LAND USE AND RURAL LIVELIHOOD TRANSFORMATION DURING THE AGRICULTURE SECTOR RESTRUCTURING IN CENTRAL VIETNAM

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Duong Thi Thu Ha

Graduate School of Environment and Life Science

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OKAYAMA UNIVERSITY

This is a special gift to my Dad, who is the world's greatest Dad. Words may never be enough for how proud I am that you are my Dad. I would not be where I am today without your unconditional love. Thank you for raising me up and for giving me a beautiful life. Thank you for being patient and encouraging me to follow my dream. Thank you for always supporting me and for believing in me more than I believe in myself.

ABSTRACT

How to transition out of agriculture effectively has always been a significant policy challenge for governments. This process was considered the core issue in the development of low-income agrarian societies where agriculture plays a backbone role in the transition economy. Vietnam is moving toward industrialization and modernization through agricultural development and transition. Farming has been transformed at an impressive speed via economic reform in the late 1980s, leading Vietnam to become one of Asia's most successful transition countries. However, it should be noted that land fragmentation was still rooted in these policies due to the mechanism of equal land distribution per capita. Besides, Vietnam was still an agrarian society, with 30 percent of total households based on agriculture for food security and livelihood. Although rice is the main crop in Vietnam, the production scale of households is only 0.2 ha on average, based on family labor forces. The labor force in the agricultural sector is abundant, but its contribution to Vietnam's GDP remains disproportionately minimal. Hence, the Vietnamese government promoted the agrarian transformation by reallocating land and labor in the early 2000s. Accordingly, land consolidation was suggested and implemented by the central government in 1998 through a national program called the Land Reallocation Program. Despite Vietnam's central government's efforts to implement land consolidation, agriculture is still mainly characterized by traditional and small-scale production. This promotes comprehensive strategies to restructure the economy, with the nucleus being agricultural restructuring. Hence, the central government approved the Agriculture Sector Restructuring Program to increase added value and sustainable development in 2013. The nature of this program is the

linkage between farmers and a newly established cooperative to create contiguous large-scale paddy fields. This program aimed to promote entrepreneurship in agriculture and diversify livelihoods in rural areas by pushing out rural populations from the agricultural sector. Policy changes often impact society. These changes often demand that farmers adjust their land use and livelihoods to adapt to the transition process. Thus, it is necessary to improve the understanding of the Vietnamese administrative mechanism of land consolidation and households' land use and livelihood strategies during the ongoing ASR program.

This dissertation aims to analyze the effect of land consolidation and contract farming schemes in central Vietnam as an essential tool to achieve the goal of restructuring agriculture. This objective is reached using the typical case studies in central Vietnam, where agriculture was significantly influenced by inter and intra-farm land fragmentation. Using a qualitative analysis method and GIS, the dissertation revealed the mechanism and the effect of land consolidation, focusing on the spatial restructuring farmland parcels and rural infrastructure. Then, the author identified the effects of contract farming through a new cooperative, focusing on the production scale, households' livelihoods transformation, and farmers' responses. In addition, the dissertation discussed land allocation and reallocation in Vietnam under a smallholders' lens, emphasizing their role and negotiating power. The findings were combined to provide implications for the study to build a better picture of the impacts of the agricultural restructuring program and adaptations to ensure the livelihoods of local farmers.

The first case study analyses the effect of the land consolidation program on the first stage of agrarian transition based on a case study of the Binh Dao commune, a

typical coastal plain commune in the country's central region. Instead of focusing on the economic aspect as in previous studies, this case study indicates the results of Vietnam's land consolidation program of 2006 on the spatial structure of farmland parcels and rural infrastructure. Then, it explores the reasons why the program was left incomplete. The findings show that the land consolidation program in the Binh Dao commune contributed to a decrease in the average number of plots per household; however, the change in the average farm size was insignificant. The agricultural road and irrigation systems in the Binh Dao commune were also significantly improved as a by-product of land consolidation. However, the fragmented classification system of agricultural land stemming from the principle of equality redistribution by the socialist agricultural revolution led to the program's incomplete results. This has influenced the goal of encouraging agricultural mechanization through land consolidation programs. Additionally, it poses a daunting challenge to the central government in the context of agricultural and rural development.

The second case study continues with the Binh Dao commune, where local agriculture is currently undergoing a transition. Instead of being individual farmers on a small scale, the farmers at this research site have been oriented to contract farming with the new cooperative since early 2015. This case study examines the effect of contract farming on household members' labor force changes and their livelihood behaviors after their participation in this scheme. The findings show that contract farming shaped the vertical coordination of the value chain from the farmers to the cooperative and agricultural product trading companies. Subsequently, it encouraged land use and labor efficiency due to mechanical

support. In addition, it also increased productivity and protected farmers from market risks. However, despite its positive effects on agricultural productivity in this case, the contract farming scheme could not achieve the restructuring of the rural labor force toward non-agricultural sectors. Ironically, farmers in the Binh Dao commune tended to increase cultivable land during the agricultural restructuring program, rather than switching their labor forces to non-agricultural sectors. The lack of stable non-farming job opportunities in rural Vietnam results in challenges to the efficiency of agricultural restructuring programs. Consequently, farmers in the Binh Dao commune are still smallholder farmers, depending on the family labor force.

In addition to revealing the top-down decision-making and detailed effects of land policies, the third case study describes land allocation and reallocation in Vietnam under a smallholders' lens. The research takes place in a farming community. Cau Nhi village of Hai Phong commune was selected because of its traditional style of the central region in Vietnam with a long history and unique culturally valuable. Similar to the first case study, this study also highlighted the incomplete results of the land consolidation program due to the principle of equality redistribution. Notably, data analysis revealed the efforts of the Cau Nhi community on land allocation and reallocation. Despite allocated and reallocated land through taking a lottery within a production team, smallholders within the same clan and hamlet received arable land at the same location and close to each other. This finding implied indirect participation of the rural community, especially the traditional clan systems in the Cau Nhi village in implementing land policy.

In summary, the dissertation shows the socialistic land governance in Vietnam and its effects on land use and agriculture transition. The dissertation also illustrates households' responses to farming methods and land use changes. Based on the findings, the dissertation calls for improvements in current agriculture sector restructuring regulations. Especially job training strategies for farmers should accompany the process of compulsory restructuring.

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ABBREVATIONS

Abbreviations	Full phrase
ASR	Agriculture Sector Restructuring
FAO	Food of Agriculture Organization
GDP	Gross Domestic Product
GIS	Geography Information System
GSO	General Statistics Offices
VND	Vietnamese dong

CHAPTER 1

INTRODUCTION

1.1. Introduction

Vietnam is an agrarian country, where more than 30% of households depend on agriculture for their livelihood (GSO 2016). Institutional reforms in Vietnam's land and agriculture have undergone considerable progress in recent decades, emphasizing equal land distribution, such as the Land Law of 1993 and Decree 64/CP (Cazzuffi 2017, Kerkvliet 2006, Pingali 1992, Ravallion 2008). Transferring agricultural land use rights from collectives to individual households through land reform in the early 1990s has become an essential driver of rural economic growth in Vietnam (Liu 2019, Ravallion 2008, World Bank 2016). However, it should be noted that land fragmentation was still rooted in these policies due to the mechanism of equal land distribution per capita (Markussen 2016, Marsh 2002). The situation of inter-farmland fragmentation (less than 0.5 ha per household) and intra-farm land fragmentation (approximately 8 to 9 plots per household, with the size of each plot ranging from only 100 to 500 m^2, separated by considerable distance) has become popular in the northern and central regions (Hoang 2015, Marsh 2002). Given the development characteristics of these small private farm systems with more than 76 million fragmented parcels (Griffin 2002), Vietnam's agriculture sector has faced an enormous decline in GDP as well as stress on the domestic competition for capital for land and labor under contextual industrialization (World Bank 2016). In addition to the decline in productivity, net income, and net returns of rice production

from 1985 to 2006 (Kompas 2012), the average rate of agricultural growth decelerated at each stage from 4.5% (between 1994 and 2000) to 3.3% (between 2001 and 2006) (Ayerst 2020). Besides, economic growth and the commercialization of agriculture motivated further mechanization of agricultural systems. However, land fragmentation combined with poor rural infrastructure did not allow the efficient usage of agricultural technologies (Bonfanti 1997, Marsh 2002). Under these circumstances, the Vietnamese government started the agrarian transformation by reallocating land and labor forces in the early 2000s. Accordingly, the policies on reducing land fragmentation, promoting cooperative farming, and releasing the agricultural labor force to non-agricultural sectors were approved.

Despite Vietnam's central government's efforts to implement land consolidation since the early 2000s, agriculture is still mainly characterized by traditional and small-scale production. This promotes comprehensive strategies to restructure the economy, with the nucleus being agricultural restructuring. Hence, in 2013, the central government issued Decision No. 899/QD-TTG, i.e., a government policy approving a project to restructure the agricultural sector to increase added value and sustainable development (known as *Tai Co Cau Nong Nghiep* in Vietnamese, which means the "Agriculture Restructuring Program"). Following this scheme, a new format of contract farming through a cooperative was approached as an institutional innovation of the Vietnamese government. It must be noted that policy changes often impact society (Keith 2001, Le 2018, Nguyen 2015). These changes often demand that farmers adjust their land use and livelihoods to adapt to the transition process. In some cases, these modifications can deprive certain farmer groups of opportunities to engage in agricultural production. They lack access to

non-agricultural means of livelihood and are fully prepared for job changes. It not only worsens the sustainability of the agricultural restructuring program but also puts a burden on rural development. Consequently, it is essential for policymakers to examine the use of land as well as strategies for farmers' livelihoods to ensure better adaptation to the transition.

This dissertation was conducted to improve understanding of the Vietnamese administrative mechanism of land consolidation and households' land use and livelihood strategies during the ongoing ASR program. This lays the groundwork for the study to build a better picture of the impacts of the agricultural restructuring program and adaptations to ensure the livelihoods of local farmers. The contributions of this dissertation are essential for academic as well as policymaking in both land use and rural development fields.

1.2. Research objectives and research questions

1.2.1. Research objectives

The general objective of our research is to explore the effect of land consolidation and contract farming schemes in central Vietnam as an essential tool to achieve the goal of restructuring agriculture. The specific objectives are elaborated to achieve the proposed aim:

(1) To identify the mechanism and effect of land consolidation through land reallocation on the spatial structure of farmland parcels and rural infrastructure and the core problem that led to the incomplete of this scheme.

(2) To analyse the effect of contract farming through a new cooperative on the production scale, households' livelihoods, and farmers' response during this ongoing scheme.

(3) To explore land allocation and reallocation in Vietnam under a smallholders' lens, emphasizing their role and negotiating power.

1.2.2. Research questions

Based on the apparent research problem and objectives, the following research question was proposed:

(1) How did the land consolidation program affect the spatial structure of farmland parcels and rural infrastructure? How has the socialistic land governance in Vietnam reflected on the process of land consolidation?

(2) How did contract farming through a new cooperative affect the production scale and households' livelihoods? What did the farmers do to better adjust to these changes?

(3) What was the role of smallholders during the land allocation? How did the smallholder negotiate with the local authority in the land reallocation process?

1.3. Methodology

The research methodology was adopted to reach each specific objective. Details for each methodology are provided in each chapter (**Chapters IV, V, and VI**). However, this section provides the overview and the rationale behind the choices for our methodologies.

The first and the third specific objective require exploring the mechanism and the changes in the spatial structure of farmland parcels and rural infrastructure before and after land consolidation. To reach these objectives, the research adopts a case study approach, using the typical case studies of the Binh Dao commune (**Chapter IV**) and the Cau Nhi village (**Chapter VI**). To compare and analyse the changes in farmland parcel and rural infrastructure, we used GIS combined with secondary data to create the digital maps of land allocation and reallocation. In parallel, we conducted an in-depth interview with the local officers and the key persons of the community to investigate how the socialistic land governance in Vietnam reflected on the process of land consolidation and how smallholders negotiate with local authority during the land consolidation process.

The second specific objective seeks the effect of contract farming through a new cooperative on the production scale, household's livelihoods and their response. This objective is reached using the typical case study in central Vietnam (**Chapter V**), combined with qualitative analysis methods and GIS. The in-depth interview with the local officers and the cooperative was conducted to identify the process of contract farming. Then, to analyse the change in land use and production scale, we used GIS and secondary data from the cooperative and local government to create the digital map of the cooperative's production area by contract farming. Significantly, in-depth interviews with contracted and non-contracted households were conducted to investigate labor force status and farmers' livelihood behaviors during contract farming. It is an essential task of the dissertation to reveal the local livelihood transition during the contract farming scheme and the effectiveness of the ASR program.

1.4. Overview of study areas

The research focuses on three case studies in central Vietnam, including the Binh Dao commune, Tra Doa 1 and Tra Doa 2 villages, and Cau Nhi village of Hai Phong commune (Figure 1.1). These areas were chosen for two reasons. The first relates to the characteristic of agriculture in the area. Following the land allocation policy in the late 1980s, the agricultural sector in the central region was significantly influenced by inter and intra farm land fragmentation. Thus, the central government introduced land consolidation and contract farming schemes to restructure the agriculture sector. Binh Dao was chosen to develop the first and second specific objectives because it is a typical rural commune, which has the features of a coastal plain commune in the central region. This commune had implemented land allocation in 1993, land reallocation in 2006, and contract farming through a new cooperative in 2015.

In addition to the characteristic of agriculture, the second reason related to social relations, which are the potential basis for smallholder negotiating power. Given the traditional rural community with a cluster of residential areas within the same clan for a long time, the Cau Nhi village was chosen to examine the role and participation of smallholders during land allocation and reallocation. The detailed reasons for choosing study sites will be mentioned in each case study (**Chapters IV, V, and VI**).

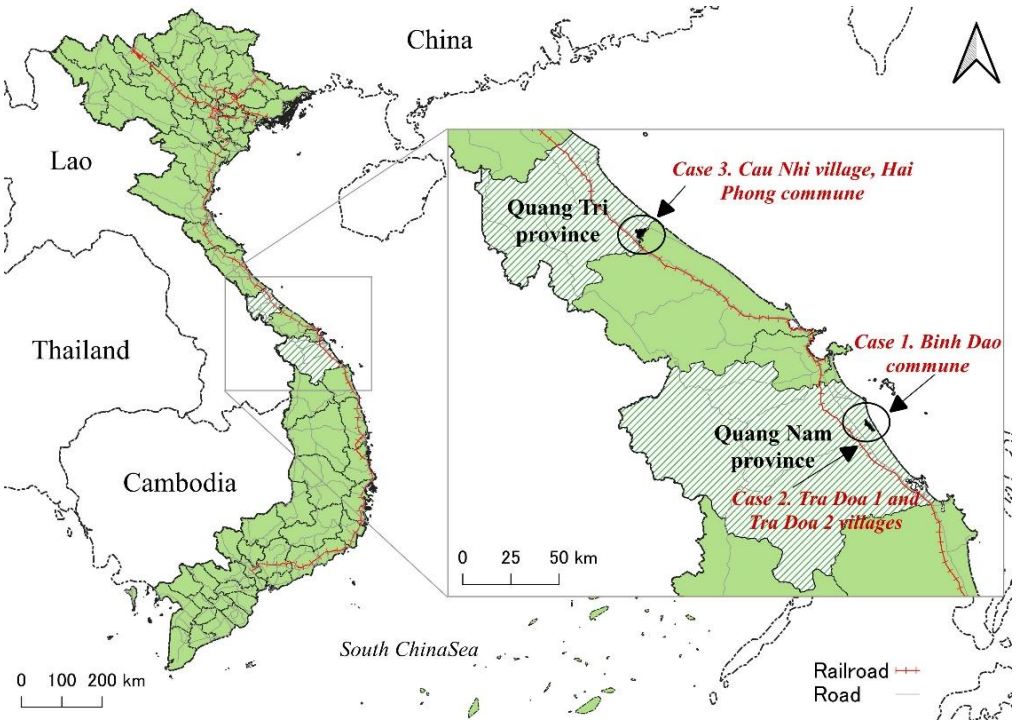

Figure 1.1. Research sites

1.5. Dissertation structure

The thesis is organized into seven chapters to reach the overall objective, as shown in Figure 1.2. The content of the chapters is summarised as follows:

Chapter I serves as an introduction and overview of the contextual information for the research. In addition to describing the research problem and the original contribution to knowledge, an important part of this chapter raises the research objectives and questions. This section also provides an overview of study sites and the general rationale behind the choices for methodologies.

Chapter II provides a critical review of literature relevant to the research. Based on the academic understanding of topics related to the research, the effects of production scale on farming were considered. Then, an overview of land use and rural livelihood transition is provided. Notably, this part outlines an administrative

mechanism theory of the Vietnamese government on agricultural transition and the smallholder farmers' implementation practice.

Chapter III presents land policy in Vietnam and institutional innovation toward developing and transitioning agriculture. This review reveals the socialistic land governance in Vietnam. Then, it contributes to interpreting the research results of each specific objective.

Chapter IV provides answers to the first specific objective. This chapter analyses the results of the land consolidation program in Vietnam, using a typical coastal plain commune in the central region. Besides describing a clearer picture of the land consolidation program's implementation mechanism and its impact, this chapter discusses why this program was left incomplete. It is also one of the core reasons leading to the next phase of the ASR program, which will be presented in the next chapter.

Chapter V starts with an overview of households' land use and livelihood. Then, based on findings on the small production scale in the previous chapter (**Chapter IV**), this chapter highlights the mechanism of restructuring agriculture through contract farming. Significant, our findings reveal households' responses to changes in farming methods and land use. At the same time, we discuss challenges to the efficiency of agricultural restructuring programs.

Chapter VI describes critical findings in relation to the third specific objective. This chapter starts with an overview of social relations as the potential basis for smallholder negotiating power. Then, the framework for smallholder negotiating power in the land allocation and reallocation process is outlined. Based on the case

study at the Cau Nhi village, the land allocation and reallocation in Vietnam under a smallholders' lens, emphasizing their role and negotiating power, are discussed. Finally, a summary of the chapter is provided.

Chapter VII summarizes the previous chapters' key findings and draws out conclusions from the undertaken research. Besides, this chapter discusses implications and research limitations. At the same time, it recommends avenues for further research.

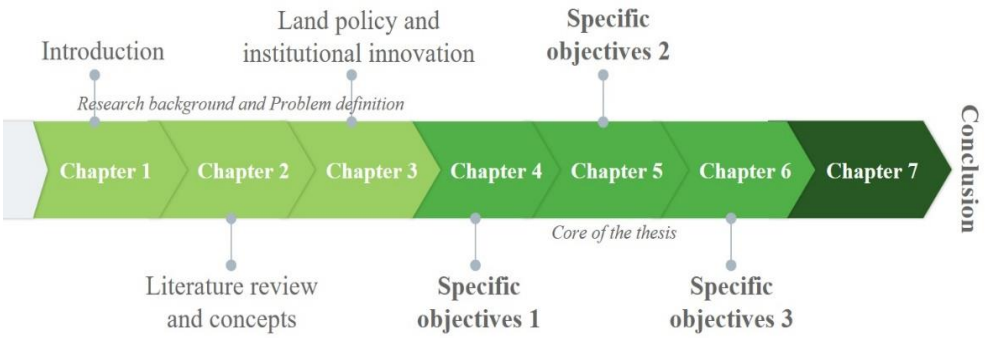

Figure 1.2. The structure of thesis

CHAPTER 2

LITERATURE REVIEW AND CONCEPTS

2.1. Production scale: small or large-scale

2.1.1. Land fragmentation

Land fragmentation and small farm sizes are considered inevitable consequences of land reform and the land privatization process (FAO 2019). As described by Asiama (2019) and Van Dijk (2003), land fragmentation is divided into two primary forms; physical and tenure fragmentation. Physical land fragmentation is described as scattering farm parcels across many areas with small and fragmented plots, while land tenure fragmentation is the discrepancy between land use and ownership. The mechanism of land distribution and production scale in economic development has still been controversial among scholars. Based on the inverse farm size productivity relation, Benijamin (1995) and Ali (2014) claimed that land fragmentation can improve productivity if small farms are more productive than large farms. In contrast, land fragmentation and small farm size were emphasized by Bentley (1987), Gajendra (2004), Niroula and Thapa (2007) as a universal characteristic of all agricultural systems and the primary cause to hamper farm efficiency.

Vietnam is a typical case of land fragmentation caused by land reform (Kerkvliet 2006, Pingali 1992, Ravallion 2008). Land fragmentation in Vietnam can be described as inter-farm and intra-fram fragmentation (Markussen 2016, 2017). Inter-farm fragmentation is defined as a land divided into many small farms, while intra-farm fragmentation means that each small farm is divided into many

scattered plots. Land fragmentation has different levels among regions depending on terrain features, population density, historical context, and institution (World Bank 2016). Many studies provide evidence that fragmentation harms agricultural production, such as Hoang et al. (2019), Ha et al. (2015), World Bank (2005), and Markussen (2016). They claimed fragmentation harms household income, even after controlling for other model factors. In addition, small scale, paddy land scattered, limited skills and resources, and a lack of market information, smallholder farmers face various challenges in agricultural production. Land fragmentation affects production costs and profits of agricultural production because of more labor input, higher costs for irrigation of many small units of land, and the barrier to adopting profitable crops on a large scale. Therefore, small-scale production makes it difficult to organize production and merchandise and connect value chains. Then, land consolidation and large production scale were suggested as a tool to further reduce land fragmentation.

2.1.2. Land consolidation

Land consolidation is often a complex process with many steps (FAO 2019, Hartvigsen 2015), although there is no single universal definition or approach for land consolidation (Veršinskas 2020). Its general instrument is to rearrange and reallocate land parcels and their ownership to address land fragmentation and enlarge agricultural holdings (Veršinskas 2020, Hartvigsen 2015). Accordingly, this program requires a legally regulated procedure and should be managed and approved by a public authority. This program also requires the cooperation between landowners and users to rearrange parcels to reduce land fragmentation and improve rural infrastructure (FAO 2019). It has been proven that larger farm sizes

resulting from land consolidation promote the proper use of arable land. Due to the rearrangement of agricultural land for changes in farm-level economies of scale, land consolidation has been emphasized as a standard tool for increasing land use effectiveness, upgrading rural infrastructure, and motivating agricultural mechanization (Asiama 2020, Sklenicka 2006, Vitikainen 2014). It has contributed to improving agricultural productivity and the release of rural labor into non-agricultural activities (Nguyen 2020, Riddell 2000, Van den Berg 2007). Hence, land consolidation has long been considered a significant tool for addressing land fragmentation problems and supporting rural restructuring in several countries (Hartvigsen 2015, Nguyen 2020, Sklenicka 2006, Veršinskas 2020).

Most studies on land consolidation in Vietnam have also revealed economic aspects such as productivity and production costs, labor and income, and machinery (Kompas 2012, Markussen 2016, 2017, Nguyen 2020, Pham 2007, Tran 2019). Pham (2007) and Markussen (2016, 2017) claim that land consolidation can be used to improve technical efficiency in rice production because it contributes to reducing production costs and facilitating contract farming. Land consolidation improves mechanization ability and rural infrastructure (Kompas 2012). Tran (2019) and Nguyen (2020) find that increasing land consolidation can increase crop income and improve household income. Hence, land consolidation was suggested to continue toward expanding production scale and developing agriculture.

2.1.3. Cooperative and contract farming

Historically, cooperatives have existed for a long time and played an essential role in developing many agrarian countries. Besides playing a crucial role in reducing poverty, cooperatives promote employment opportunities and increase

food security (Candemir 2021). The development and organizational structure of cooperatives have been strongly influenced by the state's institutional, political, and history (Candemir 2021, Tortia 2013). A cooperative is defined by FAO (2012) as a voluntarily and democratically autonomous association between smallholders to benefit from their economic, social, and cultural demands. Hence, cooperatives can be formed in various sectors, like agriculture, consumer issues, marketing, financial services, and housing. By linking resources related to land and labor among smallholders, cooperatives facilitate the development of farming through increased access to markets, information, technologies, and training (Tortia 2013). The cooperatives can support and protect smallholders in decision-making at all levels. Then, it promotes expanding production scale and improving rural livelihood by becoming representatives between smallholders and companies during contract farming (FAO 2012).

In Vietnam, the cooperatives' historical formation and development were along with the country's social-economic development. Vietnam's land and agricultural institution systems have had a well-known turbulent history with debate on whether they hamper or motivate social-economic development. However, the practice has shown strong evidence of the role of cooperatives during the agrarian transition (Pingali and Vo 1992, Ravallion 2003, World Bank 2016). The cooperatives in Vietnam were organized under the Cooperative Law in 2012. Accordingly, the stage recognizes two forms of cooperatives: transformed[1] and newly-establishment

[1] These cooperatives were established before the new Cooperative Law 2012.

cooperatives[2]. Basically, these two forms are organized as member-oriented service cooperatives, emphasizing members' voluntary and autonomy.

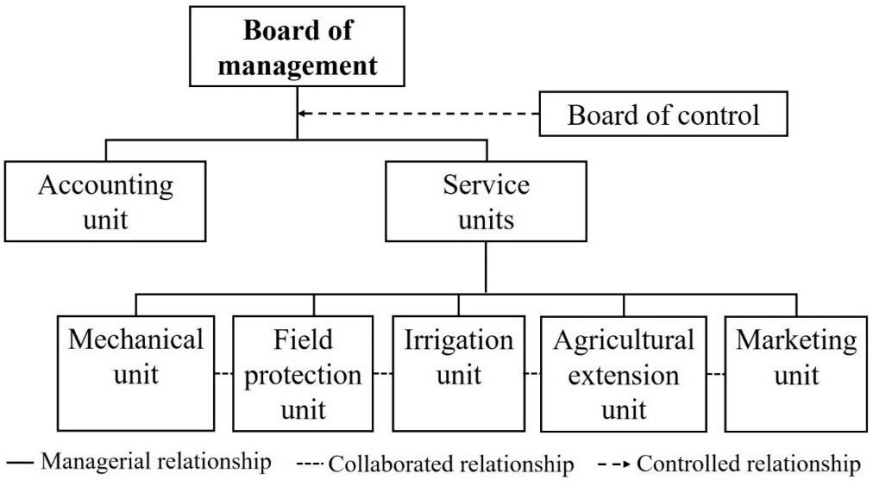

Figure 2.1. General organizational structure of cooperatives model in Vietnam (Source: Nguyen 2020)

The general organizational structure of the cooperatives model in Vietnam is illustrated in Figure 2.1. The newly-establishment cooperatives are responsible for serving the common interests of members for mutual benefits, such as supply inputs and outputs (extension, irrigation, fertilizer, harvest, selling, etc); drives the job opportunities for members, and build-up the linkage in agriculture by contract farming between the cooperatives, farmers and enterprises on production and consumption.

Along with cooperative, contract farming has long been considered a potential means of transforming smallholder farmers into entrepreneurial farming entities. It encourages agricultural transition and rural restructuring (Bellemare 2018). As FAO (2001) suggested, Figure 2.2 illustrates a hypothetical contract farming framework diagrammatically. Accordingly, contract farming is shaped based on

[2] These are cooperatives that are established according to the regulations of the new Cooperative Law 2012.

multiple contractual arrangements and influenced by many factors such as market and resource provision, management specifications, and government support.

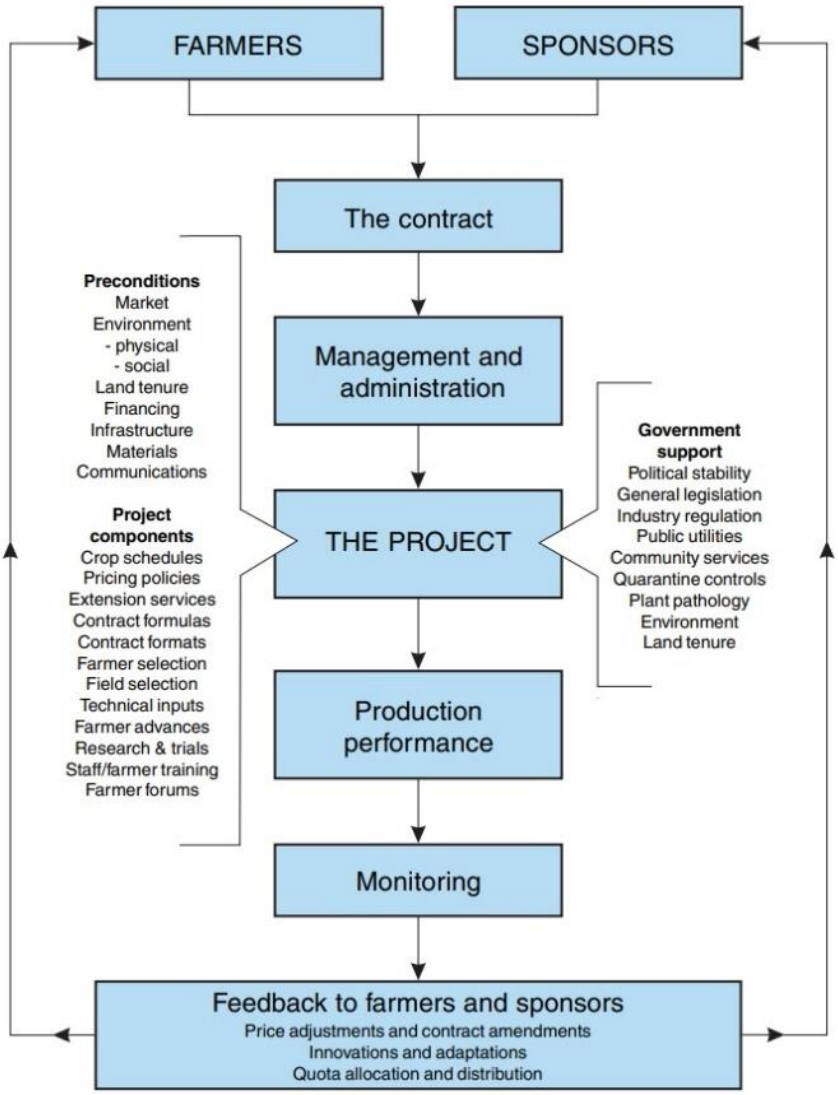

Figure 2.2. Framework of contract farming
Source: FAO 2001

Depending on the sponsor and smallholders' demand, experience, and resources, contract farming can be structured into five models: the centralized model, the nucleus estate model, the multipartite model, the informal model, and the intermediary model (FAO 2001). Basically, contract farming refers to an agreement between a firm or processor and a group of farmers in exchange for certain services in inputs and outputs (Ton 2018). In this relationship, while firms secure a stream

of quality inputs for processing, contract farmers connect to output markets by being provided with inputs, credit, or agricultural extension i.e., the application of new scientific research to agricultural practices by implementing farmer education. It is not only based on the vertical coordination of the value chain; contract farming is considered an effective tool to create horizontal among smallholder farmers (FAO 2001). Hence, most researchers consider contract farming a positive development for agricultural innovation in developing countries (Bellemare 2012, Da Silva 2013, Eaton 2001, Otsuka 2016, Saenger 2009). It has been widely applied in several countries, including Vietnam (Nguyen 2015, Otsuka 2016, Ton 2018).

2.2. Land use and rural livelihood transition: administrative mechanism theory and implementing practice

2.2.1. The top-down decision making and smallholder negotiating power in land allocation and reallocation

Land reallocation is the most critical and complex stage of land consolidation because of differing stakeholder interests (Aslan 2007, Asiama 2019, Cay 2010). In many cases, this often leads to disputes and delays in the implementation process (Haldrup 2015, Niroula 2005). Thus, farmers' satisfaction and acceptance are considered key factors in the success of land consolidation (Aslan 2007, Haldrup 2015, Liu 2016). At the same time, it often requires special endeavors to carry out land consolidation, including ensuring mutual consent between the government and landowners (Cay 2010). Moreover, depending on the historical trends, culture, traditions, and political institutional background of each country, land consolidation can be implemented using various methods (Asiama 2020, Hartvigsen 2015, Vitikainen 2014).

Although land consolidation through voluntary mechanisms can be successful, it takes a long time and requires high cooperation among stakeholders, especially individual landowners. This approach is not sufficiently effective to ease the fragmentation problem (Hartvigsen 2015). This has also been recorded as a failure in many South Asian countries, such as India, Bangladesh, and Pakistan, because of poor cooperation between smallholders and local elites (Niroula 2005). In contrast, land consolidation through land reallocation under a compulsory approach can push for quick consolidation of fragmented and scattered parcels (Hartvigsen 2015). Many countries have adapted land reallocation based on a top-down approach without considering farmers' choices. This approach requires legal safeguards to promote the smooth realization of land consolidation projects, including protecting legitimate tenure rights (FAO 2019).

Vietnam is a socialist country with the typical characteristic that everyone has equal access to the necessary material and social means. Thus, a top-down approach combined with equity mechanisms is approached for the land allocation program in the early 1990s. Consequently, land fragmentation has become the main problem hampering the development of agriculture (Kerkvliet 2006, Pingali 1992, Ravallion 2008). Hence, land consolidation has been encouraged since the mid-1990s by the central government. The bottom-up method was approached at the program's first stage, which encourages farmers to voluntarily exchange small and scattered parcels with each other. However, this approach quickly failed because of the low cooperation among households (Hoang 2015, Ngo 2020, Tran 2006). Consequently, a top-down approach was suggested and implemented by the central government in 1998 through a national program called the Land Reallocation Program.

Accordingly, based on the main procedure for the land reallocation program of the central government, the local government has the responsibility to follow and carry it out at the local level. Households can participate in some steps, such as accessing soil quality or taking a lottery. In some cases, smallholders took advantage of the influence of social relations to engage in land reallocation. It is rooted in interdependencies between smallholders and the power of their traditional customary. Negotiation between rural communities with local governments to get more benefits for their community was also found in Vietnam, especially during forest land allocation (Ironside 2017, Le 2018). In fact, the bottom-up or allowing negotiation during land allocation and reallocation can benefit all farmers in the zone or at least some group. Then, it can contribute to successful economic and social development and benefit all farmers and the development of rural communities (Rutten 2017, Semedi 2014). These also show the potential power of the community and smallholders in implementing land policies.

2.2.2. Equal land redistribution and its incomplete results in Vietnam

As mentioned in 2.2.1, land reallocation often includes complex stages, depending on each country's political and institutional. Like many socialist countries, equal land distribution is crucial to ensure equality and equity. The viewpoint on the effectiveness of equal land redistribution show opposite sides. On the one hand, Berck (1986) claimed that despite achieving the goal of increasing equity, this mechanism affected aggregate output and the economic effectiveness of the land reallocation program. This way did not often bring benefits but increased challenges for agriculture (FAO 2019). Sometimes, it may not be enough to reduce further land fragmentation (Hartvigsen 2015). On the other hand, Rodrik (1995)

and Sokoloff (2000) found that equal land distribution positively affected a society's political economy. Vietnam has also maintained equal land distribution during land consolidation. The positive effects of the land consolidation program were highlighted by Kompas (2012), Markussen (2016, 2017), Nguyen (2020), Pham (2007), Tran (2019), and Tran (2006) (as presented in 2.1.2). However, the limitations of this program were also observed in the results of Markussen (2016, 2017), and Tran (2006). Inter-farm and intra-farm land fragmentation still occurred due to the land consolidation implemented within a particular field (only paddy land or annual cropland). Besides, this program's success depends on the role and capacity of local institutions. This mechanism decreased the number of plots per household but showed an insignificant change in acreage farmland per household. In some cases, the conflict between landholders was rising due to being forced to use the lottery method to receive the new plots.

2.2.3. Contract farming to expand production scale and rural livelihood transition

In the context of the dramatic expansion of industrialization, agricultural transition is considered an inevitable solution to address the disparity in rural and urban development as well as the improvement of rural livelihoods (Briones 2013, Luc 2011, Nori 2020). However, effectively moving away from agriculture remains a perplexing policy-making issue for many governments around the world. This issue is considered central to the development of agrarian countries, where agriculture is mainly characterized by smallholder farmers with relatively scarce resources. Ian (1992) emphasized that an essential characteristic of agricultural transition comprises activities associated with the reallocation of resources related

to capital for land and labor. This means that, on one hand, this transition requires the enhancement of land productivity and work efficiency through mechanization with higher-value products. On the other hand, this transition should be accompanied by an increase in labor distribution from agriculture to other economic areas. This contributes to ensuring the livelihoods of farmers. Hence, using contract farming and the cooperatives is considered a tool to shift smallholder farmers into entrepreneurial farming entities. Then, it encourages agricultural transition and rural restructuring (Bellemare 2018).

Given characteristic smallholders with small-scale production, the Vietnamese government has introduced contract farming since the early 2000s. Contract farming was developed based on the vertical coordination of the value chain from farmers to cooperatives and agricultural product trading companies. On that basis, contract farming promotes the linking between smallholders to expand the production scale. Then, it supports rice farmers in improving rice quality, using technology, and reducing production costs. Contract farming is considered a tool to encourage the negotiating power of smallholders in accessing target markets and improve rural livelihood (Hoang 2019).

2.3. Conceptualizing agricultural transition and restructuring past and present in Vietnam

2.3.1. Agricultural transition before 2013

Vietnamese agriculture has strongly transferred after the economic reforms in the late 1980s. However, this transition experiences many stages, depending on the state's history, policies, and institutions. As described by Vinh (2021) and World

Bank (2016), the conceptualizing agricultural transition in Vietnam before 2013 can be classified into three major issues, including (i) poverty alleviation from 1986 to 1988, (ii) extensive commercial and export-oriented production from 1989 to 2000, and (iii) intensive development from 2000 to 2010. The period of poverty alleviation from 1986 to 1988 was considered the first stage of transformation from a collective economy to a household economy. In the short term, this stage contributed to crossing the hunger. However, the state still controlled monopolized foreign trade in the agricultural market and private sector. Combined with land use rights still belonging to the cooperatives, this led to continued food shortage and declining farming. It forced the state to issue new strategies to develop agriculture. The period of 1989-2000 was considered the golden stage for Vietnamese agricultural development. During this period, the agricultural transition was summarized as the processing to transfer from self-sufficient to commercial production and toward export-oriented production. Despite the agricultural and rural economic achievement, agriculture at this time mainly depended on small-scale production and family members. Hence, 2000-2010 marked the new strategy for developing agricultural, rural, and farmer (called Tam Nong in Vietnamese). In this stage, agriculture focused on intensive production, encouraging land consolidation and accumulation to expand production scale, increasing productivity and product quality. Then, it could bring rural development and improve livelihood for rural households. Despite some achievements in output and exports, product quality and production efficiency (land and labor) became the primary concern of the central government. Besides, the unbalance welfare and income inequality between rural and urban raised challenges for rural development. Raw commodities

combined with food safety are also the main reason for low prices and inhibit the ability to compete globally. Hence, the central government introduced a comprehensive strategy for agriculture development.

2.3.2. Agricultural sector restructuring after 2013

Following the strategy of the central government, the directions of the restructuring of the agricultural sector from 2013 until now focus on sustainable agricultural productivity, growth, and competitiveness in domestic and international markets. Accordingly, the main objectives of this program are as follows:

(i) maintain growth; improve efficiency and competitiveness through increased productivity, quality, and added value to boost exports;

(ii) improve income and livelihood of households in rural areas; ensure food security and contribute to poverty reduction;

(iii) develop agriculture while protecting and saving natural resources and the environment.

CHAPTER 3

LAND POLICY AND INSTITUTIONAL INNOVATION

3.1. Land regime before Renovation in 1986

3.1.1. The monarchical era and French colonialism (before 1954)

As in many other countries, Vietnam's land regime was formed along with the country's development history. Looking back in the past, wet-rice agriculture and sedentary settlement culture in the lowlands have contributed to forming a cluster of residential areas and the first state of Vietnam. Until the Van Lang - Au Lac state[3], the land ownership was mainly characterized by communal landholding. They only paid the taxes for *Lạc Hầu* and *Lạc Tướng*[4] by tributes. However, there were changes after over 1000 years of being dominated by Chinese dynasties[5]. Although restoring of country's independence and entering feudalism[6], the land ownership was still strong influenced by the previous regime. Through many dynasties[7], on the basic, all farmland belonged to the ruling state on the King's behalf. Based on the research of Dao (1993), Dang (2014), and Truong (2009), Figure 3.1 illustrates the land regime of Vietnam in the feudal period. The King and landlord-tenant system characterized the land regime during this period. Thus, land

[3] Hung Kings established the kingdom of Van Lang from the 9th century BC to 258 BC. Thuc Kings established the kingdom of Au Lac from 258 BC to 207 BC.

[4] Lạc Hầu and Lạc Tướng are a system of Kingdom of Van Lang - Au Lac state (from the King to Lạc Hầu to Lạc Tướng). They have the responsibility for implementing King's rules at the local level.

[5] From 111 BC to 938 AD.

[6] From 939 AD to 1883 AD.

[7] Ngo dynasty (939-965), Dinh dynasty (968-980), Tien Le dynasty (980-1009), Ly dynasty (1010-1225), Tran dynasty (1225-1400), Ho dynasty (1400-1407), Hau Le dynasty (1428-1788), Nguyen dynasty (1802-1883).

tenure existed in two forms, including state ownership of land (*công điền*) and private ownership of land (*tư điền*). The state ownership of land was formed to maintain the organization of the state and pay salaries for royal officials. It was divided into two forms, including farmland directly managed by the State and communal farmland. Regarding farmland directly managed by the State, this land usually included several types depending on its purpose. The first type is *Ruộng sơn lăng*. After harvesting from this farmland, the profit was mainly used for the critical worshiping ceremonies of royal ancestors. The second type is *Ruộng tịch điền*. The acreage of this farmland and its contribution to the State's budget was relatively tiny. However, the State maintained this type to serve rituals in agriculture and charity for the poor. The third type is *Ruộng quốc khố*. After harvesting, all profits from this farmland were kept in the state reserves and being used for future purposes. The finally type is *Ruộng đồn điền*. Similar to *Ruộng quốc khố*, all profits from this type were also kept in the state reserves. Though, this farmland was mainly cultivated by war prisoners and exiled convicts. Besides increasing the budget and controlling State's power, the primary purpose of the communal land is to maintain and develop the military. The State still owns the communal land, but the commune government directly manages it. The commune head (official) distributed land to people (*dân đinh*) within their commune to cultivate. In parallel, people have a responsibility to the State by paying the taxes (*tô thuế*) and doing public laboring (*sưu dịch*). Depending on the commune's rule, communal land could be redistributed. This ensures that people of age (usually 18) can use the land. Besides, the State could use the communal land to grant for royal officials as salary or gift. However, the State does not allow the sale or inheritance of this land (Dao, 1993).

Historically, the private ownership of land has gradually appeared and strongly developed since the XII century. Although the private ownership of land existed in four types, the large private ownership of domains (*điền trang*) and the large private ownership of landlords (*địa chủ*) were the most popular types at this time. Given the excessive taxes (*tô thuế*) imposed by the local lords, many laborers have sold their landholdings and become serfs. That led to the rapid increase of the domains and landlords and the decrease of small private ownership of laborers and the private ownership of serfs (*nô tỳ*). It also resulted in the political and economic crisis and changes in the land regime in the next period.

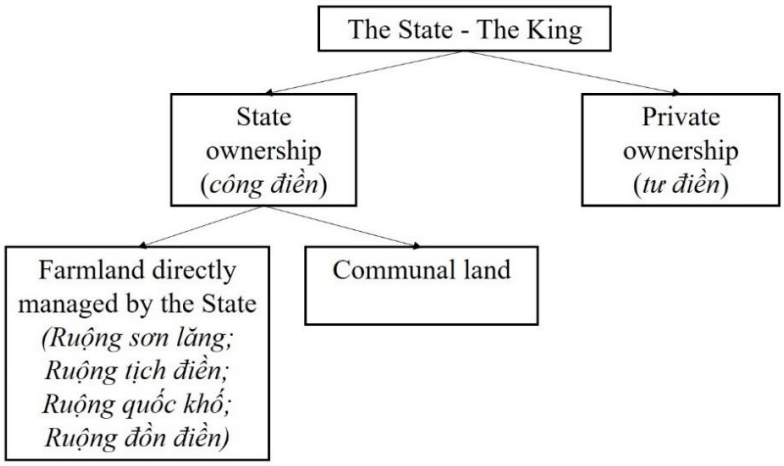

Figure 3.1. Vietnamese land regime in the feudal period

After 1884, Vietnam (named Annam) officially entered the French colonial era. In the first stage, Vietnam maintained the Nguyen dynasty's land regime. However, a few years later, French colonial policy controlled and influenced land tenure in Vietnam. French divided Vietnam into three regions, corresponding with different land policies. The leading French colonial policy in the South is to develop economically through large private ownership. Hence, they confiscated abandoned and communal lands, and land from poor farmers. Then, they granted them to French colonizers and landlords. Given this policy, Nguyen (2004) noted that the

acreage land owned by domains and landlords up to 909.300 ha. At the same time, an extremely skewed land distribution resulted in tenant farmers and landless laborers (Pingali 1992). In contrast, French kept communal land and small private ownership of laborers in the North and Central regions to maintain agriculture and food. However, high fixed rent (from third to a half of an average harvest) and share tenancy had made farmers even poorer. By the end of the 1930s, two-thirds of male peasants did not have land to cultivate (Dao, 1993). Although communal land accounted for 20% - 30% of the commune's total land, this land has strongly controlled by local landlords. Overall, land tenure in Vietnam before 1954 had influenced by local feudalism and colonial policy. Besides an essential role of state ownership, land tenure was also characterized by private ownership through a landlord-tenant system and landlord class.

3.1.2. Socialist land reform and agricultural collectivization (1954-1986)

The outstanding feature of Vietnam's land regime from 1954 to 1986 is socialist land reform and agricultural collectivization. Due to the war period until 1975, Vietnam was divided into two countries with different governance regimes (see Figure 3.2). That also resulted in the difference in land tenure and agrarian structure. Following socialist ideology, agriculture policy in the north accelerated land redistribution and reform under the collective system. Thus, northern agriculture was characterized by fragmented landholdings and small-scale petty commodity production. In contrast, before 1975, agriculture in the south was mainly based on tenancy and the landlord class. Thus, private property and individual freedom to accumulate land became popular in this area. Besides, rice production in the south was highly commercial with export-oriented. The

redistribution and collectivization efforts in the south were only carried out after reunification in 1975.

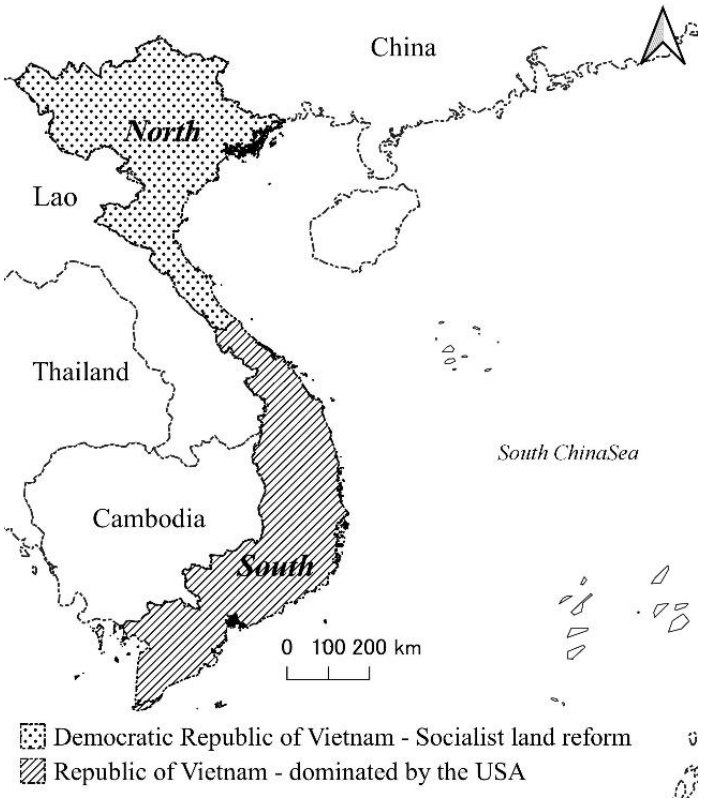

Figure 3.2. The governance and land regimes by region in Vietnam from 1954 to 1975

After the August 1945 Communist revolution and the Geneva Accords in 1954, the Democratic Republic of Vietnam[8] in the north carried out a land reform program (*Cải cách ruộng đất*). In the first phase of this program, 37% of arable land (810,000 ha) was redistributed to 2,104,000 farmers (an average of 0.4 ha per farmer) by confiscated from landlords (Pingali 1992). However, the second phase focused on a centrally planned model and collectivization policy to consolidate the new government and develop rural communities. From 1956 to 1958, the

[8] The Democratic Republic of Vietnam was established in the north after the August 1945 Communist revolution, influence by the socialist ideology of the former Soviet Union and China.

collectivization of agriculture was mainly carried out under the type of work exchange teams (*Tổ đổi công*) or mutual aid teams (*Tổ đoàn kết*). Farmers must participate in seasonal or permanent work teams. Members of seasonal teams usually work during peak labor periods (planting, transplanting, harvesting,…) without payment[9]. The permanent team included a members of a year-round team such as the fertilizer team, the mechanization team. They were paid based on work days or work points. On this basis, 1958 to 1960 marked the establishment of low rank agricultural cooperatives (*Hợp tác xã nông nghiệp bậc thấp*). Following this model, households were still allowed to manage their production means (land, draft animals, tools,…). After harvesting, they received the member's share of output corresponding with their contributed production means. At the same time, based on their contribution during farm work, they were paid a part of the gross yield of the cooperative. From 1960 to 1972, it was transferred to the new one as the high rank agricultural cooperatives (*Hợp tác xã nông nghiệp bậc cao*). The new model of cooperative removed the private farm ownership by collectivizing production means under cooperative ownership. At this time, the cooperative only used the work points (at the end of the season) to pay each member. This stage recorded the strong development of cooperatives. The total number of members participated in the cooperatives accounting for 95.6% of all peasant households in the North region. The average arable land per cooperative was 115 hectares, with the participants of 199 households and 337 people (Hoang 2015). However, the cooperative model's payment structure and high output quota[10] led to a decline in productivity and

[9] Because these activities were considered mutual aid.

[10] In 1979, the food obligation policy was introduced by the central government (*Nghĩa vụ lương thực*). Following this policy, the government provided inputs (irrigation services, fertilizers, pesticides,…) at a low price. In exchange, this policy forced households to sell a quota of their

farmers' enthusiasm (Kerkvliet 2006, Hoang 2015). In reality, work points revealed the number of working hours, not the quality of work. As a result, individual team members started to intensify in the private lands (households are allowed to keep a small tract for private production) to get more products. The government has recognized collective farming combined with the consequence of the war as the primary reason that led to the chronicle food deficit and socio-economic crisis between 1976 and 1981 (Vo 2014). It was also an initial step to consider the new economy unit (household economy unit) and the new land reform.

In the south, land reform under the Republic of Vietnam (dominated by the Vietnamese-American government) was carried out in two stages. The first stage focused on the tenancy between landlord and tenant. However, this policy did not solve the conflicts because most farmers were still landless and tenants. At this time, the government protected and recognized the private property and individual freedom to accumulate land of the landlord class (Ho 2021, Ravallion 2008). From 1963 to 1970, the second stage of land reform continued to be implemented, especially the Land to the Tiller program (*Đất cho dân cày*). This program limited the land ceiling to 20 ha per family. Then, the excess amount of land would be redistributed to tenant farmers. Basically, this policy removed large private land ownership of landlords, but created a more middle-class peasantry. Besides, the land ownership still belonged to the landlord class (Michael 2020). In addition to improving irrigation infrastructure and modern technology, bringing farmers back

outputs to the government at a predetermined price. However, the predetermined price imposed by the government was eight times lower than the market prices.

to farming was considered one of the reasons that contributed to rice output growth in the south from 1966 to 1975 (Pingali 1992).

After reunification in 1975, the land equal distribution policy was conducted in the south by the Communist Party government. Then, from 1976 to 1980, the government encouraged collective farming. Depending on age of household member, land quality and irrigation access, each household was allocated as follows: 0.1 to 0.15 ha for each adult and 0.08 to 0.1 ha for each child under 16 years old and adults over 60. The allocated land could be reallocated by the cooperative. The cooperatives or districts managed all the production means such as tractors, tillers, pumps, and draft animals, and so on. Until 1980, 90% of the farmers in the South Central Coastal and 52% in the Central Highland were involved in agricultural cooperatives. However, this policy did not attract the participation of farmers in the Mekong River Delta, with less than 6% of farmers joining cooperatives by 1986 (Ngo 2020, Pingali 1992). Despite collectivization, farmers in the south continued to work on family farms, with their own decisions on input and technology. Shortage in draft animal in the south combined with high output quota resulted in the decline in yield and rice output during the 1976 to 1981 period (Pingali 1992, Ravallion 2008).

In that context, some areas in the north implemented a new contract type without the agreement of the central government, known as a sneaky contract (*khoán chui*). The initial effectiveness of this type marked the changes in land policy in the next stage. In 1981, the central government introduced the contract system through Directive 100 CT, known as Contract 100 (*khoán 100*). Households were allowed to cultivate and manage their land, but had to provide an output quota to

the cooperative. They also were allowed to keep excess products for individual purposes such as consumption or private trade. In exchange, the cooperative provided the inputs for households and sold the contracted output to the State at a fixed price. All farmers in the whole country joined a contract with the cooperatives. However, the top-down decision-making related to land use and crop choice and unstable output of the central government led to the incomplete pre-reform. Besides, the legal system still did not support the land use rights of households. That led to farmers not having incentives for long-term land investment. Thus, the pre-reform only contributed to the food output growth in the short time from 1981 to 1982. Then, the country faced to food security crisis until 1987 (Hoang 2015). It required a new land reform to transfer and develop agriculture.

3.2. Land reform through Renovation in 1986

3.2.1. Market-oriented reform and de-collectivization

In 1986, the Renovation series (known as *Đổi mới*) were introduced by the Vietnamese Community Party at the Sixth National Party Congress. One of the critical outstanding of this policy is to shift the nature of Vietnam's economy from a centrally planned to a market-oriented one. Thus, in 1988, the central government supported land privatization through Resolution 10, known as Contract 10 (*khoán 10*). It was considered as an initial step toward abandoning collective production in agriculture and private farming legalization. The first Land Law in 1987 also supported this policy by promoting land allocation to households for production and recognizing the land lease system. The cooperatives no longer controlled the production activities of households. Instead, they played a role in providing inputs and managing services such as irrigation and marketing. Regarding households,

they were assigned land from 10 to 20 years in renewable leases depending on land use type. Until 1989, households were allowed to keep all products for individual purposes (sell outputs to the state or in the free market) after taking out the input fee to the cooperative. They had also paid tax corresponding to their land value[11]. In the south, households could be granted land that they owned before 1975. However, this policy was rapidly changed to avoid the conflicts between farmers and old landlords[12]. Besides changes in land tenure, a series of decisions to open the economy was approved by the central government, such as (i) removing import tariffs in 1988, (ii) resuming trade with China in 1989, (iii) freeing markets to set the prices for goods and services in 1992, and (iv) allowing state-owned enterprises to trade with foreign firms (World Bank 2016). These changes have contributed to positive economic results, especially agriculture sector. Food yield sharply increased from 19.5 million tons in 1988 to 21.5 million tons in 1989. The GDP growth in agriculture achieved 3.8% from 1989 to 1992 (Michael 2020, Hoang 2015). Notably, Vietnam became the third largest rice exporter in 1989. These results encouraged the development of the household economy unit and motivated the land allocation policy in the early 1990s.

3.2.2. Land allocation and a new type of agricultural cooperatives

The period from 1993 to 2001 witnessed the development of the private economy through smallholders. However, land fragmentation also stemmed from this policy and has affected Vietnamese cultivation development for a long time.

[11] At this time, based on the quality of land (soil acidity, elevation, irrigation access), arable land were divided into seven land categories. The fixed tax range from 0 to 750 kg of grain/ha/year, corresponding with seven land categories.

[12] After that, the central government changed this policy as follows: the land can not be returned to landlords whose was confiscated during or after the war.

Besides, the cooperatives were re-established and identified as the core of the collective economy unit under the market economy socialist-oriented.

Based on Resolution 10 and the Land Law in 1987, the revision Land Law was promulgated by the central government in 1993. The revision law continued to recognize that the state possesses land ownership on behalf of all nationals. In addition, the outstanding policy of the Land Law of 1993 is agricultural land allocation for entire households with land use rights of 20 years for annual crops and 50 years for perennial crops. Households were granted a land-use rights certificate (*sổ đỏ*) with five rights: exchange, transfer, inheritance, lease, and mortgaging of land-use rights. The new land law also regulated land quotas by region, less than 3 ha of land (paddy and annual cropland) per household in the Red River Delta and less than 5 ha per household in the Mekong River Delta. On that basic, the central government promulgated Decree 64/CP in 1993 on the detailed regulations and procedures for land allocation. Owing to these policies, agricultural land-use rights were transferred from collectives to individual households in the early 1990s. However, there were differences in land allocation between the north and the south. That was rooted in the past cooperatives and collective farming of both regions (*as described in 3.1.2*). It also resulted in land use and agricultural structure between northern and southern. Cultivation in the north was characterized by small-scale production based on families, while large-scale commercial production and export purposes were more popular in the south. In the north and central, the land allocation was mainly conducted through the cooperative or village/commune level. Significantly, the mechanism of equal land distribution per capita was implemented. That means the total acreage land of each household was

determined by counting the number of family members as of 1993. Simultaneously, to ensure equal distribution, the authorities conducted the land classification based on the Decree 73/CP[13] in 1993. Then, based on the total acreage land of each household, the allocated lands were divided into many small plots based on soil quality, location, irrigation, etc. In contrast, land returned to the previous owner was implemented in the south[14]. Hence, inter-farm and intra-farm land fragmentation with small-scale has strongly occurred in the north and central. By 2016, the average farm size per household in the whole country was only 0.5 ha (0.3 ha/household for paddy land and 0.4 ha/household for annual cropland). Significantly, households in the Red River Delta had the lowest arable acreage, with only 0.2 ha/household on average. The farm size of households in the central was 0.4 ha/household, while farm size per household in the central highland and the south were 0.8 ha and 1.3 ha, respectively (GSO 2016, Markussen 2017).

In addition, the government's efforts in restoring the collective economy under the economy market-oriented were recorded. As a result, the first Cooperative Law was approved by the National Assembly in 1997. In contrast to controlling production activities in the collectivization period, the new cooperatives emphasized the voluntary of members and more autonomy. The new law provided the legal framework for transforming, dissolving, and establishing new agricultural cooperatives as member-oriented service cooperatives. As e result, households tended to transform into the new ones rather than dissolve. From 1997 to 2000,

[13] Decree 73/CP was issued by the central government in 1993 on a land classification to agricultural land use tax liability. Following this Decree, the quality of arable land was classified based on five factors: soil fertility, location, topography, climatic conditions, and irrigation access.
[14] Each household was allocated as follows: 0.1 to 0.15 ha for each adult and 0.08 to 0.1 ha for each child under 16 years old and adults over 60.

there were 8,764 agricultural cooperatives in Vietnam, including 5,764 transformed cooperatives, 1,585 undergoing transformation cooperatives, and 1,415 newly established cooperatives (Axel 2010). On that basis, the revision laws continued to be approved by the National Assembly in 2003 and 2012. Accordingly, the new cooperative have responsible for serving the common interests of members for mutual benefits, such as supply inputs and outputs (extension, irrigation, fertilizer, harvest, selling, etc); drives the job opportunities for members, and build-up the linkage in agriculture by contract farming between the cooperatives, farmers and enterprises on production and consumption. GSO (2016) data show that the number of agricultural cooperatives increased in 2006-2011 and 2011-2016 from 6,302 to 6,946 cooperatives, respectively. Notably, the increase was mainly focused on the north and central regions.

After land allocation until the early 2000s, Vietnam reached significant achievements in GDP growth. Significantly, agricultural growth during 1994-2000 was 4.5% (Ayerst 2020). However, during the following periods, Vietnam's agriculture sector has faced an enormous decline in GDP to only 3.3% (between 2001 and 2006), as well as stress on domestic competition for capital for land and labor in the context of rapid urbanization (World Bank 2016). Although the role of the collective economy through the new cooperatives is recovered and admitted as one of five forms of Vietnam's socialist economy, this form has faced enormous competition from the private economic form and other economic form organizations in terms of motivation, growth rate, and share in GDP. Instead of cooperating, households were still individual households and independent cultivation even if they participated in cooperatives (Ngo 2020). In that context, the

government started to carry out strategies promoting agrarian transformation in private and collective economies by reorganizing production to improve productivity, competitiveness, and livelihood for farmers in rural areas.

3.3. Institutional innovation to boost agriculture sector restructuring

The Vietnamese government promoted the agrarian transformation by reallocating land and labor forces in the early 2000s. Accordingly, the policies on reducing land fragmentation, promoting cooperative farming, and releasing the agricultural labor force to non-agricultural sectors were approved.

After a few years of land allocation, in 1988, the central government enacted Resolution 06 to promote land rearrangement. Then, the land consolidation was introduced under a national program, the Land Reallocation Program (known as *Don Dien Doi Thua* in Vietnamese, meaning the "Land Exchanging Program"). This program was legitimized by Directive No. 10 (1998) of Vietnam's central government on regulations and procedures of the land reallocation program. This program continued to encourage under Resolution 26 in 2008 (known as *Tam Nong* in Vietnamese, meaning the development of agriculture, farmers, and rural areas). Given the orientation on emphasizing changes in economies of scale at the farm level, land reallocation was applied to all communes nationwide. Basically, the land allocation program followed the principle of equal land redistribution as land allocation in 1993. The total farmland of each household equals the number of household members. In parallel, households still received plots with different soil quality to ensure equity. By rearranging land plots, this program aimed to (i) to reduce the number of land plots per household and increase the parcel size, and (ii) to improve irrigation systems, agricultural roads, and re-plan communal agricultural

lands[15] (known as *Đất công ích or Đất 5%* in Vietnamese). After implementing this program, although intra-farm land fragmentation was reduced, inter-farm land fragmentation combined with family-scale still existed (Markussen 2017, World Bank 2016). Hence, the party and central government approved the series of Resolutions for intensive production and rural development.

From 2000 to 2002, the government encouraged households to expand production scale by farm economy through Resolution 09-NQ/CP and Resolution 03-NQ/CP. Households would be allocated land, rented land, and granted land use rights certificates long-term if they join the farm economy. Besides, Resolution 05-ND/CP was approved to establish various agricultural development programs in technological cooperation, poverty alleviation, clean water, varieties, and environmental safety. Then, contract farming was introduced under Decision No. 80/QD-TTg. Contract farming was expected to establish the rice value chain and high-tech agriculture between households, cooperatives and companies for exporter objectives. As a result, Good Agricultural Practice Program (GAP), Linkage Four Suppliers Chain Program[16] (*liên kết 4 nhà*), and Large-Scale Paddy Field (*cánh đồng mẫu lớn*) were strongly developed during 2002 to 2010. However, most of these programs were mainly implemented in the Southern (Mekong River Delta), and large-scale farmers were more likely to participate than smallholder farmers (Hoang 2019). Hence, the new strategies for promoting land concentration and

[15] Communal land in Vietnam is reserved land that is not allocated to individual households and is kept for future demands, such as population increase and/or public purposes. In Vietnam, the law determines that 5% of arable land in a commune should be under the management of the commune as communal land.

[16] Local Government - supporting legal framework and part of finance; Scientist - transferring science and technology; Agricultural Enterprise - processing and trading; the New Cooperative - supplying input service and monitoring production activities; and Farmers - organizing production.

accumulation were approved under the revision of land law in 2003 and 2013. Accordingly, the revision of land law in 2003 allowed households to participate in the land market by transferring their land-use rights to others. Then, it was expected that smallholders could expand their production scale. Resolution 19-ND/TW in 2012 continued to support expanding the land ceiling for individuals and households. Significantly, the revision of land law in 2013 extended the scope and duration of land rights. Depending on regions, individuals and households could accumulate land by receiving land use rights from others for up to 30 ha for annual crops and 300 ha for perennial crops. Besides, households were promoted to use land-use rights as a share in a joint venture. Despite the central government's efforts, small-scale production was still popular in the north and central (Markussen 2017). Data on the Vietnam Agricultural Rural Survey of GSO in 2012 show that the arable land buying market mainly occurred in the southern provinces such as Dak Lak, Dak Nong, and Long An. Meanwhile, most of the arable land of households in the north and central provinces was rooted in the state's allocation. Land concentration through the contribution of land use rights as shares in companies was the only success in small scope for perennial crops such as sugarcane and rubber (Hoang 2015, Ngo 2020).

Hence, in 2013, the central government issued Decision No. 899/QD-TTg i.e., a government policy approving a project to restructure the agricultural sector to increase added value and sustainable development (known as *Tái cơ cấu ngành nông nghiệp* in Vietnamese, which means the "Agriculture Restructuring Program"). Following this scheme, a new format of contract farming through a cooperative was approached as an institutional innovation of the Vietnamese

government. The nature of this program is the linkage between farmers and a newly established cooperative to create contiguous large-scale paddy fields. This program aimed to promote entrepreneurship in agriculture and diversify livelihoods in rural areas by pushing out rural populations from the agricultural sector.

CHAPTER 4

WHY THE LAND CONSOLIDATION OF VIETNAM IS INCOMPLETE: A CASE STUDY OF BINH DAO COMMUNE, CENTRAL VIETNAM[17]

4.1. Background of the land consolidation program in Vietnam

Vietnam is a typical case of land fragmentation caused by land reform (Kerkvliet 2006, Pingali 1992, Ravallion 2008). Hence, land consolidation has been encouraged since the mid-1990s through a pilot project involving the exchange of plots among farmers. The initial pilot project was developed based on the bottom-up method, which encourages farmers to exchange small and scattered parcels with each other voluntarily. However, this approach quickly failed because of the low cooperation among households (Hoang 2015, Ngo 2020, Tran 2006). Consequently, a top-down approach was suggested and implemented by the central government in 1998 through a national program called the Land Reallocation Program. Accordingly, the central government decided on the main procedure for the land reallocation program in four steps. First, the local government at the commune level withdraws all land-use certificates for arable lands within the commune. Second, the size and shape of each arable plot was adjusted to a larger size. Third, local governments reallocate arable land to their households. Finally, each household is issued a new land use certificate for arable land based on the results of land reallocation. This program was strongly recommended in many provinces in the

[17] This chapter is based on the author's academic paper (in press):
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northern and central regions seriously affected by land fragmentation. This program was implemented in two phases, which promoted the participation of 2,294 communes with 693,734 ha of arable land (GSO 2016). The first phase began in 2005 and in 2006. This decreased the average number of plots per household from 5.8 plots to 4.8 plots between 2006 and 2010 (Markussen 2017). This program experienced delays of a few years because of a deficiency in the government's budget to grant land-use rights certificates (Ngo 2020). The second phase started in 2010, along with the Land Database Construction Project and the National Targeted Program on New Rural Areas for the period 2010 to 2020, which aimed to establish a digital cadastral map and record on a national scale. This encouraged the remaining provinces to continue implementing land consolidation programs. Furthermore, some provinces in the first phase conducted this program for the second time to further reduce land fragmentation (Hoang 2015, Ngo 2020). After implementing the second phase, the average number of plots per household in the country decreased significantly from 4.8 plots to 3.1 plots between 2010 and 2016 (GSO 2016).

As mentioned in Chapter 2, most previous studies on land consolidation in Vietnam have revealed economic aspects, such as productivity and production costs, labor and income, and machinery (Kompas 2012, Markussen 2016, 2017, Nguyen 2020, Pham 2007, Tran 2019). However, they paid less attention to the implementation of commune-level land consolidation, which enhances the understanding of land governance in Vietnam. Changes in the approach of land institutions towards land consolidation can account for not only economic aspects but also social transformations (Coelho 1996). Hence, in addition to the extensive

economic factors that have been researched, an improved understanding of land consolidation's administrative mechanism is essential for policymaking regarding land use and rural development.

This chapter presents a case study of a typical rural commune in the central coastal region of Vietnam, where land fragmentation influences the agricultural sector. In addition to describing the implementation mechanism of the land consolidation program, we considered the spatial structure of farmland parcels and rural infrastructure before and after the program. We then delve into why land consolidation in Vietnam was left incomplete, focusing on the socialist land governance model through the case of the Binh Dao commune in central Vietnam.

4.2. Methodology and study site

The database for spatial analysis was created from cadastral map records from 1993 to 2006 to obtain an overview of the results of land consolidation. Reports on the implementation of land allocation in 1993 and land consolidation in 2006 were collected from the local government. The data on micro-topography for analysis are based on the report on land use status and the map of forest land allocation of the Binh Dao commune. A detailed flowchart of data analysis is presented in Figure 4.1.

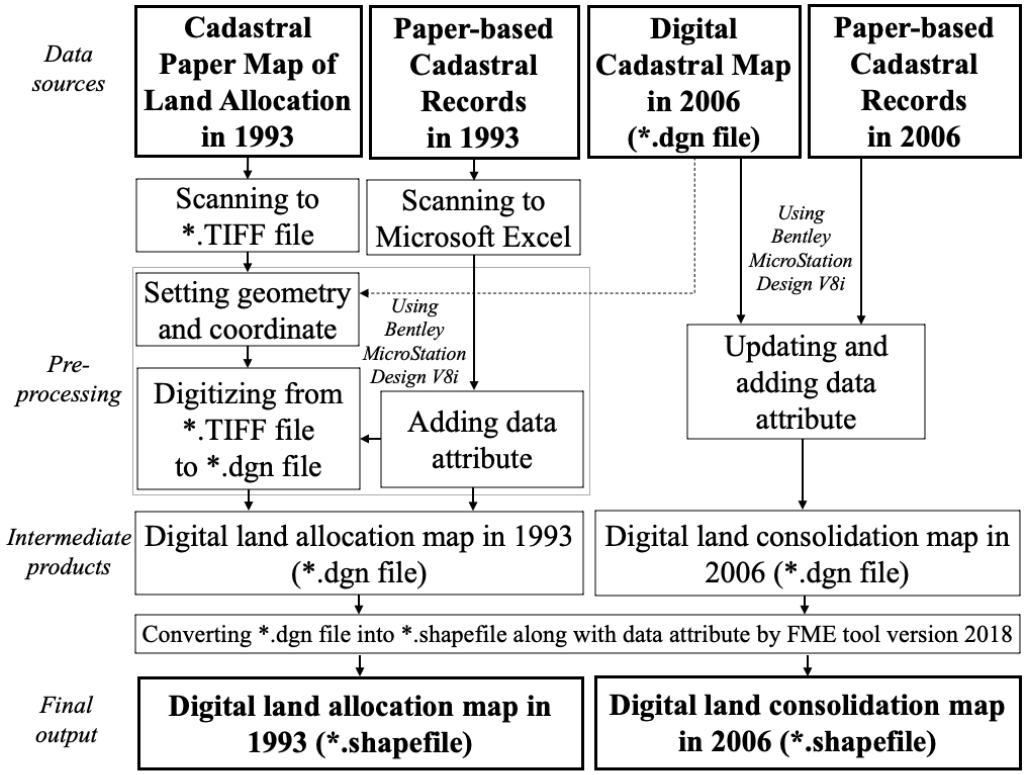

Figure 4.1. The process of data standardization

To investigate the changes in the spatial structure of farmland parcels and rural infrastructure, this study created two types of digital maps with a scale of 1:2,000: the land allocation map of 1993 and the land consolidation map of 2006. The original land allocation paper map[18] was digitized. Updated data were attributed to the digital land allocation map of 1993 using Bentley MicroStation Design V8i software. For comparison, the same types of information, such as coordinates, geometry, and scale, were recorded on the land consolidation map. In addition, using the FME tool version 2018 and Quantum GIS 3.10 software, the digital map of land consolidation was converted to shape files with full data attributes, such as

[18] At the time of the land allocation in 1993, digital maps were not yet used yet in Vietnam.

the type of land use and the name of the landowner. Fieldwork was conducted in the Binh Dao commune between August 2018 and June 2019.

This study was conducted in the Binh Dao commune in Quang Nam Province, which is located in central Vietnam (Figure 4.2). The Binh Dao commune is a coastal plain commune, in which the cultivation sector is significantly influenced by land fragmentation. Binh Dao also has the features of a coastal plain commune in the central region with narrow, gently sloping plains from northwest to southeast. The topography of the Binh Dao Commune is divided into two areas. The eastern area consists of sand hills and dunes of forestland, while most of the arable and residential areas lie along the Truong Giang River. In particular, the micro-topography of arable land in the Binh Dao commune is the relative variety with an elevation average of 0.1m to 2.9m and different soil quality. In addition to concentrated arable land areas, many small arable land areas were scattered across residential areas and near river dikes. The population of Binh Dao is 7,273, with 2,209 households as of 2019 (Thang Binh Statistical Office 2019). Of these, 84.4% were farming households, that is, 1,864 households (The Binh Dao Commune People Committee 2019). The acreage of agriculture production land is 384.6 ha, accounting for 31.7% of the total natural area, including 354.6 ha of rice paddy and 30 ha of annual crop land (Thang Binh Statistical Office 2019). The Binh Dao commune has four villages: Tra Doa 1, Tra Doa 2, Van Tien, and Phuoc Long. Most households in the Binh Dao commune depend on agricultural products such as rice, sweet potatoes, peanuts, and small-scale livestock. The farming characteristics in this area are defined by small-scale production by farmers' families.

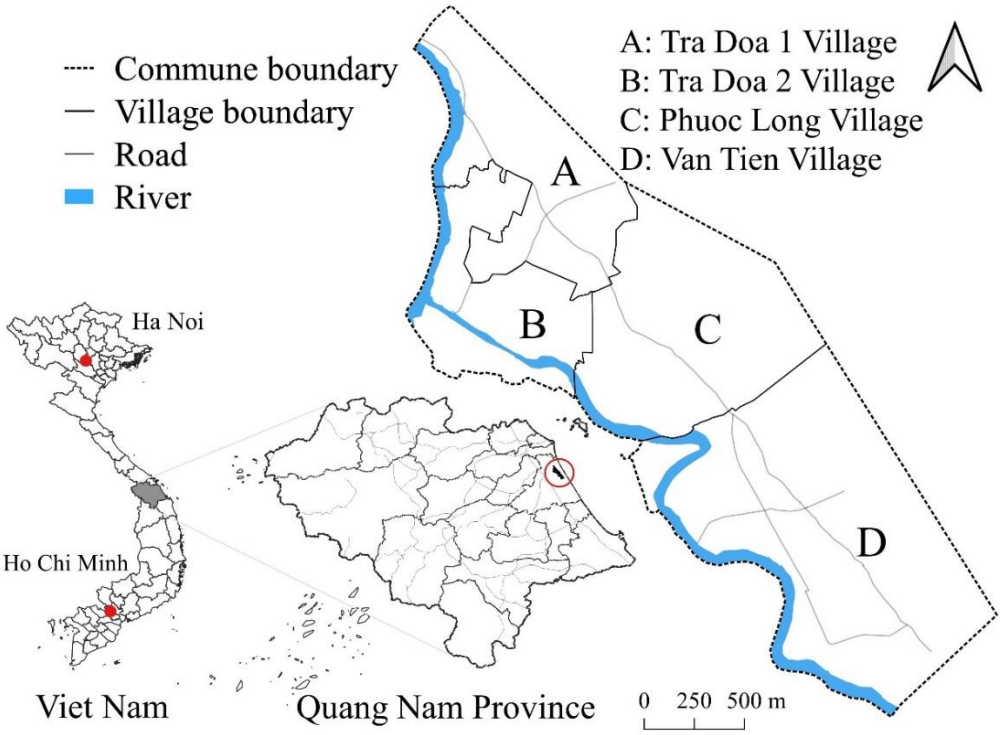

Figure 4.2. Location of the study site

4.3. Land allocation in 1993

4.3.1. The process of land allocation

Following land reform policies, land allocation in the Binh Dao Commune was implemented in 1993. This policy involved the removal of cooperative ownership of arable land and emphasized private farm ownership. This allowed the arable land to be distributed to each household for independent cultivation. The main principle of land allocation in 1993 was equal to the land distribution per capita. In other words, the total acreage of land received by each household was determined based on the number of family members as of 1993, regardless of their age. Simultaneously, to ensure equal distribution, the allocated lands were divided into many small plots based on soil quality, location, irrigation, etc. The central government decided on procedures for land allocation through Decree 64/CP in

1993. These procedures were applied to all communes nationwide with almost the same steps. The procedures followed for land allocation in the Binh Dao commune are as follows (further illustrated in Figure 4.3):

(i) The authority[19] (commune) defines the arable land to be allocated.

(ii) The authorities conducted a land survey on the acreage, types of land use, and location.

(iii) Five percent of the total arable land was excluded for future purposes, such as population growth, as communal land.

(iv) The authority classified the quality of arable land based on five factors: soil fertility, location, topography, microclimatic conditions, and irrigation.

(v) Based on the above classification, the authority divided arable land into four blocks[20] within a village territory, corresponding with good soil quality blocks, bad soil quality blocks, medium soil quality blocks, and blocks farther away from households.

(vi) The authority creates a handwritten map for each block.

(vii) The total acreage of allocated land per household depends on the number of household members (per capita equivalent, approximately 507 m^2/person).

[19] The authority is a system of state government. It has responsibility for implementing state policy at the local level.

[20] A good soil quality block includes arable land for two or three crops per year, very flat terrain, and proactive irrigation with over 70% irrigation time. Bad soil quality blocks include arable land for one crop per year, marshlands, low-lying terrain, and the predominant use of rainwater. Medium soil quality blocks include arable land with medium fertility paddy soils, flat terrain with drought and waterlogging-prone farmland, and proactive irrigation with time for irrigation ranging from 50% to 70%. Blocks farther away from households include arable land, with the distance of the plot to the road or dwelling being over 1.5 km.

(viii) Based on the acreage of allocated land per household and arable land status in fields, the authority determined the acreage of good, poor, medium, and far from residential area per household (about ¼ for each soil quality type). In theory, given four blocks, each household receives four plots. However, owing to the varied micro-topography in the field, arable land within each block was scattered across many locations with lands from each other. Thus, each household received many plots with different locations for each soil-quality type.

(ix) The authority organized the meetings for land allocation at the village level, and a representative of each household was requested to draw a lottery for each block. Based on the arable land status of each block in the field, the representative of each household was requested to draw lotteries individually from each box until the acreage of allocated land for each soil quality type per household was reached.

(x) The authority granted land use rights certificates to households based on the results of land allocation.

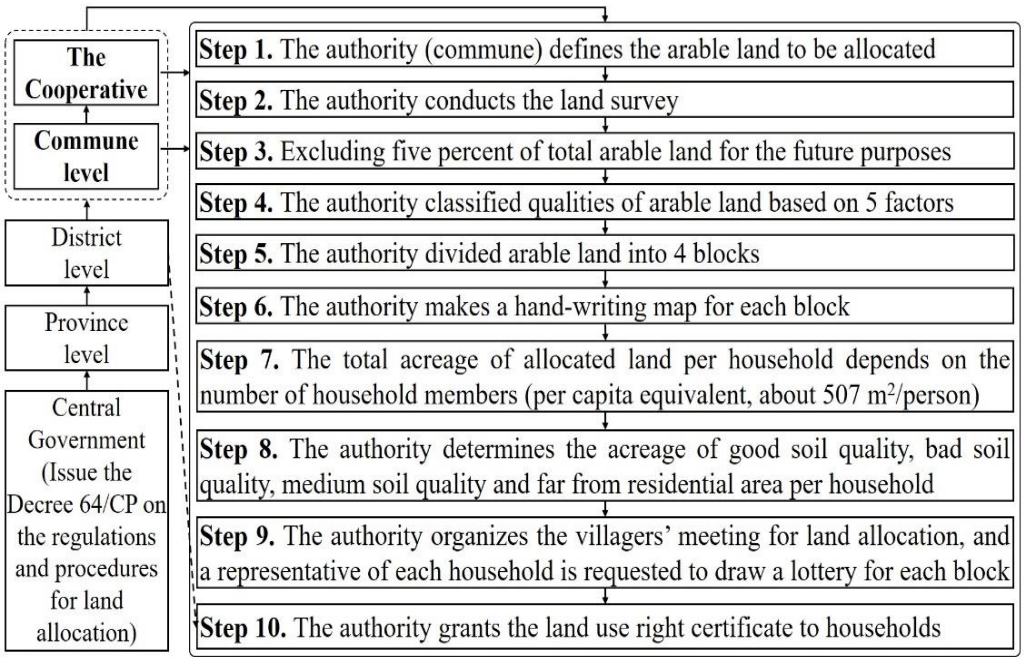

Figure 4.3. The process of land allocation in 1993

4.3.2. Land fragmentation in the Binh Dao commune

Given the main principle of equal distribution, the allocated land was divided into many small plots at different locations. A total of 380 ha of arable land was allocated to 1,821 households with 7,092 people for long-term and stable use for 20 years[21]. According to our data analysis, however, the key principles of land allocation resulted in fragmented and scattered plots spread over 14,300 plots. The average farmland per household was only 0.2 ha, while the average number of agricultural plots per household in the Binh Dao commune was very high at 7.9 plots. In particular, the largest number of plots per household was 26, which were scattered across three different locations, with the smallest plot size being only 10 m^2.

Figure 4.4 shows the results of the land allocation in the Binh Dao commune in 1993. Looking closer, it is clear that the micro-topography in the field also affected the high level of land fragmentation. The good soil blocks are mainly concentrated on sites with a slightly high elevation from 0.5m to 0.8m, near residential areas and irrigation channels. Bad soil blocks tended to be located in two areas. Some are concentrated near the river with elevation from 0.1m to 0.3m, which usually flood during the rainy season. Others are scattered across residential areas with a high elevation of up to 2.9m or lie far away from irrigation channels. The medium soil blocks are interleaved between the good and bad soil blocks with various elevations

[21] Land allocation for long-term and stable use in Vietnam does not mean endowing legal ownership, but land use rights in Vietnam guarantee five rights: transfer, exchange, inheritance, lease, and mortgage. Therefore, Vietnamese farmers perceive this as ownership.

from 0.4m to 1.9m. The blocks farther away from households, from 1.5 km to 2.5 km, are located near the river dikes. The varied micro-topography and mismatched acreage of each soil quality type led to intra-land fragmentation among the soil quality blocks. In particular, to ensure that all households received four soil quality types, plots in the good and bad soil quality blocks were divided smaller than the plots in the medium and further blocks. As a result, most households in the Binh Dao commune own multiple plots with different soil quality and accessibility to irrigation and field road systems.

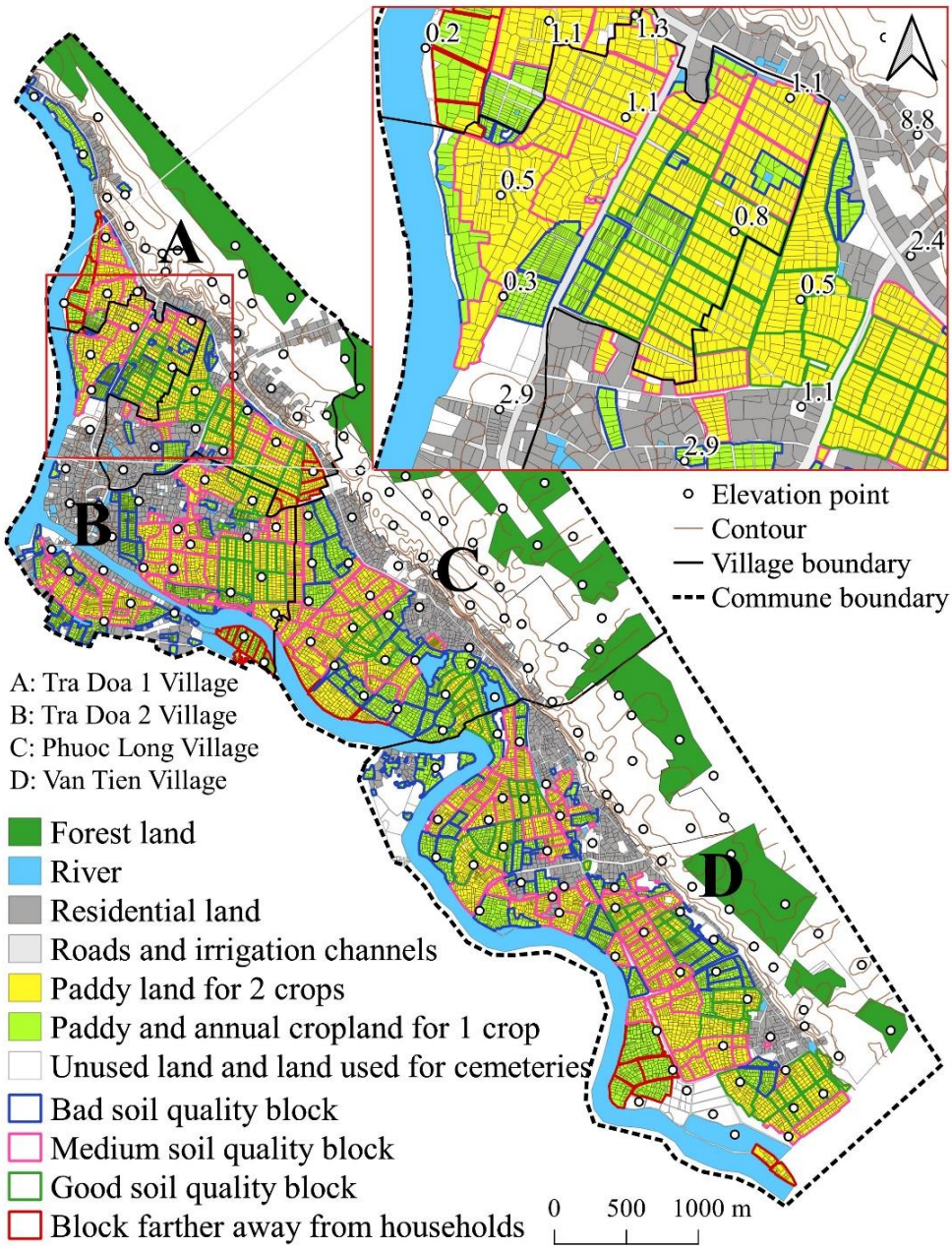

Figure 4.4. Map of land allocation in 1993 in Binh Dao commune

4.4. Land consolidation program in 2006

4.4.1. The process of land reallocation

The Binh Dao commune conducted a land consolidation program in 2006 to tackle extremely high levels of fragmentation resulting from the standpoints of equal land distribution per capita. The key goals of this program were to reduce the

number of plots, expand the plot size, and improve irrigation and field road systems. Thus, land consolidation was implemented by reallocating rather than swapping land ownership. Given Vietnam's status as a socialist country, the state possesses land ownership on behalf of all nationals, and the Vietnamese government was able to withdraw land use rights from farmers and reallocate land to them. It is worth noting that these processes were implemented at the village level, maintaining the principle of equal distribution per capita. In 2006, a land classification system was adopted for consolidation. Consequently, the overall land consolidation procedures were similar to those of the land allocation in 1993. The detailed procedures of land consolidation in the Binh Dao commune are presented in Figure 4.5.

(i) The authority withdrew all land-use certificates for arable lands within the commune after the second harvest of 2005.

(ii) A local committee at the village level was formed by authorities to facilitate the land consolidation process.

(iii) The local committee classified the qualities of arable land based on five factors, similar to the land allocation program in 1993: soil fertility, location, topography, microclimatic conditions, and irrigation.

(iv) Based on the above classification, the local committee divided arable land into four blocks: good soil quality blocks, bad soil quality blocks, medium soil quality blocks, and blocks farther away from households.

(v) The local committee removed the current plot boundaries. Simultaneously, the size and shape of each plot were re-adjusted to a larger size.

(vi) Communal land plots are rearranged in concentrated locations.

(vii) Based on the land use status of the fields, the local committee determined the acreage of reallocated land for each block.

(viii) The local committee created a handwritten map for each block.

(ix) The local committee organized villagers' meetings for land reallocation, and each household was requested to draw a lottery for each block.

(x) Based on the results of the lottery, the authority issued a new certificate of land-use rights to each household.

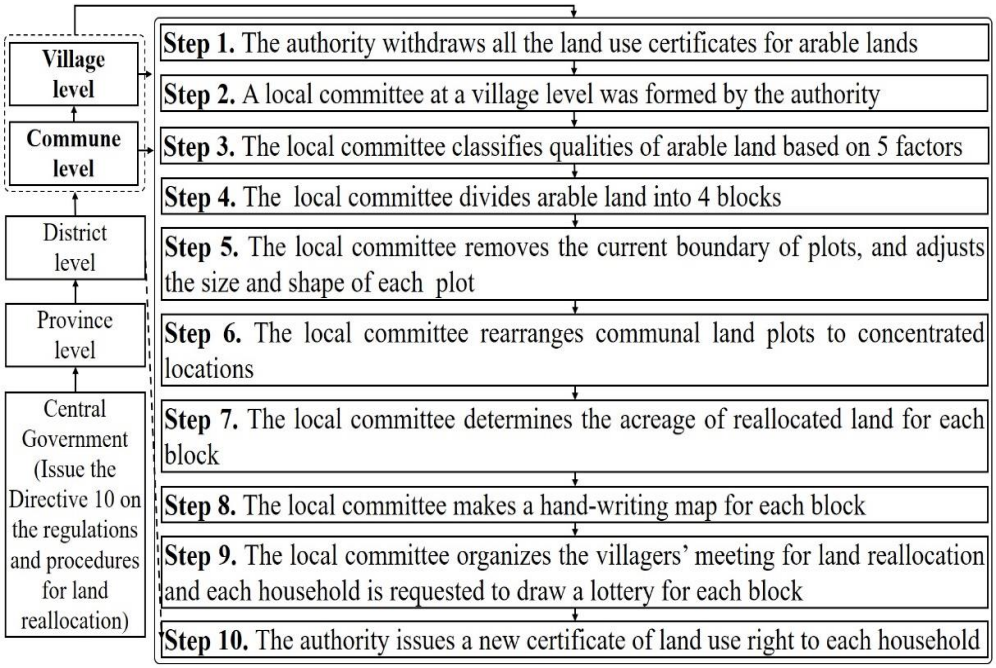

Figure 4.5. The process of land reallocation program

In this process, a top-down approach from central to local governments was adopted. The central government decided on these procedures through Directive 10 in 1998. On this basis, the Binh Dao Commune applied these procedures during land reallocation. In particular, the commune level took responsibility for

implementation without the right to modify procedures. During these processes, individual households were allowed to participate in assessing land quality.

4.4.2. Parcels spatial structure and rural infrastructure after land reallocation

4.4.2.1. The decrease in the number of plots per household

The data analysis in Table 4.1 shows that the total number of plots decreased from 14,377 to 7,648, reducing to 46.8% after the land consolidation program. The average number of plots per household was also reduced to 4.2 plots from 7.9 plots per household. To understand this change, the status of landholdings per household in each group was observed, as shown in Figure 4.6. Based on the results of classifying agricultural land into the four blocks and their land reallocation status, we divided households into four groups based on the number of plots they held: 1–3, 4–6, 7–9, and 10–26 plots. Figure 4.6 shows that the proportion of household groups holding fewer than six plots increased from 36.2% to 70.6%. In particular, the proportion of household groups holding one to three plots increased from 8.8% to 28.8%. Additionally, the proportion of household groups holding four to six plots increased from 27.4% to 41.8%. These results indicate that the land consolidation program contributed to reducing land fragmentation. However, data analysis also revealed the incomplete nature of the program's results. Figure 4.6 shows that even after the land consolidation program, 29.5% of households held more than seven plots. While the land consolidation program aimed to reduce the number of plots per household, it still emphasized the principle of equal redistribution. In theory, arable land in the Binh Dao commune is divided into four blocks. Under ideal conditions, each household is entitled to four plots of land. However, because of

the varied micro-topography in the field with an elevation average of 0.1m to 2.9m and differences in soil quality, each of the four blocks was divided into many smaller blocks scattered over many field areas. Figure 4.7 shows the results of land reallocation in the Binh Dao Commune in 2006. Soil quality block locations and their acreage have changed because of improvements in field roads and irrigation channels. The good and medium soil blocks were divided into more sub-blocks than the bad and far soil blocks. It aimed to minimize the differences in land quality among the villagers. Each sub-block was then divided into small plots to ensure that each household would receive the four soil quality types. This resulted in the plots in the good and medium soil blocks being more fragmented than the bad and farther blocks. Hence, in the land reallocating process, many plots of land were not in the same block, but scattered in different locations depending on the actual location of the blocks in the field. This has resulted in a high level of land fragmentation, even after land consolidation. Some households possessed up to 21 plots, with the smallest being 18.3 m^2.

Table 4.1. Changes in size and number of plots per a household in the Binh Dao commune

Indicators	Before (1993)	After (2006)
The total number of plots (plot)	14,377	7,648
The average number of plots per household (plot)	7.9	4.2
The average size per plot (m^2)	244.9	376.4
The average farm size per household (m^2)	2,071.2	2,087.6
The smallest number of plots per household (plot)	1	1
The largest number of plots per household (plot)	26	21
The smallest size of plot (m^2)	10	18.3
The largest size of plot (m^2)	1,795.0	1,636.2

Source: Field survey in 2019.

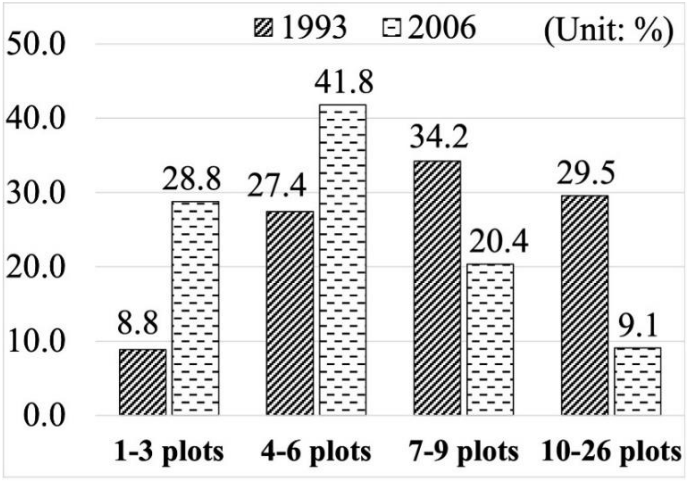

Figure 4.6. The change in the number of plots by household
Source: Authors' data analysis.

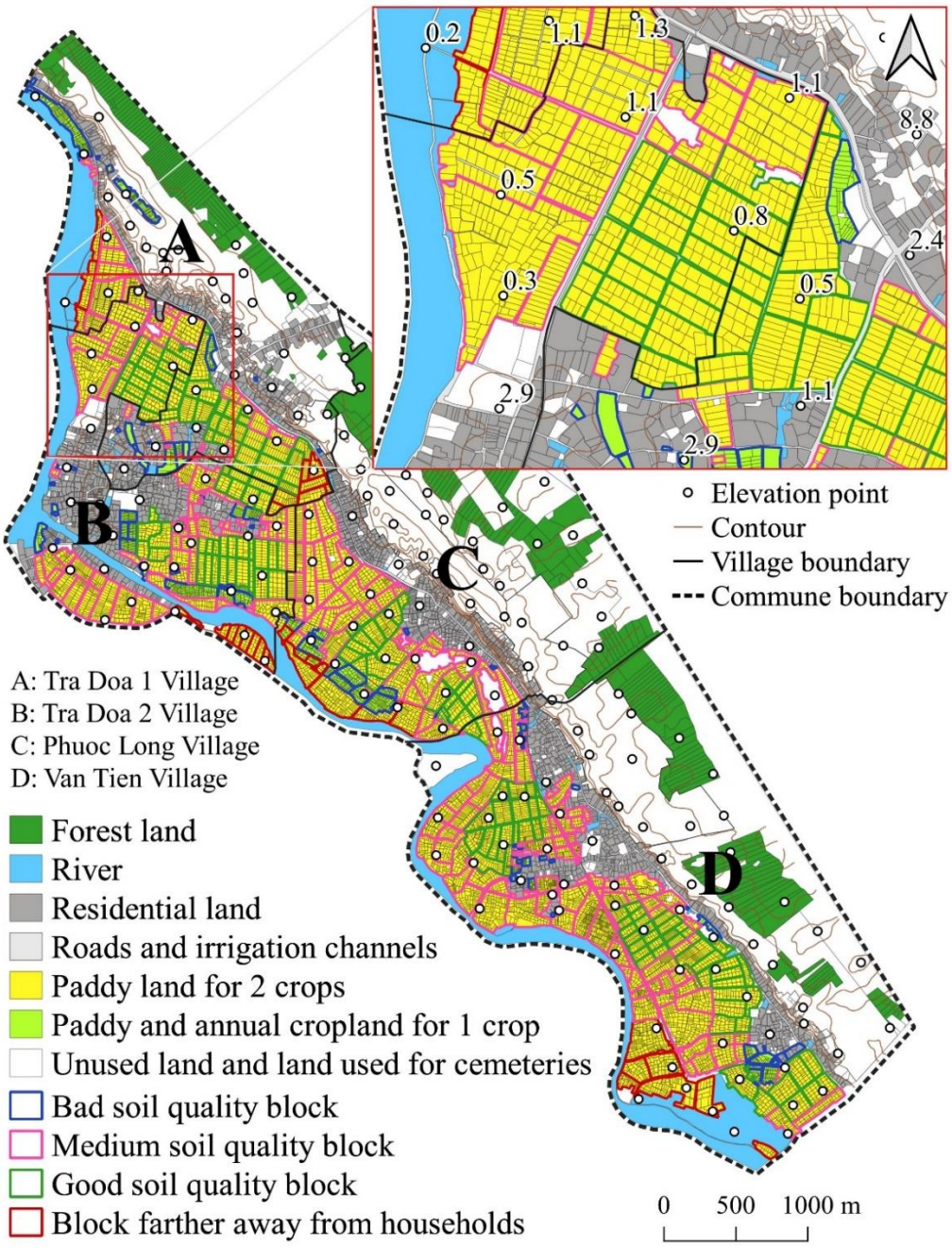

Figure 4.7. Map of land consolidation in 2006 in Binh Dao commune

4.4.2.2. Changes in plot size and plot shape

The results of the data analysis in Tables 4.1 and 4.2 combined with Figures 4.8 and 4.9 show that this program contributed to improving the size and shape of the plots. The average size per plot increased from 244.9 m^2 to 376.4 m^2. The proportion of rectangular plots increased from 34.8% to 72.9% of the total plots as

shown in Table 4.2. However, the proportion of large plots over 800 m^2 was insignificant. The changes in plot size for each group are shown in Figure 4.8. Data analysis showed that the size of the plots was extremely small before the land consolidation program, with 67.9% of the plots' sizes fluctuating from 10 m^2 to less than 300 m^2. In this group, there were plots with sizes from 100 m^2 to less than 200 m^2 and 200 m^2 to less than 300 m^2 with proportions of 25.3% and 28.0%, respectively, of the total plots. After land consolidation in 2006, however, the sizes of the plots were enlarged, with 58.5% of the total plot sizes ranging from 200 m^2 to less than 500 m^2. However, plots larger than 1,000 m^2 after land consolidation accounted for only 0.2% of the total plot area. The largest plot size in our case study was 1,636.2 m^2.

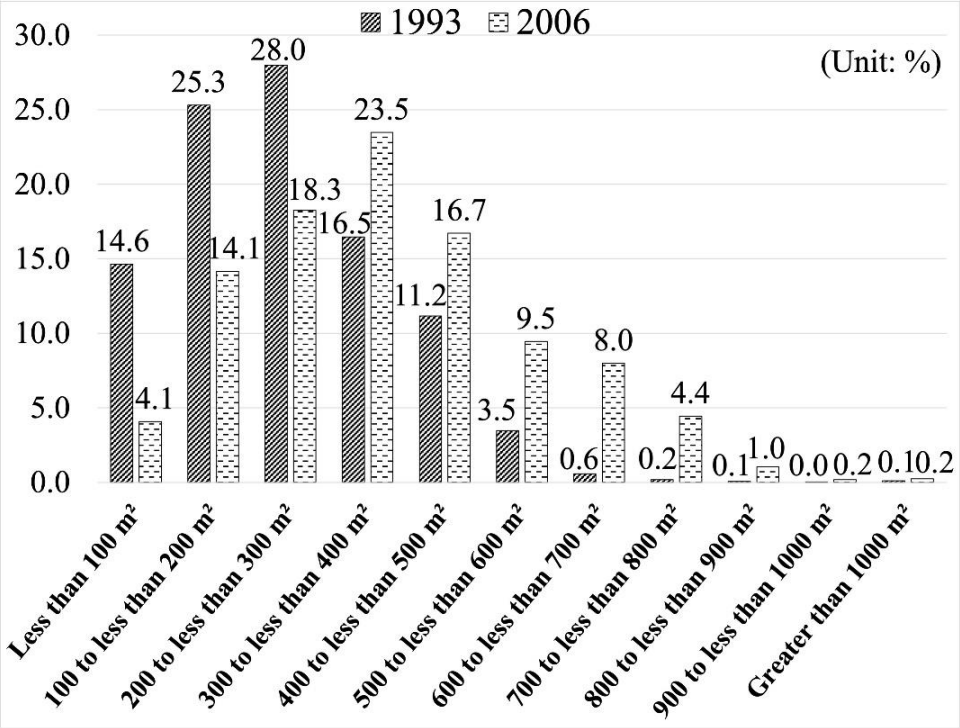

Figure 4.8. The changes in size per plots
Source: Authors' data analysis.

In addition to plot size, changes in the shape of plots from irregular to rectangular were observed using the parcel shape index[22] by Demetriou (2013). Table 4.2 shows that the number of irregular plots in 1993 was 9,370, accounting for 65.2% of all plots. During the land consolidation process, they were adjusted to rectangular shapes. The proportion of rectangular plots in 2006 increased to 72.9%. However, the proportion of irregularly shaped plots still accounted for nearly one-third of the total plots (2,072 plots) because of the socialistic principle of equal distribution, combined with the varied micro-topography in the field. To increase agricultural productivity, plot size and shape should be as optimum as possible to effectively use machinery. However, the results imply that agricultural productivity was sacrificed for the socialistic principle of equal distribution. By contrast, the average farm size per household was increased only by 16.4 m^2, from 2,071.2 m^2 to 2,087.6 m^2, for the same reason. Therefore, this impinges on the effectiveness of land consolidation programs.

Table 4.2. The changes from irregular to rectangular shape plot after land consolidation

	Before (1993)		**After (2006)**	
	(plot)	(%)	(plot)	(%)
The number of irregular shape plots	9,370	65.2	2,072	27.1
The number of rectangular shape plots	5,007	34.8	5,576	72.9
Total	14,377	100.0	7,648	100.0

Source: Authors' data analysis.

[22] The parcel shape index was developed through a generic shape analysis model, using the multi-attribute decision-making method. Adapting the results of Demetriou (2013), this case study classifies the plot shape based on the length of the sides, acute angles, reflex angles, boundary points, compactness, and regularity.

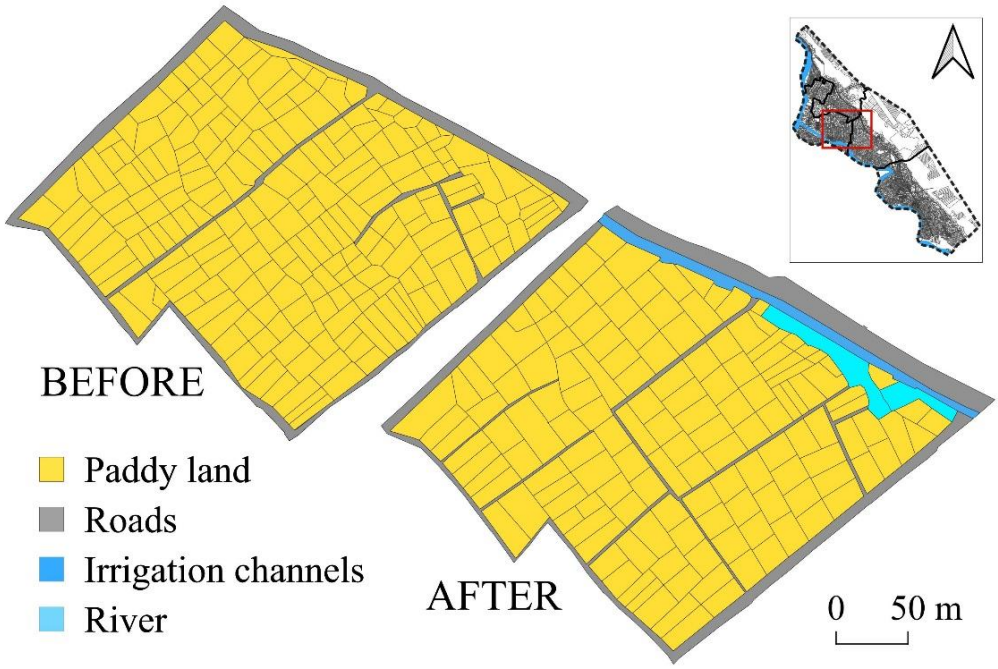

Figure 4.9. The expansion in size and shape of parcels before and after land consolidation
Source: Authors' data analysis.

4.4.2.3. Improvement in irrigation and field road systems

Table 4.3 and Figure 4.10 show that land consolidation improved the irrigation and field road systems. After implementing the land consolidation program, 12.3 km of irrigation channel and 15.6 km of field road were regenerated and/or upgraded. 2.9 km of the irrigation channel and 4.3 km of the field road were newly constructed. Consequently, the acreage of arable land connected to the irrigation channel increased from 239.9 ha to 358.9 ha. Furthermore, the proportion of plots directly connected to the road increased, accounting for 86.2% of the total plots in 2006. In addition, the program contributed to rearranging communal land into concentrated locations by swapping scattered communal plots with households. This has facilitated the management of the land for agricultural purposes.

Table 4.3. The status of irrigation, field road systems after land consolidation

	Before (1993)	**After (2006)**
Length of irrigation channel (km)	9.4	12.3
Length of field road (km)	11.3	15.6
Acreage of arable land connected to the irrigation channel (ha)	239.9	358.9
Number of plots directly connected to the road (plot)	10,352	6,593
Proportion of plots directly connected to the road (%)	72.0	86.2

Source: Authors' data analysis.

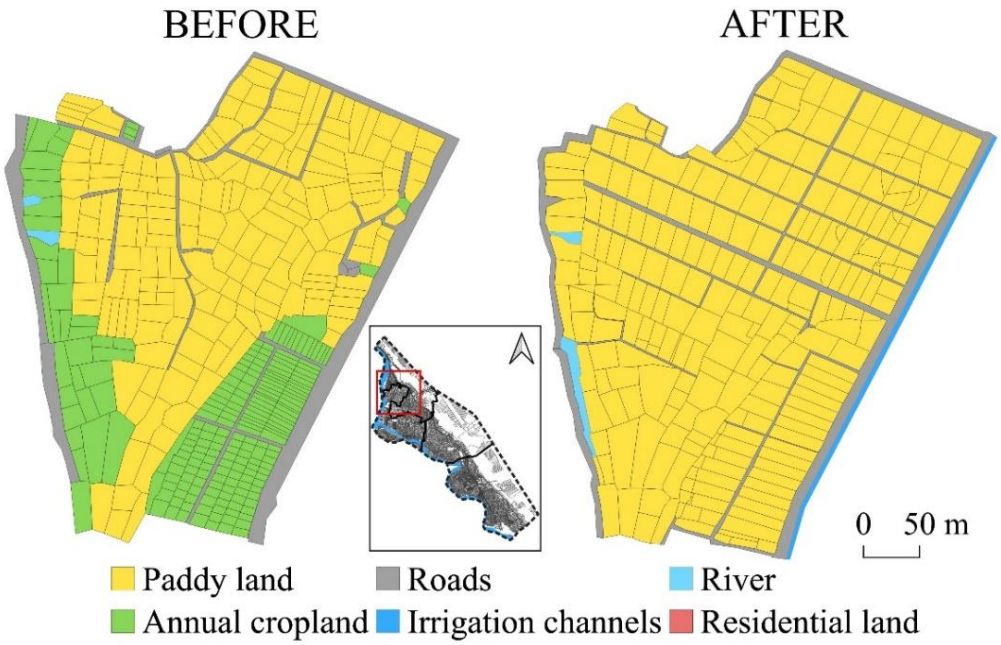

Figure 4.10. Improvement of irrigation and road systems after land consolidation

By the end of 2006, the Binh Dao commune had completed the reallocation of plots among households. Figure 4.10 highlights the changes in the arable landscape of the Binh Dao Commune through the land consolidation program. The shapes of the paddy plots during the land allocation in 1993 were irregular and small. Moreover, households had limited access to their plots during planting and harvesting, as well as limited use of agricultural machinery, because some areas lacked field roads and irrigation channels. The data analysis in Table 4.4 also shows

that the acreage of paddy fields per crop per year decreased significantly after land consolidation.

Table 4.4. The status of land use after land consolidation

	Before (1993)	**After (2006)**
Acreage of paddy field for 1 crop[a] per year (ha)	144.7	25.7
Number of paddy field plots for 1 crop per year (plot)	7,382	1,343
The average productivity of paddy fields (tons/ha)	3.3	4.0

[a] Harvest one time per year.
Source: Field survey in 2019.

Those paddy fields lay fallow in the next season due to lack of water to sustain crops throughout the season; it was very high prior to the land consolidation, nearly at 144.7 ha with 7,382 plots (accounting for 38.1% of the total agricultural area of the commune). However, by integrating land consolidation with the construction of field roads and irrigation channels, the majority of plot shapes were adjusted. New plots were improved in terms of access to field roads and irrigation channels, which in turn contributed to agricultural productivity. The acreage of paddy fields per crop per year decreased to only 25.7 ha, with 1,343 plots after land consolidation. The transformation from arable land for one crop per year to two crops per year is illustrated in Figures 4.4 and 4.7, respectively. Data analysis shows that most paddy and annual cropland for one crop located in the sites with a slight high elevation from 0.3m to 0.8m were upgraded to two crops. However, there was an insignificant change in the low elevation bad soil blocks near the riverbank and blocks near residential areas with high elevations up to 2.9m. After land reallocation, the average productivity of paddy fields increased from 3.3 tons/ha to 4.0 tons/ha.

4.5. Discussion

To achieve the goals of reducing land fragmentation and expanding economies of scale in agricultural restructuring, land consolidation is an inevitable trend. Nevertheless, in Vietnam's context, this process faces considerable challenges because of the current perspectives in relation to equity mechanisms of the socialist agricultural revolution. This led to incomplete results for this program.

Vietnam is a socialist country with the typical characteristic that everyone has equal access to the necessary material and social means. Thus, a top-down approach combined with equity mechanisms is an essential step in implementing a national land consolidation program. Based on the central government's Directive No. 10 in 1998 on regulations and procedures of the land consolidation program, land reallocation was applied to all communes nationwide with almost the same steps. On this basis, the Binh Dao commune implemented this program without the right to modify its procedures. Given this approach in terms of reducing land fragmentation, certain results in our case study suggest that this goal seems to have been met. By reallocating land, the average number of plots per household decreased by 46.8%, from 7.9 plots to 4.2 plots. At the same time, this program contributed to increasing the size of the plots from 244.9 m^2 to 376.4 m^2 on average. This also contributed to the adjustment of plot shape. The proportion of rectangular plots after adjusting increased to 72.9%. In addition, integrating land consolidation with the construction of field roads and irrigation channels contributed to improving rural infrastructure. As a result, this benefits agricultural sector restructuring. However, perspectives related to the equity mechanisms of the land reallocation process seem to impinge on the program's economics and effectiveness. The narrow,

gently sloping plains micro-topography features of a coastal plain commune in the central region also affected the land reallocation results. Although most arable lands are concentrated in the same area, they lie in sites with various elevation averages of 0.1m to 2.9m. Besides, many small arable plots are scattered across residential areas and near river dikes. This led to arable land with the same soil quality being scattered in many locations and far from each other, which in turn contributed to incomplete land consolidation.

Land reallocation can be considered as a new land reform (Cay 2010). Nevertheless, to ensure social equity, the experiences of land allocation through a classification system of agricultural land (especially the physical characteristics of paddy land) in 1993 were re-applied by the local government. The characteristics of land, such as soil quality, distance between households and paddy fields, and accessibility of water and roads, are key factors in determining a plot's value. Moreover, the land redistribution method depends on a random lottery. As a result, although this project reduced the number of plots per household and increased plot size, the proportion of plots over 1,000 m^2 was negligible, accounting for only 0.2% of the total plots. In addition, irregularly shaped plots accounted for nearly one-third of the total plots. Our study observed cases in which some households possessed up to 21 plots per household after being reallocated with a plot size of only 18.3 m^2. However, maintaining the principle of land redistribution per capita equivalent led to insignificant changes in average farm size per household. In our case study, the average farm size per household increased by only 16.4 m^2 from 2,071.2 m^2 to 2,087.6 m^2. These results imply that both intra-farm and inter-farm land fragmentation still exist, which contrasts with the initial expectations of the

land consolidation program of the central government. In other words, agriculture is still mainly based on smallholder farmers with relatively scarce land resources. It increases the pressure for agricultural restructuring in a complex and multifaceted competitive environment involving land, labor, and other resources from cities, industry, and services of the domestic market.

CHAPTER 5

CONTRACT FARMING THROUGH A COOPERATIVE TO BOOST AGRICULTURAL SECTOR RESTRUCTURING: EVIDENCE FROM A RURAL COMMUNE IN CENTRAL VIETNAM[23]

5.1. Land use and rural livelihood

Vietnam is moving toward industrialization and modernization through agricultural development and transition. By eliminating collectivization, the economic reform in Vietnam *(known as Doi Moi)*, which commenced in 1986, has enabled it to achieve economic growth and poverty alleviation (Liu 2019). However, this transformation has also increased the dependence of agricultural development on smallholder farmers (World Bank 2016). Although rice is the main crop in Vietnam, the production scale of households is only 0.2 ha on average, based on family labor forces (Markussen 2017). The labor force in the agricultural sector is abundant (see Figure 5.1), but its contribution to Vietnam's GDP remains disproportionately minimal. The transition speed of agricultural labor in other sectors from 2000 to 2013 was still slow. Moreover, agricultural products still emphasize the quantity of agricultural produce rather than its quality, and its added value remains low. In addition, small and scattered plots hinder the efficient usage of farming technologies. Despite Vietnam's central government's efforts to implement land consolidation since the early 2000s, agriculture is still mainly

[23] This chapter is based on the author's published academic paper:
Thi Thu Ha Duong, Doo-Chul Kim, 2022, Contract Farming Through a Cooperative to Boost Agricultural Sector Restructuring: Evidence from a Rural Commune in Central Vietnam, *Journal of the Economic Geographic Society of Korea*, Vol.25, No.1, pp 109-130. https://doi.org/10.23841/egsk.2022.25.1.109.

characterized by traditional and small-scale production. This promotes comprehensive strategies to restructure the economy, with the nucleus being agricultural restructuring. Hence, the central government approved the ASR program to increase added value and sustainable development in 2013. The nature of this program is the linkage between farmers and a newly established cooperative to create contiguous large-scale paddy fields. This program aimed to promote entrepreneurship in agriculture and diversify livelihoods in rural areas by pushing out rural populations from the agricultural sector. As of early 2016, 619,343 households had taken part in this program, with 169,851 hectares of arable land. Contract farming contributed to the formation of 2,262 continuous large-scale paddy fields in the whole country, mostly comprising paddy fields (74%) (GSO 2016).

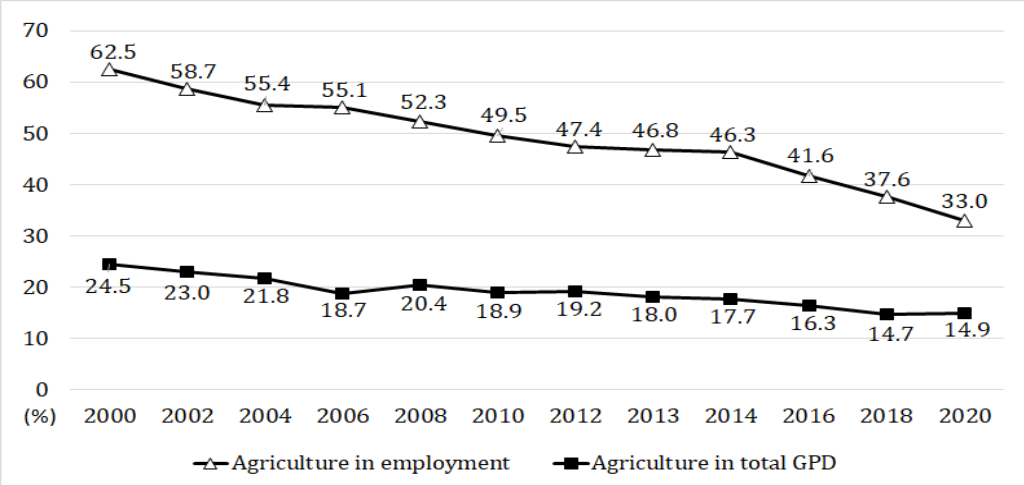

Figure 5.1. Vietnam's agricultural sector through GDP and labor from 2000 to 2020

(Source: GSO 2005, 2020)

Based on the findings of chapter 4, this chapter continues with the case study of Binh Dao commune, where local agriculture is currently undergoing a transition. Instead of being individual farmers on a small scale, the farmers at this research site have been oriented to contract farming with the new cooperative since early 2015. Besides describing the mechanism of contract farming, this chapter aims to reveal

the changing trends in the labor force of household members and behaviors in the means of livelihood of farmers after their participation in contract farming.

5.2. Methodology and case study

Our study was still conducted in the Binh Dao commune, especially focused on Tra Doa 1 and Tra Doa 2 villages. These villages were the first areas in the Binh Dao commune to implement five-year contract farming. In addition, contracts between households and the Binh Dao cooperative had expired (2015-2020). As presented at chapter 4, although the number of plots per household decreased after land reallocation, the acreage of arable land per household in the Binh Dao commune was still maintained at 0.2 ha. Farming in this area was mainly based on the farmers' families. The majority of on-farm laborers were parents. Besides taking up jobs in non-agricultural sectors, the younger generation still participated in agriculture in their spare time. Hence, the contract farming through the new cooperative was introduced in this area. The production situation of certain primary agricultural products in the Binh Dao Commune is presented in Table 5.1.

Table 5.1. The agricultural production in the Binh Dao commune

	1994		2006		2015		2018		2019	
	ha/year*	tons/ha	ha/year	tons/ha	ha/year	tons/ha	ha/year	tons/ha	ha/year	tons/ha
Paddy	736	3.3	580	4.0	602.5	6.0	597	5.8	551	5.7
Peanut	27	1.3	33	1.8	33.4	1.6	43	1.7	45	1.7
Sweet potato	165	22.2	82	9.6	15.9	8.8	13	7.8	13	8.0
Corn	-	-	-	-	-	-	8	5.6	8	5.6
Sesame	1	0.2	8	0.5	2.1	0.4	3	0.4	3	0.7
Cassava	-	-	-	-	-	-	3	16.7	1.5	19.3

Source: Thang Binh Statistical Office (2019)

* Total hectares of harvested paddy fields per year. A part of paddy fields in this commune is harvested twice a year

This study used qualitative analysis methods combined with GIS. Secondary and in-depth interview data were collected from farmers, the Binh Dao Cooperative, and the People's Committee of the Binh Dao commune. Our first field survey was conducted in June 2019 to investigate the general socio-economic status of the Binh Dao commune and to obtain an overview of the contract farming implementation mechanism through the Binh Dao cooperative. The second field survey was conducted in April 2021 to collect data on land use, labor force status, and farmers' livelihood behaviors during contract farming.

We interviewed representatives of 190 households randomly selected from 1,160 households in Tra Doa 1 and Tra Doa 2 villages. We divided the selected households into two groups: 95 contracted households and 95 non-contracted households. Of the 95 contracted households, 45 were involved in rice contract farming, and 50 in land lease contracts. Our survey mainly focused on the implementation process of rice contract farming and leasing out farmland between the Binh Dao cooperative and households, land use status and agricultural production activities, and the household labor force. In particular, interviews with household heads focused on their decisions about contract farming types and individual occupational choices before and after their participation in contract farming. Based on this data, the livelihoods of contracted and non-contracted households were classified and analyzed to reveal the local livelihood transition during the contract farming scheme. The sample included current household members at the time of the survey. In addition, to investigate the changes in land use and production activities, this research created a digital map of the cooperative's

production area with a scale of 1:2000, namely. A detailed flowchart of the data analysis is shown in Figure 5.2.

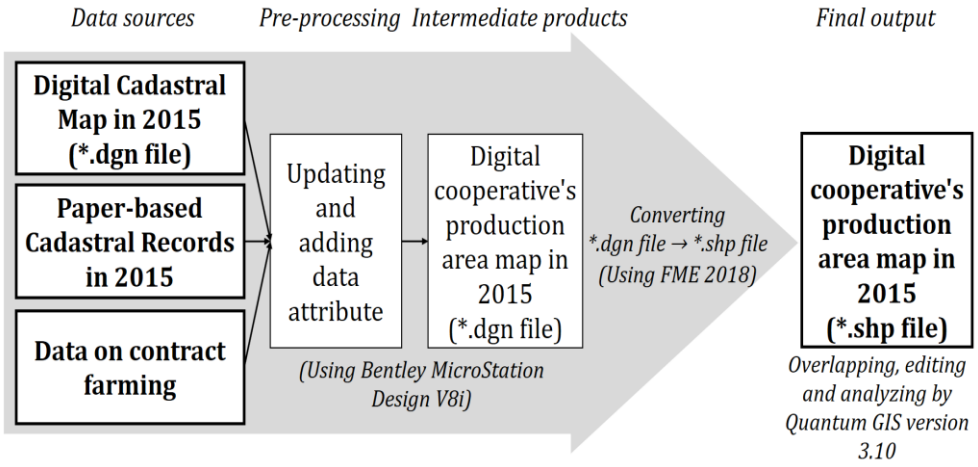

Figure 5.2. The process of data standardization

This map was created based on the cadastral map records of 2015, combined with reports on the contract farming from the cooperative and local government. In particular, the digital cadastral map in 2015 was updated using the Bentley MicroStation Design V8i software. Then, it was converted to shapefiles with the entire data attributes, such as the type of land use, name of the landowner, and type of contract with the cooperative, through the FME tool version 2018 Quantum GIS 3.10 software.

5.3. Contract farming through a new type of cooperative

5.3.1. Land use and livelihood of households before contract farming

Until 2014, farming practices in the Binh Dao commune had not changed significantly. Small-scale farming by family members had been a popular practice. Table 5.2 illustrates the size of farmland per household in the Binh Dao commune for the years 1993, 2006, and 2020. Due to the principle of equal land distribution per capita encapsulated in Vietnam's economic reform, farm size per household in

the Binh Dao commune mainly ranged from 1,000 to less than 3,000 m^2, with over 70%. As of 2020, the number of households with farmland over 3,000 m^2 accounted for only 15%. Given this production scale, paddy rice and other agricultural products in Binh Dao were mainly used for self-consumption. This surplus was sold to local intermediaries and/or local traditional markets.

Table 5.2. The size of farmland per household in Binh Dao commune in 1993, 2006, and 2020

	1993		2006		2020	
	household	%	household	%	household	%
Less than 1,000 m^2	250	13.7	234	12.9	255	13.7
1,000 to less than 2,000 m^2	729	40.0	733	40.3	767	41.1
2,000 to less than 3,000 m^2	562	30.9	575	31.6	568	30.5
3,000 to less than 4,000 m^2	212	11.6	213	11.7	212	11.4
Greater than 4,000 m^2	68	3.7	66	3.6	62	3.3
Total	**1,821**	**100**	**1,821**	**100**	**1,864**	**100**

Source: Field survey in 2021

In addition, the number of laborers who participated in farming was still high. The field survey results in Table 5.3 indicate the labor structure of our sample. In 2015, 65.2% of the labor force in our sample maintained farming activities. Besides flexibly adopting a wide range of jobs, such as building, small-scale trading, sun-drying fish, and other such activities to increase their income, farming still played an essential role in their livelihood. The proportion of household members engaged in non-agricultural jobs was 34.8%, but they were primarily in the younger generation. Under these subsistence characteristics of agricultural products in Binh Dao, contract farming through a cooperative was newly introduced to encourage

local farmers' entrepreneurship. In this program, paddy fields were concentrated through contract farming between farmers and a cooperative to form continuous, large-scale paddy fields. First, the cooperative contracted with agricultural enterprises to supply agricultural products (primarily rice). The cooperative then consolidated arable lands under its jurisdiction, usually within a village, to create contiguous large-scale lands. In this process, farmers were allowed to choose between rice contract farming or land lease contracts. This program was expected to transform a smallholder farmer into a participant in an entrepreneurial farming entity, namely the cooperative, with the vertical coordination of the value chain from farmers to cooperatives and agricultural product trading companies. Moreover, it also aimed to release the agricultural labor force to non-agricultural sectors, which could promote livelihood diversification.

Table 5.3. Occupation of household members in the sample

	2015		2021	
	Person	%	Person	%
Laborers who participated in farming	*445*	*65.2*	*334*	*48.0*
Laborers who only adopted farming	145	21.2	140	20.1
Laborers who mainly engaged in farming and extra activities in the remaining time*	152	22.3	87	12.5
Laborers who mainly engaged in non-farming activities** and extra farming in the remaining time	148	21.7	107	15.4
Laborers who participated in non-farming activities	*238*	*34.8*	*341*	*49.0*
Laborers who only adopted unstable non-farming activities***	96	14.1	163	23.4
Laborers who only adopted stable jobs before contract farming****	142	20.8	178	25.6
Retirement, death, housewife	*0*	*0*	*21*	*3.0*
Total	**683**	**100**	**696**	**100**

[*]Builder, workers engaged in sun-drying fish, painters, moto-taxi riders, etc.

[**]Wage laborers (restaurant and tourist services), small-scale traders, potters, builders, workers engaged in sun-drying fish, and salary workers (e.g., tailors, shoemakers, staff at tourist resorts and teachers).

[***]Wage laborers (restaurant and tourist services), small-scale traders, food vendors, or workers engaged in multiple activities at the same time.

[****]Full-time traders, shoemakers, tailors, staff at tourist resorts, teachers, policemen, office workers, drivers, etc.

Working household members over 15 years of age at the time did not include homemakers, students, unemployed persons, and retired members.

Source: Field survey in 2021

5.3.2. A new type of cooperative and the process of contract farming

The Binh Dao cooperative was established in 2014 to implement an agricultural restructuring program. In fact, the old-style cooperative has existed since 2006, but its function was limited to managing irrigation systems and electricity for farming. In 2014, under the new Cooperative Law (2012), it was transformed into a new type of cooperative but was still under the strong political influence of the local authority. After its transformation in 2014, by taking over the production assets of the former, the cooperative diversified production services to members and increased the number of members. In addition to irrigation services, it began to provide input and output services such as: (1) fertilizers, pesticides, herbicides, and seeds, (2) land preparation, (3) harvesting, and (4) marketing. To manage continuous large-scale paddy fields, the Binh Dao cooperative also invested in agricultural machinery such as combine harvesters, tractors, and transplanters.

The detailed process of contract farming through the new type of cooperative is presented in Figure 5.3. The cooperative acted as an intermediary between companies and households. However, the cooperative's activities were managed

and supported by the local authority. First, the local authority (at the district level) provided a part of the budget support for the cooperative's production to invest in agricultural machinery and upgrade field roads and irrigation channels. In parallel, the local authority connected with companies[24] to supply inputs and outputs and introduces these companies to work with the Binh Dao cooperative. Second, at the beginning of the growing season, the company negotiated and signed a contract to produce, sell, or buy with the Binh Dao cooperative. In addition to providing inputs and outputs, these companies provided technicians and technical training in production to the Binh Dao Cooperative. Finally, the Binh Dao cooperative organized production in large-scale paddy fields under the supervision of companies and local authorities. Theoretically, according to the new Cooperative Law in 2012, the new cooperative should have been one in which farmers invested, managed, and shared benefits among members. However, the reality was not always successful, and local authorities politically managed cooperative management boards in many cases. This is more obvious when a closer examination into the mechanism of contract farming through a new type of cooperative is conducted, as follows:

(i) The cooperative selects locations to form continuous large-scale paddy fields with the support of the local authority.

(ii) The cooperative submits its production plan to the local authority.

[24] Three companies participated in this program, including Southern Seed Joint Stock Company (2015-2017), Quang Nam National Seed Joint Stock Company (2018-2020), and Quang Binh National Seed Joint Stock Company (2021). These companies are national seed companies, whose branches are in the Quang Nam province.

(iii) Based on the approved plan, the cooperative prepares two types of contract farming with farmers: (a) land lease contracts and (b) rice contract farming. Both contracts include the fixed rent, predetermined rent, and fixed price of paddy for all paddy fields during the entire five-year contract period.

(iv) The cooperative organizes a meeting with all households with paddy fields in the designated production areas mentioned in (i). Then, a representative of each household is requested to choose either type of contract mentioned in (iii).

(v) A household that chose rice contract farming has to use the seeds and other inputs (i.e., fertilizer and pesticide) provided by the cooperative. They can manage their paddy fields. At the end of harvesting, they must sell all the products to the cooperative.

(vi) The cooperative provides services for the use of machinery for activities such as plowing, transplanting, and harvesting. Households should pay a fee to the cooperative according to the acreage of their paddy fields.

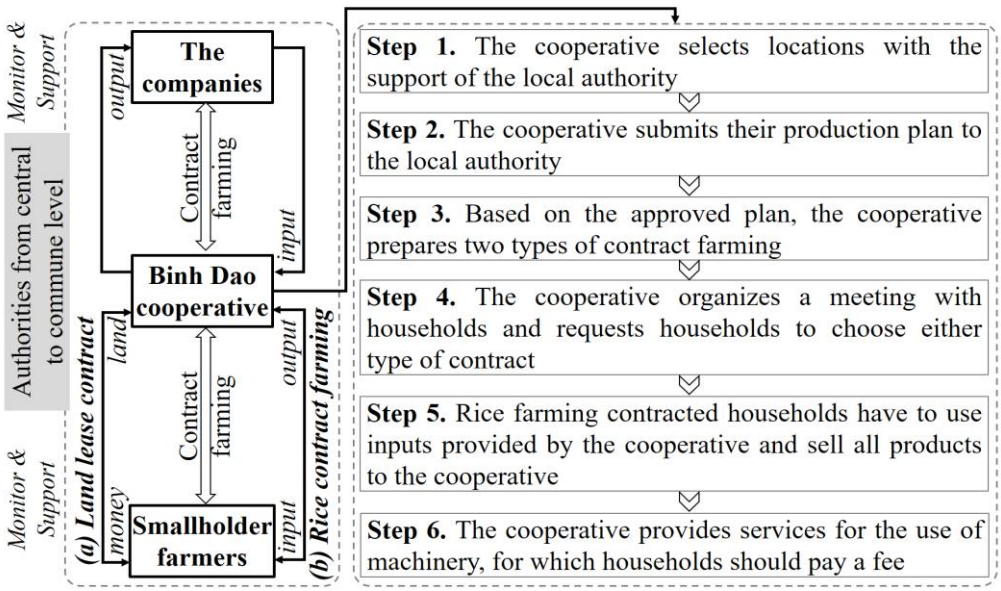

Figure 5.3. The process of contract farming through a new type of cooperative

Source: Field survey in 2019

The top-down approach, from the central government to local governments, was implemented in this process. The cooperative took responsibility for forming continuous large-scale paddy field land and organizing production. Households were only allowed to choose either type of contract prepared by the cooperative. If they chose the land lease contract, households could not continue to farm on land. Instead, they received a predetermined rent during the five-year period of the contract. In 2015, the Binh Dao cooperative paid 75 kg of dried paddy (equivalent to 600,000 VND or 26 USD[25]) per 500 m^2 per year at the end of the harvest season. This rent was relatively low compared with farmers' incomes when they cultivated paddy rice by themselves. In 2015, farmers' net profits from paddy rice cultivation fluctuated between 2,000,000-2,200,000 VND per 500 m^2 per year (roundly 87-96 USD). However, some farmers still accepted it because of their situation related to the acreage of allocated land and means of livelihood. If they chose rice contract farming, the cooperation allowed households to cultivate their paddy fields, including carrying out weeding, fertilizing, spraying pesticides, and drying of rice. However, they were required to follow the regulations imposed by the cooperative, such as changing from normal seeds to Filial 1 (F1) seeds i.e., hybrid seeds, and using the seasonal calendar, production process, and input services of the cooperative. The fixed price of paddy also guaranteed output from the Binh Dao cooperative during the five-year period. This fixed price was set at a price 1.2 times higher than the market price at the time of harvesting. In 2016, the Binh Dao cooperative paid 7,560 VND per kg of dried paddy (equivalent to 0.3 USD) at the end of the harvest season, while the average market price was 6,300 VND per kg.

[25] Exchange rate: 1 USD = 22,900 VND.

5.4. Forming continuous large-scale paddy fields and households' choice

5.4.1. Forming continuous large-scale paddy fields

Large-scale paddy fields were formed through top-down decision-making by the Binh Dao cooperative, combined with interference from the local government. However, due to the cooperative's approach, contract farming was implemented only in the designated production areas in the Binh Dao commune. Table 5.4 and Figure 5.4 show the acreage, number of plots, number of contracted households, and locations of designated production areas for large-scale paddy fields through contract farming. Data analysis shows that the designated production areas were extended year by year, scattered across seven locations in four villages in the Binh Dao commune. In 2015, the Binh Dao cooperative designated four paddy field locations for the concentration of nearly 30 ha from 411 households in Tra Doa 1 and Tra Doa 2 villages. In 2019, 35 ha of paddy fields were added. Then, the total acreage of consolidated lands became 65 ha at seven locations in all villages in Binh Dao. This accounted for nearly 20% of the total arable area of the commune. The average acreage of each large-scale paddy field was 9.3 ha, owned by nearly 110 households. Despite this small scale, its contribution may be in the form of the first step in changing farmers' production behavior through vertical coordination of the value chain mechanism.

Table 5.4. The acreage, number of plots, number of household in large-scale paddy fields by village and year

Location (village)	Year	Acreage (ha)	Number of plots (plot)	Number of households (household)
Tra Doa 1	2015	5.0	82	78
Tra Doa 2	2015	24.6	377	333
Phuoc Long	2019	8.6	104	89
Van Tien	2016-2019	26.8	345	281
Total		**65.0**	**908**	**781**

Source: Field survey in 2021

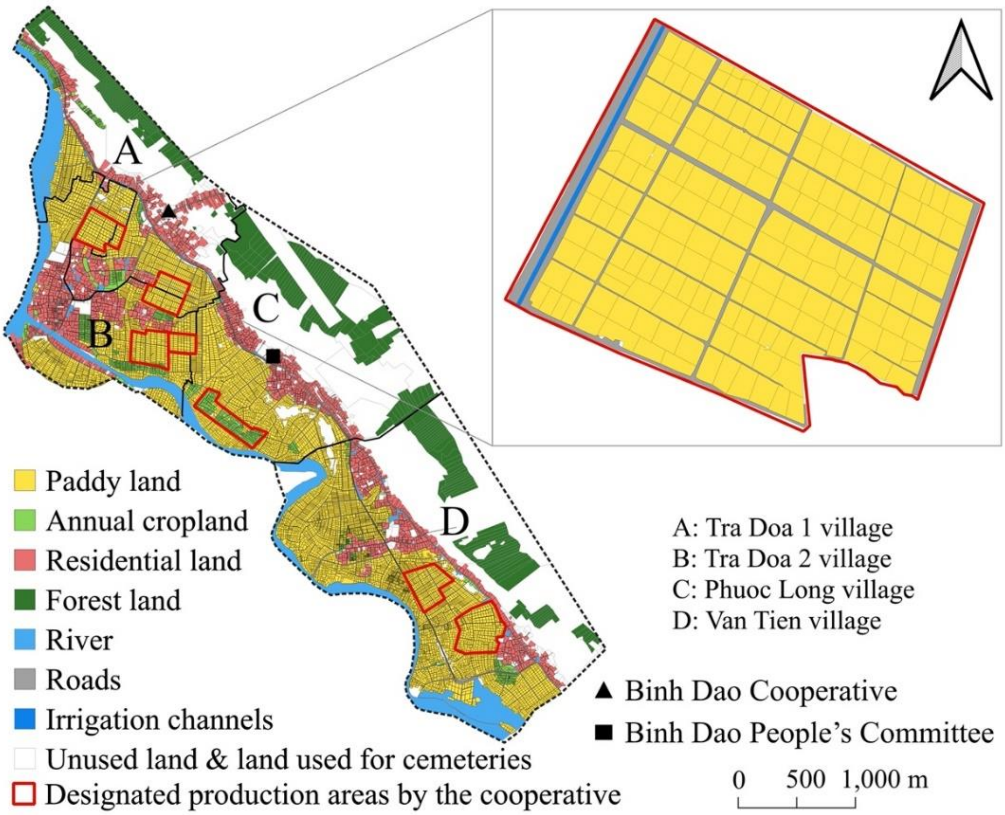

Figure 5.4. The map of cooperative's production area by the contract farming in Binh Dao commune until 2020

5.4.2. Households' choice

Table 5.5 illustrates the households' choices through the two types of contract farming with the Binh Dao cooperative. The results show that most households that

owned paddy fields in the designated production area (772/781 households, accounting for 98.8%) entrusted their land to the cooperative. In particular, 617 households (79.9%) with 54 ha chose rice contract farming. 115 households (20.1%) with 10.5 ha leased out farmland to the cooperative. The in-depth interviews with farmers in our sample in Table 5.6 reveal some factors that influenced households' choices.

Table 5.5. Households' choice in designated production areas

	Household		Acreage	
	Case	Percent	Hectare	Percent
Submitting land to the cooperative	*772*	*98.8*	*64.5*	*99.2*
Rice contract farming	617	79.9	54.0	83.7
Land lease contract	115	20.1	10.5	16.3
Refusing to submit land to the cooperative	*9*	*1.2*	*0.5*	*0.8*
Total	**781**	**100**	**65.0**	**100**

Source: Field survey in 2021

Regarding the rice contract farming households, 60.0% (27 households) claimed that the allocated farmland was relatively small i.e., only 0.2 ha per household on average, but nearly 40% (of primarily good soil quality) had belonged to designated production areas. Given the low-rent land, if households chose to lease out their farmland, their livelihood depended entirely on 60% of the remaining land. On the other hand, their livelihood meant relying on agriculture for a long time, but no program supported training or career changes after leasing out farmland. Thus, they chose rice contract farming to produce crops for their income. In addition, 26.7% (12 households) explained that they were of the view that the new production model combined with the support of machinery might have been able to help them

save time on off-farm activities. The final reason for this was that 13.3% (6 households) revealed that their children did not help with farm work. Thus, they chose production cooperation to take advantage of the input and output support from the cooperative.

Table 5.6. *Households' reasons to choose type of contracts*

	Case	Percent
Rice contract farming	*45*	*100*
Small acreage of allocated farmland and trying the new production model	27	60.0
Saving time for some off-farm activities	12	26.7
Got old and shortage labor	6	13.3
Land lease contract	*50*	*100*
Small acreage of contracted and saving time for some off-farm activities	24	48.0
Rent in other larger and continuous plots for convenient cultivating	4	8.0
Got old and shortage labor	22	44.0

Source: Field survey in 2021

In contrast, 48.0% (24 households) of the land lease contract group claimed that the contracted land acreage within large-scale field areas was relatively small (only 500 m^2 to 700 m^2). Hence, they decided to lease out land to save time for non-farm jobs and earn more income. 8% (four households) were found to have decided to lease the land out related to the land fragmentation situation. Although land consolidation was carried out in 2006, households in our sample still held over four plots on average, and they were scattered across different locations in paddy fields. Therefore, they chose to lease their land to the Binh Dao cooperative and rent in other larger and continuous plots for convenient cultivation. 44% (22 households,

consisting primarily of old farmers) had similar reasons as those of the rice contract farming group i.e., related to their age and labor force. They explained that they were old, and their children wanted to focus on non-farming jobs. Thus, they decided to lease out their land because they were not strong enough to grow crops on the current total farmland.

The compulsory nature of the approach taken by the cooperative was also revealed through households that refused to participate in this program. Remarkably, nine out of 781 households (1.2%), approximately 0.5 ha of land, refused to submit land to the cooperative. This may have led to the formation of mixed seeds in large-scale fields. Thus, the cooperative used the local authority's power to swap household plots with the marginal area (see the example in Figure 5.5). The marginal area still belonged to the designated production area. In addition, this land switch was a temporary change within the five-year period, with no change on the administrative side[26]. After five years, at the time of ending the lease contracts, switched landowners received their plots of land. Although the switched land plots (550 m^2 per plot on average) had relatively good soil quality, their locations were quite far from the owners' houses (about 2-4 km). Some difficulties in cultivation were recorded because they moved around among their plots (over five plots per household, on average). These changes in land use status influenced farmers' behavior in terms of land use and livelihood activities.

[26] There was no change in the land use right certificate among the switched land owners.

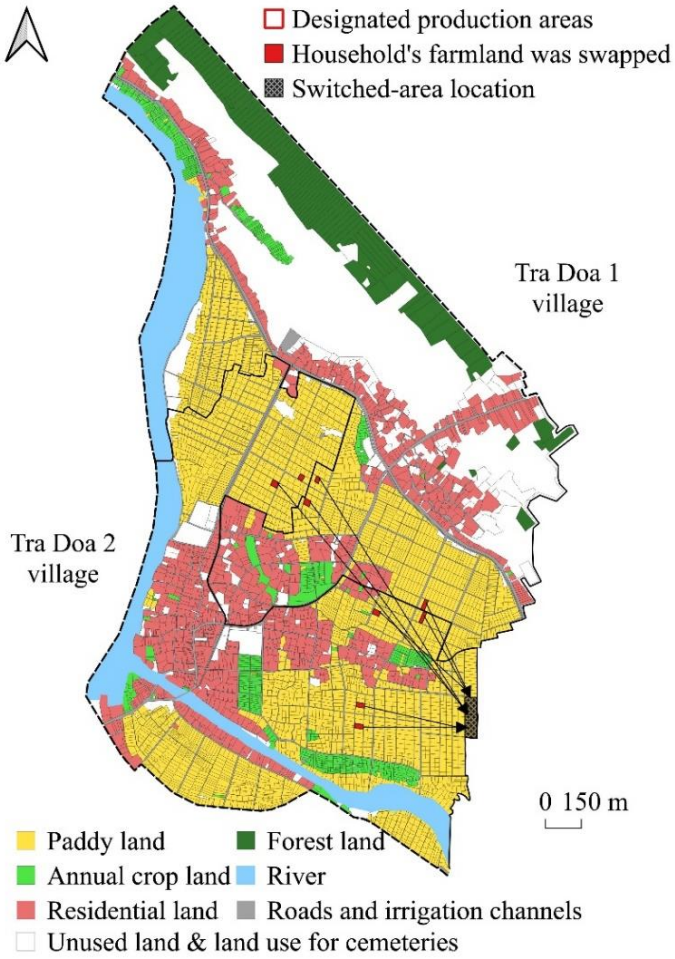

Figure 5.5. Switched-area locations by the cooperative

5.5. Land use and production activities during the period of contract farming

5.5.1. Changing in land use

Entering into contract farming with the cooperative led to changes in household land use. The average amount of cultivated, contracted, non-cultivated, and newly cultivated arable land per household and the number of plots per household in both household groups are shown in Table 5.7. The average cultivated land per contract household was approximately 2,000 m^2 (over 90% was paddy land). However, nearly 40% of the land area was submitted to the cooperatives. Most of this land is

ideal for farming because of its high quality, proximity to irrigation systems, transport routes, and lack of salinization. Regarding households in the rice contract farming group, their arable land acreage remained unchanged as they still cultivated crops on the contracted land area. By contrast, households in the land lease contract group had only 60% arable land for cultivation. With regard to the remaining free farming land (land in the non-contracted area), contract households complained that cultivation was not economically efficient due to lack of water, flooding, salinization, or complete dependence of some plots on manual cultivation and harvest. Thus, low crop productivity and capital losses occurred frequently. In addition, since 2011, two tourist resorts[27] have been constructed near the commune, which have attracted the rural labor force, resulting in the plots[28] of some households. These changes have forced contract farmers to search for other ways to adapt.

Rice contract farming households also tend to rent more land from others to compensate for their abandoned land. Thus, the total cultivated land on average of this household group increased by 1,082.2 m^2 in 2021 to 3,071.4 m^2. Meanwhile, in addition to some households renting land from others, households in the land lease contract choose to rent their land out to others or abandon some plots. As a result, the average total cultivated land of households in the land lease contract group decreased to 1,047.4 m^2 in 2021. These choices also affect their livelihoods (which will be discussed in the later part).

[27] The two biggest tourist resort projects in Thanh Binh district which were built from 2011 to date are Vinpearl Resort & Spa Hoi An and Casino. These projects had attracted many farmers as workers.
[28] These plots are mainly paddy fields. Cultivation in these plots is usually not economically efficient due to the lack of water, flooding, and salinization, or some areas are entirely based on manual cultivation and harvest.

Meanwhile, for non-contracted households, the total cultivated land increased slightly (by 131.7 m^2) between 2015 and 2021. Although some land plots were abandoned because of low productivity, they chose to rent land from others to compensate for their abandoned land and continue cultivation.

Table 5.7. Average amount of cultivated arable land in 2015 and 2021, contracted land, non-cultivated land, and newly cultivated land per household (m^2/household)

	Total cultivated land in 2015		Contracted land		Non-cultivated land	Newly cultivated land	Total cultivated land in 2021
	m^2	plot	m^2	plot	m^2	m^2	m^2
Rice contract farming	1,989.2	4.8	867.2	1.4	296.0	1,378.2	3,071.4
Land lease contract	2,068.1	4.5	762.2	1.4	420.8	162.4	1,047.4
Non-contracted household	1,815.3	4.3	-	-	248.6	380.3	1,947.0

Source: field survey in 2021

5.5.2. Changing in production activities

In addition to changes in land use, vertical coordination of the value chain through contract farming contributed to changes in the production activities of the contracted households. The data in Table 5.8 show that instead of planting a variety of seeds and facing risks to the market price, households in the large-scale field were guaranteed output and a purchase price 1.2 times higher than the market price. This encouraged an increase in the incomes of households that chose rice contract farming. Data from the in-depth interviews also revealed that the application of machines from cooperatives to farming activities contributed to saving farming time and labor for households. However, to ensure their income, they still cultivated

their remaining farmland, which was not always economically efficient because of flooding, salinization, and pest infestation (mostly rats). Moreover, they traded the products of their remaining paddy fields in local markets with local traders in an unplanned manner.

Table 5.8. Differences in production activities between non-contracted area and contracted area

Indicators	Non-contracted area (remaining farmland)	Contracted area (large-scale paddy field)
Input	- Households plant variety of seeds by demand - Free to use input services by demand	- Only plant F1 seeds by order of the cooperative and companies - The cooperative uses machinery for input services at the same time - Members of households manage their own paddy fields
Output	- Free to use output services by demand - Face risking output: Sell their product at local market and/or to local traders with the market price	- The cooperative uses machinery for harvesting at the same time - Guaranteed output: Sell all product to cooperative with fixed price: 1kg dried paddy (F1 seeds) = 1kg dried paddy (marker price) * 1.2
Yield	250-280kg/500m^2/crop	315-325kg/500m^2/crop

Source: Field survey in 2021

5.6. Local livelihood after joining contract farming

As presented in Tables 5.2 and 5.3, given the small amount of allocated arable land, households in the Binh Dao commune flexibly adopted some non-farm jobs among household members to increase their income besides farming, even before 2015. During this time, farm work was mainly undertaken and maintained by the parents' generation and occasionally supported by their children. This tendency

towards livelihood diversification continued after 2015. The young generation and laborers, whose income was mainly from non-farming activities, found it easy to stop farming and engage all their time in non-farming jobs. However, the farmers in our case study tended to intensify farming for their livelihoods. This is more evident when observing the livelihoods of contract households before and after they joined contract farming.

Table 5.9. Changes in livelihood of households between 2015 and 2021

		2015		2021	
		Case	%	Case	%
Contract households		*95*	*100*	*95*	*100*
Total	Only farming	14	14.7	6	6.3
	Mainly farming and extra activities	41	43.2	37	38.9
	Mainly non-farming activities and extra farming	39	41.1	42	44.2
	Only non-farm activities	1	1.1	10	10.5
Rice contract farming	Only farming	9	9.5	4	4.2
	Mainly farming and extra activities	22	23.2	25	26.3
	Mainly non-farming activities and extra farming	14	14.7	16	16.8
	Only non-farm activities	0	0	0	0
Land lease contract	Only farming	5	5.3	2	2.1
	Mainly farming and extra activities	19	20.0	12	12.6
	Mainly non-farming activities and extra farming	25	26.3	26	27.4
	Only non-farm activities	1	1.1	10	10.5
Non-contract households		*95*	*100*	*95*	*100*
	Only farming	13	13.7	9	9.5
	Mainly farming and extra activities	47	49.5	49	51.6
	Mainly non-farming activities and extra farming	35	36.8	37	38.9
	Only non-farm activities	0	0	0	0

Source: Field survey in 2021

The data analysis in Table 5.9 shows that, except for one non-farming household before[29], the number of households that stopped farming and switched to non-farming activities rose by nine after 2015. It is also notable that they were households that chose the land lease contract model, and household members in this group diversified their livelihoods before 2015. Before leasing farmland to the Binh Dao cooperative, they leased some paddy field plots to others. In this group, three cases were found because of loss of workability and retirement. Meanwhile, in the six remaining cases, the income sources of these households did not come from agriculture but mainly from non-farm jobs. In other words, households with a complete transition to non-farming seemed to have previously adopted this trend, and contract farming was not the crucial reason for their choices.

In addition to flexibly adopting a wide range of non-farming activities to increase income, farming still plays an essential role in the livelihoods of both contract household groups. Households that combined non-farming activities with farming and maintained farming, besides extra activities, still accounted for a significant portion i.e., 83.1%, 79 out of 95 households). Of these, 42 households (44.2% of the contracted households, which was an increase of 3.1% in 2021 compared with 2015) chose to diversify their livelihoods among household members. 37 households (38.9% of the contracted households, which was a decrease of 4.3% in 2021 compared with 2015) still maintained farming in addition to some extra activities in spare time, such as mason work at construction sites, sun-drying of fish, and small-scale trading. These changes were observed in both

[29] This case refers to a non-farming household prior to 2015. Before leasing land to the Binh Dao cooperative, they leased all their farmland to others for a long time. Their income did not come from agriculture, and they had stable jobs among households' members.

contracted household groups. Notably, livelihood transition is rooted mainly in household members whose primary income is not farming. They were mainly young household members (average age, 44 years). In-depth interviews with contracted households revealed that the profit from some paddy fields was sufficient to meet the family's food and animal raising needs. Thus, before 2015, they were engaged in non-farming activities. After 2015, farming became easier because of the support of the agricultural machinery. Hence, they left farming to their household members (mostly the parents' generation or female laborers) or leased out paddy fields to focus on non-farming activities to earn more income. However, they only engaged in unstable, non-farming activities. Most male laborers were house painters and mason workers at the construction sites. Female laborers' activities include sun-drying fish, small-scale trading, and serving local eateries. Although this work was wage labor, earnings of approximately 100,000 VND per day (equivalent to 4.4 USD) for trading, 80,000 VND per day (equivalent to 3.5 USD) for sun-drying fish, and 300,000 VND to 400,000 VND per day (equivalent to 13.1 to 17.5 USD) for mason workers could still help them pay their bills. However, after the COVID-19 pandemic, a returning trend toward farm work was observed in both types of contracted households[30]. The farm work of this household group was still undertaken and maintained by the older farmers (average age of 67 years). After 2015, changes in land use coupled with low crop productivity in some paddy plots forced them to adapt. They only cultivated contracted land and high-quality paddy fields. Simultaneously, they received paddy fields from their children,

[30] In-depth interviews with farmers and local officials demonstrate that until the end of 2020, there were over 70% of people in the Binh Dao commune who lost jobs in construction sites after the COVID-19 pandemic.

who had stopped farming or rented plots from others, to compensate for their abandoned land. As a result, 22 cases, including 14 cases of rice contract farming and eight cases of land lease contracting, chose to rent land from others to cultivate and increase their income.

The trend of intensifying farming for their livelihoods was also observed in the household group that adopted only farming i.e., in six cases (6.3% of contract households). They were farmers with an average age of 55 years, and included four rice contract farming households and two land lease contract households. Of these, two rented between 10,000 m^2 and 30,000 m^2 to plant F1 seeds and subsequently sold them to the Binh Dao cooperative. Four cases rented between 2,500 m^2 and 5,000 m^2 to plant normal rice seeds and sell them to local traders.

These responses were also observed in the non-contracted household group. 26 non-contracted households (27.4%) rented in paddy fields from neighbors to compensate for abandoned land and increase their income.

These results imply that the contract farming scheme did not achieve the initial goal of restructuring the rural labor force toward nonagricultural sectors. Farmers in the Binh Dao commune tended to increase their cultivated land during the agricultural restructuring program rather than switching their labor forces to non-agricultural sectors. Although household members had increased opportunities to join non-farming jobs, most non-farming jobs and extra activities were unstable and insecure. Thus, the lack of stable non-farming job opportunities in rural Vietnam raises challenges for the efficiency of agricultural restructuring programs.

5.7. Remarks

Vietnamese agriculture has long been characterized by smallholder farmers with relatively scarce land resources. Hence, restructuring a modernized product value chain through vertical integration and contract farming is necessary for agriculture because it contributes to rural transformation. These findings indicate that contract farming contributed to the formation of large-scale paddy fields. The vertical coordination of the value chain from smallholder farmers to cooperative and agricultural product trading companies contributes to protecting farmers from market risks. In addition, the use of machines through cooperative farming activities saves farming time for households. These results imply that the contract farming scheme achieved the goals of using land efficiency and increasing productivity. However, the aim of altering the labor structure by pushing farmers out of agriculture through contract farming schemes does not seem to have been met. Farmers kept their land by choosing rice contract farming, rather than leasing out their farmland to the cooperative. Moreover, they intensified their farming practices by renting more land. Although livelihood transition was observed in some cases, it was mainly rooted in young household members whose primary income sources were not farming. Given the insecure and unstable jobs, returning to farm work due to job loss was also recorded in our case study. In other words, agriculture is a form of livelihood insurance. As a result, farmers in the Binh Dao commune are still smallholder farmers who depend on the family labor force.

CHAPTER 6

LAND ALLOCATION AND REALLOCATION IN LAND CONSOLIDATION: A PERSPECTIVE FROM THE SMALLHOLDER NEGOTIATING POWER

6.1. The potential basis for smallholder negotiating power through social relations

Families, clans, and villages are the basic social structure of rural areas. Given the initial small residential clusters, the relationship between families, clans, and villages has gradually consolidated and developed into large communities with strong social relations. Based on these social relations, the state could implement the distribution of control over farming and other resources at the local level (De Haan 2005). In exchange, smallholders could negotiate with local governments to get more benefits for their community (Rutten 2017, Semedi 2014).

Vietnam is an agrarian country, with 63.2% of the population living in rural areas (GSO 2020). Hence, the strategies related to the social economy in recent years usually emphasize rural development. Before the 1980s, the Vietnamese social structure (families, clans, villages, communes) had been strongly influenced by the war and economic reform policies. Notably, collectivization based on the low/high-rank agricultural cooperatives governed rural economy and social relations for a long time. Thus, many rural areas faced an economic, cultural, and social crisis (Hoang 2015, Ngo 2020). The rural areas in Vietnam have gradually transformed after the Renovation in 1986. One of the outstanding points contributing to these changes was land allocation and recognized household economy unit. On that basis, social relations and resources have gradually been re-

established. It also motivated the reborn of rural areas. As a socialist country, Vietnam's policies were mainly conducted through top-down decision-making. However, in some cases, households were allowed to participate in specific steps to ensure equality and equity for all people. Instead of describing the mechanism and detailed effects of land allocation and reallocation in chapter 4, this chapter reveals the role of smallholders during the land allocation program through a case study in the Cau Nhi village. Moreover, how social relations can become the potential basis for smallholder negotiating power under changes in institutional policies was considered.

6.2. Framework for smallholder negotiating power in land allocation and reallocation process

Figure 6.1 illustrates a framework for smallholder negotiating power in the land allocation and reallocation process in our case study. Following the land reform of the Renovation policy in the late 1980s, arable land was allocated to entire people based on the principle of equal land distribution per capita. At the same time, to ensure equality, the arable land was allocated randomly by lottery. Though, given the traditional rural community with a cluster of residential areas within the same clan for a long time, smallholders in the Cau Nhi village have negotiated with the local government for land use. As a result, they still follow the land allocation process, especially the principle of equality distribution but the same clans within the same hamlet tend to receive arable land at the same location.

The economic growth combined with urbanization and industrialization encouraged the rural economy to transform (Liu 2019, World Bank 2016). In that context, land reallocation in land consolidation was conducted to tackle land

fragmentation and a small production scale as a new strategy to develop farming and rural area. In addition to following the land reallocation process, smallholders within the same hamlet and households among the clan continue to negotiate with the local government to receive arable land at the same location and close to each other.

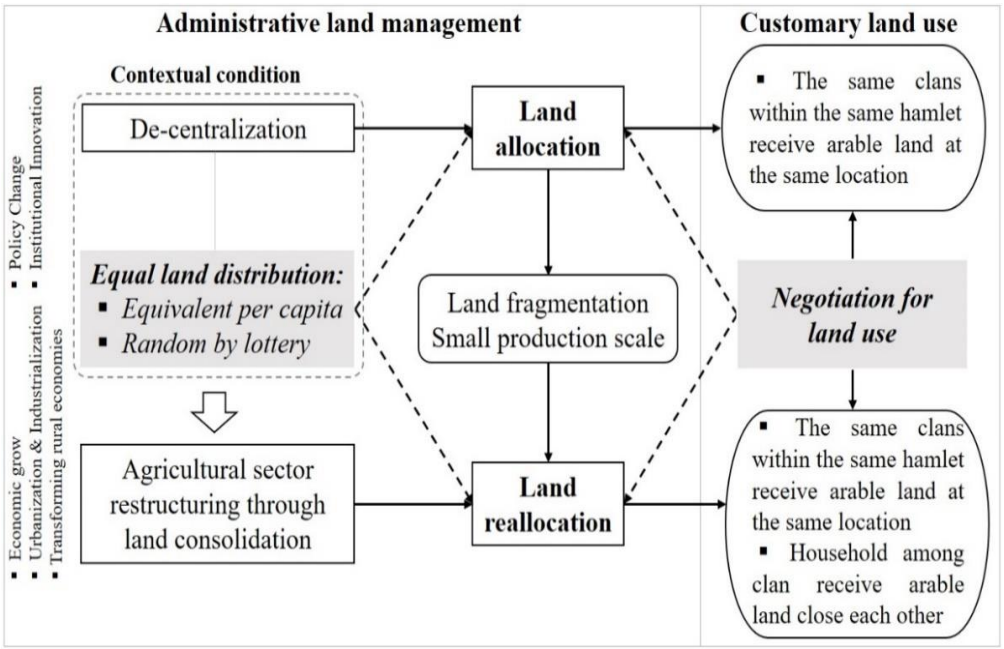

Figure 6.1. The framework for smallholder negotiating power in land allocation and reallocation process

6.3. Methodology

The research adopts a case study approach, using GIS combined with secondary data and in-depth interview with the local officers and the key persons of community. The research takes place in a farming community. Cau Nhi village of Hai Phong commune was selected because of its traditional style of central region Vietnam with long history and unique culturally valuable. We started by investigating the role of smallholders during land allocation and reallocation implementation process. Then, the digital maps of land allocation and land

reallocation were created with a scale of 1:2000 to analyze the changes in the distribution of arable land by clans and hamlets. At the same time, the changes in the spatial structure of farmland and rural infrastructure are also described.

To do that, the field survey to collect secondary data was conducted in August and September of 2019. In addition to the reports on the implementation process in both land allocation in 1993 and reallocation in 2006, the cadastral map records were collected from the local government at the commune level. These databases include the original land allocation paper map in 1993, the digital cadastral map in 2006, and paper data attributes in 1993 and 2006, such as the name of land users, clan, address, the type of land use, and so on. On the basis of these databases, the original land allocation paper map in 1993 was digitized and was updated with full data attributes through the Bentley MicroStation Design V8i software. In parallel, the digital cadastral map in 2006 was also updated with full data attributes on land reallocation. For comparison, both digital maps were converted to the shapefiles with the full data attributes using the FME tool version 2018 and Quantum GIS 3.10 software.

6.4. History of the study village

Cau Nhi village of Hai Phong commune is a small village surrounded by two rivers, the O Lau and O Giang rivers. This village has the boundary between Quang Tri and Thua Thien Hue province (Figure 6.2). The acreage of agriculture production land was 306.0 ha, accounting for 79.9% of the total natural area (mostly paddy land) (Hai Phong Commune People Committee 2020). The population of Cau Nhi was 3,180, with 646 households as of 2020 (Hai Phong Commune People

Committee 2020). The Cau Nhi village has 8 hamlets: Dong, Quy, Chua, Yen, Pho, Cang, Hoa and Cang[31].

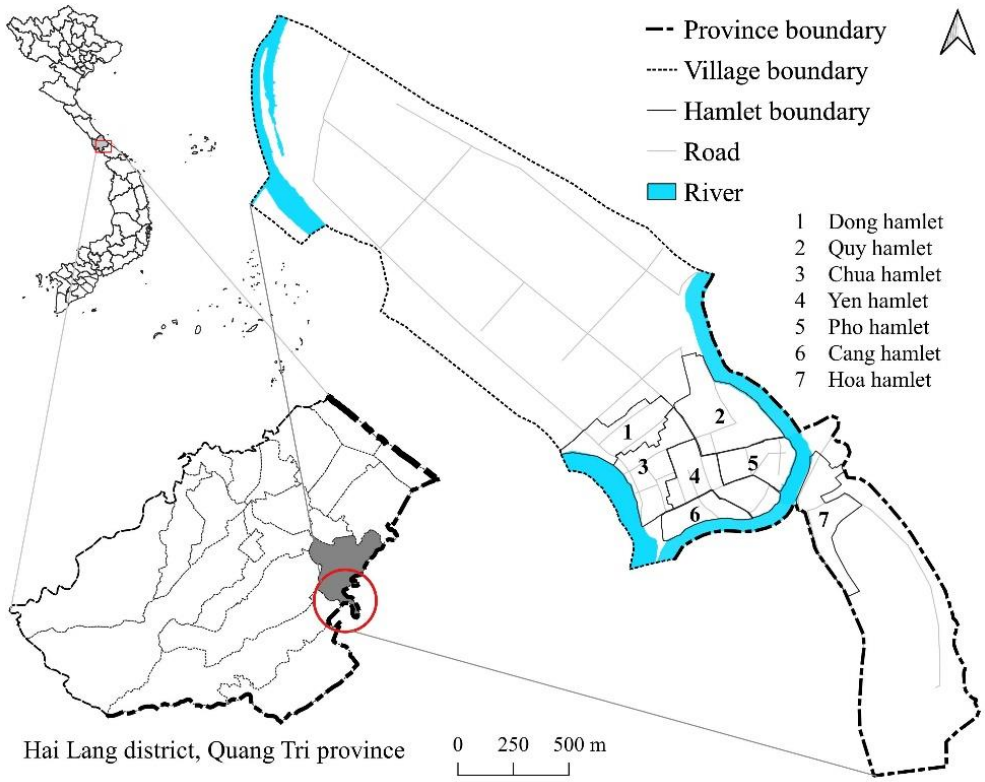

Figure 6.2. The study site, Cau Nhi village, Hai Phong commune

Cau Nhi is well known as one of the traditional cultural villages in the central region with a long history. More than 600 years ago, in 1406[32], King Tran Anh Tong married his younger sister[33] off to King of Champa to get two provinces of Chau O (the southern areas of Quang Tri province) and Chau Ly (Thua Thien Hue province) as a wedding gift. Then, King Tran Anh Tong encouraged people to

[31] Cang hamlet still belongs to Hai Phong commune, but it lies far 5km away from 7 hamlets. There are only 15 households in Cang hamlet with a complicated history and some differences in land use compared with remain 7 hamlets (Hai Phong Commune People Committee, 2020). Thus, the data analysis of this chapter only focuses on 7 hamlets.
[32] In the late Tran Dynasty and early Le Dynasty.
[33] Princess Huyen Tran is one of the most famous princesses in Vietnamese history. The political marriage between Princess Huyen Tran and King Jaya Sinhavarman IV of Champa (Chiem Thanh) contributed to expanding Vietnam's boundaries to the south. At the same time, it built up close connections between the two feudal countries after a long time of wars (Wheeler, 2012).

migrate to these new areas to live. From 1407 to 1427, Mr. Bui Tranh *(known as the head of the Bui clan)* called 21 people from eleven clans[34] to come together to this new area and named it Cau Lam village. During a long time living together, they had expanded the village's boundary to the west-south of the O Lau river and changed the village's name to Cau Nhi[35].

Cau Nhi village has features of the traditional rural community with a cluster of residential areas within the same clan. Notably, their clan culture and customs have created the village's uniqueness. This village has 26 clans. These clans were divided into major and minor clan groups, corresponding to their role in establishing the village. In particular, the major clan group included 12 clans *(called Chinh Toc in Vietnamese),* accounting for 98.6% of people in the Cau Nhi village (Hai Phong Commune People Committee 2020). These original clans built the village convention[36] *(called Huong Uoc in Vietnamese)* to form and develop the village. This group was divided into two sub-groups, the "Khai khan" group[37] (including four clans: the Bui clan, Hoang clan, Nguyen clan and Pham clan), and the "Khai hoang" group[38] (including eight clans: the Tran clan, Le clan, Dao clan, Do clan, Truong clan, Phan clan, Dang clan, and De clan[39]). Figure 6.3 illustrates the

[34] Hoang clan, Nguyen clan, Pham clan, Tran clan, Le clan, Dao clan, Do clan, Truong clan, Phan clan, and Dang clan, De clan.
[35] Historically, King Tran Anh Tong recognized the village's name and location. At the same time, these twelve clans were also recognized as people who had the primary role in establishing the Cau Nhi village.
[36] The village convention still exists and was approved by the People Committee of the Hai Lang district in 2000. It includes 30 points, focusing on production and trade in the village, worshiping ceremonies and ancestral house construction, environment protection, and the village's budget.
[37] It means these clans are the first members who told King Tran Anh Tong about the plan to live in the new area. After receiving the approval of the King, they came to the Cau Nhi village and took responsibility for organizing the ceremonies to establish the village.
[38] It means these clans came to the Cau Nhi village later.
[39] In this sub-clan group, through the ups and downs of history, people of four clans as *Truong clan, Phan clan, Dang clan, De clan* have passed away without successors. Until now, people in the Cau

distribution of clans by hamlet in the Cau Nhi village. Most people living in the Cau Nhi village belong to the "Khai Khan" group, especially the Bui clan account for more than a quarter with 28.3% of total population. Significantly, households within the same clan tend to live within the same hamlet. The Bui clan cluster mainly lives in Hoa hamlet, accounting for 63.3% of the total hamlet's people. 46.5% of people at Quy hamlet and 33.3% at Pho hamlet are Hoang clan. People of the Nguyen clan distribute in Cang (31.0%) and Chua hamlet (21.8%). Most Pham clans live in Chua hamlet (35.9%) and Yen hamlet (28.2%). Nearly half of the people living at the Dong hamlet are the Le clan (48.6%), and most people of the Do clan live at the Hoa hamlet.

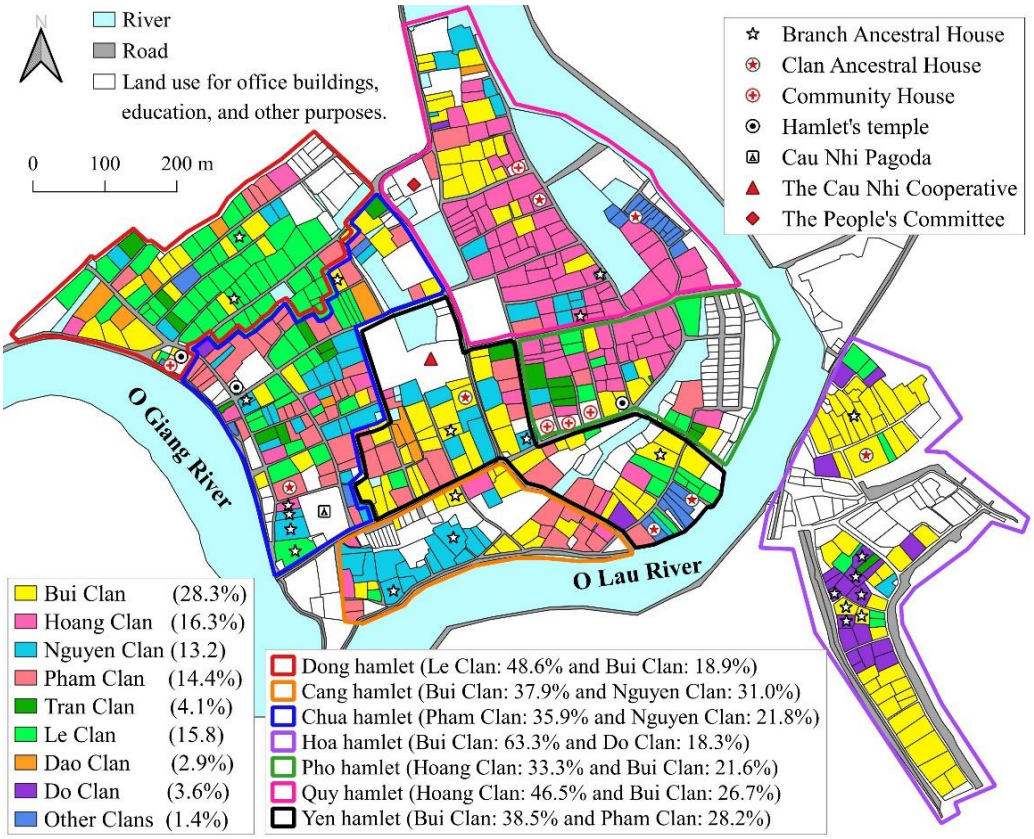

Figure 6.3. The distribution of clans by hamlet in the Cau Nhi village
Source: field survey in 2019

Nhi village still hold the annual worshiping ceremony at Clan Ancestral House to remember their contributions to the village.

The minor clan group included 14 clans such as the Ly clan, Ho clan, Duong clan, Lai clan… *(called Phu Toc in Vietnamese)*. They mainly live in Quy and Yen hamlets, and only accounting for 1.4% of people in the Cau Nhi village (Hai Phong Commune People Committee 2020).

Cau Nhi village has the Cau Nhi pagoda with ancient artistic architecture. This pagoda had recognized as a National Historical Relic of Vietnam in 2001. Besides, this village has an ancestral house, 18 ancestral clan houses, and temples to worship the people who play the main role in establishing the village. Through the ups and downs of history, this village still kept its community activities, such as annual ceremonies and festivals[40].

6.5. Smallholder's role during land allocation in 1993

6.5.1. Social structure in the Cau Nhi village

As mentioned in 6.4, the clan culture and customs contributed to building a community with strong social relations in the Cau Nhi village. Thus, besides following the state's imposed social structure, households kept their traditional structure.

Figure 6.4 illustrates the social system by administrative management and customary in the Cau Nhi village. On the administrative management side, like in

[40] Three traditional worshiping ceremonies were organized at Cau Nhi village every year (lunar calendar) to remember the contributions of people who played the leading role in establishing the village:
(i) The worshiping ceremony on July 27th to remember the contributions of Mr. Bui Tranh and 12 clans *(called Le Cung Dong Toc in Vietnamese)*;
(ii) The worshiping ceremony on August 9th to remember four clans who passed away *(called Le Cung Tu Toc in Vietnamese)*;
(iii) The ceremony on August 10th to remember all villagers in the Cau Nhi village who passed away *(called Le Cung Am Hon in Vietnamese)*.

other communes in Vietnam, households in the Cau Nhi village were organized into three levels (from commune to village to hamlet). They must follow all regulations and policies of state under the management of local government (at commune level). In parallel, households being forced to follow the village convention approved by the *Hoi Dong Toc Truong*[41] and *Hoi Chu Lang*[42]. Besides, clan members are responsible for following their own clan's regulations under the management of the head of clan. This social relation, combined with the characteristic of the same clan living within the same area (as described in Section 6.4 and Figure 6.3 above), also resulted in farming and land policy implementation.

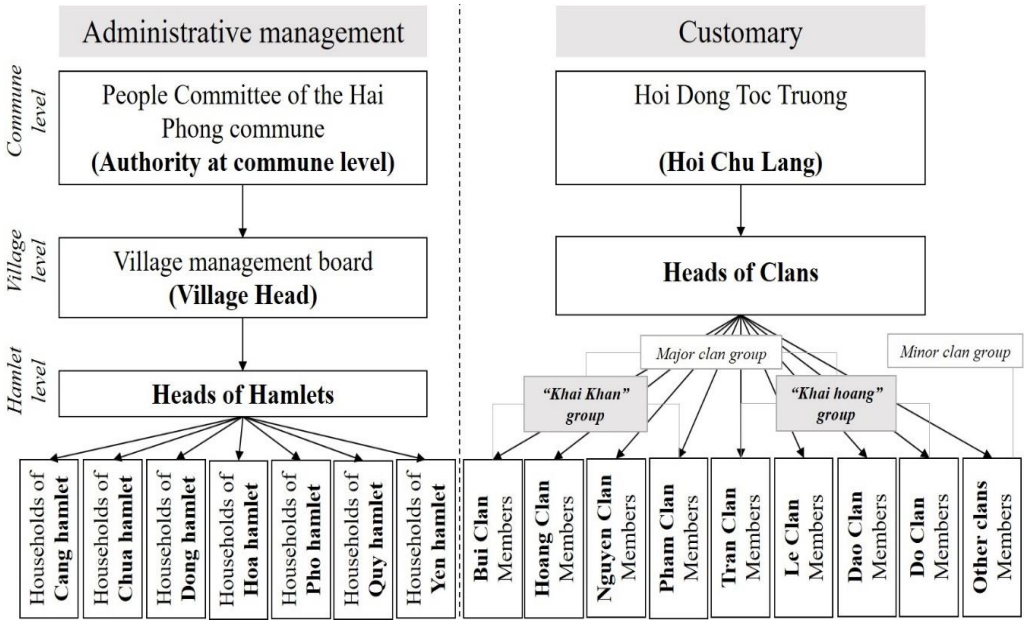

Figure 6.4. Social structure by administrative management and customary in the Cau Nhi village
Source: field survey in 2019

[41] *Hoi Dong Toc Truong* is the management board for all clans in the Cau Nhi village. Members of *Hoi Dong Toc Truong* are the heads of clans.
[42] The head of the *Hoi Dong Toc Truong* is called *Hoi Chu Lang*. As a rule, only 1 of 8 people in the major clan group can be the *Hoi Chu Lang*.

6.5.2. Land allocation in 1993 and negotiation efforts of smallholders

On the basis of the land reform policies and Decree 64/CP on procedures for land allocation of central government, land allocation was conducted in the Cau Nhi village in 1993. Similar to the Binh Dao case (as presented in Chapter 4), land allocation in the Cau Nhi still followed the mechanism of equal land distribution per capita. However, instead only allocating land at village level, land allocation in the Cau Nhi village had the participation of the hamlets and production teams[43]. The procedures followed for land allocation in the Cau Nhi are as follows (further illustrated in Figure 6.5):

(i) The authority (commune) defines the arable land to be allocated.

(ii) The authority formed the local committee to conduct a land survey on the acreage, types of land use, and location.

(iii) Five percent of the total arable land was excluded for future purposes, such as population growth, as communal land.

(iv) The local committee classified the quality of arable land based on five factors: soil fertility, location, topography, microclimatic conditions, and irrigation.

[43] The Cau Nhi cooperative managed the production teams. There were 8 production teams in the Cau Nhi village. However, the members of production teams were the members of hamlets:
- Production team 1 included all members of Hoa Hamlet;
- Production team 2 included all members of Quy Hamlet;
- Production team 3 included most of the members of Pho Hamlet;
- Production team 4 included most of the members of Cang Hamlet;
- Production team 5 included most of the members of Yen Hamlet;
- Production teams 6 and 7 included all of the members of Chua Hamlet;
- Production team 8 included all of the members of Dong Hamlet.

(v) Based on the above classification, the authority divided arable land into three blocks within a village territory, corresponding with good soil quality blocks, bad soil quality blocks, and medium soil quality blocks.

(vi) The local committee creates a handwritten map for each block.

(vii) The total acreage of allocated land per household depends on the number of household members (per capita equivalent, approximately 1000 m^2/person). Based on the acreage of allocated land per household and arable land status in fields, the local committee determined the acreage of good, poor, and medium per household (about one third for each soil quality type).

(viii) The local committee organized the meeting with the heads of production teams for land allocation. Then, a representative of each team was requested to draw a lottery for each block (good, bad, and medium).

(ix) The local committee organized the meetings for land allocation at the production team level, and a representative of each household was requested to draw a lottery for each block. The representative of each household within same team was requested to draw lotteries individually from each box until the acreage of allocated land for each soil quality type per household was reached. Households within hamlets and clans also took advantage of this step to bargain with the local committee to receive land close to each other.

(x) The authority granted land use rights certificates to households based on the results of land allocation.

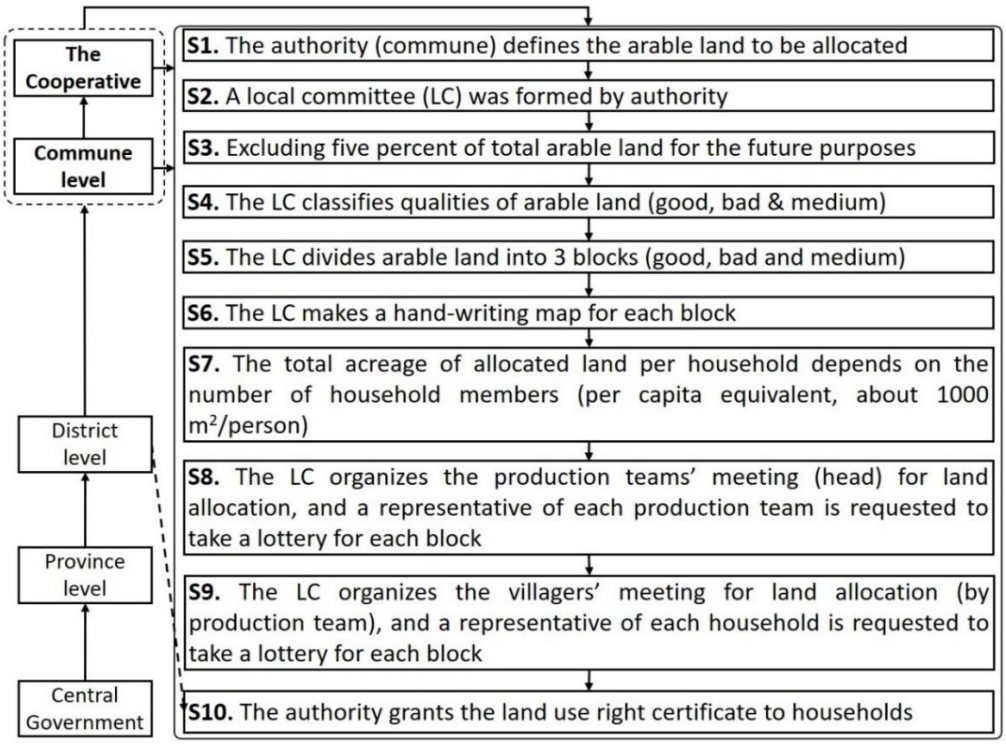

Figure 6.5. The process of land allocation in the Cau Nhi village

After land allocation, households received many small plots with different locations for each soil-quality type. According to our data analysis, 206 ha of arable land was allocated to 417 households in the Cau Nhi village. However, due to the mechanism of equal land distribution per capita, land fragmentation observed with the total number of plots up to 5,092. Data in Table 6.1 show the size and number of plots per household in the Cau Nhi village after land allocation. The average farm size per household was nearly 0.5 ha, but the average number of plots per household was up to 12.2 plots. Notably, the largest number of plot per household was 21, and the smallest size of plot was only 7 m^2.

Table 6.1. Changes in size and number of plots per a household in the Cau Nhi village

Indicators	Before (1993)	After (2006)
Total number of plots (plot)	5,092	2,115
The average number of plots per household (plot)	12.2	5.1
The average size per plot (m^2)	421.1	763.5
The average farm size per household (m^2)	4,950.0	3,815.3
The smallest number of plots per household (plot)	1	1
The largest number of plots per household (plot)	21	16
The smallest size of plot (m^2)	7	26
The largest size of plot (m^2)	4,306.0	4,003.0

Source: Field survey in 2019

The initial efforts of the Cau Nhi community on land allocation were also revealed through data analysis. As presented in the land allocation process (see Figure 6.5), the local committee (at the commune level) took responsibility for implementation. Individual households were allowed to participate in meeting to take a lottery of their production team. Notably, most of the members of a hamlet were the members of a production team, while the members of the same clan have lived in the same hamlet (see Figure 6.3). Therefore, an indirect role of smallholders through their representatives (hamlet and production team) was observed at this step. That also implied initial indirect participation of the traditional clan systems in the Cau Nhi village in the land allocation. It could be roosted from the long living with close relationships and farming history of households in the Cau Nhi village. Land allocation close to each other could help them cultivate easier and share their benefit within the same clan. Thus, based on the power of the community with their clan system, households in the Cau Nhi village tried to negotiate with the local committee while taking a lottery. Figures 6.6, 6.7, and 6.8 show the results of hamlet

and clan's land allocation in the Cau Nhi village in 1993. Looking closer at Figure 6.6, although taking the lottery, households within the same hamlet were allocated land at the same location. Significantly, data in Figure 6.7 and an example in Figure 6.8 illustrate the distribution of paddy land by clan after land allocation. The proportion of households within the same clan received contiguous plots, and their close to each other reached 66.8%.

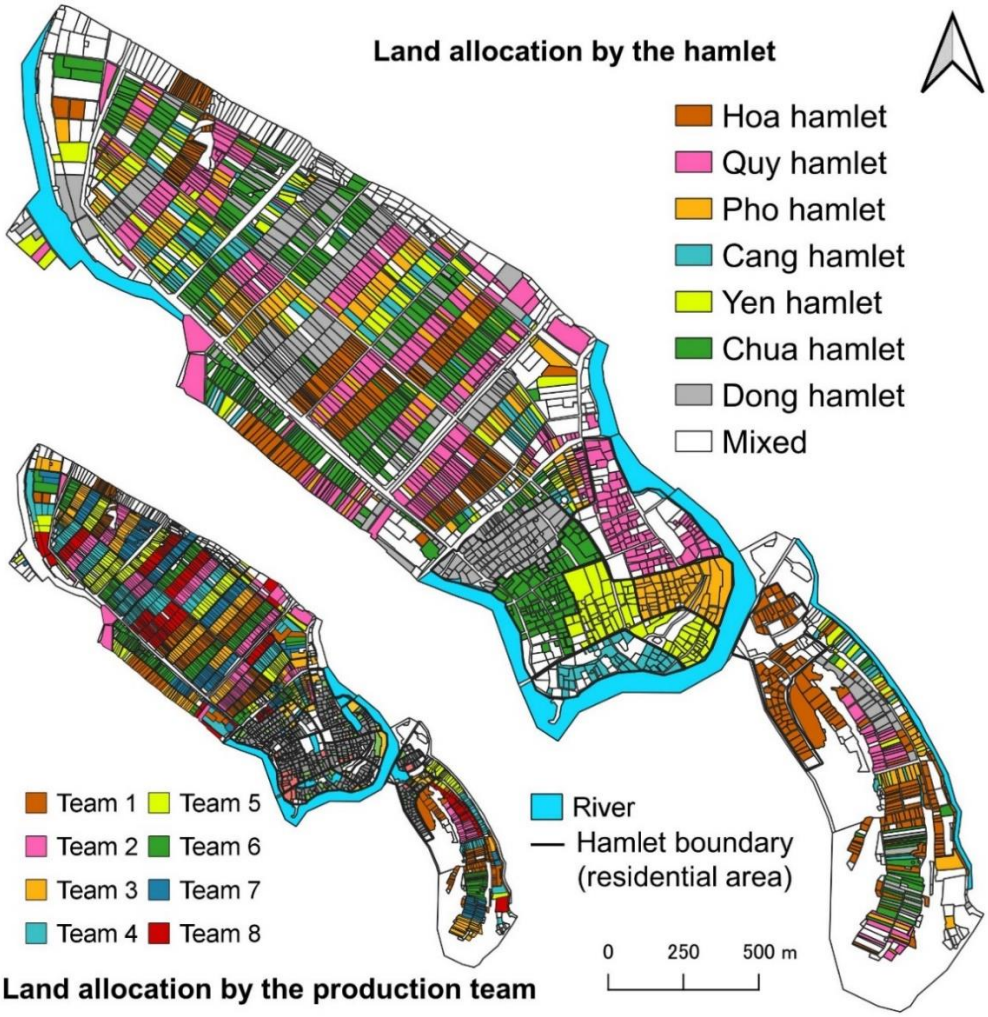

Figure 6.6. The map of land allocation by hamlet and production team in the Cau Nhi village

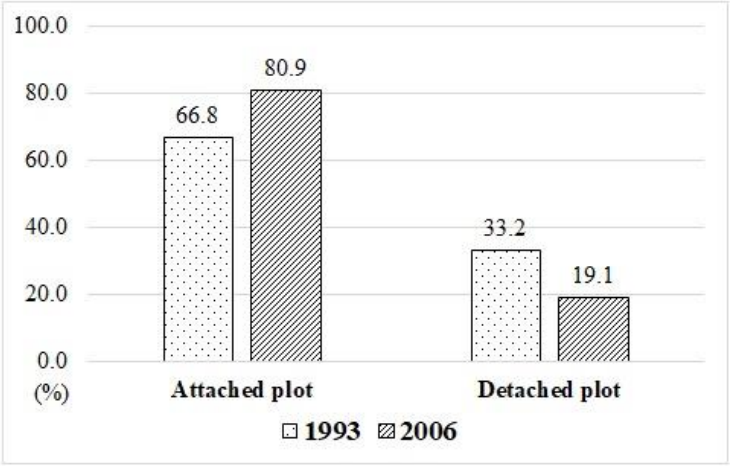

Figure 6.7. The distribution of paddy land plots by clan in the Cau Nhi village

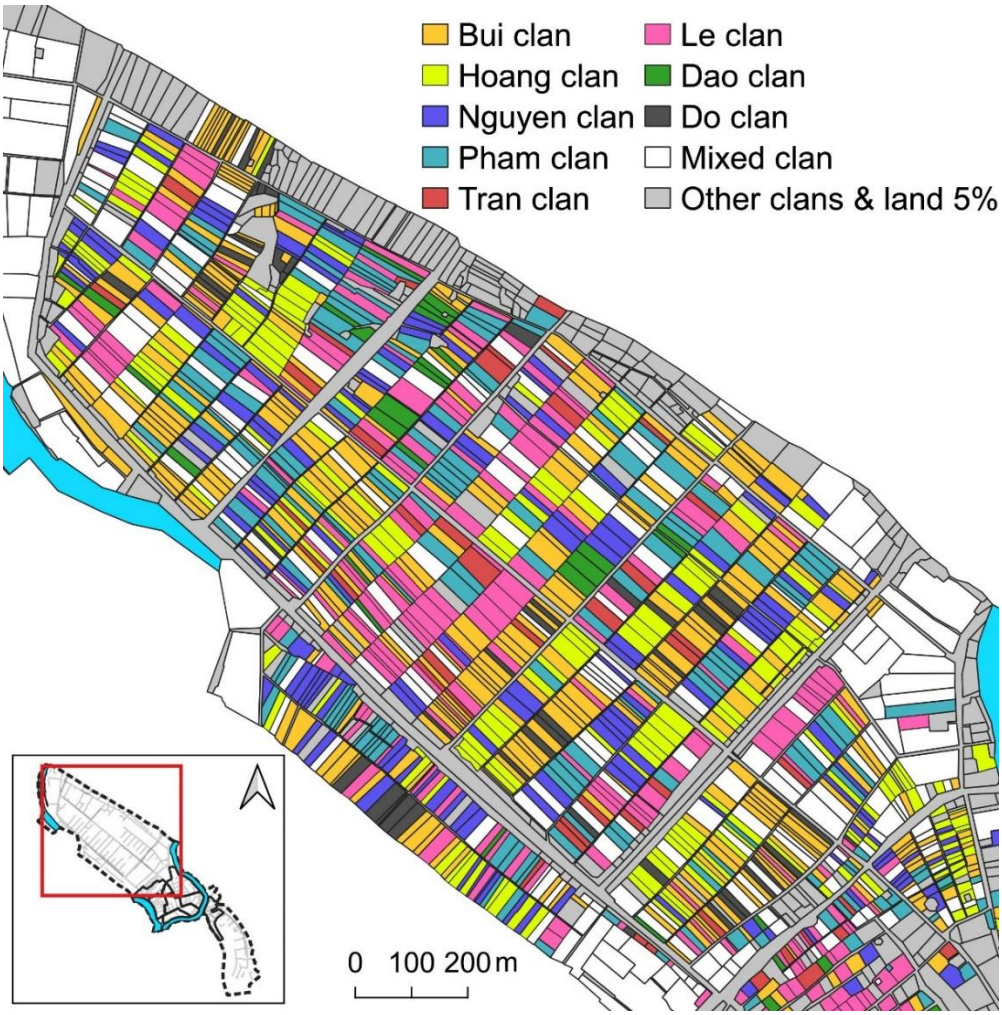

Figure 6.8. Land allocation by clan in the Cau Nhi village

6.6. Smallholder negotiating power in land consolidation in 2006

6.6.1. The process of land consolidation

To deal with land fragmentation, land consolidation through Land Reallocation Program was carried out in the Cau Nhi village in 2006. Despite reallocating land, this program maintained the principle of equal distribution per capita. Besides, the overall land reallocation procedures were similar to the land allocation in 1993. The detailed procedures of land consolidation in the Cau Nhi village are as follows (see a summary in Figure 6.9):

(i) The authority withdrew all land-use certificates for arable lands within the commune after the second harvest of 2005.

(ii) A local committee at the village level was formed by authorities to facilitate the land consolidation process.

(iii) The local committee classified the qualities of arable land based on five factors, similar to the land allocation program in 1993: soil fertility, location, topography, microclimatic conditions, and irrigation.

(iv) Based on the above classification, the local committee divided arable land into three blocks: good soil quality blocks, bad soil quality blocks, and medium soil quality blocks.

(v) The local committee removed the current plot boundaries. Simultaneously, the size and shape of each plot were re-adjusted to a larger size.

(vi) Communal land plots are rearranged in concentrated locations.

(vii) Based on the land use status of the fields, the local committee determined the acreage of reallocated land for each block.

(viii) The local committee created a handwritten map for each block.

(ix) The local committee organized the meeting with the heads of production teams for land allocation. Then, the local committee organized the meetings for land allocation at the production team level, and a representative of each household within same team was requested to draw a lottery for each block. The representative of each household was requested to draw lotteries individually from each box until the acreage of allocated land for each soil quality type per household was reached. Similar to land allocation in 1993, households within hamlets and clans also took advantage of this step to bargain with the local committee to receive land close to each other.

(x) Based on the results of the lottery, the authority issued a new certificate of land-use rights to each household.

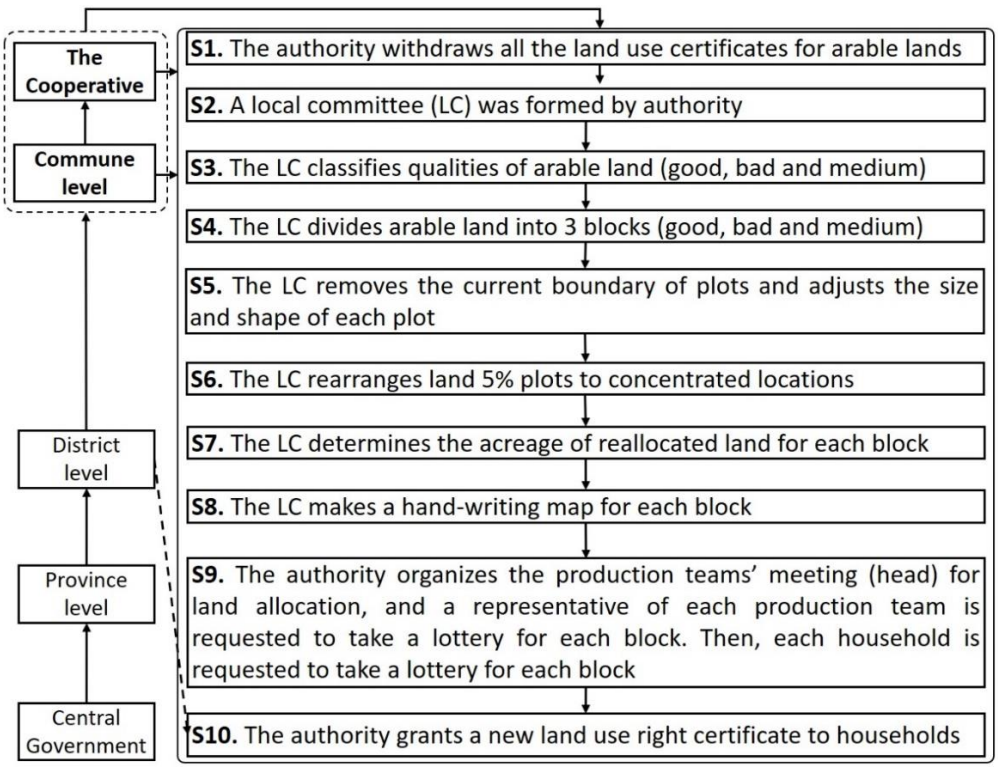

Figure 6.9. The process of land reallocation in land consolidation in the Cau Nhi village

Similar to the land allocation process in 1993, the top-down decision marking was conducted during land reallocation. Households were allowed to participate in the process of assessing land quality. Through the meetings with the local committee and the head of their production team, households gave some comments on the locations of land redistribution. Households within the same hamlet and clan tried to be reallocated arable land plots together. Figures 6.10 and 6.11 illustrate the results of land reallocation by production team, hamlet, and clan. Instead of taking a lottery, the production teams still kept arable land locations of their team as previously. They only reallocated land within the sub-blocks of their team. These contributions seem to influence the land reallocation results significantly (Detailed results will be presented in 6.6.2).

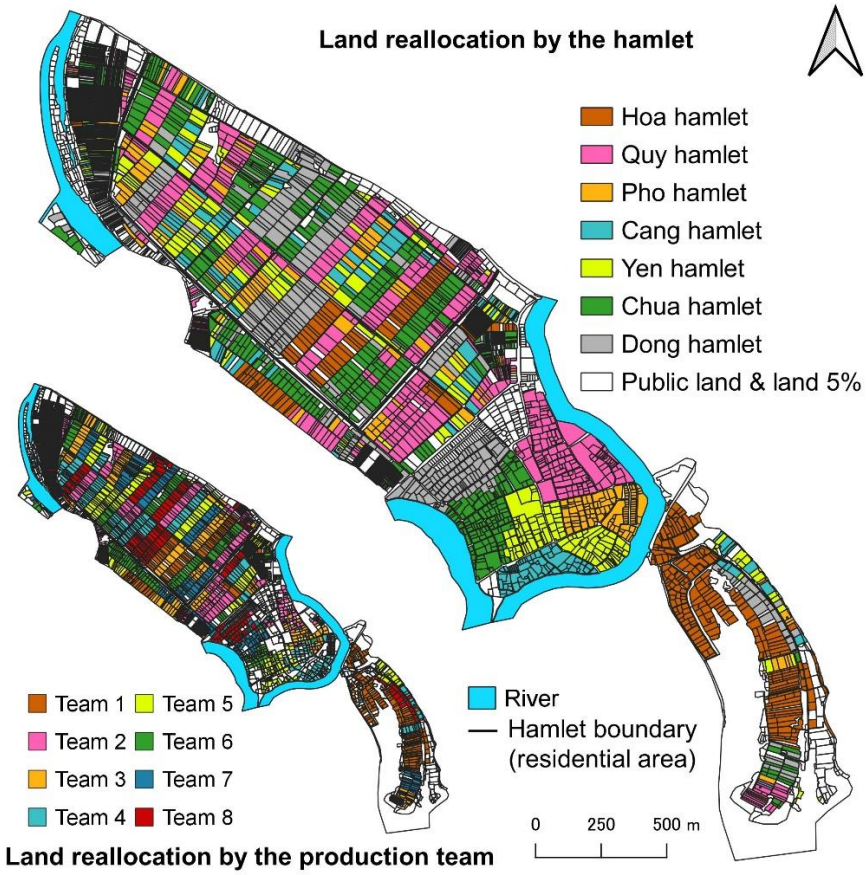

Figure 6.10. The map of land reallocation by hamlet and production team in the Cau Nhi village

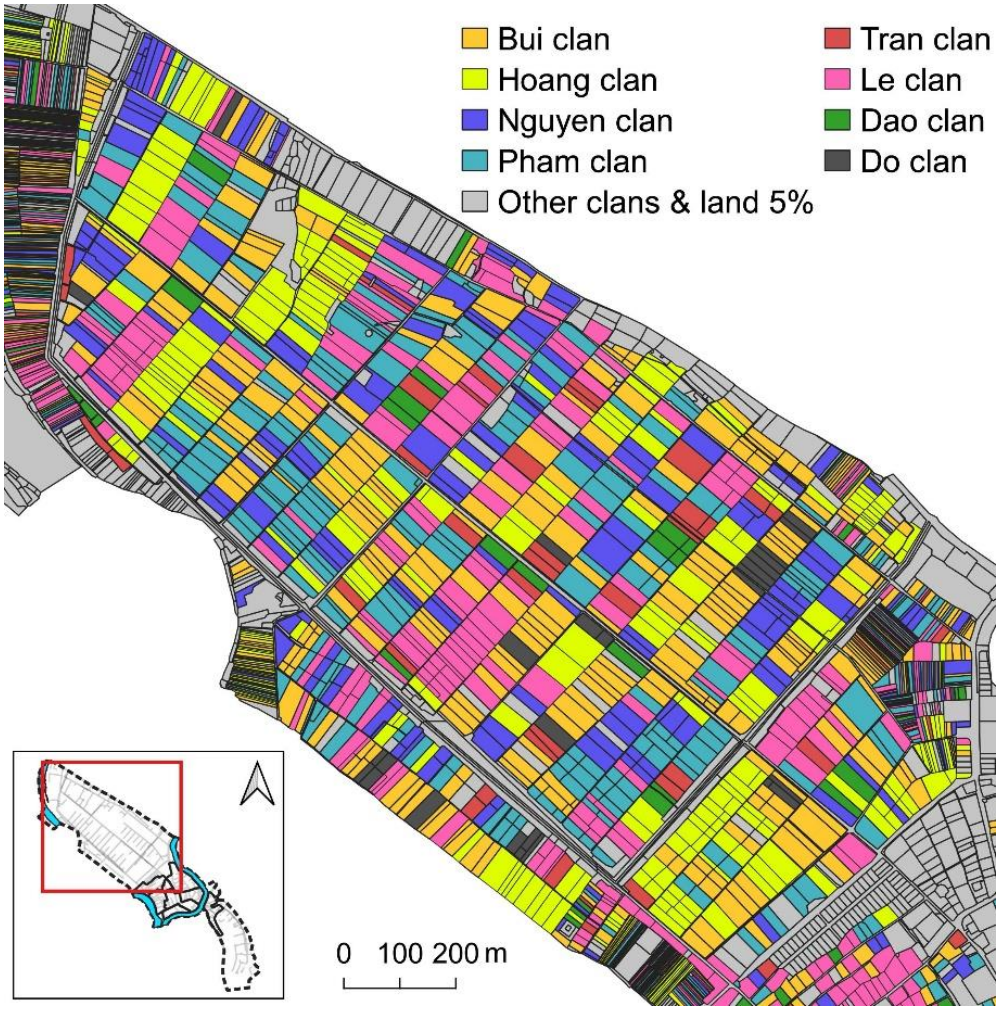

Figure 6.11. Land reallocation by clan in the Cau Nhi village

6.6.2. Farmland parcels structure and negotiation efficiency of smallholders

Data analysis shows some positive impacts on farmland parcels structure after reallocating land: decreasing the number of plots per household, expanding the size and shape of plots, and improving agricultural infrastructure. In addition, the bargaining power of smallholders during land reallocation has contributed significantly to land use among hamlets and clans.

6.6.2.1. The decrease in the number of plots per household

Changes in the number of plots per household are illustrated in Table 6.1 and Figure 6.12. After rearranging plots, the total number of plots per household was

reduced by 41.5%, from 5,092 plots to 2,215 plots. That decreased the average number of plots per household from 12.2 to 5.1 plots. It is more evident when observing the status of landholdings per household in each group in Figure 6.12. Before land reallocation, households in the Cau Nhi village mainly owned many plots, with 81.1% holding 10 to 21 plots. However, after reallocating land, the proportion of household groups holding greater than 10 plots sharply decreased by only 3.1%. In exchange, the proportion of household groups holding fewer than 10 plots significantly increased from 19.0% to 96.8 %. These results seem to show positive contributions to reducing land intra-land fragmentation. However, data analysis also revealed the incomplete of this program. The proportion of household groups holding 4 to 9 plots in 2006 still accounted for 75.0%. The proportion of household groups holding 1 to 3 plots increased, but this group only accounting nearly a quarter with 21.8%. Each household could be reallocated 3 plots, corresponding with soil quality. However, to ensure equality among production teams on soil quality combined with the varied micro-topography in the field, blocks were divided into many sub-blocks. Then, each sub-block was divided into small plots to ensure that each household would receive the three soil quality types. Due to this approach (as land allocation in 1993), land fragmentation still existed, even after land consolidation. As a result, in some cases, households still owned 16 plots with a tiny plot size, only 26m^2.

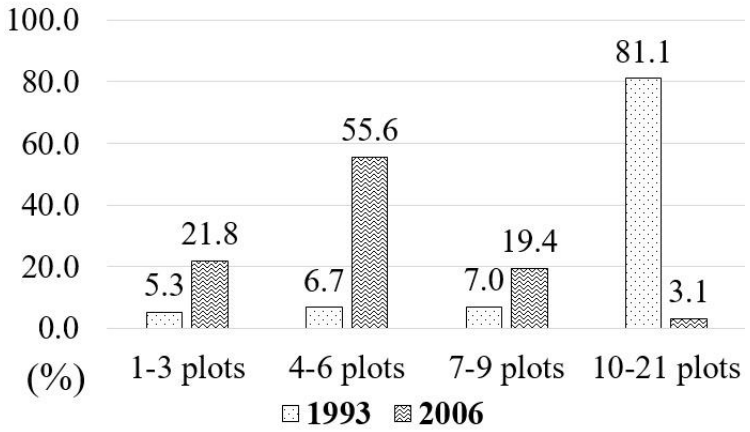

Figure 6.12. The change in the number of plots by household
Source: Author's data analysis

6.6.2.2. Changes in plot size and shape and improvement irrigation and road systems

Data analysis in Table 6.1, Figure 6.13, and an example in Figure 6.14 show that plot size and shape were expanded after rearranging and adjusting. In parallel, the irrigation and field road systems were improved. The average size per plot increased by nearly a half, from 421.1 m^2 to 763.5 m^2. It is more evident when observing changes in plot size for each group in Figure 6.11. After land allocation in 1993, 53.3% of the size of the plots ranged from 7 to less than 300 m^2. Notably, the size of plots greater than 1000m^2 accounted for only 9.3%. However, after land reallocation, the sizes of the plots were enlarged. The proportion of large plots over 1000 m^2 significantly increased by 30%. The largest plot size was 4,003.0 m^2. Besides some positive effects, data analysis also revealed that the socialistic principle of equal distribution influenced the effectiveness of the land consolidation program. As a result, the proportion of plot sizes fluctuating from 200 m^2 to less than 500 m^2 still accounted one third with 36.4% of the total.

In addition to adjusting in size and shape of plots, 14.8 km of irrigation and 21.5 km of field road systems were upgraded and newly constructed (see an example in Figure 6.14). This has increased the acreage of arable land connected to the irrigation and filed roads. Then, it could contribute to improving land productivity. The acreage of paddy fields (bad soil quality) only cultivated once a year decreased by 3.3 ha, from 22.9 ha to 19.6 ha in 2006.

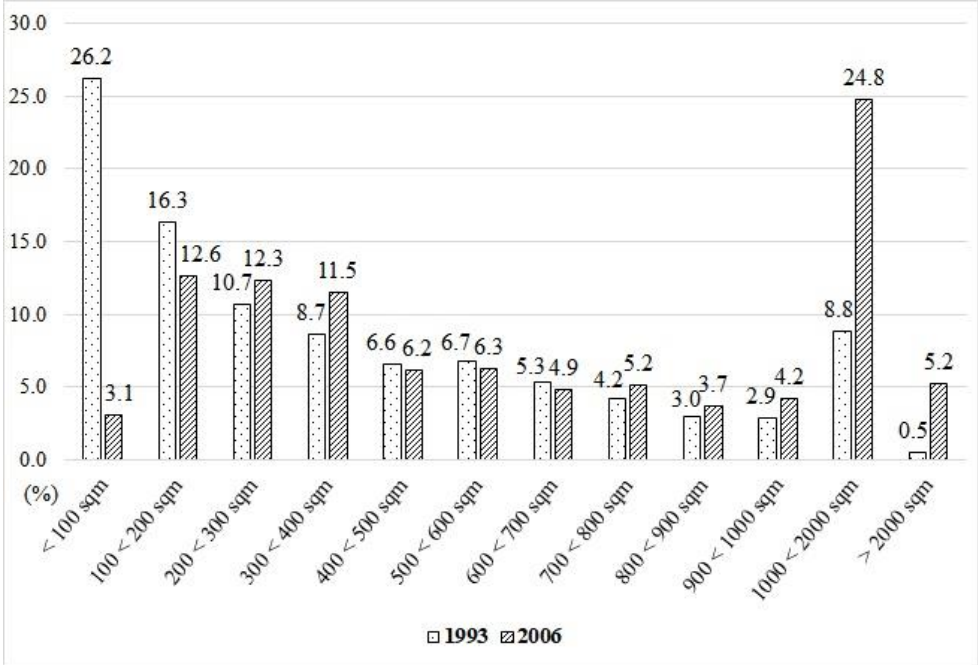

Figure 6.13. The changes in size per plots

Source: Authors' data analysis.

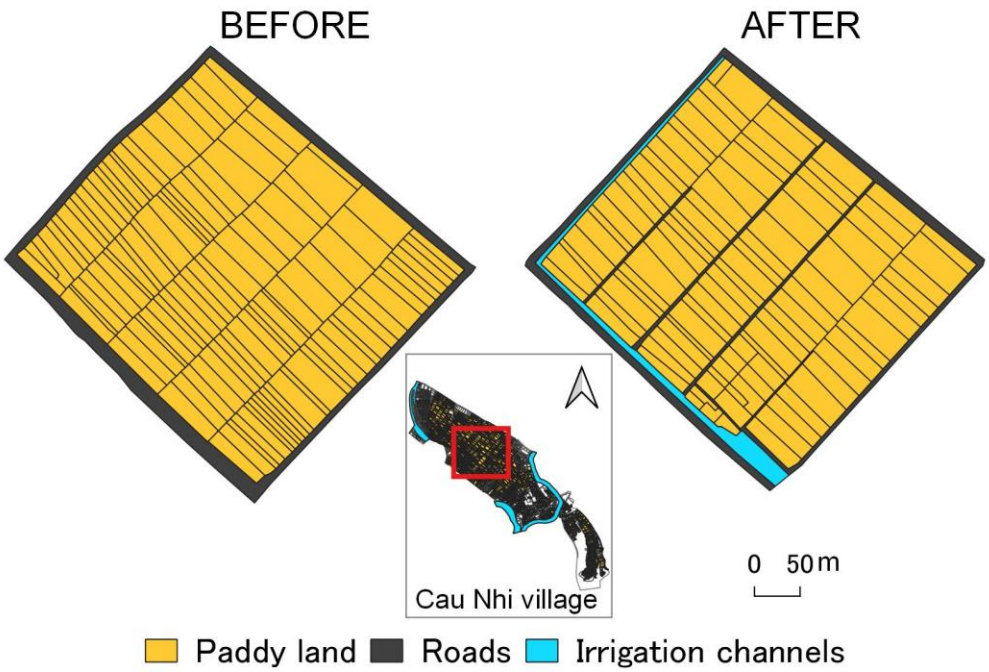

Figure 6.14. The expansion in size and shape of parcels and improvement of irrigation and road systems after land consolidation

Source: Authors' data analysis.

6.6.2.3. Negotiation efficiency of smallholders

Data analysis in Figure 6.15, Tables 6.2, and 6.3 show the changes in the clan's distribution of arable land plots by hamlet before and after land reallocation. After land reallocation, land plots of households within the same clan were moved close to each other. Notably, the major clan group played an important role, while the minor clan group was left in a weak negotiating position. Besides, households within the same clan in the "Khai Khan" group tended to receive plots closer than in the "Khai Hoang" group.

Accordingly, after land allocation in 1993, the proportion of households within the same clan in the Hoa, Quy, and Dong hamlets received plots close to each other was relatively high, corresponding to 70.4 %, 63.6 %, and 62.9%. Notably, the households of these hamlets were mainly the Bui clan, Hoang clan, and Le clan.

These clans account for most of the people in the Cau Nhi village and belong to the major clan group. An exception to the Cang hamlet, this trend was still observed in the remaining hamlets after land reallocation in 2006. Significantly, this proportion was very high in residential clusters of the "Khai Khan" group, such as Quy hamlet (86.2%), Hoa hamlet (85.5%), Chua hamlet (78.6%), and Dong hamlet (71.8%). To clarify this, we continued to analyze the distribution of arable land plots by clan before and after land consolidation.

Table 6.2. The distribution of arable land plots of the clan by hamlet before and after land consolidation

Hamlet	1993				2006			
	Attached plot		Detached plot		Attached plot		Detached plot	
	(plot)	(%)	(plot)	(%)	(plot)	(%)	(plot)	(%)
Cang	46	41.1	66	58.9	34	47.9	37	52.1
Chua	167	51.9	155	48.1	184	78.6	50	21.4
Dong	163	62.9	96	37.1	122	71.8	48	28.2
Hoa	140	70.4	59	29.6	71	85.5	12	14.5
Pho	68	38.4	109	61.6	51	58.0	37	42.0
Quy	194	63.6	111	36.4	181	86.2	29	13.8
Yen	68	44.7	84	55.3	61	61.0	39	39.0
Total	**846**	**-**	**680**		**704**	**-**	**252**	**-**

(Source: Author's data analysis)

Data analysis in Table 6.3 shows that the proportion of attached plots within the same clan increased significantly after land reallocation. Before land reallocation, the detached plot was around half, ranging from 36.8 % to 58.9%. However, this proportion decreased to around one-third, fluctuating from 19.1% to 42.9% after reallocating land. Significantly, the proportion of attached arable land plots of the

"Khai Khan" group (Bui, Hoang, Nguyen, Pham clans) was over 70%. For example, Figure 6.15 illustrates the distribution of arable land plots by clan at Quy hamlet before and after land consolidation. The arable land plots within the Hoang and Bui clan (major clans living in Quy hamlet as described in Figure 6.3) were moved into clusters within the same place. This is also observed in other hamlets as well as clans. Regarding the minor clan group, although the proportion of the attached plots increased by 33.3%, these plots were still scattered across many locations. These results imply that smallholders took advantage of the influence of social relations, especially their traditional customary, to engage in land reallocation. The clan system is not directly involved in land allocation and reallocation, but living within clusters (hamlets) led to their indirect participation. It is rooted in interdependencies between smallholders and the power of the major clan group.

Table 6.3. The distribution of arable land plots by clan before and after land consolidation

Clan	1993		2006	
	Attached plot (%)	**Detached plot (%)**	**Attached plot (%)**	**Detached plot (%)**
Bui	57.9	42.1	74.1	25.9
Hoang	63.2	36.8	80.9	19.1
Nguyen	53.8	46.2	74.8	25.2
Pham	52.7	47.3	75.4	24.6
Tran	41.1	58.9	57.1	42.9
Le	54.1	45.9	69.2	30.8
Dao	52.6	47.4	58.8	41.2
Do	59.3	40.7	80.8	19.2
Others	0.0	100.0	33.3	66.7

(Source: Author's data analysis)

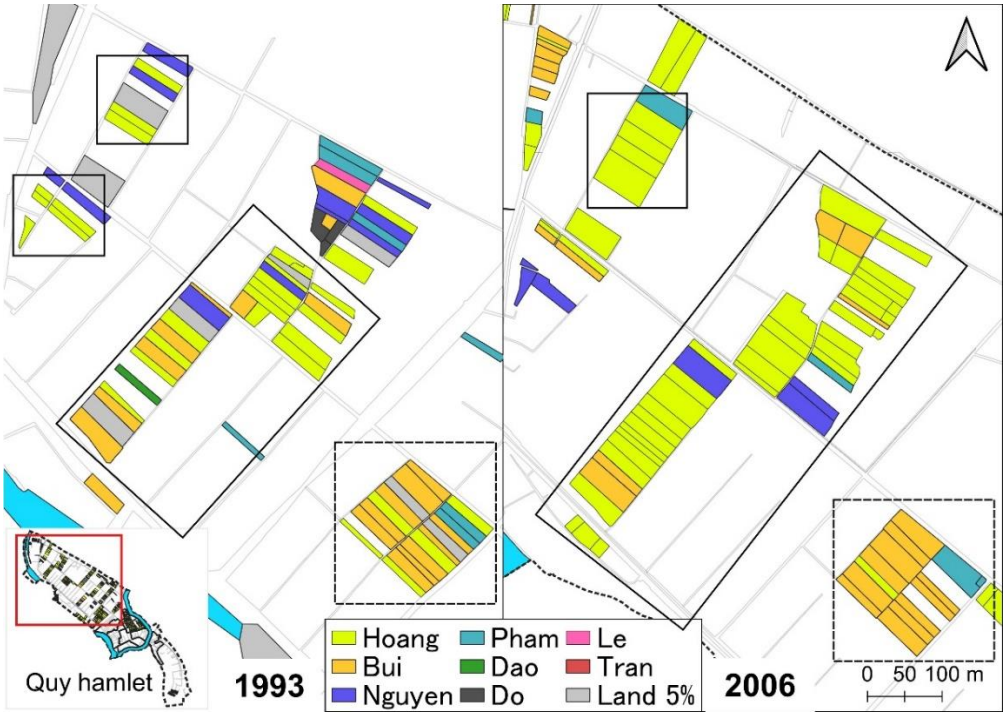

Figure 6.15. An example on the distribution of arable land plots by clan at Quy hamlet before and after land consolidation
(Source: Author's data analysis)

6.7. Remarks

The findings indicate some positive impacts on farmland parcels structure after reallocating land: decreasing the number of plots per household, expanding the size and shape of plots, and improving agricultural infrastructure. In parallel, the incomplete results of the land consolidation program were also observed due to the principle of equality redistribution. As mentioned in Chapter II, land allocation and reallocation are often complex processes, and it is influenced by many factors such as historical trends, culture, and traditions. It is more clearly through the case study in Cau Nhi village. Given the traditional rural community with a cluster of residential areas within the same clan for a long time and sharing benefits within the same clan, smallholders in the Cau Nhi village have negotiated with the local government for land use. As a result, they still follow the land allocation process,

especially the principle of equality distribution but the same clans within the hamlet received arable land at the same location. At the time of land reallocation, despite reallocated land through taking a lottery within a production team, they still kept the location of their team as land allocation in 1993. Besides, taking a lottery by each production team but smallholders within the same clan and hamlet received arable land at the same location and close to each other. These results reveal an interesting perspective on the potential power of community and smallholders in implementing land policies. The clan system is not directly involved in land allocation and reallocation, but living within clusters (hamlets) led to their indirect participation. Smallholders took advantage of the interdependencies between smallholders and the power of the major clan group to engage in land reallocation. First, it could benefit small cluster groups; then, in the long term, it may contribute to the development of rural communities.

CHAPTER 7

CONCLUSION

7.1. Reconsidering the principle of equality redistribution in land consolidation program

As mentioned in Chapter 4 and Chapter 6 of this dissertation, land consolidation is the most important tool for restructuring farming in Vietnam. By using evidence from a typical case in a rural area of central Vietnam, this study's findings provide insights into the degree of the land consolidation program's impact on the spatial development of farmland parcels and rural infrastructure. In particular, this study reveals why land consolidation in Vietnam has been left incomplete, focusing on socialistic land governance. The findings also reveals an interesting perspective on the potential power of community and smallholders in implementing land policies. Our study fills the gap in the research on the implementation mechanism and effects of the consolidation process in the context of agricultural restructuring. This is crucial to policymaking, as it helps government bodies to consider land use effectively in the complexities of rural development.

Land policy, combined with the relationship between growth and equity, is always a politically-sensitive and complex issue in the Vietnamese context. To balance these relationships, land privatization was conducted in the early 1990s. In our case study, arable land has been allocated to individual households in the Binh Dao commune and Cau Nhi village since 1993. However, this equity mechanism led to an extremely high level of fragmentation in these areas. To address this situation, a land consolidation program was implemented in 2006. The results of

our case study suggest that this program contributed to (i) a decrease in the number of plots per household, (ii) changes in plot sizes and shapes, and (iii) improvement in irrigation and field road systems. However, maintaining a fragmented classification system of agricultural land stemming from the principle of equality redistribution under the socialist agricultural revolution led to incomplete results of this program. This has influenced the goal of encouraging agricultural mechanization through land consolidation programs. Additionally, it poses a daunting challenge to the central government in the context of agricultural and rural development.

7.2. Challenges of agricultural restructuring programs

Countries with economies in transition are currently facing challenges in agricultural restructuring. Based on the evidence from a typical case in a rural area of Vietnam in Chapter V, this dissertation revealed the mechanism of contract farming through a new type of cooperative in the ongoing agricultural restructuring program. In parallel, our findings reveal households' responses to farming methods and land use changes. Besides, the findings show the challenges of agricultural restructuring programs.

Contract farming through a new type of cooperative in Vietnam was used as a tool to deal with the imbalance between the abundant agricultural workforce and low small-scale self-sufficient productivity. In addition to promoting land efficiency and increasing productivity, this program aimed to restructure the rural labor force toward non-agricultural sectors. Findings show that contract farming contributed to forming large-scale paddy fields. Then, the vertical coordination of the value chain from smallholder farmers to cooperative and agriculture product

trading companies contributed to protecting farmers from market risks. In addition to increased productivity, the application of machines from the cooperative to farming activities saved farming time for households. These results imply that the contract farming scheme achieves the goal of using land efficiency and increasing productivity. However, changing the labor structure by pushing farmers out of farming through a contract farming scheme does not seem to be met. Findings indicate that livelihood transition in the Binh Dao commune is mainly rooted in households and household members whose primary income is not from farming. As a result, households who switched to non-farming seemed to have adopted this trend previously, and contract farming was not the crucial reason for their choices. In maintaining farming and combining farming with non-farming activities groups, although household members of increased opportunity to join non-farming jobs, most of the non-farming jobs and the extra activities are still unstable and insecure. Thus, our case study also recorded the situation of returning to farm work due to job losses. Meanwhile, farmers in the Binh Dao commune tend to increase cultivation lands during the agriculture restructuring program rather than switch their labor to non-agriculture sectors. In other words, agriculture is a sort of insurance for their livelihoods. However, farmers' ongoing agriculture restructuring programs are being driven out of agriculture without any support from the government or cooperatives to help them switch to other jobs. That is why farmers tend to intensify farming and keep their land by choosing rice contract farming rather than leasing their farmland to the cooperative. These increase the pressure on the effectiveness and the goal release on-farm labor to off-farm labor of this program. Despite some households taking advantage of outputs and the support of

agricultural machinery to expand their production, households were still individual farmers and cultivated by household members during contract farming. In other words, the goal of turning peasantry farming into entrepreneurial farming through new business cooperative models does not seem to be met. The lack of stable non-farming job opportunities in rural Vietnam raises challenges to the efficiency of agricultural restructuring programs. Based on the findings, the dissertation call for improvements in current ASR regulations. Especially job training strategies for farmers should accompany the process of compulsory restructuring.

7.3. Research limitations and future research

The research is intended to reveal the mechanism of land consolidation and contract farming through the new cooperative and the responses of households to changes in farming methods and land use from a typical case in the rural area of Vietnam. Then, the research critically understood farmers' responses to the ASR program from a systemic view. However, it is acknowledged that this research has limitations. The research has only focused on a local Vietnamese value chain for contract farming in a specific region as Quang Nam province. The labor market development in other regions of Vietnam may be different. Although the findings of this research cannot generalize to the whole country and other produce, it was not the study's primary purpose. Introducing practical evidence in the rural area of Vietnam is necessary to lay the groundwork for the study. Thus, the research results are an initial first step to investigating the role of contract farming and the cooperative in the ongoing agricultural and rural transition. Then, future research will continue to develop other case studies to build a complete theoretical

framework, to compare and build a better picture of the roles and impacts of contract farming and the cooperative in agriculture and rural restructuring.

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APPENDIX

Questionnaire for household survey

LABOR STRUCTURE AND HOUSEHOLD'S STRATEGIES IN THE CONTEXT OF THE ASR PROGRAM

ID: RCF ….. LLC ..… NCH ..… ***Respondent name:*** ……..…….....

Village: …….. ***Date:*** 2021/…../……. ***Phone number***: …….

(RCF: Rice contract farming – please answer Task 1, 2, 3, 4, 5 (a);

LLC: Land lease contract – please answer Task 1, 2, 3, 4, 5 (b);

NCF: Non-contracted household – please answer Task 1, 2, 3, 4)

TASK 1. PRIVATE RESIDENTIAL INFORMATION

1. Are you a farmer?
2. People currently living in your home : ……..
3. People currently living in your home over 15 years old : ……..

- The number of students over 15 years old : ……..
- The number of women over 55 years old who do not take part in work: …
- The number of men over 55 years old who do not take part in work : …

4. Are your household a cooperative member? Yes No

TASK 2. LABOR AND JOB

In 2015 and 2021	**Household' s head**	**Household's members**			
Questions	No. 1	2	3	4	5
5. What is the name of [No.x]? ***[Name]***					
6. Year-Birth/Age of ***[Name]***					
7. Gender (male 0, female 1)					
8. The highest education level of ***[Name]***					

a. Elementary b. Lower Secondary c. Upper Secondary d. Higher					
9. In the past 12 months, did ***[Name]*** do any works for salary and wage? (take part more than 30 days)					
10. What was the main job of ***[Name]*** in the past 12 months? (work on-farm, woodworker, teacher, ...)					
11. How long have ***[Name]*** been in this job?					
12. What is the main form of ***[Name]***'s job? a. Self-employed b. Hired job					
13. How many days per month did ***[Name]*** do this job on average?					
14. How many hours per day did ***[Name]*** do this job on average?					
15. Where is the workplace of ***[Name]***? (The main job) a. In the commune b. Other communes in the district c. Other districts in the province d. Another province					
16. Apart from the main job, did ***[Name]*** do any other works for salary and wage in the last 12					

months? (work on-farm, woodworker, teacher, ...)					
17. What is the form of other paid work of ***[Name]***? a. Self-employed b. Hired job					
18. In the past 12 months, how many months did ***[Name]*** do other paid work?					
19. How many days per month did ***[Name]*** do other paid work on average?					
20. How many hours per day did ***[Name]*** do other paid work on average?					
21. Where is the workplace of ***[Name]***? (The other paid work) a. In the commune b. Other communes in the district c. Other districts in the province d. Another province					

TASK 3. MAIN INCOME OF HOUSEHOLD

In 2015 and 2021	**Household' s head**	**Household's members**			
Most time consuming paid work and other paid work	No. 1	2	3	4	5
22. The main income of ***[Name]*** before contract farming					
23. The main income of ***[Name]*** after contract farming					

TASK 4. LAND USE STATUS OF HOUSEHOLD

24. Allocated land	**Location**	**Acreage**	**LUT***	**Soil quality**	**Year**
Plot 1					
Plot 2					
Plot 3					
Plot 4					
Plot 5					
25. Lease out to others or cooperative	**Location**	**Acreage**	**LUT**	**Soil quality**	**Year**
Plot 1					
Plot 2					
Plot 3					
Plot 4					
Plot 5					
26. Rent in form others	**Location**	**Acreage**	**LUT**	**Soil quality**	**Year**
Plot 1					
Plot 2					
Plot 3					
Plot 4					
Plot 5					
27. Rice contract farming	**Location**	**Acreage**	**LUT**	**Soil quality**	**Year**
Plot 1					
Plot 2					
Plot 3					
Plot 4					
Plot 5					
28. Abandoned land	**Location**	**Acreage**	**LUT**	**Soil quality**	**Year**
Plot 1					
Plot 2					
Plot 3					
Plot 4					

Plot 5					

(land use type)*

TASK 5. CONTRACT FARMING PROGRAM

(a) The land lease contract	**(b) Rice contract farming**
29. Why did you choose to lease your land to the BD Cooperative?	30. Why did you choose this type of contract?
31. Before leasing out these plots to the BD Cooperative, did you lease them to another farmer? Why?	32. Did you receive support from the BD Coop or local government on production activities? If yes, please describe the detailed supports that you received.
33. How about the production status in your non-contracted area? (the remaining farmland): need less or more labor, inputs, low or high net profits,…	34. How about the production status in the large-scale paddy fields? Compared with non-contracted area: need less or more labor, inputs, low or high net profits,…
35. Does the Cooperative hire you to do farm work in large-scale field areas? (Details on activity and how the BD Cooperative pays money?)	
36. Do you want to continue to sign the contract with the BD Cooperative in the next phase? Why?	
37. Did you hire or exchange labor with others? Why, who, and when? How to pay (cash or in-kind)?	