgate prices in Rwanda have increased by 65% in 2022 (Ntirenganya 2022), raising renewed hope for coffee farmers with larger holdings.

In Laos, alternative cash crops (cassava, durian, avocado) have become attractive to farmers after the coffee price fall. Farmgate prices fluctuate considerably, making for a very unstable situation. An elderly male farmer explained: “coffee and cassava [...] yield almost the same price per hectare. However, producing coffee is more labour-intensive and requires more farm workers”. Because the net income per hectare was higher for cassava, he converted his 5 ha coffee plantation into a cassava field. Unexpectedly, the coffee price increased again, peaking at over 200 USD/lb at the end of 2021. His case once again exemplifies the difficulty of taking long-term decisions in the face of constant price fluctuations, and the low resilience of small-holders. Unlike in Rwanda, however, land scarcity is less pronounced in Laos (0.3 vs. 2.8 ha mean operational land holding (Illien et al. 2022a)), so food security was not immediately threatened when prices fell. While most women make their living from family-owned coffee farms, men can find additional labour outside the agricultural sector and in HVA, for instance in company-owned coffee farms.

Workers on company-owned plantations do not get health insurance coverage, but they receive first-aid treatment in case of a work accident. On private coffee farms, however, no treatment is paid for by the landowner. At the same time, landowners usually delegate the more dangerous tasks, such as weeding using a cutting machine, to labourers. Thus, larger landowners benefit twofold: through outsourcing work-related

<sup>1</sup> <https://tradingeconomics.com/commodity/coffee>, Accessed 05/12/2022.



risk to labourers and through reaping the economic benefits of HVA, which allows them to afford proper healthcare for themselves and their families.

In all three study regions, HVA provides a major source of employment for the rural population. The Nepali case illustrates an early stage after the introduction of a new and lucrative cash crop, followed by job creation and steep income increases. The examples of Laos and Rwanda showcase long-term developments, several decades after a cash crop was introduced. While the overall wealth level differed considerably, all three cases are characterised by precariousness—on the side of labourers who are scraping by at or beneath the poverty line and work under difficult conditions, as well as on the side of small to medium sized farmers who struggle with fluctuating prices. Additionally, female labourers on average earn less than male labourers because of their disproportionate involvement in lower-paid activities and/or because of the gender pay gap in casual agricultural labour. Our results corroborate previous findings from other contexts showing gender inequity in informal agricultural markets (Bigler et al. 2017) and poor overall working conditions, especially for casual labourers and even under fair trade conditions (Meemken et al. 2019).

Our findings highlight the diversity and vibrancy of rural labour markets in the Global South, particularly in export agriculture (Oya and Pontara 2018). In all three research sites it is typically the poorer segments of the population that must complement their own-account farming activities with casual agricultural wage employment in plantation companies or on the farms of better-off neighbours. On the one hand, HVA offers employment opportunities that provide income to meet household needs. On the other, there is not much choice of jobs, incomes are too low to live decently and working conditions are usually poor. Having paid work per se does not equal having the capability to gain sufficient income in a decent way—and even less so for women.

Even in the case of the cardamom success story of Nepal, where comparatively well-paid rural job opportunities increased in the short term, our findings demonstrate how quickly these opportunities vanish when prices fall or plant diseases spread. Most economically successful farmers continued to live in a situation of *precarious prosperity*—a situation in which a certain financial leeway coexists with constant material insecurity and the associated threat of future downward mobility (Budowski et al. 2010). A national analysis from Laos showed that precarious prosperity was widespread throughout the country: between 2003 and 2013, 50% of the population moved in and out of poverty (Bader et al. 2016). Transitioning into and out of poverty was common in Nepal and Rwanda, as well (Diwakar and Shepherd 2022). In all three study sites, only a fraction of the wealthiest households was able to move out of poverty permanently, developing resilience in the face of the changing conditions of HVA, e.g. through buying rental houses in town. In the light of the above, we conclude that the expansion of the paid work capability has not offered resilience for a vast majority of the rural population.

### **Mobility—Being Able to Move Between Geographical Locations**

Under the Nepali policy to connect rural areas with market centres, Salakpur village was connected to the road network in 2015. Before the road was built,



women and men of all social strata had to walk for about 1.5 h to reach the road, and transporting goods was cumbersome. Today, an affordable bus service (120 NPR, equivalent to about 1 USD) runs twice daily between Salakpur and the nearest town 25 km away. Consequently, both women and men go to the market more often to sell crops and to buy household items, the sick can be taken to the hospital more easily, and some of the children are schooling in town. Compared to pre-road times, mobility choices have increased considerably.

The road was not built directly because of HVA, but cash crop production had a significant influence on the use of the road. As the completion of the road coincided with a peak in cardamom prices, many families were financially comfortable and numerous middle-class families bought a motorbike; a few wealthy families even could afford a car. A female farmer explained that before they produced cardamom, “we didn’t have money for a motorbike, [...] the income was only sufficient for running the household. From selling cardamom we could afford to buy the bike”. Another respondent stated that she was happy that her family owns a bike because “whatever time we prefer we can travel, we don’t need to wait for the bus”. Hence, those who could afford a private means of transport have even greater mobility choices compared to those who depend on public transport.

However, when asked why the family chose to buy a motorbike, the first respondent explained: “That was due to the interest of my husband. He wanted to buy the bike and learn how to ride it”. In fact, even though women are in favour of buying a vehicle for various reasons, their direct benefit from this asset is limited, as it is very uncommon for women to ride motorbikes or drive cars. This limited freedom to use vehicles on their own has consequences for other freedoms, as illustrated by the case of a woman from a middle-class family. She was invited to a women’s entrepreneur event at Rong Rural Municipality, which is only about 10 km away as the crow flies. However, the dirt road leading to Rong is very rough and leads through steep hills, and there is no public transport available. To reach Rong, those who cannot go by motorbike have to take a detour of 60 km, and it is not possible to return on the same day, as the journey by bus takes over 5 h one-way. Hence, this woman could not attend the women’s entrepreneur event. In the end, she asked her husband to go on her behalf and pass the information on to her after his return, as he could take the shortcut on his motorbike. They could not go together because one of them had to stay at home to take care of the farm and the family business. She felt unhappy about not being able to participate, and she encouraged her 20-year-old daughter to learn how to ride a motorbike so that she could be independently mobile in the future.

Despite these inequalities in transportation access, it is important to note that HVA also increased mobility opportunities specifically for women. Firstly, as mentioned above, women who previously did not have much reason to leave the village on their own now go to the town market regularly. Secondly, the women’s agricultural cooperative brings together women from different villages and offers participation in district-level events. Thirdly, governmental and non-governmental institutions offer trainings related to HVA that increase women’s opportunities and confidence, as illustrated by this statement from a female small-scale farmer:



“If my movement were restricted, I would not be in the place I am now. 10 years ago, I went to Fikkal for a residential training and stayed there for a week. After the training, I established a cardamom nursery. I became the top woman nursery farmer in the village and the District Agriculture Development Office provided me with an opportunity for an exposure visit to different parts of the country. When I am away from home, my husband takes care of everything. I have been to Jhapa, Ilam and other parts independently, without needing the support of anyone. Here, women do not face constraints on their mobility.”

Finally, male and female agricultural labourers also expanded their range of movement after cardamom was introduced because they could find more labour opportunities in neighbouring villages. While this undoubtedly increased their mobility on the functioning level, we do not count this movement as a capability expansion: casual labourers must be mobile, they cannot choose to stay at home and live off subsistence farming because their farm is too small. It is important to keep in mind that higher mobility per se does not necessarily imply greater freedom to be mobile.

In Rwanda, the government likewise has invested heavily in infrastructure, including roads: since 2016, a high-quality tarmac road has connected Nyamasheke with other towns and Kigali. However, villages along unpaved roads are not connected to the public transportation network. Thus, in everyday life, people usually walk; services of motorbike and bicycle cooperatives are available but costly, so even the coffee harvest is carried on foot unless processing station representatives pick it up. For most of the population, the tarmacked road did not bring much benefit, except for a few entry points into economic activity (petty trade or wage labour) in the roadside villages. On the functioning level, men and women are equally mobility deprived, as most households cannot even afford a bicycle; motorbike ownership is exceptional and associated with high status. On the capability level, however, we identified a gender difference: whereas both women and men lack access to a means of transport for financial reasons, the social setting would not typically allow a woman to ride a motorbike or bicycle, even if she was wealthy.

In the Lao study region, the road was completed in 2020, connecting the Bolaven plateau with the regional capital Pakse and the Thai border. Today, the motorbike is the basic means of transport; even labourers and small landowners have at least a second-hand motorbike. The boom started about ten years ago, when cheap motorbikes from China became available. Before the tarmac road to Pakse was completed, people used motorbikes mainly to commute between the field and the home or between villages. Going to town was less common given that the journey was lengthy. After completion of the road, many families bought additional motorbikes, for instance to enable their older children to go to school in Pakse. Now that the road is completed, people visit town more frequently to trade agricultural goods. This applies especially to women who are considered to be better negotiators than men. Unlike in Nepal and Rwanda, it is very common for women to ride motorbikes in Laos, for instance to go home at lunchtime to cook and later return to the field with the food, or to run errands. Public transport is also available, but it is inconvenient: there is no fixed schedule and it costs equivalent to USD 2.60 for a one-way bus trip



to Pakse, compared to USD 1.30 for motorbike fuel. Hence, the bus is mainly used by people who do not have a motorbike at hand, for instance when returning to the village after a longer-distance bus trip.

In all three regions, infrastructural improvements functioned as a partial expansion of the mobility capability by granting material access. The extent to which the range of choice increased was determined by economic gains from HVA (determining the ability to purchase a vehicle, fuel, or bus ticket) and gender (determining the ability to use the vehicle). Functionings varied by country: in the study sites in Rwanda and Nepal, the motorbike is a precious asset owned by few households and used almost exclusively by men, while in Laos motorbikes are ubiquitous and used by everyone. Whereas in Laos mobility choices have increased for farmers and labourers alike and regardless of gender, in Nepal and Rwanda male members of wealthy families had the greatest freedom to be mobile. Regardless, in Nepal women expanded their capability to be mobile thanks to economic, cooperative and training opportunities directly linked with HVA.

Is the expansion of the mobility capability resilient in the face of agricultural risk? We argue it is not: while the roads themselves are permanent, people can only use them if they can afford public or private transport. If the main income stems from cash crop production, the capability expansion depends on a stable income from HVA which is not a given. The example of mobility demonstrates the instrumental value of income for capability expansion. As much as the capability approach rightfully emphasises the necessity to look beyond income for development policymaking, sustained income increases, or schemes that respond to declining incomes or income gaps, remain important policy goals.

In addition, the mobility example illustrates the importance of differentiating between capabilities and functionings. In Nepal, an agricultural worker in search of employment in neighbouring villages is likely to cover more kilometres per month than a well-off farmer working on the family farm. Yet, the labourer's mobility does not represent their freedom to make mobility choices but rather their lack of choice as they must be mobile to gain an income. Crucially, the mobility capability is not about *being mobile*, it is about *being able to be mobile* (see Robeyns 2003).

### **Social Relations: Forming, Nurturing and Enjoying Social Relations**

In 2008 and 2011, the Women's Development Office of Rong Rural Municipality in Nepal founded two cooperatives in Rong 6: Jirmale Women's Agriculture Cooperative (JWAC) and SUMADUA Cooperative. The former aims to strengthen women's role in the HVA sector through different training (e.g. business skills) while the latter is a mixed-gender group aiming to improve the overall conditions for HVA production (e.g. buying inputs). Generally, these groups provide their members with increased social support and act as savings groups and credit institutions. In addition to these practical benefits, the cooperatives have played a significant role in addressing unequal gender relations. JWAC has functioned as an arena for women to gain confidence, for instance when speaking in front of a group, and women have become used to assuming leadership roles within their organisations. This newly



built confidence exceeds the realm of women-only spaces and spills over to mixed-gender settings, as described by the cooperative leader: “Women who could not even introduce themselves in public 10 years ago now take part in discussions, explain their perspectives openly and stand up for their views. This is a big change”. Today, women usually claim the vice president role in mixed associations, although no mixed group is currently led by a woman. Agricultural groups have provided rural women with new choices: unlike 15 years ago, today they can become members, reap training opportunities, gain confidence and expand their networks. Upper class women can vie for leadership positions to gain status and political influence. Poor casual labourers, however, who have too little and too irregular incomes to participate in a savings group and who do not produce enough to become part of a producer association do not benefit from these new opportunities. Those women who gained confidence, however, are likely to remain confident even if cardamom prices fall. This capability expansion seems to be resilient in the face of agricultural market downturns.

On the Rwandan site, there was only one coffee producer cooperative. Small producers were mostly not members because they perceived the cooperative to be an association for larger producers with little benefit to regular farmers. However, other community organisations such as savings groups or church-based congregations were widespread. In addition, numerous official meetings were held with the village leaders or for the monthly community work in Rwanda, and the government sometimes promoted producer groups, e.g. on terraces or rice marshlands. Further, there were frequent instances of community help and gift giving among people, for instance by allowing friends to harvest food from one’s farm. However, these social structures were not linked to coffee production per se. Wage employment continues to be marked by power imbalances, and while workers expressed their dissatisfaction with working conditions, we did not observe much collective organisation to address this issue.

In the Bolaven plateau in Laos, coffee cooperatives, women’s unions and youth organisations are widespread, and each village has its own branch that holds regular meetings, mostly monthly. While the coffee cooperatives are usually led by men, the groups negotiate better prices for everyone and provide both women and men with a social network. Through the women’s union, there are additional opportunities for women only, such as training on women’s rights or management skills. In addition, membership fees from the women’s union are pooled and used to support life events such as childbirth, sickness, funerals, etc. The coffee cooperative has a wide and diverse member base including small farmers. While the social groups have certainly increased opportunities for farmers to create networks and access support, the case of Nepal seems to be rather unique in catalysing women’s empowerment at a broad scale. In both Nepal and Laos, however, the greater range of social opportunities for the rural population thanks to HVA appears to be of permanent nature: even if prices dropped severely and agricultural cooperatives closed, women who gained confidence to speak in public through the cooperatives (see also KC et al. 2016; Upreti et al. 2018) are likely to continue voicing their opinion. We hence consider the capability expansion in terms of social relations as resilient to price shocks or adverse environmental effects.



However, our research also shows that women continued to face other constraints, for instance regarding mobility or in the agricultural labour market. In Laos, while it was common for women to use motorbikes unlike in Nepal, gender inequality persisted in other areas of life. For instance, recent research from Laos has shown that the introduction of a new coffee variety did increase women's participation in the agricultural labour market and opened up new household decision-making spaces for women, but it did not lead to women's empowerment overall (Douangphachanh et al. 2021) and a gender pay gap in agricultural wage labour persisted (Senedu-angdeth et al. 2018). In Rwanda, gender inequalities including a significant gender pay gap were found to persist despite differing public opinion and government efforts (Ingabire et al. 2019; Bigler et al. 2019). While cash crop production may open up significant new socio-economic spaces for women, the commercialisation of agriculture is by no means a silver bullet or a direct pathway to overall gender equality.

## Conclusion

Using the capabilities approach as a synthesis tool enabled us to scrutinise not only functionings, but also capabilities. We did so by featuring three freedoms—paid work, mobility and social relations—which we assessed using qualitative data from high-value agriculture hotspots in three countries. The approach allowed us to assess changes in both development outcomes and personal freedoms as necessary parts of the development process. The focus on capabilities brings a perspective that goes beyond a single time measurement and offers a focus on resilience, which is crucial for sustainability. All three study sites showed remarkable consistency in results regarding the considerable risk entailed by cash crop production which was mainly borne by farmers and rural labourers. Research and ensuing policy action on mechanisms to guard against risk at household or individual level are warranted. Our results offer entry points for applied research informing policymaking in the three fields for which we assessed capability fluctuations. We propose to investigate more thoroughly the following policy actions:

1. **Income:** Any measure to stabilise incomes, to bridge income-restricted periods between harvest cycles or to buffer market price fluctuations, is likely to improve rural farmers' and labourers' material welfare, increase their ability to plan to mitigate shocks and provide more scope for entrepreneurialism. Specific income stabilisation interventions—e.g. minimum wages, interest-free loans, crop insurance and (un)conditional cash transfers—must be selected in consideration of the local context and carefully evaluated in practice before being rolled out to the wider population.
2. **Mobility:** Road infrastructure is necessary but not on its own sufficient to provide long-term mobility and thus better access to markets for smallholders. Road safety and training for women who want to drive, involving their male relatives, could be measures to increase mobility choices.





3. Social relations: Agricultural cooperatives seemed to be a solid pathway towards women's capability increase, and a durable one as well. In view of policy measures, incentives for cooperative structures could be an effective means towards building and sustaining capabilities—particularly for rural women.

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