Turning land to livelihood: what are the socio-economic and institutional determinations of local land use in Red River Delta region?

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Abstract

This research analyzes the determinations of household land use strategy in the context of the rapid rural changes due to the industrialization and urbanization in Vietnam. The mechanism that turns land to livelihood from both productive and non-productive processes is investigated to understand the different land use strategies of smallholders in Red River Delta region. Based on the presence of migrating members, the total selected 191 households in Hai Duong province were divided into 3 different groups to do the surveys. The research results show that local land use strategies are various in which 79.06% of surveyed households maintain the allocated land for agricultural production while 65.97% of households leave land idly at least once a year. The factors from productive process such as small landholding, high production cost and overall downward income from agricultural production meantime the greater opportunities from non-farm jobs are the main socio-economical determinations of agricultural land abandonment or less effective use. The security questions of shifting livelihood between farming and non – farming sectors, the inter-household arrangements, the social supports and the institutional constraints are non-productive elements that make the exchange and other forms of commercializing agricultural land are less prominent. The complexity of household land use strategy and its determinations not only reflects the dynamism and flexibility of peasant's livelihood adaptation but also explain why the land concentration does not proceed faster in Red River Delta region of Vietnam.

Keyword**:** *agricultural land, land use strategy, livelihood adaptation, peasant economy, Vietnam*

JEL: Q15, P25, P16, R20, R14, Z13

1. Introduction

Red River Delta region of Vietnam shares the common features of agrarian transition undergone by modernization of the country. The subsistent orientation in land allocation and household economy in 1990s have been proceeding further toward more market and industrial orientation to gain faster economic development. Since 2000s, the focal industrial zones established in this fertile delta have resulted in the large agricultural land conversion for industrialization. According to the recent National Survey on Land, in a decade from 2000 to 2010, the non-agricultural land increased 89000 hectares while the land for rice production

decreased more than 34000 hectares annually (Nguyễn Ngọc Công 2012). The industrialization associated with urbanization has complex impacts upon the allocated agricultural land and household economy. A large number of farmers are moving out of agriculture to find the jobs in non-farm sectors along rural – urban continuum (Nguyen Thi Dien 2011). The equal distribution and long-term land allocation have been blamed for high fragmentation, ineffective use and low economic productivity(Van Hung, MacAulay et al. 2007). Currently, the government has making the strong efforts to consolidate the household land plots in seeking the foundation for greater rural productivity. Within this framework, the question of how farmers use their allocated agricultural land becomes the most important issue. Although the new emerging phenomena of agricultural land abandonment have happening in almost all provinces in Red River Delta region (Thanh Hang 2013), the local land use is much more complex. The driving forces of the various land use decisions are not easy to generalize.

From the literatures, land use strategy of smallholders has drawn the attention of the wide empirical and theoretical researches because of its complexity and its central roles in land question. Within the framework of livelihood approach, there are two different standpoints on how rural people use land to make their livelihood. Although both perspectives view the land use strategy that rural people adopt in order to cope with the increasing pressures in relating to the meanings that land brings about to their life, there is still the debate on whether the production or distribution process that is vital to understand the complexity of land use strategy.

Based on the adaptation perspectives, various researches within the livelihood approach have focused on the productive aspects of land use strategy in which the utility of land in producing agricultural goods was emphasized(Mertz, Wadley et al. 2005). The structure of economic activities that peasant households involve is examined in understanding the land use strategy. The diversification and delocalization of rural livelihoods were highlighted to show the determinations of transition in livelihood (Ellis 2000; Bouahom, Douangsavanh et al. 2004; Rigg 2006). The non-farm activity and its greatest share in rural household income were considered as the main driving forces of changing livelihood so that changing the ways rural people use their land (Akram-Lodhi, Borras et al. 2006; Alberto, Gero et al. 2009; Neves and du Toit 2013). The effectiveness of land use (Edward Taylor and Loper-Feldman 2010) as the results of channeling capital is determined by the degree of participation in the non-farm sector as well as the types of non-farm activities that households are pursuing(Barrett, Reardon et al. 2001; Brons 2005). The productive perspective has stressed migration as the source of peasant livelihood delocalization which becomes the most important features of rural household livelihood in the developing countries (Philipe 2011). This implies that rural people livelihoods are increasing disconnected from land and agricultural production (Rigg, Salamanca et al. 2012). The productive perspective emphasizes too much on the production and technical aspects (Deininger, Savastano et al. 2012) but overpasses the distribution and socio-cultural process.

Another standpoint in livelihood approach pays special attention on the less obvious and less viable aspects or the distribution, the claim and access to resources and the social supports of using land (Cousins and Scoones 2010). Recently, Ferguson states that producing agricultural products is not only one way and not necessary the most important way of using land at the current conditions of rural South. According to Ferguson, the social process of distribution is as much important as the technical process of production in the mechanism that turns land to livelihood (Ferguson 2013). The distributive perspective points out that rural people interested

increasingly in owning the land even it brings less agricultural productivity and even they have other lucrative alternative sources of income(Keith 2012). In fact the plot treated as "*unused land*" or "*less effective land*" by outsiders is used for the cultural and social purposes by local people. The wide range of arrangements and inter-household supports that rural people make to help each other in their livelihood explain a specific sharing mechanism in using land and other resources (Turner 2005).

Addition to the micro analysis of livelihood approach which has visualized the land use strategy of smallholders from the inner socio-economic driving forces, the human ecology has tried to figure out the sources of land use changes in Vietnam as well as in the transition countries from macro outer socio-environmental influences (Sikor and Truong 2002; Sikor 2006; Lambin and Meyfroidt 2010; Prishchepov, Müller et al. 2013). This approach assumes that the society has to profoundly modify their land use practices in response to a depletion of natural resources or ecosystem services that follow from their previous land use. The concept of land use transition refers to "*any change in land use systems from one state to another one*"(Lambin and Meyfroidt 2010). Although the socio-economic factors from different scales are presented in several researches but the ecological factors are main focuses of the human ecology approach in analyzing the driving forces of land use changes. This approach concentrates on land use change linking to land covers and crop patterns (Qasim, Hubacek et al. 2013) rather than the decisions on how to use the land made by smallholders.

This research examines the interrelations among land use, employment and livelihood. It concentrates on the ways that farmers manage their allocated agricultural land. The household land use strategies in this research refer to the responses of peasant households to the socio-economical and institutional factors under the current agrarian transition in Vietnam. Both productive and distributive aspects of land use strategy are emphasized. Therefore, it bases on the dynamic but not "*static vision of peasantry*" (Peemans 2013). Meantime, the local contexts of land management are highlighted. The research is developed to understand the different patterns of practical land use of peasant households in Red River Delta, North Vietnam. The overall objective of this research is to identify the socio-economical and institutional determinations of household agricultural land use decisions of farmers. In doing so, this research aims to explore the peasant livelihood adaptation in the current context of agrarian change in Vietnam.

Hai Duong province is selected as the research site because of the widespread of agricultural land abandonment in this province. According to the information from the Ministry of Agriculture and Rural Development, the total agricultural land abandonment in this province reaches to 200 hectares in 2011 and stands at the highest place among provinces in Red River Delta region (Thanh Hang 2013). This province also represents the common changes under industrialization process of the region. In this research, the local context of land conversion for industrialization is considered to investigate the patterns of agricultural land use. Based on the provincial statistic data on current agricultural land in 2012, two communes, with and without land conversion for industrialization, were selected to do the surveys.

The total 191 households were selected to do the survey in which migration is important research indicator to select sample households. In the current condition of agricultural production in Vietnam, migration determines the use of agricultural land and it reflects the job opportunities that households can find outside their village or commune. The surveyed households were divided into 3 main groups based on the presence migrating members:

Group 1: Non- migration household: the breadwinners work at the village.
Group 2: Mixed household: the breadwinners work at the village and outside village.
Group 3: Migration household: the breadwinners work outside their villages.

This research uses both the secondary and primary data. The most important secondary data are gathered from available official statistical sources from the relevant ministries and its departments at provincial and district levels. The unofficial sources, local reports and other publications and relevant researches are used to capture different complementary data. The primary data is collected by different techniques – both household surveys and field works including focus group discussion, in-depth interviews, formal and informal conversion in the research sites. We use an inductive and qualitative research even though this study uses both qualitative and quantitative methods to analyze data, especially primary data.

2. Research results

2.1 Local context and the socio-economic characteristics of surveyed households.

Hai Duong province stands at the leading position with high rate of land conversion for industrialization in Red River Delta region(Nguyen Thi Dien 2011). The prominent and common features of agrarian transition under this process are the decline of agricultural land and the diversification of employment toward non-farm sector. In the targeted communes, the land conversion for industrialization started in Cam Phuc since 1996. Until 2005, there are total 6 times with 1081 households affected by land conversion and 146.30 hectares of agricultural land (61.42% of total agricultural land of this commune) has been conversed to industrial companies(Cam Phuc commune people commitee 2006). Cam Hoang is not direct involved in industrialization but the agricultural land of this commune also decreased as for the development of infrastructure and other non-agricultural use. Currently, agricultural land in Cam Phuc commune is 231.24 hectares (30.08% of total land area) while agricultural land in Cam Hoang commune is 532.72 hectares (72.36% of total land area) (see table 1). These differences in the left area of agricultural land help to understand the different patterns of household land use.

Table 1: Land use in targeted communes in 2012

Type of land (ha)	Cam Phuc	Cam Hoang
Total land area	**591.69**	**736.25**
1.Agricultural land	**231.24**	**532.72**
1.1 Crop land	*197.23*	*362.04*
1.1.1 Rice	191.27	310.75
1.1.2 Others crop	5.96	51.29
1.2 Aquaculture production	*34.01*	*170.68*
2. Non-agricultural land	**360.45**	**203.53**
2.1 Resident land	46.54	55.18
2.2 Other non-agricultural land	313.91	148.35

Sources: (Cam Hoang commune people commitee 2011; Cam Phuc commune people commitee 2011)

At household level, we compared the landholdings of sampled households in 2003 and 2012. The results were showed in table 2. Because of the equal land distribution at starting point in 1993, the members of every household were allocated the same amount of agricultural land and the household landholding keeps unchanged from 1993 to 2003. Since 2003, the industrialization process and market integration lead to certain changing in landholding. Among three targeted groups, migration group has the higher level of changes in both agricultural and resident land. The land conversion for industrialization is the main source of the household agricultural land decline. Beside that under the program of "*regrouping*" land and "*agricultural structure change*", a part of agricultural land, mostly one - crop rice fields, has been transformed to large-scale farms with fish ponds to integrate aquaculture, animal production, orchards and other crops. Some households engaging to this program can rent the communal land and have illegally turned their agricultural land to non – agricultural use such as the resident land. This also leads to the decreasing agricultural land at the same time increasing resident land.

Table 2: Changes in household landholding

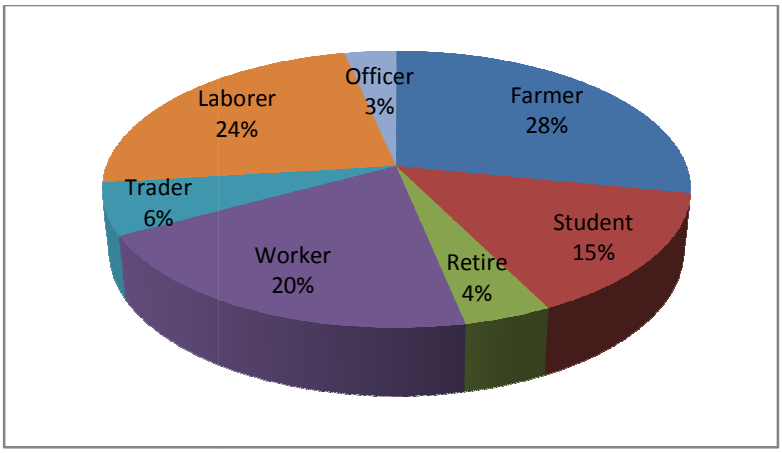
Type of land	Year	Group 1: Non-migration (n=24) m^2, mean	Group 2: Mix (n=116) m^2, mean	Group 3: Migration (n=51) m^2, mean
Agricultural land	**2003**	1214.00[a]	1668.35[b]	1753.18[b]
	2012	972.00[a]	1442.53[b]	1418.35[b]
	2012-2003	-242.00	-225.82	-334.83
Resident land	**2003**	369.71	413.77	365.47
	2012	384.71	425.47	471.35
	2012-2003	15.00	11.70	105.88

Note: [a,b] ANOVA test at alpha=0.05

Source: Household survey, 2013

Meantime to the decline of agricultural land, there is the change in employment structure in which the farm employment is shrinking. At the provincial level, the rate of labor engaging in agricultural production is only 58% of total labor force (Phạm Minh Thăng 2013). In fact, this figure is even lower because many farmers who do at the same time agricultural production and other non-farm job but they still report that they are farmers. In the targeted communes, the rate of farm employment in Cam Hoang commune is 56% in total labor force. In Cam Phuc commune, there is no official data on the labor structure of commune but the rate of farm employment is much lower because this commune has involved in the land conversion for industrialization since 2000s and the industrial companies are located surrounding the commune. The number of migrant worker stays in this commune even over the local population. Recently, the main livelihood activities of villagers in this commune are providing the services for migrant workers such as food, home stead, and other necessities. Many households in this commune also produce the wooden goods as the traditional artisan. Therefore the number of labor engaging in agricultural production is decreasing. The results from our survey show that the labor force involving in farming activities is only 28% of total labor in the sampled households.

Figure 1: The main job of labor force in surveyed households



Source: Household survey, 2013

Table 3 presents the main demographic features of surveyed household groups. The socio-economic characteristics of households play the important roles in their decisions on agricultural land use. Among the targeted groups, the household head is younger in group 3 and older in group 1. This reflects the common features of migration in developing countries. The young and dynamic proportion of population seems to engage higher rate in migration. The group 3 also has the bigger family size in comparison to other groups. The old people likely stay in the villages and involve much higher rate in agricultural production (group 1). The agricultural land holding of group 1 is also smaller than other groups.

Table 3: The main characteristics of surveyed households

Indicators (mean)	Groups of household		
	Non-migration (n=24)	**Mix (n=116)**	**Migration (n=51)**
Age of household head	59.71	55.22	54.63
Family size	3.21[a]	4.52[b]	4.88[b]
Labor size	1.92[a]	3.26[b]	3.31[b]
Farm labor	1.29[a]	1.19[a]	0.47[b]
Non-farm labor	0.62[a]	2.08[b]	2.84[c]

Note: [a,b,c] ANOVA test at alpha=0.05

Source: Household survey, 2013

2.2 The main features of household land use strategy

In the context of agricultural land decline and increasing income diversification, the land use practices of farmers have been changed. In order to analyze the household land use strategy, we investigate the land use patterns practiced by surveyed households. These practices are the manners that households use to manage their land rather than the crop patterns. The overall land use practices of surveyed household are presented in table 4. These practices are the foundations to classify land use strategy and its determinations. In fact, the land use practices at local level are much more complex because a household can have several plots of land. They might sell one plot but buy other piece of land. Similarly, they rent out a piece of land but rent in land in certain seasons. They also not abandon all their land but one or several

plots of land that are difficult for agricultural production in certain period of time. Thus, the land use patterns are various, from the more productive to non-productive ways of using land and reflect the complexity of land use strategy made by rural households.

Table 4: Land use practices of surveyed households in 2012

	Non-migration		Mix		Migration		Total	
Indicator	***Count***	***%***	***Count***	***%***	***Count***	***%***	***Count***	***%***
Buy land	0	0.00	8	6.90	5	9.80	13	6.81
Rent in land	5	20.83	17	14.66	7	13.73	29	15.18
Use land for agri. production	21	87.50	98	84.48	32	62.75	151	79.06
Rent out land with interest	0	0.00	5	4.31	6	11.76	11	5.76
Rent out land without interest	2	8.33	13	11.21	14	27.25	29	15.18
Abandon land during winter crop	19	79.17	75	64.66	32	62.75	126	65.97
Abandon land whole the year	3	12.50	11	9.48	12	23.53	26	13.61
Sell land (all or a part)	1	4.17	8	6.90	7	13.73	16	8.38

Source: Household survey, 2013

The targeted groups of households also choose different land use strategies. In this section, we analyze the mechanism that turns land to livelihood from both production and distribution process. In general we classify three typical land use strategies based on the relevant land use practices in research sites. Among the targeted groups of households, the households with productive strategy occupy highest proportion in comparison to other strategies. This illustrates that agricultural production is still the main way of turning land to livelihood among households in research sites. There is a great attention to the households with non-productive strategy, not only because of their greater number (35.60% total surveyed households) but also because of the extent to which other manners of turning land to livelihood present in the inter household arrangements. It is likely that there are the close connections between migration and non-productive land use strategy because 60.08% of migration households choose this strategy. This is in line with the previous studies of migrate miner workers in African countries(Ferguson 2013).

In order to understand the various patterns and the determinations of each land use strategy, the main characteristics of the land use strategy are presented in table 5. Beside the targeted groups, we examine the elements of household demographic characteristics in which the family size and labor size are emphasized. The agricultural land holdings and the different land use practices, number of income sources or the income diversification and food production status are also considered in analyzing the determinations of household land use strategy.

Table 5: Characteristics of household land use strategies

Indicator	Unit	Land use strategy			Total
		Productive	Non-productive	Flexible	
Group 1: Non-migration	*HH, %*	23.68	7.35	2.13	12.57
Group 2: Mix	*HH, %*	60.53	47.06	80.85	60.73
Group 3: Migration	*HH, %*	15.79	45.59	17.02	26.7
Age of household head	*mean*	54.99	57.71	53.64	55.62
Family size	*mean*	4.43	4.44	4.49	4.45
Total labor	*mean*	3.12	3.07	3.13	3.10
Farm labor	*mean*	1.21[b]	0.69[a]	1.15[b]	1.01
Dependent people	*mean*	1.3	1.37	1.36	1.34
Number of migrants	*mean*	0.82	1.03	0.87	0.91
International migration	*HH,%*	28.95	36.76	25.53	30.89
Agricultural land in 2012	*mean*	1,420.42	1,284.41	1,440.53	1376.95
Buy land	*HH, %*	11.84	2.94	4.26	6.81
Rent in land	*HH, %*	36.84	1.47	0.00	15.18
Use land for agri. production	*HH, %*	81.58	70.59	87.23	79.06
Rent out land with interest	*HH, %*	7.89	4.41	4.26	5.76
Rent out land without interest	*HH, %*	2.63	36.76	4.26	15.18
Abandon land during winter crop	*HH,%*	57.89	73.53	68.09	65.97
Abandon land whole the year	*HH, %*	0.00	36.76	2.13	13.61
Sell land (all or a part)	*HH, %*	0.00	19.12	6.38	8.38
Number of income source	*mean*	2.26[a]	2.63[b]	2.62[b]	2.48
Produce enough food	*HH, %*	78.95	58.82	76.60	71.20
Produce not enough food	*HH, %*	21.05	41.18	23.40	28.80

[a,b,c] ANOVA test at alpha=0.05

Source: Household surveys

2.2.1 Productive land use strategy

Using their allocated land for agricultural production, mainly rice production and other crops such as maize, bean, vegetables and fruit trees is the decision made by a large proportion of surveyed households (79.06%, average). Within the productive strategy, this rate is 81.58 % and less than that rate of flexible strategy. Aquaculture and pig production are practiced by the households in Cam Hoang commune where land conversion for industrialization has not yet happen and local government encourage farmers turning several rice plots with low productivity to fish ponds under the program of "*changing crop structure*". The main reason of using land for agricultural production is to sustain food security rather than to make profit. Even the households with small area of land (less than 1000 m^2) two rice crops per year ensure the subsistent food for whole household members around the year. This explains why the rate of household can produce enough food for their home consumption in this strategy is highest among three typical strategies. For the households with larger land area, they have a countable proportion of rice, vegetables and other crops for sale. Only few households report that they get profit from agricultural production. The reasons are that the production cost is

high due to they had to hire some agricultural services such as preparing fields, transplanting, and harvesting while the price of agricultural products are low.

Addition to using the allocated land, the households following the productive land use strategy also buy and rent in land from other households in the villages or from the communal land to do agricultural production. Depend on the area that household can buy or rent as well as the financial capital, these households can form the large-scale farms. They practice the so-called VAC system with fish pond, pig or chicken production and cultivation. They use mainly the family labors and hire some labors from villages to work for them. They are the rich farmers who can benefit from agricultural production through the mechanization of farming and improved crop-livestock integration.

The other important determination in choosing the productive strategy is human capital such as the household size, labor skill and the ability in taking the opportunity to find out the jobs outside the communes or villages. In general, agricultural production in research sites bases mainly on the human labor force. Mechanism and other forms of modern technology in agricultural production are not much improved in research sites. Also not all households can send their members to other places to work. Therefore the households with larger size but their members are unable to migrate normally choose the productive land use strategy. Human capital also is equally important in the case of large-scale farms. Their owners are the well to do farmers who can buy the small tractors and equipments to earn extra income from providing agricultural services to other households such as preparing fields, threshing rice and other activities in harvesting. They develop also the models of capitalist agricultural production to have higher profit.

2.2.2 Non-productive land use strategy

The prominent features of non-productive land use strategy are the different forms of renting land, ineffective using land and abandoning land. In fact, this is the inter-household arrangement on land. Among the targeted groups, there is higher rate of non-migration and mix households rent in land, the migration households involve with higher proportion in buying, selling and renting out land. This reflects the different impacts of remittance and migration patterns upon household decisions on land. The households who rent out their land are normally the retired state officers with stable pension, the aging land owners, the households with migrant breadwinners and the households with lucrative non-farm jobs. These households can rent out their agricultural land to their neighbors, siblings or close relatives with or without interest. In some cases that is simply the helps but in other cases it is a kind of social exchange. The large numbers of household in the village that have their children who live in the city but they are still the land owners. They do not use their land but rent it out for other siblings as the way to support their siblings or relatives contemporary but as the way to keep the land for their retirements. The other households can receive the more direct social supports from those who rent their land. For example, in the migrating households, normally the left behind members were old people and children. These people often need the supports of the relatives or kinships while the bread winners go out to work. The different forms of household arrangement or social process in land use reflect the various mechanisms to turning land to livelihood.

Abandon land and other forms of using land in ineffective way are the considerable practices and raise a great concern of local authority. Overall, 65.97% surveyed households leave land idly during the winter and 8.90% households abandon land all around the year. The commune

leaders have reported that during the summer rice 2013, the land abandon areas in Cam Phuc commune is about 11 hectares and in Cam Hoang is 8 hectares.

Land area is important indicator in abandoning land. While most households abandon land during the winter crop because of high input cost, those whose land holding is too small (less than 1000m^2) seems fallowing their fields all around the years. This happens in Cam Phuc commune where the land conversion for industrialization took place. Beside, the negative impacts of industrialization also cause the land abandon. The surveyed households in Cam Phuc commune report that land and water pollution have destroying their crops. The irrigation system was broken down as for the building of factories and causes the flood or drought, rate and other pests are wider spreading and affect the production. As the results, agricultural land is left idle for a long period of time

Land abandon in certain seasons or other forms of ineffective use, in fact are the different ways to keep the long-term land use right but not to make profit from agricultural production. In the context of socialist land tenure in Vietnam, the land use right ensure the access to both material and non-material resources of peasant households in their villages and communes. This reflects the peasant logic with high level of income diversification outside agricultural production to firstly ensure food security and then to enhance livelihood through participating in the wider market in other sectors and places. These sources of livelihood making are furthermore intertwined with widespread practices of mobility, which effectively connect rural dwellers to often distant locales and resources (Peemans 2013).

2.2.3 Flexible land use strategy

Flexible land use strategy is the decision of a large number of households in group 2 in this research. This strategy combines different types of land use practices. Firstly, the large number of households reports that they use their land for agricultural production (87.23%). This figure is even higher than that of the productive strategy. They select several good plots of their allocated land for agricultural production, mostly rice cultivation with two rice crops per year. There is the high percentage of household (76.60%) who follow this strategy can produce enough food for their home demand from their allocated land. During certain winters, they abandon land to find a better non-farm job with higher income. But in other winters, they cultivate cash crops such as vegetables, beans, sweet potato, potato and flowers for sales if the price of these crops is good and for their home consumption. Depend on the stability and income level of non-farm jobs some households rent out their land in certain years. Almost households who rent out their land without interest, very few of them rent out land to have some interests. In this case, there is normally the oral but no written land renting contract between the land owners and their neighbors or relatives. These contracts are in fact the agreements to use the land in a short time. The combination of different land use practices ensures the household food security and subsistence demand. In addition, households can have better income from the diversification to non-farm sources.

2.3 Socio-economic and institutional determinations of agricultural land use strategy

2.3.1 Agricultural landholding and farm income

From the main characteristics of each land use strategy presented in above section, we analyze the socio-economic and institutional determinations of household land use strategy. The most important determinations of household land use strategy are the factors influenced to agricultural production such as land holding and agricultural profit. As mentioned earlier, the

household landholding is very small and fragmented. In average, the households in group 1 have less than 1000 m^2, even some households in Cam Phuc commune have only 500 to 600 m^2 of agricultural land. It is obvious that farmers cannot sustain their livelihood by this very small land. The results in table 6 also show that the households who follow the non-productive strategy have less agricultural land than other households in productive and flexible strategy. In the context that the possibility to enlarge farm is scare because every farmers want to own land or sustain their long - term land use right, households cannot rely on their land to make their living and to cover other fees such as education, health care and other social costs.

Addition to small landholding, the high production cost and low price in agricultural production leads to the low farm income. During the field surveys, many farmers reported that they get no profit from agricultural production. The agricultural production in the research sites rely mainly on manpower. There is little mechanics and other modern technologies and they are normally applied in the large – scales farms. Farm activities are always hard and dirty jobs for many young peoples. Labor cost for agricultural production therefore is high. Other inputs such as fertilizer, pesticide, agricultural services are also high. Other risks such as pest and diseases causes the big lost in agricultural production. The price of agricultural products is low and unstable. This leads to the downward income from agricultural production and agriculture becomes less profitable sector. The industrialization and modernization may further affect the household land use for agricultural production through increasing land pollution. High input cost, low price of agricultural goods and great work load mean that agricultural profit cannot be considered economic determinants in land use because their added value has absolutely no influence on the increase household income.

It is necessary to emphasize that although agricultural production is not for making profit and income from agricultural production is less important than other sources in household income, agriculture still bring the stable and secure livelihood. Moreover, agriculture provides in kind income, safe food and suitable for the households with aging members. In the context of unstable non-farm jobs and fluctuated food price, agricultural production is still the important activity that ensures household food consumption. The factors associated to agricultural production determine the decisions of household on their agricultural land use in the way that they use their land for agricultural production to sustain their own food demand and to avoid the risks of changing jobs. Therefore using land for agricultural production is linked firstly to the question of security.

2.3.2 Occupational multiplicity, non-farm jobs and land concentration

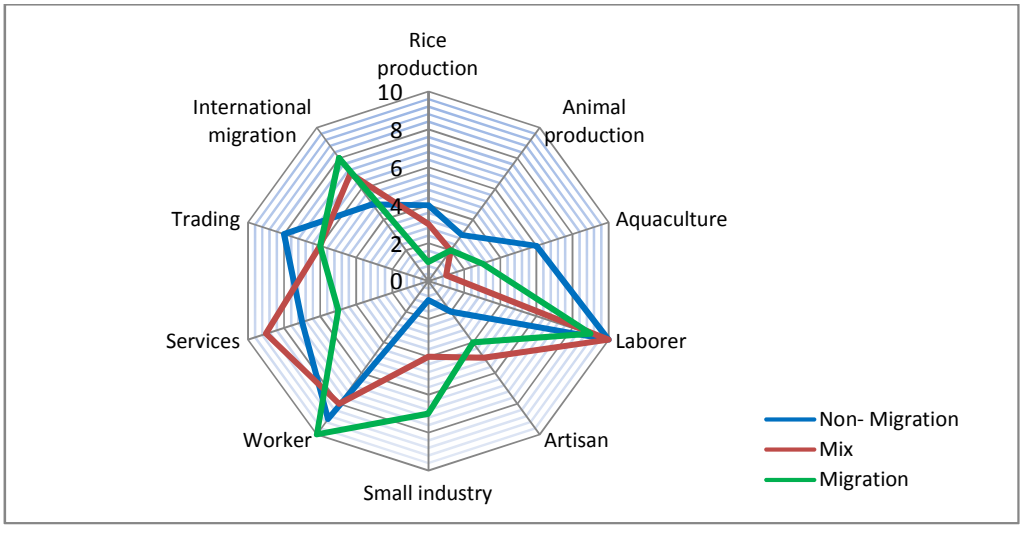
The income diversification is also important indicator that determines the household's decisions on land use. The results from table 6 indicate that productive land use strategy links to the households that have less diverse income sources while the non-productive land use strategy are made by the households with higher level of income diversification. This proves that income diversification, especially the economic activities outside agricultural production have ensuring the livelihood of peasant. Exploiting land for agricultural production is not only one way to draw the household livelihood.

The industrial development has at the same time taken agricultural land and created the non-farm jobs in both formal and informal sectors. Although, not all farmers have opportunities to earn their living from non-farm jobs, the non-farm income constitutes the main part of household income(Nguyễn Thị Diễn, Vũ Đình Tôn et al. 2012). We investigated the main jobs of labor in surveyed household. The results show that the number of farmer occupies

only 28% of total labor force and mainly the groups of labor from 40-60 years old. The non-farm jobs are very diverse but the main non-farm jobs are laborer and worker in new industrial factories surround villages. We also investigate the roles of different sources of household income. The results in figure 2 provide the income ranking of three targeted groups of surveyed households. It is clear that income from non-farm activities play increasing important roles in comparison to income from farm activities.

The different types of non-farm jobs influence to the land use decision of different households in different ways. The migration as the most important non-farm job has the diverse impacts upon the household decision on their agricultural land use depending on the patterns of migration and the use of its remittance. For example, international migration is different to domestic seasonal or commuting migration in the way it contributes to household income and influences land use decision. Because of high deposit money, several households had to sell their agricultural land to support their members following international labor migration. In turn, some success migrants can send remittance to their left behind members to buy land and to invest in agricultural production. For many of others, buying land is the way to accumulate the real estate but not to do agricultural production. In opposite, some households might go in debt because of the risks of international migration. In the research sites, the number of international labor migrants in Cam Hoang reaches 250 persons and in Cam Phuc is 289 persons. Among the 191 sample households, there are 67 international labor migrants. Some households have 2 or 3 members migrating internationally. As mentioned earlier, the non-productive land use strategy is decision of households with migrating members. The meaning of land on livelihood in these cases is not only close to agriculture and technical efficiency of production but connects strongly to the various aspects of mutuality and social reciprocity. This creates a network of consensus and relationships that function to preserve agricultural land.

Figure 2: The role of income sources in household economy



Source: Group discussion, 2013

Diversification of income not only determines the ways households use their agricultural land and overall their choice over land use strategy, it also implicates the slowly land concentration in Northern Vietnam. The impacts of income diversification on land concentration can be understood through the decisions of the rich and the poor farmers. The wealthier households

with agrarian surplus are interested in investing to other lucrative non-farm activities. In the research sites, some owners of large-scale farms can effort to channel their capital to small industries, food processing or other rural services to have higher benefit. The poor households by nonfarm activities can survive without selling their land. Thus the land concentration cannot proceed faster. The results from table 5 illustrate that the buying and selling land or other commercializing land is less prominent in research sites. The fact is that all the farmers want to keep their land, even it is small and even they have no land ownership but land use right in the condition of Vietnamese socialist land distribution.

2.3.3 Institutional factors: Land allocation, land use restriction and land conversion policy

Land policy in which land allocation is the crucial factor determining the land use strategy. The long-term equal land allocation implemented since 2003 are currently extending. This leads to the land fragmentation or the splitting of farm into smaller plots. This policy was critiqued that it reduces the efficiency of agricultural production and create numerous management problems such as the greater distances, loss of working hours, more difficult transportation of agricultural products, scattering of the farms across the land. Similar to other formal socialist countries, Vietnamese government has carrying out the land consolidation program. The land consolidation program or regrouping land is assuming that a larger farm area implies greater possibilities to use machinery and modern technology on agricultural production. Thus, the consolidating plot will lay the foundation for greater rural productivity(Deininger, Savastano et al. 2012). In fact, the land consolidation program has implemented in research sites since 2003 but it does not create the greater agricultural productivity or even the greater agricultural productivity does not keep pace with the non-farm income. This leads to the doubt on the possibility of land consolidation to solve the issue of low agricultural economic efficiency and the land abandonment has happening at a wider spread. The main reason is that the farmer does not want to consolidate their farms with other farms or the land accumulation does not happen in the fast pace. Households follow the land consolidation program but households want to keep their land. So that instead of having 7 or 8 plots of land, after land consolidation they have 2 or 3 plots but the household landholding is the same. Many of them do not pay much attention on making profit from agricultural production because they have the opportunities for non-farm jobs. As the above analysis, it is not only the efficiency of agriculture that determines the household land use strategy. The households abandon their productive land even they buy it because they do not consider cultivation to be worthwhile. Benefits are expected to arise not from productive use but from future appreciation of land values, could underlie such behavior.

Beside the land allocation, the land use restriction policy which classifies agricultural land is for agricultural production and cannot be conversed to non-agricultural land also plays important institutional determinations of household land use strategy. The land plots that were degraded by industrialization or climate are abandoned because it cannot be used for agricultural production. Within agricultural land, there are also the restrictions for growing rice to meet the goals of food security and export target but not for other perennial crops or aquaculture production. Farmers are not allowed to converting rice field to fish pond because the state has invested on irrigating rice fields or because the benefit of a farmer might effect on others (Markussen, Tarp et al. 2011). Similar to the question of land fragmentation, the land use restriction might affect to profit from agricultural production, especially rice production but does not change the reality of peasant land use strategy. Security question and flexible livelihood adaptation rather than uneconomically agricultural production seem to be at the root of different land use strategy.

The land conversion policy also influences the options of households on agricultural land use. The previous section has analyzed the possibility of non-farm jobs, the decline of agricultural land holding, the damage of crops and livestock in determining the household land use strategy. It is necessary to notice that because of the environment pollution in the industrialization area, the land owners might leave the land idly in hoping to demonstrate the agricultural low productivity and signaling to potential claimants that it had better to converse to fish ponds and livestock production or to other types of non-farm land (Nguyen Thi Dien 2011). In research sites, the land conversion from rice fields to fish ponds and orchard in Cam Hoang and from agricultural land to guest houses in Cam Phuc has demonstrated this fact.

The other institutional factors that effect to household land use strategy are the local regulations and social networks at the community. The kinship relations in the extended family, the neighborhood play the important roles in the decisions of households on land use. As mentioned earlier, the patterns of land use practices in non-productive strategy are made though the inter-household arrangements. The social supports are necessary in the rural life, thus, land brings the social and cultural meanings in distribution process beside its economic function in production process.

Conclusion

From the above description of land use strategy and its determinations, the conclusions of this paper as following:

First, productive strategy in which agricultural land is used for agricultural production to sustain household food security is the decision made by a large number of peasant households in Red River Delta region. The maintaining the allocated land for agricultural production links to the security questions of shifting livelihood between farm and non – farm sectors and depends strongly on the adaptive ability of different household groups. Following the productive strategy, some households become wealthier farmers since they can afford to rent in the land to form large-scale farms to integrating cultivation and livestock production.

Second, there is an increasingly importance of non-productive land use strategy which is presented in land abandon and other forms of ineffective land use. In fact, this reflects the social supports and inter-household arrangements in the conditions of changing employment structure toward non-farm sectors and the greater livelihood mobility outside the villages.

Third, the factors associated with the downward income from agricultural production such as small land holdings, high input cost and pollution meantime the opportunities from non-farm jobs are the main socio-economic determinations of household land use strategy.

Fourth, Income diversification influences the decisions on land use and behavior of both rich and poor farmers in which the rich finds another alternative way to invest their surplus income and the poor can survive without selling their land thank to the non-farm jobs. Income diversification is crucial factor that determine not only household land use strategy but also the slowly land concentration in the context of socialist land distribution in Vietnam.

Fifth, the government policies on land such as the equal land distribution, periodically land allocation, land conversion and land use restriction as the institutional constraints have some implications in agricultural production rather than in peasant's land use strategies. The local

regulations and community networks are likely the institutional determinations closer to household decisions on land use.

This paper analyzes the dynamic and flexible adaptive strategy of peasant households on land use meantime it emphasizes the "*hybrid*" peasantry (Peemans 2013) and the diverse rural reality. In the current context of "*restructure agriculture*" program, this paper pays attention on the options that can be made available to the smallholders and the future of peasant agriculture.

References

Akram-Lodhi, A. H., S. M. Borras, et al. (2006). Land, poverty and livelihoods in the era of globalization : perspectives from developing and transition countries. London ; New York, Routledge.

Alberto, Z., C. Gero, et al. (2009). "Rural income generating activities: Whatever happened to instutuional vacuum? Evidence from Ghana, Guatemala, Nicaragua and Vietnam." World Development **37**(7): 1297-1360.

Barrett, C. B., T. Reardon, et al. (2001). "Nonfarm income diversification and household livelihood strategies in rural Afria: concepts, dynamics, and policy implications." Food policy **26**: 315-331.

Bouahom, B., L. Douangsavanh, et al. (2004). "Building sustainable livelihoods in Laos: untangling farm from non - farm, progress from distress." Geoforum **35**(2004): 607 - 619.

Brons, J. E. (2005). Activity Diversification in Rural Livelihoods: The role of farm supplementary income in Burkina Faso. Wageningen, Wageningen University**:** 153.

Cam Hoang commune people commitee (2011). Report on general socio - economic development plan of Cam Hoang commune to 2011 and guideline to 2012. C. H. c. p. commitee, Cam Hoang commune.

Cam Phuc commune people commitee (2006). Report on general socio - economic development plan of Cam Phuc commune to 2005 and guideline to 2006. C. P. c. p. commitee, Cam Phuc commune.

Cam Phuc commune people commitee (2011). Report on general socio - economic development plan of Cam Phuc commune to 2011 and guideline to 2012. C. P. c. p. commitee, Cam Phuc commune.

Cousins, B. and I. Scoones (2010). "Contested Paradigms of "Viability" in redistributive land reform: perspectives from Southern Africa." Journal of Peasant Studies **37**(1): 31-36.

Deininger, K., S. Savastano, et al. (2012). "Land Fragmentation, Cropland Abandonment, and Land Market Operation in Albania." World Development **40**(10): 2108-2122.

Edward Taylor, J. and A. Loper-Feldman (2010). "Does migration make rural household more productive? Evidence from Mexico." Journal of Development Studies **46**(1): 68-90.

Ellis, F. (2000). Rural livelihoods and diversity in developing countries. Oxford, Oxford University Press.

Ferguson, J. (2013). "How to Do Things with Land: A Distributive Perspective on Rural Livelihoods in Southern Africa." Journal of Agrarian Change **13**(1): 166-174.

Keith, B. (2012). "Land, livelihoods and remittances: A political Ecology of Youth Outmigration across the Lao-Thai Mekong Border." Critical Asian Studies **44**(1): 57-83.

Lambin, E. F. and P. Meyfroidt (2010). "Land use transitions: Socio-ecological feedback versus socio-economic change." Land Use Policy **27**(2): 108-118.

Markussen, T., F. Tarp, et al. (2011). "The Forgotten Property Rights: Evidence on Land Use Rights in Vietnam." World Development **39**(5): 839-850.

Mertz, O., R. L. Wadley, et al. (2005). "Local land use strategies in a globalizing world: Subsistence farming, cash crops and income diversification." Agricultural Systems **85**(3): 209-215.

Neves, D. and A. du Toit (2013). "Rural Livelihoods in South Africa: Complexity, Vulnerability and Differentiation." Journal of Agrarian Change **13**(1): 93-115.

Nguyễn Ngọc Công (2012). "Những biến động trong sử dụng đất đai thập niên 2000 - 2010 (The changes in land use from 2000-2010)." Nghiên cứu kinh tế (Economics Study) **411**(8/2012): 43-50.

Nguyen Thi Dien (2011). Land conversion for industrialization and its impacts on household livelihood strategies in Hung Yen province, Northern Vietnam. Rural Economics and Development. Liege, Liege University. **Ph.D dissertation:** 190.

Nguyễn Thị Diễn, Vũ Đình Tôn, et al. (2012). "Chiến lược sinh kế hộ nông dân và cơ chế phân tầng xã hội ở vùng nông thôn công nghiệp hóa (Household livelihood strategies and the mechanism of social differentiation in industrialized areas)." Nghiên cứu kinh tế (Economics Study) **411**(8/2012): 51- 62.

Peemans, J.-P. (2013). "A political economy of rural development in Southeast Asia in relation with many versions of the disppearance of the peasantry." Etudes et Documents du GRAESE **6**: 1-102.

Phạm Minh Thăng. (2013, 30/1/2013). "Hải Dương: Vấn đề phát triển nguồn nhân lực trong giai đoạn hiện nay (Hai Duong: The issue of human resource development in current period)." Retrieved 1/1, 2014, from http://skhdt.haiduong.gov.vn/ktxh/quyhoachvaptktxh/pages/haiduong.aspx.

Philipe, F. K. (2011). "Migration, Agrarian transition and rural change in Southeast Asia: Introduction." Critical Asian Studies **43**(4): 479-506.

Prishchepov, A. V., D. Müller, et al. (2013). "Determinants of agricultural land abandonment in post-Soviet European Russia." Land Use Policy **30**(1): 873-884.

Qasim, M., K. Hubacek, et al. (2013). "Underlying and proximate driving causes of land use change in district Swat, Pakistan." Land Use Policy **34**(0): 146-157.

Rigg, J. (2006). "Land, farming, livelihoods, and poverty: Rethinking the links in the Rural South." World Development **34**(1): 180-202.

Rigg, J., A. Salamanca, et al. (2012). "Joining the Dots of Agrarian Change in Asia: A 25 Year View from Thailand." World Development **40**(7): 1469-1481.

Sikor, T. (2006). "Politics of rural land registration in post-socialist societies: Contested titling in villages of Northwest Vietnam." Land Use Policy **23**(4): 617-628.

Sikor, T. and D. M. Truong (2002). "Agricultural policy and land use changes in a Black Thai commune of Northern Vietnam, 1952-1997." Mountain Research and Development **22**(3): 248-255.

Thanh Hang (2013). Nông dân bỏ ruộng: Lời cảnh báo cho ngành Nông nghiệp Việt nam (Farmer abandoned agricultural land: the warning for Vietnamese Agriculture). Viện chiến lược và chính sách tài chính (National institute for finance). Hà Nội.

Turner, S. D. (2005). Livelihoods and Sharing: Trends in a Lesotho village, 1976-2004. Research report No 22. Cape Town, CARE and Program for Land and Agrarian Studies (PLAAS), School of Government, University of the Western Cape, South Africa.

Van Hung, P., T. G. MacAulay, et al. (2007). "The economics of land fragmentation in the north of Vietnam*." Australian Journal of Agricultural and Resource Economics **51**(2): 195-211.