

Agrarian transition, gender and social differentiation:  
Smallholders' responses to a boom commodity cassava in Vietnam

A case study report submitted to ACIAR

December 2017

Nozomi Kawarazuka

International Potato Centre

## Table of Contents

<b><i>Agrarian transition, gender and social differentiation: Smallholders' responses to a boom commodity cassava in Vietnam</i></b> .....	<b>1</b>
<b>Abstract</b> .....	<b>3</b>
<b>1. Introduction</b> .....	<b>3</b>
<b>2. Exploring the dynamics of incorporation into and responses to boom crops</b> .....	<b>4</b>
<b>3. Research methods and context</b> .....	<b>6</b>
a) Methods .....	6
b) Research contexts .....	8
<b>4. Key findings</b> .....	<b>9</b>
a) Diverse responses to and impacts of a cassava boom .....	9
b) Social relations among value-chain actors.....	15
c) Gender and family relations central to the processes of adverse incorporation .....	18
<b>5. Discussion</b> .....	<b>21</b>
<b>6. Conclusion</b> .....	<b>23</b>
<b>References</b> .....	<b>25</b>
<b>Acknowledgement</b> .....	<b>27</b>
<b>Appendix</b> .....	<b>27</b>
<b>Topics of open-ended questions</b> .....	27
<b>In-depth interviews with farmers</b> .....	27

## Abstract

In Southeast Asia, the areas of export-orientated boom cash commodities have been expanding. The literature on political ecology has questioned its sustainability and there is a growing concern about the implications for social equity and social justice. Drawing upon the feminist political ecology built on the critical social theory of gender (Elmhirst, 2011b), this study has explored the diverse responses and impacts of a cassava boom in four study communities in Vietnam. The study has shown that there is no single victim narrative of land grabs and debt. Instead, the processes of incorporation into boom crops are diverse and dynamic. Those varieties can be explained by not only their settlement history and socio-economic conditions but also by the gender and social norms, which impede or facilitate access to the resources of specific social groups. Social relations among value-chain actors are deeply embedded in local social and cultural norms, which resulted in ethnic minorities being disconnected from the powerful value-chain actors who hold information. The study concludes with implications for agricultural interventions for more sustainable farming systems; without considering the different needs and interests of diverse social groups, interventions run the risk of supporting the wealthy large-scale cassava farmers, who can afford agricultural inputs, labour and time, while further marginalising the poorest of the poor who also depend heavily on cassava with limited financial resources and male family labour.

## 1. Introduction

Smallholder farmers in Southeast Asia have been increasingly involved in producing export-oriented boom crops, such as coffee, fast-growing trees, oil palm and rubber. The transition from subsistence farming to those boom cash crops has brought about many changes in production and selling practices, such as the patterns of investments and relationships with value-chain actors (Hall, 2011). The literature on political-economy shows that in this process of transition, a small number of powerful actors, who have greater access to resources receive substantial benefit, contributing to widening the gap between poor and rich peasants (Akram-Lodhi, 2005), as well as between the ethnic majority and the existing minorities (Doutriaux et al., 2008). Boom commodities are therefore often linked to the terms, social differentiation, exclusion and adverse integration. Boom commodities have changed some aspects of gender roles and responsibilities in agriculture as well as domestic work, while other aspects of gender norms remain unchanged, determining household strategies for the deployment of family labour, influencing the patterns of migration and land acquisition (Elmhirt, 2011a, 2017). Some cash commodities favour male labour and it is often women who are excluded from or integrated in adverse terms in boom commodities. In some communities, women's farming roles are downgraded from managing subsistence farming to supporting men in sustaining cash commodities (Cramb et al., 2017) or their labour and time burden increased while their domestic responsibility remained the same (Lindebirg, 2012). In other areas, women shifted their work to non-agricultural sectors outside their village (Bonnin & Turner, 2014) or even go to work in other counties (Elmhirt, 2011a).

This study explores the processes of social differentiation among the communities and within the community in the context of industrial cassava production in Vietnam. Cassava became a major

boom commodity in Vietnam in the 2000s, produced on an industrial scale to meet a growing global demand for starch, animal feed and biofuel. However, the sustainability and livelihoods of smallholder farmers continue to be challenged by soil erosion and declining fertility, leading to low productivity. In the past two years, this has been exacerbated by unstable and falling prices. Mahanty and Milne (2016) describe cassava as a 'gateway crop' to intensify the capitalist mode of production with more competition and input, which leads poor smallholder farmers to be indebted and more dependent on outside investors. On the other hand, unlike other boom commodities, such as palm oil and coffee, cassava requires a relatively low input and processing is available within the community by using small-scale starch-extracting machinery. Hence, it has been adopted by poor smallholders in remote mountainous areas (Cramb et al., 2017). There are shopkeepers, collectors and traders, who offer credit to smallholder farmers and they play a significant role in linking those smallholder farmers to the global market. Given the nature of cassava as a commodity for the poor, the processes of incorporation into a cassava boom might take place in very different ways from other boom commodities. There are relatively limited studies on exploring smallholders' agency: their strategies for boom commodities and negotiations with value-chain actors, which constitute the focus of this study. Three key questions asked were:

- 1) How differently do smallholder households respond to cassava production in relation to other boom crops and livestock?
- 2) How and to what extent do men and women farmers (of different ethnicity and socio-economic statuses) negotiate with, and obtain information and support from, cassava value-chain actors?
- 3) How do gender norms and relationships shape the deployment of family labour for cassava production and other livelihoods?

In order to address these questions, 5-week fieldwork was undertaken in cassava farming villages in the Son La and Dak Lak Provinces in Vietnam. In-depth interviews were conducted with 55 ethnic minority men and 55 women, respectively. This complemented the additional standard methods used in the project, such as village focus group discussions, key informant interviews and large-scale household surveys.

This study views smallholders' adaptation to agrarian change as a complex process embedded in gendered social norms and relationships (Nightingale, 2006, 20011; Elmhirst, 2011; Lindeberg, 2012). It thereby seeks to contribute to the literature on broader political ecology and agrarian transformation in Southeast Asia, in particular, the impacts of boom crops on smallholders and subsequent social differentiations (Akram-Lodhi, 2005; Hall, 2011) and the roles of cassava for the poor (Mahanty & Milne, 2016; To et al., 2016; Cramb et al., 2017).

The following section describes the conceptual basis to explore varieties in the responses to and impacts of the cassava boom. Section 3 describes the research methods and research context. Section 4 presents the key findings to address the three research questions described earlier. Section 5 discusses the key findings in relation to the relevant theories and literature. The study concludes with implications for cassava interventions to support the poor.

## **2. Exploring the dynamics of incorporation into and responses to boom crops**

The literature on the impacts of boom crops has described the processes in which a specific social group or a community are incorporated into a capitalist economy in adverse terms. This study seeks to explore dynamics within a community and among communities. In order to address this issue, the study draws on the literature on new feminist political ecology (Elmhirst, 2011b) to move beyond producing 'single victim narratives' (Elmhirst, 2017) to illuminating complex and dynamic varieties among single communities and single social groups.

New feminist political ecology (Elmhirst, 2011b) employs gender as a tool to explore the manner in which power plays out in the family and the community. In this process, the dynamic social positions of individuals in relation to their family and community are central. This relational approach differs from classifying men and women into two groups for comparison purposes or comparing gender with other factors such as ethnicity. Individual's positionality, such as gender, age and ethnicity constitutes power and this attribute plays out in complex and dynamic ways. Gender scholars especially from the field of human geography have been using this relational approach in political ecology (e.g. Nightingale, 2011; Truelove, 2011). Those studies employing a strong gender lens have demonstrated that the processes in which rural farmers are affected by agrarian change are closely related to gender and social norms that shape the deployment of family labour, including migration strategies and these lead men and women, the young and the old into different situations, which in turn affect long-term well-being inter-generationally (Elmhirst, 2017). The relational approach enables us to explain the processes of incorporation not only based on the mode of production but also on the varieties within the same community in the same mode of production.

While the shift from subsistence farming to cash crops in Southeast Asia certainly changed gender roles in farming, some parts of gender norms and relations have predominantly remained the same, as traditional social systems persistently co-exist with economic interactions in new market systems (Lindebirg, 2012; Tickamyer & Kusujarti, 2012). In their study of the palm oil industry in East Kalimantan, Indonesia, Elmhirst et al. (2017) found that palm oil had brought short-term economic benefits to the community. However, women are excluded from or incorporated into palm oil production in adverse terms in the processes of formalisation in production systems, which favour men. They point out that its long-term consequences are severe, affecting inter-generationally and challenging social justice and equity. Despite women being very actively involved in agriculture management in the family, when it comes to palm oil, it is men who present on behalf of family, and men's power is strengthened through a boom in the palm oil production which is a major income source. This finding echoes other gender studies in value-chain implying that women lose their positions in the process of market formalisation (e.g. Anderson et al., 2012; Quisumbing et al., 2015).

While the mode of production for palm oil industries includes large-scale contract farms as well as individual smallholders, cassava production in the study sites in Vietnam is mostly dominated by smallholder farmers and their production and trading systems remain largely with informal social interactions rather than formal relations with private firms.

Power hierarchy in informal economies is different from that of formal economies. Understanding the processes of inclusion and exclusion in informal value-chain systems is particularly important to explore farmers' diverse processes and consequences of incorporation into the global cassava

market that consists of informal relationships. Phillips (2011) suggests that the concentration of poor people on the informal economy is created not only through the power of capitalist economies but also results from the strategies of poor households themselves, who have fewer barriers in informal systems, which also fulfil their short-term practical needs. As a result, poor people are incorporated into, rather than excluded from, markets on adverse terms. At a global level, the gendered dimension of the informal economy is evident since women constitute a substantial share in the informal sector (Charmes, 2012; Chen, 2014). Informal social relationships often provide both material and non-material support, such as credit, information and risk sharing opportunities in the case of initiating business or investment (Fafchamps & Minten, 1999). Access to market is therefore not necessarily based on capital but also on the social relationships (Ribot & Peluso, 2003) in which an individual's positionality in their society (based on gender, ethnicity, and family backgrounds) plays out. This is what White (1993) describes as the politics of social 'embeddedness', in which various forms of social, cultural and gendered ideological powers influence the processes of access to markets, and shape the ways in which markets are operated. The shift from local economy to global economy does not necessarily disconnect the social and cultural elements of the society (Hess, 2004). The literature thus shows that when rural farming households are linked to global economy, it generates diverse responses and consequences not only because gender and social norms drive specific social groups into subordination, but also because the social positions of individuals and of families offer different forms of support to different people, allowing farmers to respond differently.

### **3. Research methods and context**

#### a) Methods

##### *Site selection*

The study draws on the primary data collected in the four communes of the Dak Lak and Son La provinces. A descriptive case study approach (Yin, 1994) was employed in order to understand smallholder farmers' various responses to on-going changes in agriculture and livelihood opportunities. Field sites were selected in two steps: first, we identified two communes with a high level of cassava production in two provinces; second, two villages were selected within each commune - one village with better infrastructure and another village with remote or difficult socio-economic conditions. For the Dang Kang commune, however, we only selected one main village as the size of village was much larger than other study sites and the village was diverse enough in terms of socio-economic statuses and mode of production. We decided to take advantage of staying in one village and form stronger relations with the villagers in order to enhance the quality of information.

A 5-week case study was undertaken between May and June 2017. Key informant interviews were conducted with vice commune leaders, agricultural extension workers and women's union at the commune level and village leaders at the village level. In-depth interviews were conducted with 55 ethnic minority men and 55 women from different households based on the advice from village leaders and carefully included major ethnic groups and men and women alike, and poor and better-off within the village. The details are described in Table 1. This study complemented the additional

standard methods used in the project, such as village focus group discussions and large scale household surveys.

**Table 1: Field sites and interviewees**

Date	Provinces	Districts	Communes	Villages Total hh	Socio-economic status and ethnicity of interviewees	The number of interviewees	
						Men	Women
16-23 April	Son La	Mai Sơn	Nà Ốt	Há Xét 70hh	Better-off, Poor Thai, Xinh-Mun	6	6
				Hủa Kẹt 28hh	Very poor Khơ mú	9	9
12-20 May		Thuận Châu	Bó Mườì	Sói 50hh	Better-off Thai	9	9
				Nà Viềng 116hh	Poor, remote Thai	9	9
29 May- 9 June	Đắk Lắk	Ea Kar	Ea Sar	Thôn 3 105hh	Better-off Tay	9	9
				Ear Sar 106hh	Poor, remote Ede	4	4
7-8, 26- 30 June		Dang Kang	Krong Bong	Curpam 120hh	Better-off & Poor mix, Ede	9	9

### *Ethical consideration*

We explained the purpose of the interviews at the beginning of the study and ensured that confidentiality was maintained throughout. Verbal informed consent was obtained from each interviewee. All names were changed for this report in order to ensure that all personal details remained anonymous. In Son La, where gender relations are restricted, men’s interviews were conducted first, as men (household heads) are in charge of serving the guests, and in order to make it easy for women to obtain permission from their husbands to participate in the interviews. Given that most interviewees had never talked to foreigners before, in some cases, the interviews were conducted with two people of the same gender and similar economic status in a preferred section of the house of one of the interviewees. In Son La, the interviews were conducted with male or female Vietnamese translators according to the gender of the respondents, while in Dak Lak, the interviews were conducted with a male Ede translator (Ede-English) for both male and female respondents.

### *Gender, reflexivity and subjectivity*

In qualitative gender studies, the critical reflection of ourselves as researchers in relation to the positions of interviewees is central in the processes of data collection and data analysis, as it significantly determines the quality of information we obtain (England, 1994). The interview team, including translators, discussed about the power and prestige we have in relation to male and female farmers, respectively. Interviews were then conducted very carefully in order to create a confrontable environment for both male and female farmers. As a first author (a female researcher) interviewed with both men and women through a translator, there were gendered advantages and

limitations. After chatting about themselves for the first ten minutes, women had the tendency to talk openly without much difficulty. Conversely, men remained very formal in conversations, and gaining a comprehensive understanding of their thoughts was difficult. Men were hesitant in sharing their issues with us and had different ideas. For example, when we asked the reasons why farmers did not dry cassava and instead chose to sell fresh one, many women told us that they needed cash right after harvest to buy rice and they could not wait for the cassava to dry despite knowing that the dried one would be more profitable. We did not hear such a reason from men. They only mentioned economic returns to labour and a shortage of space to dry. Women were also more open to talk about their difficult family situations such as their husbands' drinking habits or sick family members, which affected the capacity of the family to deploy labour. On the other hand, men were willing to show their knowledge and skills in agricultural technologies, while women did not have confidence in this knowledge and technologies and advised us to talk to the men instead. Those gendered interactions were considered in our interpretation and data were analysed based on these gendered limitations and advantages.

## b) Research contexts

The study villages have a different settlement history and consist of different ethnic groups that shape gender dynamics, influencing gendered migration opportunities and cassava production systems (Table 2).

**Table 2: The key characteristics of study sites**

The study communes	The number of households under the poverty line*/a total household number	Settlement history	Migration Opportunities	The mode of cassava production
1) Nà Ốt Mai Sơn, Sơn La	Há Xét village: 57/60	Thai, Xinh-Mun people migrated from the Son Ma and Mai Sơn districts in the 1980s and 1990s. Inter-marriage between ethnic groups is not uncommon.	Migration is uncommon for both men and women.	Cassava production is the lowest in Sơn La**. Most farmers sell fresh cassava to collectors. A factory is located at a distance of 50km. Some better-off households dry cassava for sale and to feed animals.
	Hủa Kẹt: 25/26	Khơ mú people were relocated from a higher mountain area in 2000. Young people have relative power and autonomy.	Only some single Kho mú women go to Da Lat for a few weeks to work on flower plantations.	
2) Bó Mười Thuận Châu, Sơn La	Sỏi village: 21/50	Thai people have lived in this area for at least a few generations. Women's mobility is limited.	Around 10 men work in Hanoi.	Cassava drying factory closed 3 years ago. 1 man has a truck. Many households sell fresh cassava.
	Nà Viêng village: 81/116	The same as above	30 men went to Hanoi this year through a labour broker. This arrangement is novel for the village.	12 men own 10-ton trucks to collect fresh cassava.
3) Ea Sar Ea Kar, Đắk Lắk	Thôn 3: 45/105	Tay people migrated from Cao Bang (North) in the mid-1990s. The village consists of Kinh, Nung, Tay and Ede.	Migration is not common for both men and women. Daily wage labour work available in neighbouring areas in cassava and coffee farms for both men and women.	Kinh middlemen within the village facilitate informal loans for and the selling of cassava. Farmers sell fresh cassava.
	Ea Sar: 60/121	Until 1994, Ede farmers were moving with the slash and burn system. Ede is a matrilineal society. Young men's power and autonomy are limited.	Young Ede men and women seasonally go to Dak Nong for coffee harvesting.	The same as above

4) Krong Bong Dang Kang, Đắk Lắk	Curpam: 176/246	The village was established in 1992. Before that, Ede people were moving with slash and burn farming. Kinh people migrated from other areas and have been acting as traders over 20 years.	Both men and women go to work for 3-9 months in Ma D' Rai (forest), Ho Chi Minh (factories), Gia Lai (Tabaco), Phu Yen (Cassava).	A cassava factory is located at approximately 4 km from the village. Each household carries fresh cassava directly to the factory. Kinh people facilitate informal loans.
--	-----------------	--	---	---

\* According to the government standard based on household incomes

\*\*6-7 t/h while the average in Son La is 16-17t/h.

Nà Ót commune (No.1, Table 2) has the lowest cassava productivity in Son La, and the poverty rate is very high (95% and 96% in the two study villages, respectively). Thai, Xinh-Mun and Kho mu ethnic groups live in the same commune and their socio-economic statuses are more or less similar. The farm land is located in steep mountain areas and many families do not have paddy fields.

The Bo Muoi commune (No. 2, Table 2) is relatively better-off. Unlike other study sites where people moved from other areas in the 1990s or the 2000s, Thai people have been living in this commune for a long time. Most households have paddy rice fields. The commune has a long history of engaging in industrial cassava production and many farmers benefitted from increased household incomes. The cassava price reached an all-time high in 2010-11, 2000VND/kg/fresh, and 3300VND/kg/dried. Around that time, 12 households bought 10t-trucks to collect cassava and maize through the government's project designed to provide loans to poor households. At present, many changes are happening in this area. The commune has been supporting farmers to shift from cassava to mango, while men have recently started to work in Hanoi through a labour broker. They have strong family ties and gender relations are relatively restricted.

The Ea Sar commune (No. 3, Table 3) consists of two groups: migrants from the North (Kinh, Tay and Nung) and local ethnic groups (Ede and Xe Dang). Two groups have different gender dynamics as well as social norms, which shape a different mode of cassava production. Migrants from the North are better-off, living close to the main road and their farm is located closer to their houses, while Ede and Xe Dang people tend to live far from the main road and have farm land in hilly areas.

In the study sites in Dang Kang (No. 4, Table 2), it is the Ede people who grow cassava while the Kinh people serve as agents who rent money or fertilisers. In this commune, gender norms allow women to leave home to work in other provinces and migration is common for both men and women. There is a significant gap in socio-economic statuses within the village and within the single ethnic group of the Ede. Some Ede people live in large modern concrete houses containing rich furniture while others live in very small houses made of bamboo.

#### 4. Key findings

##### a) Diverse responses to and impacts of a cassava boom

In study sites, cassava became a boom crop from the 2000s to the early 2010s but in all study sites, farmers claim that its productivity and price halved compared to the peak time. The findings show that the responses to and the impacts of a cassava boom are diverse among the communities and within the community, and it was clear that, similarly to other boom commodities, cassava provides more benefits and opportunities to the better off than to the poor. Cassava is, however, a very important crop for the poorest group in the study sites. In

this sub-section, we divide cassava producers into four types based on the degree of cassava dependency and approximate household incomes (Figure 1).

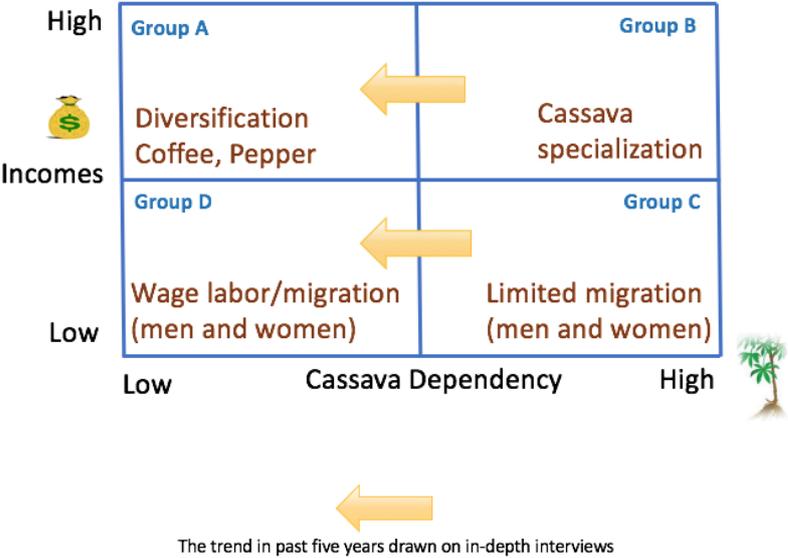


Figure 1: The four types of cassava production based on cassava dependency and household incomes

The purpose of analysing data through these four dimensions is to illuminate diversity and the differences in response to boom crops. The characteristics of producers within each group are still diverse and cannot be generalised. The demarcations between groups cannot be clear. Nevertheless, farmers within the group have similar experiences of and strategies for cassava production. Accordingly, the extent of interests in their investment in cassava differs significantly.

*High incomes and low dependency on cassava*

Some people successfully used cassava as a means of generating income to invest in other more profitable cash commodities, such as coffee and pepper as main income sources (Group A, Figure 1). For this group, cassava is used to generate income and the group representatives were early adopters who benefitted from a cassava boom during the peak time when the price of cassava was much higher than it is now. Mr Y Cuor is the second richest man in a study village in Dang Kang. He has 3 ha of land (coffee 0.6ha, cassava 0.8 ha, beans and maize 0.5ha, rice 1.1ha). He has been growing cassava since 1997. Before the factory was established near his house, he used to sell dried and chopped cassava but now he sells fresh cassava directly to the factory in his commune. Cassava is no longer a major income source and he only harvests once every two years due to the shortage of labour. He still keeps growing cassava until his coffee gets enough profit so that he can turn all his cassava fields to coffee. Mr Y Sop from Ea Sar has been growing cassava for more than 10 years. He obtained planting materials through his wage labour work for the cassava specialised wealthy farmer and multiplied them by himself. Cassava was a great crop to generate income at that time. Last year, he reduced his cassava production from 0.8 ha to 0.5 ha. There were no diseases and pests before but in

recent years, some pests were observed. However, he does not care about it because there is 'no worth to spend time and money to address these issues as cassava is anyway not profitable', he said. Instead of investing his time and labour in cassava, this year he prepared land for planting coffee and booked new varieties of coffee through his relatives, which were expected to arrive in one month. He has a plan to stop growing cassava when he has sufficient income from coffee. Similarly, Mr Cuong from Bo Muoi started coffee plantations (3000m<sup>2</sup>) this year. He has a plan to increase the size of the coffee plantations by 500-1000m<sup>2</sup> every year. In 2007, he received a new cassava variety from his relative and multiplied it by himself. He knows that growing trees for timber is the best way to use their steep land but he cannot wait for the harvest. Cassava was very successful for the first two years without any agricultural input. Although both the productivity and the price of cassava dropped, he keeps growing it to feed pigs. He said 'my plan is that, after five years, I turn all my cassava fields to the plum and coffee'. He will use cassava and pigs as a coping strategy during the transition period.

People in this group are better-off. Unlike cassava, other cash commodities require a lot of investment. In Dak Lak, for example, individual households have to start from creating a new irrigation system, digging a well and fixing a water pump, which requires electricity. In addition, coffee requires more labour and technologies to grow with no incomes for the first three years. Clearly, those who were able to use cassava as a means to shift to other more profitable commodities are the better-off groups, who have enough confidence to take a risk as well as resources. While this group has the capacity to invest in cassava, they are not willing to do it as it is simply a transition crop and they want to minimise investments (in labour and chemicals) to focus on other crops.

#### *High incomes and high dependency on cassava*

A small number of wealthier people produce cassava as a major household income source and often hire labourers within and/or outside their villages (Group B, Figure 1). In Son La, they are the Kinh people who bought or rented the farm land in the study sites, while in Dak Lak, they are the Kinh, Tay and Nung people who originally come from the North but have been living in the study sites for over two to three generations. They are early adopters who initiated cassava production for industrial use earlier when the price was very high. In Son La, some households in this group are equipped with their own drying machines (it costs VND 2 million and a running cost is 1 litre fuel per ton). This facility reduces the labour cost required to carry heavy fresh cassava from the farm to a main road and minimises the impact of the price fluctuation of fresh cassava.

Male heads in this group are often well connected with the government officers and private sectors (factories), while their wives engage only to a limited extent with the cassava production on the farm and focus more on financial management, assisting their husbands in hiring people. Mr Vinh, a Thai farmer whose main income is from cassava in Bo Muoi said that 'cassava is too heavy for women to grow and carry. I cannot ask my wife to do it. I hire labours'. Cassava specialised male farmers are very keen on obtaining information on fertilisers, pests and diseases and market trends. Mr Thang in the Ear Kar commune, for example, is the farmer who has the largest plantation of cassava in the study village (3 ha) and is well-known as a cassava specialist in the village. Other Tay men obtain news about cassava directly and

indirectly from him. He started cassava for industrial uses in 2000 when the price of fresh cassava was very high and expanded his production and investment over a decade. He liked cassava because of its low investment costs for labour and agricultural input. The current price is nearly half and productivity has been decreased. Over the past two years, pests and diseases have been observed and he has been spraying the crops. The willingness to invest in agricultural chemicals and labour is highest in this group.

#### *Low incomes and high dependency on cassava*

The next group is the poorest of the poor who depend heavily on cassava production as a major income source in their small land: cassava is the last resort for coping with difficult situations. Many Khơ mú families in the Nà Ốt commune are included in this group. Mr Thieng and Mr Nhiem have 3ha and 2ha of cassava, respectively. Neither of them have other crops. They believe that their farm is too steep to grow anything but cassava (within their financial capacity). Before growing cassava, they grew mountain rice – only 10 bags of rice harvested each year. Cassava is better because they can buy more rice than they could produce with a reduced labour input. Cassava productivity decreased from 30t/2h (first year) to 22-25t (the second year) and 15t (the third year) but the farmers will continue with cassava. Drying is not an option for this group as they want to get an immediate income in order to purchase rice.

Women in this group tend to work in harsher conditions compared to those in other groups who are responsible for lighter work in other crops and have some autonomy in crop/livestock management such as rice, vegetable, pigs and chicken. Khơ mú women work in cassava farms since cassava is the only crop to grow and no space for keeping animals in the current relocated area. The case of Ms Huong, 26, illuminates the gendered processes of adverse integration into a boom crop. She is single, living with her parents. Her brother married and lives with his wife and his parents-in-law because his family could not afford bridewealth and instead provided labour for a couple of years to the wife's family. In the Khơ mú culture, parents step down not only from farming but also from decision-making processes when their children reach the age of marriage. In this family situation, Ms Huong is fully responsible for farming. She drives a motorbike like a man and she does land preparation, which is considered a man's task. In order to increase or at least sustain cassava yield with minimum financial costs, she tried to use fallow land, to have an interval by planting maize, and to ask for planting materials from neighbours. But the production has been decreasing sharply every year. During the interview, she stopped talking about it for a while because it was too sad and emotional for her to talk. She said, 'Kinh people from outside the commune come to rent land and grow coffee, Longan, Mango, peach and so on but we grow cassava. No way to grow coffee and fruits for us'. Similarly, in Dak Lak, Ms H Got from Dang Kang expanded her cassava field this year in a mountain bush area located 10km away from her house. Her husband died and she lives with her married daughters' two children. Her daughter (divorced) and her unmarried son migrated to the Cu Pui and Hoa Phung provinces respectively, working in the forest. She has 0.3 ha of cassava land, and this year she created another 0.3 ha of new cassava land on bush areas in a hill (10km away from her house), as she does not need to add agricultural chemicals in the new land. In the Ede communities in Dak Lak, cassava can still be the best option for poor families with limited male labour. Ms H Got's unmarried son and sons-in-law from her other married daughters help her during the land preparation and harvesting while she can manage

in their absence. Ms H Got's cassava farm near her house is surrounded by wire-fenced pepper and coffee farms owned by Kinh investors. She said that she may sell her land to a Kinh investor as she is getting old and her children are not interested in farming. The aforementioned cases indicate that when female farmers experience a shortage in male labour and financial resources, they compensate them with their own labour.

This group does not invest in fertilisers. Their land tends to be very far from their house and from main roads, and they have limited family labour and financial resources. The people in this group observe the brave investments of Kinh men in fertilisers and labour by which they successfully generate incomes in geographically poor conditions similar to theirs. However, ethnic minority men and women do not see them as role models. In particular, they do not respect wealth built on debt. For example, Khơ mú men do not respect a Khơ mú man in the same village who has a truck and who invested in building roads. 'He is not rich because he has a lot of debt. His sons will be in trouble if he cannot return money. We at least do not have debt. We are clean. My family is much more secured in that sense', one Khơ mú said. Similarly, Ede women who are usually household heads, often do not have confidence in taking risks with the exception of some women from wealthy families. In this way, while this group depends heavily on cassava, there are reasons why they cannot invest in cassava.

#### *Low incomes and low dependency on cassava*

The final group is constituted by people who shifted their livelihood focus from cassava production to working as labourers (Group D, Figure 1). Although they still grow cassava in small plots of land (0.2-0.5 ha), they have limited willingness, time and money to invest in their own cassava. Some people even sold or rented their land, which was observed in both Dak Lak and Son La. The reasons for shifting from farmers to wage labourers vary but are often related to family relations and family labour situations. In one study site in Son La, migration was uncommon among both men and women for a long time and at that time, agriculture was highly important but now this has been changing. The labour brokers reached the village last year and 30 young men were sent to Hanoi this year. Mr Hieu sent his two sons to Hanoi and stopped growing cassava. He thinks that due to low prices and severe soil erosion, it is the right time to stop growing cassava to make his land fallow, waiting for some financial capital available from his son's work to reinvest in farming. In Dak Lak, Mr Y Thoi from Ea Sar, decided to rent his 0.5ha of cassava farm to a Kinh investor as profit from his farm was too low and he thought wage labour work was much more secure than investing in his own farm in his family situation with school-aged children who could still not work as family labourers. Currently he still grows cassava on the remaining plots of land (0.4ha) with a minimum agricultural and labour input. Every day, he works as a wage labourer in some places within 10 km from his house, cutting grass, picking coffee and pulling cassava for Kinh investors. The daily labour price is 170,000VND to 250,000VND. His wife only works occasionally, as she needs to look after their children. The next case is that of Mr Y San from Dang Kang. He is from one of the poorest households in the study village. His small concrete house was built by the government (30 million for the house building). His first son dropped out of school at the age of 12 to support his family. Mr Y San has been growing cassava (0.3ha) for four years. He keeps his own materials by using a negative selection method, as clean materials from the factory are too expensive. His investment in fertilisers is limited according to how much he can afford during the planting season each year. Furthermore, he does not have enough time to look after his

own farm. He and his son work for a Kinh man in a neighbouring village who owns 2ha of coffee, sugarcane and cassava plantations. The Kinh man also conducts a business selling fertiliser to local farmers on credit. Mr Y San bought it from the Kinh man so that repayment can be flexible. His wife has a health problem and his son is still too young to be sent to other provinces to work. Therefore, migration is not an option for him and his son. For other households in Krong Bong, it is very common in poor families for both the wife and the husband to go to other provinces for three to nine months while the wife's parents remain with their grandchildren. A woman said 'if all family members go to migrate, they can earn 4 million/person/month. They can easily buy even a motorbike, while if you remain here, how much can you get from cassava?' The purpose and investment in agriculture is thus changing in the context where migration is common for not only men but also women.

In this way, responses to and the impacts of boom crops differ significantly among the four groups. The farmers who are very keen on new information and technologies are group B (wealthy farmers who specialise in cassava) and group C (the poorest group) but group B is more likely to uptake this information and technology than group C. Through the in-depth interviews including life histories as well as crop histories, it is apparent that there is a tendency for both the poor and the better-off to shift from cassava specialisation to diversification (the shift from right to left). It is therefore clear that, over a decade, cassava did not help the poor to get rid of poverty: the shift from the lower to the upper (in Figure 2) did not happen. Poor people remain poor, and their strategies and options for sustainable intensification are very limited. There are clear differences among the ethnic groups. Kinh, Nhung and Tay are concentrated on groups A and B who had the capacity to make use of the cassava boom in order to generate incomes. Some Thai and a small number of Ede people have also benefitted from the boom. Those better-off Thai and Ede view Kinh people's success as an outcome of their financial capacity and business connections, while they recognise their own success as an outcome of hard work and family harmony in which the wife and husband work collaboratively in their daily manual work. The history of resettlement seems to also be contributing to creating such diverse processes of incorporation into boom commodities. Many ethnic minorities who were settled in the current location in the recent two decades had limited options for both the quality and quantity of land and they have been struggling with fixed farming practices in which sustainability is critical.

In the cassava farm operated by groups A and B, men are central to management, decision-making as well as labour input. Women are involved in lighter work but their roles are supporting their husbands. More women are involved in the cassava production in the low income groups (group C and D) in order to compensate for the shortage of male labour and financial resources. Women climb up a mountain in Son La in case their husbands cannot take their wives by motorbike due to the paths to their farms being too steep and narrow. In this group in Son La it is therefore important to inform and invite both husbands and wives to the training because men are very influential as decision-makers but women are working in the field and therefore they also need knowledge and skills according to their gendered needs and interests.

## b) Social relations among value-chain actors

The ways male and female farmers interact with value-chain actors, such as planting-material providers, agents who offer credit and agricultural chemicals, collectors and/or factory staff are so diverse. While cassava is a boom cash commodity, their interaction with value-chain actors is deeply embedded in local notions of building relationships based on trust, and social positions facilitate access to value-chain actors. This system differs from the capitalist mode of simple economic interactions in which the social positions of individuals are less likely to influence. In this sub-section, we explore male and female farmers' interactions with value-chain actors in informal settings. We highlight that information on the cassava market and production seems to be shared at the level of the major value chain which involves large-scale male farmers, while poor and small-scale farmers depend on their social networks and information from their relatives and are not well connected with powerful actors who have information. Motivations for agents, collectors and traders to share information on cassava vary. In some cases, collectors are within the village and their clients are their relatives, while in other cases, agents and collectors do not exclusively deal with cassava and are not affected by the cassava market, and therefore have limited motivation in supporting cassava farming. Private firms and governments are less likely to constitute an option for poor farmers to obtain support and information as they do not have relationships based on trust with them.

### *Relationships based on trust: the exchange of planting materials and information*

Understanding how farmers obtained planting materials for the first time helps us explore not only informal seed systems but also the source of information they trust which influences their decisions on crop changes or adoption of new practices.

Cassava planting materials are widely exchanged through social networks. There is a limited number of collective actions in getting planting materials together. Most farmers purchased materials individually from their relatives or traders whom they trust or use free materials from relatives who were successful in growing cassava. For example, in the Nà Ót commune in Son La, Thai people still have strong ties with their original home village within the Mai Son district or neighbouring Son Ma district where the soil is more fertile and agriculture is advanced. Cassava planting materials were brought to the village by individuals. On the other hand, the Khơ mú villagers started growing industrial cassava 7 years ago when a Kinh villager initiated the process on rented land. The other farmers were curious. They did not talk to him but observed. This news of new cassava spread in the commune. Thai people in the neighbouring villages started growing cassava. In this Khơ mú village, Mr Dat, the wealthiest man, was the first person who grew cassava. He bought the planting materials from a Thai person in a neighbouring village. Other villagers still observed because they were not sure if it worked. It took three steps and four years for other villagers to adopt similar practices: observing the outcomes of the Kinh man, then of Thai people and finally of Mr Dat, the wealthiest Khơ mú man, and they got planting materials from Mr Dat. By that time, the price of fresh cassava had already dropped and the Kinh man already shifted from cassava to fruit trees.

In Dak Lak, despite the proximity from the factory, many poor farmers do not buy or renew planting materials from the factory, which sometimes offers a new variety with higher

productivity. For example, Ms H Pom, a widow who lives with her grandchildren buys cassava planting materials from her relative who lives 20km away (VND 500,000 for a bunch of cassava for her 0.3ha farm). She does not use her own materials as the quality is not good. She knows that the factory (5km from her house) also sells clean planting materials on credit, sometimes a new variety with higher productivity, but she feels that their materials are rather expensive and not trustworthy – she doubts if the quality of the materials is good enough. Also, she has never been there because it is her son-in-law who carries fresh cassava to the factory. She trusts her relative’s materials as his cassava farm is doing very well every year. On the other hand, Mr Y Vel is from a better-off family who has a cassava plantation of 0.6ha. He registered the factory to buy fertilisers and planting materials provided by the factory. Under this condition, the factory buys fresh cassava at 1700 VND/kg. For those who did not complete the registration process, the price is at 1200 VND/kg. He is well connected with the factory people and has been interacting with them since the factory opened.

The aforementioned cases show that poor farmers tend to have limited direct interactions with Kinh people although they were physically close. This implies that without their trusted network, information and technologies may not be adopted. Farmers, especially poor farmers regardless of the gender of the decision-maker in the household, tend to depend on information from relatives who are in similar economic situations to theirs, not only for cassava but also for other crops, such as coffee and turmeric. Their decisions on crop changes are largely influenced by what their relatives grow rather than what their wealthy neighbours (Kinh people) grow. New information and technologies should be delivered through their networks based on trust.

*Relationships with collectors, agents or traders*

Smallholder cassava growers tend to be away from key value-chain networks to factories. Figure 1 below is a representation of value-chain networks (it is intended to provide an overview and it is not an accurate map of the study sites). Information pertaining to cassava global market trends flows with key powerful actors within a direct route (red circle area) while the remaining chains are not connected to those network systems.

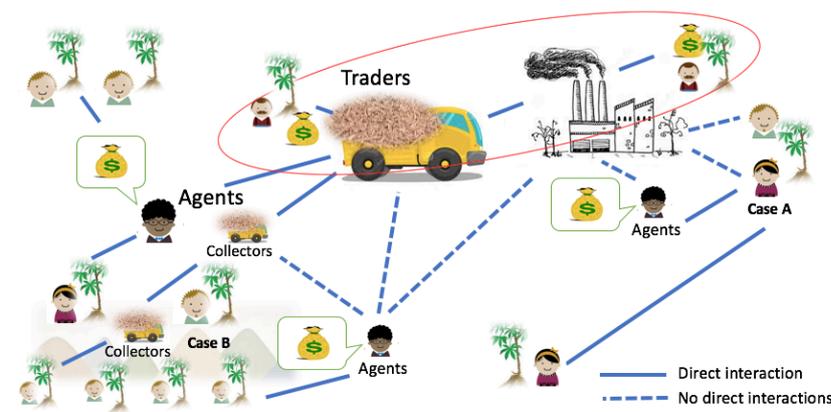


Figure 1: a representation of value-chain networks

The proximity from the factory does not necessarily invite smallholders to the key information network (Case A, Figure 1). For example, similarly to the previous case of Ms H Got, Ms H Chau is living within 4km from the factory and her son-in-law delivers fresh cassava to the factory. Despite this proximity, she has never registered to receive new cassava varieties and fertilisers. She borrows money to buy fertilisers from a Kinh man in the same village who does not grow cassava and therefore does not have any knowledge about fertilisers, pests and diseases. She rather depends on her relatives (brother-in-law) as he knows her situation well and he can advise her on cassava production as well as on how to invest and grow other crops such as coffee and beans.

In the Nà Ót commune, a primary cassava collector is a villager (Case B, Figure 1). Mr Quoc, the only better-off household in the study village, for example, invested in building roads within the village and collecting all cassava as well as other crops such as maize. He is the first person who started to grow cassava in the village at the time when the price was still high. He generated income and then turned to be a collector. He no longer grows cassava himself and he is absent from the village with the exception of the harvest season as he is doing transport business in other areas. Given that he invested in building roads in such a remote village, it is difficult for other collectors to enter his road without his permission. Moreover, other collectors may not have incentives to go there as it is very far. All villagers are heavily dependent on him for transporting cassava while he is not fully dependent on the villagers' production as he can do some transport business in other villages. This one-sided dependent relation will not change even if they change crops as he will be their transporter for any types of crops they produce. Similarly, in the Soi village in Bo Muoi, Son La, a wealthy villager bought a truck and became a collector. He was also the first person who grew cassava and now he turned to be a collector. He carries construction materials during off seasons of cassava and maize, so now he is no longer depending on farming. These cases illuminate how a boom crop cash contributes to social differentiation, widening the gaps between the poor and the better-off. While these collectors within the village are very supportive and enable smallholder farmers in remote areas to be connected to the global market, they have little interaction with a next transporter who carries the cassava to a factory or a trader.

In Dak Lak, cassava production and the sale for Ede smallholder farmers are facilitated by Kinh agents who sell fertilisers on credit and act as middle men to sell their harvests to collectors. Their relationships of trust were built through a long history of interactions. In the 1980s, Ede people had to walk for one day to reach a market to exchange goods. Kinh people started to visit the village with goods by bicycle and temporarily stayed in their village to rest. Their role as a trader helped the villagers to save time and labour, and they could buy goods on credit from those Kinh traders. Eventually Kinh people came to live in their village along the main road, and they were very successful in business as well as investing in agriculture. Many Ede people have a positive view on Kinh villagers who provide credits, offer labour opportunities to them and bring some new agricultural commodities in the village. They however do not see Kinh people as their role models since for the Ede, earning money is not necessarily the highest value in their family lives. One Ede man told us 'the scale of investment is not important. I should not take a risk'. Therefore, small loans from the Kinh are suitable for many Ede as opposed to the government loans, which officially label them as in debt and have to manage

them alone. Conversely, credits from the Kinh people are not formally recognised and they have notions of reassurance that the Kinh are sharing the risk with them. Ede families have an informal and tacit contract with a particular Kinh person and hardly change agents. One woman said, 'It would be problem if you borrow money from other people – Kinh agents are competing with each other. You should be loyal to your agent.' They invite each other to weddings and funerals. Kinh agents are often generous, they can wait for the next harvest if the cassava yield was low due to weather conditions. They can also offer some money for emergency needs although interests are much higher. One woman said that she initially borrowed money from a collector (outside the village) but one time she could not return the money on time and had a problem with him. Since then, she started to borrow money from a Kinh agent who is more flexible. On the other hand, these Kinh people do not grow cassava and have little knowledge and information about this crop. Also, they do not grow cassava as their only crop. They also do not have any loyal relations with cassava collectors, which are more economic rather than social interactions. They also sell beans and vegetable seeds on credit to Ede farmers and act as agents in the same way they do for cassava.

In this way, the relationships of trust embedded in local social relations and cultural norms are central to the ways both poor male and female farmers obtain information and take important decisions. On the other hand, those key value-chain actors who facilitate poor farmers' access to the market do not necessarily have incentives to provide market information and technological support for sustainable cassava production to their clients.

#### c) Gender and family relations central to the processes of adverse incorporation

Understanding the gender divisions of labour and the processes of decision-making within the household help us to identify targeted groups with the purpose of changing cassava production practices in more sustainable ways.

##### *Gender role differences among women*

The degree of women's labour contribution to cassava differs significantly between the better-off and the poor households. Thai women from poor families tend to work longer hours in the field, and do similar work to men in terms of cassava production. They also have many other tasks, such as collecting forest resources and working as wage labourers. Thai women from better-off families, on the other hand, tend to have lighter work, spending more time around their houses than in mountain pastures and engaging in activities such as animal feeding, packing dried cassava and managing the home garden. Women who are highly dependent on cassava as a last resort ironically do not have sufficient time to look after their cassava field. For example, Ms Trang, 48, a Thai woman in the Nà Ót commune is a widow, living with her sick son, 18. Her daughter married and lives in a neighbouring commune. Her life changed significantly after her husband died. She only grows cassava and paddy rice. She has a manual machine to dry cassava but she does not use it due to a shortage of labour and time, and furthermore she also wants to have cash from fresh cassava immediately after the harvest. Although she has support from the government on fertilisers, she prioritises their use for rice rather than cassava. She does not drive a motorbike and so she has to ask her brother-in-law for help when she goes out. Her everyday life as a woman is very different from women in the

same village who focus on maintaining fruit trees and drying cassava using a machine with a motor engine that can process 20t of cassava in one hour.

Tay and Nung women’s roles vary according to the socio-economic situations of their households. Women from better-off families do not go to the cassava field. They are in charge of assisting financial management for hired labour or other businesses, which their husbands initiated. Women from poor families work as labourers in the field, similarly to men. Some women are overburdened by caring for sick people or their old parents-in-law.

Social expectations of Ede women in their society involve caring for children and, unlike Kinh women, earning money is not an essential task for wives. Ede women from better-off families tend to stay at home with their children, seasonally supporting lighter work in the farm. While women from poor families, in particular divorcees and widows, work as labourers for other people’s farms in addition to maintaining their own farm. They compensate for the shortage of male labour with their own labour. Understanding their family situations and differences in their roles and responsibilities is a first step towards providing appropriate support.

*Diverse gendered decision-making processes*

In the Thai and Xinh-Mun ethnic groups in Son La, there are distinct differences between men and women in interests and knowledge about cassava in accordance with their gendered roles. For example, women are aware of soil erosion and the importance of fertiliser. However, it is men who purchase fertiliser in the district market (30km away) and carry the fertiliser to the mountainous field. The decision about how much you invest in fertiliser is predominantly made by men as many explain ‘I know better. My wife does not have experiences and she does not know’. This does not change even in the context in which men are absent most of the time for migration. When we talk to women about fertilisers, they advise us to talk to men. In this situation, we need to invite both men and women to provide information or technologies, as men need knowledge as a decision-makers, while women also need practical knowledge and skills as they are people who work on the field. Thai women in their 30s speak Vietnamese, drive motorbikes and are increasingly involved in agricultural work. However, a woman said, ‘our autonomous domain is not changed and we are not utilising our education and mobility – I have the same limited autonomy as my mother’s generation did’. Our study on the scale of power and freedom (Table 3) shows that Thai women perceive their positions around 2-3, while men perceive their positions around 4-5.

**Table 3: The subjective notion of the degree of power and freedom**

Step 5	Power and freedom to make most major life decisions
Step 4	Power and freedom to make many major life decisions
Step 3	Power and freedom to make some major life decisions
Step 2	Only a small amount of power and freedom
Step 1	Almost no power or freedom to make decisions

Khơ mú men and women tend to share their power more or less equally and both men and women experience a decline in decision-making power in their 40s and 50s when their children reach the age of marriage. This differs significantly from those of Kinh and Thai in which the age hierarchy is very strong. One Khơ mú man in his 50s said that he was on a step 1 position as he followed his son and daughter-in-law. The satisfaction in the village life is very high for both Khơ mú young men and young women. Young men are not keen on migration as family ties are so important and they are responsible for the family including looking after their parents. Gender divisions in labour are very clear. Women used to be responsible for animal husbandry and mountain rice in their old village but following relocation, they no longer have enough space for domestic animals and they play a supportive role in cassava production, such as weeding. Listening to the voices of younger generations is meaningful to both men and women in this context, as they are decision-makers in the household, and are more likely to accept change, new technologies and practices.

Tay and Nung people in Dak Lak follow a strong patriarchal structure and gender relations are relatively restricted. Men say that they are 'a pillar of the house' and they perceive their positions higher than their wives (4-5). Tay women from poor families are fully involved in cassava production but they are reserved and their perceived positions tend to be lower (steps 2-3) than women from wealthier households, who are not working on the farm (steps 3-4).

The matrilineal Ede people have distinct gender relations. Women tend to perceive that they share the power equally (steps 3-5). Some men perceive that they have more power than their wives (steps 3-5) but admit that their parents-in-law have the strongest power. Earning income is not the top priority for a good husband and both men and women value family harmony. Young Ede married men are struggling with obtaining their positions and have limited power (step 2-3) and their interests are orientated toward migration as they have little autonomy in farming. For example, Mr Y Dinh married two years ago, and is living with his in-laws, his wife and their son. He wants to have a separate house from his in-laws so that he can have an independent life and freedom. His parents-in-law have not given their land to his wife. His wife has five sisters, all unmarried, so he is not even sure how much land he can get for farming. He works as a driver to transport agricultural produce for a Kinh business man. He goes to Ea Heo (160km from his village) by the Kinh man's May Cai (tractor) to carry coffee and black peppers. He has been doing this work for five years since he married. He is only involved in cassava farming as a labourer during the land preparation and harvesting for his parents-in-law.

In this way, the processes of decision-making and the degree of power and autonomy vary with the social and gender norms of the society. If the project wants to influence farmers' decisions, it is important to approach the influential gender group of the household, while taking careful approaches that another gender/age group should not be harmed as a consequence.

## 5. Discussion

This study has explored the responses to and impacts of a cassava boom in four communities in Vietnam from the following three angles: 1) Diversities among the communities and within the community, 2) relationships of trust among the value-chain actors, and 3) gender roles and family relations. The findings have shown that it is wealthy people who benefit most from the boom, widening the gaps between the poor and the better-off within the community with complex varieties of processes. Below we discuss our key findings with relevant literature.

### *Diverse responses and impacts of the cassava boom*

Our study has shown that the responses to the cassava boom vary as a function of individual households' social and economic conditions. In their study in Cambodia, Mohanty and Milne (2016) compared the cassava boom to gateway drugs in the sense that the boom leads farmers to develop addictions to a more capitalist and intense production mode involving debt; farmers need more and more agricultural chemicals as they grow cassava. Our findings, however, have shown that farmers responded to the cassava boom differently. The relational approach (Elmhirst, 2011b) allowed us to demonstrate diverse responses. Some farmers are cautious about debt and are not willing to invest in cassava production although they are depending on cassava as a major source of income. Rather than being in debt, some farmers chose to rent or sell their land and work as wage labourers – another way of being involved in a capitalist intense production system but it is perceived as less risky than cultivating cassava in their farm with uncertainty. In this respect, farmers are not passive but rather active agents who respond to the boom with deliberate strategies. For some households, the mode of production remains more or less similar to their previous subsistence farming system in which farming is operated by family labour including their relatives with minimum input of agricultural chemicals. Some better-off farmers utilise cassava as a security crop during the transition period to coffee and other cash crops. Their investment on cassava is as small as those of the aforementioned poor groups. Varieties in farmers' strategies mean that farmers' current needs, interests and challenges are also diverse, and incentives for sustainable intensification differ.

Our findings agree with other studies on boom crops in Southeast Asia suggesting that the boom commodities incorporate specific social groups into the capitalist economy in adverse terms, contributing to widening the gap between the poor and the better-off (Akram-Lodhi, 2005; Doutriaux et al., 2008; Hall, 2011). Those who benefitted from the cassava boom are early adopters who initiated cassava production when the price was still very high. Male farmers in this group are well connected with private sectors and governments. On the other hand, those who were not able to benefit from the boom were late adopters who were cautious about new practices. Their farms also tend to be located in remote areas and both the quality and quantity of land is not as good as the former group. These differences affected the extent of benefits; early adopters were successful turning to other crops or becoming collectors, getting rid of their dependence on unstable and unsustainable cassava production while others still heavily depended on cassava production. The degree of impacts also differs. Poor farmers, especially women, compensate the shortage in family labour and financial resources with their own labour.

### *Informality and social relations in the cassava value-chain*

The ways in which cassava is adopted by poor ethnic minority farmers supports the idea that informal networks based on their relationships of trust are central to their access to resources, decisions on crop choices and information sharing (Ribot & Peluso, 2003). Many Ede farmers who live close to the cassava factory still prefer informal trading mechanisms, which allow some poor female and male farmers to access materials and information without having to manage formal registration systems and they can better sustain their autonomy to some extent: such as the case of Ms H Pom who buys cassava planting materials from her relative who lives 20km away. Thai and Khơ mú farmers also trust the planting materials, experiences and information of their peers. In the formal system, poor people might be marginalised based on the hierarchy among the clients who include large scale Kinh and Tay farmers. On the other hand, in informal networks, poor and small-scale producers are not discriminated against based on the scale of production. The agency of smallholder farmers is thus orientated toward informal relationships (Phillips, 2011) in which access is determined based on social relations (Ribot & Peluso, 2003) rather than on financial capacities or political power. This also agrees with a study on coffee farming in the Central Highland revealing that farmers actively use family relations in order to access resources and mitigate risks (Winkels, 2008). The global capitalist economy of cassava is thus deeply embedded in the local social and gender contexts (Hess, 2004).

Access to credit appears to be outside the above informal relationships with trust. For example, Ede farmers' relations with Kinh agents are very limited within two elements: purchasing fertilisers on credit and sharing the risks in which the latter is very important for Ede people who are afraid of debt. Similar mechanisms are observed for Thai and Khơ mú ethnic groups who buy fertilisers from Kinh shopkeepers. There is no technical support or information sharing from those Kinh people. Ethnic minorities in study areas do not see the Kinh as a role model and they still depend heavily on their relatives outside their villages or neighbours at the same socio-economic levels to obtain information and receive technical support/advice. Our findings thus differ from the study by To et al. (2016) who found that Kinh people are deeply embedded in local culture and social relations and offer technical advice and support as well as market information. In our study, many small agents (e.g. Kinh men who live within the same village) are not well-connected with formal cassava networks with private firms, and they remain outside ethnic minorities' own social networks in which trust is central.

Interventions to support the poorest cassava producers should be along with their informal systems rather than inviting them to the formal networks. Kinh people are not the role models of ethnic minorities and it is questionable whether the information or technologies sent by Kinh people can be adopted by poor ethnic minority farmers.

### *Gender and family relations*

The findings agree with earlier gender studies that gender and social norms shape the process of incorporation into a capitalist economy (Elmhirst, 2011a; Lindebirg, 2011; Bonnin & Turner, 2014). Certain gender norms and rules such as gendered migration norms, land inheritance,

decision-making power, gender roles and age hierarchy, shape the deployment of family labour (Elmhirst, 2017) and household decisions on crop choices. These account for the reasons why very poor families have to depend on cassava but cannot invest in it. While both men and women are involved in cassava production, the degree of involvement and autonomy therein differ significantly between the poor and the better-off as well as among the ethnic groups. The study illuminates very poor women's significant involvement in cassava production and their overburden caused by family problems, which may be overlooked in a general survey or focus group discussions in agricultural research. If the project aims at supporting a certain group of very poor female farmers who experience a shortage of male family labour, we need to consider their needs and interests as well as their capacities. Intervention approaches for those women and for the better-off households with male labours cannot be the same, as their capacity to and interests in investing in cassava differ significantly.

The link between global economy and migration was also observed. Although cassava provided short-term income opportunities for the poor, it did not last long and a cassava boom did not help young generations to generate further income. There is an increasing tendency of rural-urban and rural-rural migration especially for youth both in Son La and Dak Lak, which echoes studies on migration in relation to boom commodities in Southeast Asia (e.g. Winkels, 2008; Beban & Gorman, 2016). Boom crops thus not only create migration opportunities for the poor to work in large-scale farms operated by private firms and individual investors, but these migration phenomena were also caused by the boom crops themselves, which entailed negative consequences for poor households inter-generationally.

Unlike the case of palm oil in East Kalimantan, Indonesia (Elmhirst, 2017) and other studies which draw the processes of women's exclusion from the capitalist economy (Anderson et al., 2012; Bonnin & Turner, 2014), the mode of cassava production allows women as well as men to keep staying in informal networks, but women's autonomy is much smaller in cassava compared to those of animal husbandry, home gardens and paddy or mountain rice.

## 6. Conclusion

In Southeast Asia, agricultural areas with export-orientated boom cash commodities have been expanding. The literature on political ecology has questioned about its sustainability and there is a growing concern about the implications for social equity and social justice (e.g. Hall, 2011). Due to its intensive capitalist mode of production and control of land by powerful actors, these cash crops are often described as land grabbing. However, the community is not homogenous and farmers are not passive agents. There must be varieties in the responses and impacts of boom commodities. If the government policy is to support the poorest of the poor, we need to identify their needs, interests and constraints. Drawing upon feminist political ecology built on the critical social theory of gender (Elmhirst, 2011b), this study has explored the diverse responses and impacts of a cassava boom in four study communities in Vietnam.

The study has shown that there is no single victim narrative of land grabs and debt. Instead, the processes of incorporation into boom crops are diverse and dynamic. Those varieties can be explained by not only their settlement history and socio-economic conditions but also gender and social norms which impede or facilitate access to resources to specific social groups.

A lack of information on production and market trends is often considered as a challenge for smallholder farmers who depend heavily on cassava as a main income source. Understanding farmers' various social relations with value-chain actors was therefore the second theme in this study. Findings have shown that farmers actively engage with their social relationships based on trust, which is not only a means to access resources but also a source of information that influences their decisions on crop change and the adoption of new technologies. While smallholder farmers in remote areas depend on collectors within the village, these collectors have little incentives to support providing knowledge and information to their clients, as their business is diverse and not affected by cassava market. Local social networks are disconnected from those of powerful key actors who exchange the latest knowledge and information on cassava production and market trends. Kinh people who sell agricultural chemicals on credit in the village are not necessarily perceived by poor farmers as a member of their social relationships based on trust and it is questionable if they can be a key informant to support ethnic minority farmers.

This study has also explored gender divisions of labour and decision-making processes through the relational approach. This helps us to identify targeted social groups to influence their decisions on adopting more sustainable practices and to offer practical technologies and skills in the field. The findings have shown that women are not a homogenous group; individual women's social positions affect their involvement in cassava production as well as other crops and domestic work. Ethnic minority women from poor families who depend heavily on cassava practices tend to compensate for the shortage of financial resources with their own labour, and women do similar work as men do in the field. They are also often responsible for taking care of sick family members which may constitute a reason why they are poor and have to depend on cassava. Interventions for those poor groups of men and women need to consider their capacity as well as availability. Otherwise we impose more burden on those who bear many difficulties. Decision-making processes vary with the gender norms of each ethnic group. While gender roles and education have changed significantly over the past two decades, there is little change in gender relations. A higher involvement of women in productive activities should not be interpreted as women's empowerment or gender equality. In a patriarchal society, men tend to be major decision-makers for the cassava production and decisions on changing crops, while women and young men work as labourers. Those social norms and gender relations help us to identify targeted groups to influence and support.

Lastly, the analyses of gender and family stories account for variations in women's and young men's challenges and inter-generational impacts of adverse incorporations into the capitalist economy. Ironically it is the poorest of the poor who depend on cassava production but they have many reasons why they cannot or do not follow the proper use of fertiliser or more sustainable methods such as intercropping. Without understanding those reasons behind and providing support which meets their needs and delivers through their information sharing systems, technological interventions run the risk of exerting the same effect as a capitalist economy does: supporting the better-off and widening the gap between the poor and the rich.

## References

- Akram-Lodhi, A. H. (2005). Vietnam's agriculture: Processes of rich peasant accumulation and mechanisms of social differentiation. *Journal of Agrarian Change*, 5(1), 73-116.
- Anderson, D. M., Elliott, H., Kochore, H. H., & Lochery, E. (2012). Camel herders, middlewomen, and urban milk bars: the commodification of camel milk in Kenya. *Journal of Eastern African Studies*, 6(3), 383-404.
- Beban, A., & Gorman, T. (2017). From land grab to agrarian transition? Hybrid trajectories of accumulation and environmental change on the Cambodia–Vietnam border. *The Journal of Peasant Studies*, 44(4), 748-768.
- Berry, S. (1993). *No condition is permanent: The social dynamics of agrarian change in sub-Saharan Africa*. University of Wisconsin Pres.
- Bonnin, C., & Turner, S. (2014). Remaking markets in the mountains: integration, trader agency and resistance in upland northern Vietnam. *Journal of Peasant Studies*, 41(3), 321-342.
- Cramb, R., Manivong, V., Newby, J. C., Sothorn, K., & Sibat, P. S. (2017). Alternatives to land grabbing: exploring conditions for smallholder inclusion in agricultural commodity chains in Southeast Asia. *The Journal of Peasant Studies*, 44(4), 939-967.
- Charmes, J. (2012). The informal economy worldwide: trends and characteristics. *Margin: The Journal of Applied Economic Research*, 6(2), 103-132.
- Chen, M.A. (2014) 'Informal Employment and Development: Patterns of Inclusion and Exclusion', *European Journal of Development Research* 26(4), pp. 397–418.
- Doutriaux, S., Geisler, C., & Shively, G. (2008). Competing for Coffee Space: Development-Induced Displacement in the Central Highlands of Vietnam. *Rural Sociology*, 73(4), 528-554.
- Elmhirst, R. (2011a). Migrant pathways to resource access in Lampung's political forest: Gender, citizenship and creative conjugality. *Geoforum*, 42(2), 173-183.
- Elmhirst, R. (2011b). Introducing new feminist political ecologies. *Geoforum*, 42(2), 129-132
- Elmhirst, R., Siscawati, M., Basnett, B. S., & Ekowati, D. (2017). Gender and generation in engagements with oil palm in East Kalimantan, Indonesia: insights from feminist political ecology. *The Journal of Peasant Studies*, 44(6), 1137-1159.
- England, K. V. L. (1994). Getting Personal: Reflexivity, Positionality, and Feminist Research\*. *The Professional Geographer*, 46(1), 80-89.
- Fafchamps, M., & Minten, B. (1999). Relationships and traders in Madagascar. *The Journal of Development Studies*, 35(6), 1-35.
- Hall, D. (2011). "Land grabs, land control, and Southeast Asian crop booms." *Journal of peasant studies* 38 (4), 837-857.

- Hess, M. (2004). 'Spatial' relationships? Towards a reconceptualization of embeddedness. *Progress in human geography*, 28(2), 165-186.
- Lindeborg, A. K. (2012). *Where gendered spaces bend: The rubber phenomenon in northern Laos* (Doctoral dissertation, Kulturgeografiska institutionen, Uppsala universitet).
- McCarthy, J. F. (2010). Processes of inclusion and adverse incorporation: oil palm and agrarian change in Sumatra, Indonesia. *The Journal of peasant studies*, 37(4), 821-850.
- Mahanty, S., & Milne, S. (2016). Anatomy of a boom: Cassava as a 'gateway' crop in Cambodia's north eastern borderland. *Asia Pacific Viewpoint*, 57(2), 180-193.
- Murphy, J. T. (2006). Building trust in economic space. *Progress in Human Geography*, 30(4), 427-450.
- Nightingale, A.J. (2011). Bounding difference: Intersectionality and the material production of gender, caste, class and environment in Nepal. *Geoforum* 42: 153–162.
- Phillips, N. (2011). Informality, global production networks and the dynamics of 'adverse incorporation'. *Global Networks*, 11(3), 380-397.
- Quisumbing, A. R., Rubin, D., Manfre, C., Waithanji, E., van den Bold, M., Olney, D., ... & Meinzen-Dick, R. (2015). Gender, assets, and market-oriented agriculture: learning from high-value crop and livestock projects in Africa and Asia. *Agriculture and human values*, 32(4), 705-725.
- Radel, C., Schmook, B., McEvoy, J., Mendez, C., & Petzelka, P. (2012). Labour migration and gendered agricultural relations: The feminization of agriculture in the ejidal sector of Calakmul, Mexico. *Journal of Agrarian Change*, 12(1), 98-119.
- Ribot, J. C., & Peluso, N. L. (2003). A theory of access. *Rural Sociology*, 68(2), 153-181.
- To, P., Mahanty, S., & Dressler, W. (2016). Moral economies and markets: 'Insider' cassava trading in Kon Tum, Vietnam. *Asia Pacific Viewpoint*, 57(2), 168-179.
- Truelove, Y. 2011. (Re-) Conceptualizing water inequality in Delhi, India through a feminist political ecology framework. *Geoforum* 42: 143–152.
- Tickamyer, A. R., & Kusujarti, S. (2012). *Power, Change, and Gender Relations in Rural Java*. Ohio University Press.
- Jiao, X., Smith-Hall, C., & Theilade, I. (2015). Rural household incomes and land grabbing in Cambodia. *Land Use Policy*, 48, 317-328.
- Winkels, A. (2008). Rural in-migration and global trade: managing the risks of coffee farming in the Central Highlands of Vietnam. *Mountain Research and Development*, 28(1), 32-40.
- White, G. (1993). Towards a political analysis of markets. *ids bulletin*, 24(3), 4-11.

## Acknowledgement

We thank the farmers who participated in this study, Mrs Phan Huy Chuong and Do Trong Hieu (NOMAFSI) and Ms Do Thi Kieu An (Tay Nguyen University) for their field research support, and Ms Bui Thi Quynh Trang, Mr Y Cuôr Bkrông and Ms Nguyen Thi Van for translation. This case study was conducted as part of AGB/2012/078 project of ACIAR and CGIAR Research Program of Roots, Tubers and Bananas (RTB).

## Appendix

### Topics of open-ended questions

#### 1) Key value-chain actors in the village

Questions are built on earlier scoping studies with value-chain actors that identified characteristics of key value-chain actors (within and outside the village) and the economic aspects of their perceptions of, and motivations for, cassava production. The key informant interviews this time will focus on the social relationships of those actors with smallholders in the village to identify which groups of smallholders (e.g. men, women, poor, better-off) are more or less well connected to those influential actors and to what extent.

- The history of being a cassava value-chain actor.
- Social relationships with other value-chain actors outside village.
- Social relationships with village farmers (men and women).
- Support and information given to farmers.
- Challenges and opportunities in the cassava value chain.

#### 2) Key innovators (early adopters of new technologies)

Interviews with innovators enable us to understand the social processes in which innovations are created and spread within and outside the village. The flows of innovation are highly gendered (men and women) and socially differentiated (ethnic groups). Identifying gendered flows of innovation helps us in designing interventions that can effectively reach different gender, ethnic and socio-economic groups.

- Innovation history.
- Social relations and connections within and outside the village.
- Interactions with other farmers (late adopters) who follow them.

#### In-depth interviews with farmers

- Relationships with cassava value-chain actors (support and information obtained from the key actors).
- Friends and relatives from whom new practices are learnt and information related to farming obtained.
- Experiences of labour exchange and hiring people for farming.

- Changes in crops and/or farming practices and subsequent changes in gender roles and responsibilities.
- Key respected innovators in the village (the definition of innovation and innovativeness is defined based on the interviewee's subjective understandings).
- Interactions of other ethnic groups and perceptions about differences in culture and agriculture of those other ethnic groups.
- The domains in which the interviewee has autonomy to decide without asking family members.
- The subjective notions of the degree of power and freedom.