



**Duality of migrant lives: Gendered migration and agricultural production
in Red River Delta region, Vietnam**

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Abstract

This research analyzes the gender dimensions of labor migration and agricultural production among farm households in Red River Delta region of Vietnam. Through surveying 215 households in Bac Ninh province, the paper explores impacts of female and male migration on agricultural production and its implications on rural development. The results show that in comparison to male migration household, the female one tends to focus on agricultural production by taking the opportunities to rent more land (26.3%) and effective use their own allocated land for agricultural production (97.4%). The overall impacts of migration on agricultural production are the aging of farm labor force (49.6 year old in average) and higher female participation in agricultural production. The findings suggest that female migrants have a greater contribution in agriculture production both in term of working time and agricultural capital investment while male migrants enhance household income by accumulating capital outside agriculture. Through the gender lens, this research emphasizes the duality in the nature of migrant lives and the implications of rural labor migration on the fixed categories.

Keywords

Gender, migration, agriculture production, land use, labor allocation, duality, Vietnam

JEL: P16, O10, O12, Q15, R14, Z13

1. Introduction

The policies of reform and modernization have induced the dramatic changes in agricultural production and rural development of Red River Delta region in Vietnam. Beside proceeding further the market orientation and mass agricultural land conversion for industrialization (Nguyen Thi Dien 2011), recently, Vietnamese government has launched the program of building « *new countryside* » and « *restructuring agriculture* » to improve the income of farmers. These modernize policies have catalyzing to the wave of labor migration with various patterns and dynamics. According to the report of UNDP, during last 20 years, Vietnam has witnessed the greatest flow of both domestic and international labor migration in its history (UNDP Vietnam 2010). In Red River Delta region, many households spread all over their livelihood activities in different sectors. Migration permits them at the same time to keep a foothold on land in their villages and seek cash incomes elsewhere.

As a critical population movement, migration has close linked to the agricultural production and rural development. While the general consensus is made that migration is both the outcomes and driven forces of agrarian production(Philip 2011), the impacts of migration on agricultural production are still in the debate. The literature identifies negative as well as positive attributes of migration on agricultural production. Some claim that migration leads to greater investment and agricultural improvement, while others claim that it leads to a loss of labor and degradation of agricultural systems.

The pessimistic shows that the greater migration leads to the shortages of agricultural labor and impoverishes the rural communities (Skeldon 2003) because the migrants are mostly young productive population. Many studies claim that the loss of labor caused by migration has a negative effect on household farm income in sending areas, although it does not negatively effect on the agricultural productivity (Croll and Huang 1997; de Brauw 2010). This loss of labor may also create a de-intensification of agriculture and the decline of cultivated land area (de Haas 2005). Furthermore, labor scarcity may have a deleterious effect on the cultural and social organizations that sustain agriculture (Jokisch 2002). When remittances are not invested in agriculture, the net impact of migration on agricultural production could be dramatically negative, particularly when agriculture is subsistence-based and has low returns on investment (McKay 2005). Besides, there is still another reason for the lower crop output which can be attributed to changes in the type of labor involved in farming, with less family labor and more hired labor, leading to a reduction in agricultural efficiency.

In contrast, the optimistic points out that migration can address the critical problem of under-employment in rural areas, and hence, not necessarily create labor shortage at peak periods (Croll and Huang 1997; Rigg 1998; Jokisch 2002). The remaining labor resources left behind in the village can engage to agriculture in the rise of migration. It is also proved that remittances – the most important aspect of migration can be used for labor and non-labor inputs in the farming sector to offset any labor losses (de Brauw 2010). Even though a relatively small amount of

remittances is spent on productive activities, remittance is an important source to improve agricultural land (de Haas 2005). Remittance also permits migrant households to purchase the improved inputs such as equipment, seed, fertilizer and draught animals or hired labor (McDowell C and de Haan 1997) as well as to overcome capital and credit constraints. Some other studies indicate that a considerable proportion of remittances is used to invest in agricultural land, equipment, and small-scale businesses (Tiffen M, Mortimer M et al. 1994; McDowell C and de Haan 1997; McKay 2005).

Despite the rise of migration and the concerns of its impacts on the rural areas, little is differentiated female and male migration and the impacts of gendered migration on agricultural production. The simplistic narrative of positive or negative impacts of migration on agricultural production is not sufficient to understand the diverse and complex relationships between migration and development in rural areas. Migration as the livelihood strategies of households induces the new forms of labor allocation within farm households. Although the common tendency of aging and feminizing farm labor were well recognized (Sally 2006), the household's decisions over their labor allocation depend on their own resources, internal household relations especially the gender relations and specific socio-economic and institutional contexts. Migration decision is not only related to personal life, but also households' strategy. The decision to migrate is often the result of deliberate, calculated in a long time (De Jong and Gardner, 1981; Massey, 1990), including the weight of cost and benefit among household's members, in at different stages of family life. The choices of migration and agricultural patterns are the gender-based labor division and allocation of households. The development of different migration patterns associated with the change in gender roles does not necessary lead to the same impacts such as the shortages of farm labor or deterioration of farm production for every household. Beside, given the growing of "*hybrid peasant*" (Peemans 2013) for both male and female labor, the impacts of migration on agricultural production must be understood by gender lens.

Another important aspect that need to be paid the greater attention in order to understand the interlinked of migration and agriculture is the role of agriculture in household economy in the context of migration. The female and male migration households show their different desires about the purpose of agricultural production that is not limit to subsistent or commodity agricultural production but also the symbolic and non-productive values of agricultural production (Ferguson 2013). These diverse purposes determine the use of agricultural land, other resources and infrastructure for agricultural production. The local agricultural land use becomes more complex with different and contrary tendencies including the land accumulation and even the land abandonment. In Vietnam, doing agricultural production for many households is the way to keep the secure on land and the way to keep a foot on the village (Nguyễn Thị Diễm, Vũ Đình Tôn et al. 2014). Gendered migration and its remittance also create the differences in household's investment behaviors and capital channeling. As the results, migration leads to the changes in the nature of agricultural production. Agricultural practices have the multi-functions beside the traditional function as the food producing.

Labor migration brings the new sources of rural livelihood and creates the changing in the individual status and identities. Gendered migration further adds the other new dimensions on the rural social differentiation and fixed categories. Gender relations reflect both the negotiations within the rural households and the impacts of outside socio-economical structures on households' decisions over land use, labor allocation and remittance usage. Various empirical researches have demonstrated that in the household decision making process, the more equal gender relations in intra-household is the more effective labor and other resources are used (Bettina 2006; Gorman 2006). Thus, in the circuits of accumulation, gender relations determined the rising up or falling down status of household as a whole. Moreover, the common tendency of '*feminization of agriculture*' (Sally 2006) which is likely linked to '*feminization of poverty*' (Sylvia 2007) in developing countries and in Vietnam as well reflect the gender inequality systematically. Beside, as migrant, the presence of women in low paid jobs in both formal and informal sectors (Cling, Huyen et al. 2010) also reveal the vulnerability of certain women groups those status seems to be at the lowest layer of social ladder (Mason and King 2001). Thus in the context of labor migration, the capitalist accumulation in agricultural production is not necessary the only one way of social stratification. The opportunities to earn the living outside agriculture and outside the villages of migrants create other forms of capital accumulation. Man and woman experience the opportunities and challenges differently. As the results, the gendered migration and agricultural production creates the gendered social stratification. Moreover, migration leads to the diverse class position and gender identities in different spaces. A laborer in one context might be the owner in another (Philip 2011), the poor in one context might be the rich in another. Because of the duality of migrant lives, the gender identity, the professional identity and the resident identity are changing accordingly.

This research aims to explore the duality of migrants through investigating the gendered labor migration and agricultural production. It examines the different patterns of land use, labor allocation and investment behavior of different farm households to understand how gendered migration implies on agricultural production and the fixed categories. The interactions of labor migration and agricultural production are examined to understand the different forms of mobility of farm households and the individual identities. Gender dimensions of this process manifest the "hybrid peasantry". This research is carried out to provide the accurate and profound analysis on current agrarian change in Red River Delta region. This research bases on the new political economy approach (Razavi 2009) which integrates the traditional political economy (White 1989) and gender relations in investigating the two main axes of agrarian change which are the labor migration and agricultural production in the greater interactions of rural – urban spaces.

Bac Ninh province in Red River Delta region is selected as the research site. With 823 km² in total and around 1.038 million populations, it is the smallest province of the delta. However, the province has been represented for the prominent features of modernization and industrialization process in the delta. It has been ranked as five of provinces that have the highest investment in the whole country. Currently, Bac Ninh has 15 industrial zone and more than 35 industrial

clusters with more than 9400 ha agricultural land acquired (People committee of Bac Ninh province 2013). So, the acquisition of agricultural land in order to develop industry has caused a crucial impact on rural changes, including labor migration and land use for agricultural production. Among eight administrative units of Bac Ninh (seven districts and one city), Que Vo district and Yen Phong district are selected for research sites. This selection is based on the proportion of the acquisition of agricultural land and proportion of migrants including inter and intra province (Bac Ninh Industrial Zones 2013). To understand gender dimensions of labor migration and agricultural production, 215 households are selected to do a household survey. We pay attention on the gender aspects of migration and agricultural production to select surveyed households.

The surveyed households are classified into 4 groups:

Group 1: Non-migration households: No one in the household is the migrant

Group 2: Male migration households: Only male member in the household is the migrant

Group 3: Female migration households: Only female member in the household is the migrant

Group 4: Both sex migration households: Both female and male members in the household are the migrant

Beside household survey, the group discussions, participate observation and in-depth interviews are carried in selected communities. A combination of qualitative and quantitative methods is used to analyze the data and information.

2. Research results

2.1 Main features of the surveyed households

The industrialization process started in Bac Ninh province since 2001 with the large agricultural land acquisition to build up the industrial parks such as Que Vo and Tien Son. The decline of agricultural land associated with the growing opportunities to find a job outside agriculture lead to the mass labor migration. The farm labors have also the chances to find a job in industrial enterprises. This creates the changes in labor structure of farm households. We describe in table 1 the main characteristics of surveyed households in which the changing agricultural landholdings and demographic features of households are focused. The common trend of the declining agricultural landholdings of surveyed households from 1993 to 2014 has a root from land conversion for industrialization and other small exchanges among villagers since the agricultural land market is not well developed in Vietnam in general and in Bac Ninh in particular. The farm households cannot sustain their livelihood with small land households therefore they had to find a job outside agriculture. There is also the exception of increasing landholdings among the group 1. Without migrating members, this group of non-migration households concentrates on agricultural production. They rent more land of the village or commune to form the large-scale farms. They can also rent more land to plant potato to serve the demand of chip production in the industrial parks.

Table 1 shows that in average, the labor size of household is 3.5 labors in which migration labor size is 1.6 labors. The group 4 has a higher labor size and this explains also the higher migrant members of this group. The migration patterns in the research sites are diverse and the circular migration is a prominent feature of households in the research site. The circular migration or daily shift migration in which people are moving repeatedly in a close enough distance to be able to go back and forth in a day is the most favor migration pattern of surveyed households. Usually this form of migration does not consider the distance, only a change in the administrative boundaries as commune, district or province so that migrants can come back home daily.

Table 1: The socio-economic characteristics of surveyed households

Indicators	Group 1 Non migration (n=38)	Group 2 Male migration (n=40)	Group 3 Female migration (n=38)	Group 4 Both sex migration (n=99)	Total (N=215)
Family size (mean, pers.)	4.3	4.3	5.0	5.7	5.1
Labor size (mean, pers.)	2.8	3.3	3.5	3.8	3.5
Male labor (mean, pers.)	1.2	2.0	1.5	1.9	1.7
Female labor (mean, pers.)	1.6	1.4	2.1	2.0	1.8
Migration labor (mean, pers.)	0.0	1.2	1.4	2.6	1.6
Male migration labor (mean, pers.)	0.0	1.2	0.0	1.3	0.8
Female migration labor (mean, pers.)	0.0	0.0	1.4	1.3	0.8
Agricultural land (1993, m²)	2909.7	2805.8	3350.5	3120.3	3065.2
Agricultural land (2014, m²)	7037.9	2422.5	2840.8	2241.3	3228.7

Source: Household survey, 2015

2.2 Overview of migration in research sites

Prior to the *Doi Moi* that took place in the mid 1980s, migration in Bac Ninh province as well as in Vietnam in general was tightly regulated by government policies and household registration systems. Currently, a wave of internal and external migration has increasing and acts as a key livelihood diversification strategy for many rural households and communities - especially those vulnerable households have less access to resources. Migration helps rural households cope with the risks and take advantage of revenue opportunities by distributing household labor in many different spaces, maximize family incomes and reduce risk. In other words, migration is an

important way to diversify household earnings and to ensure the accessibility of resources. This section focuses on analyzing the characteristics of migrants in terms of gender, especially considering this kind of female labor migration. Gender dimension of migration is very important to understand its impacts on agricultural production but often neglected in research, even negated in some policies. Scale rural labor migration has not only increased nationwide, but also take many different forms with the broad participation of women, however, because the official statistics on migration often no separation according to gender dimensions, the determination of the scale movement of women still face many restrictions.

2.2.1 Age and sex composition of migrants

In order to understand the relationships between migration and agricultural production, we explore firstly the basic characteristics of migrants. We focus on the age and sex composition of labor migrants because it linked closely to that of farm labors and to the questions of whether migration creates the shortages of farm labors. The proportion of male and female migrants in the survey sample was relatively balanced (178 or 50.4% male migrants and 175 or 49.6% female migrants respectively) (table 2).

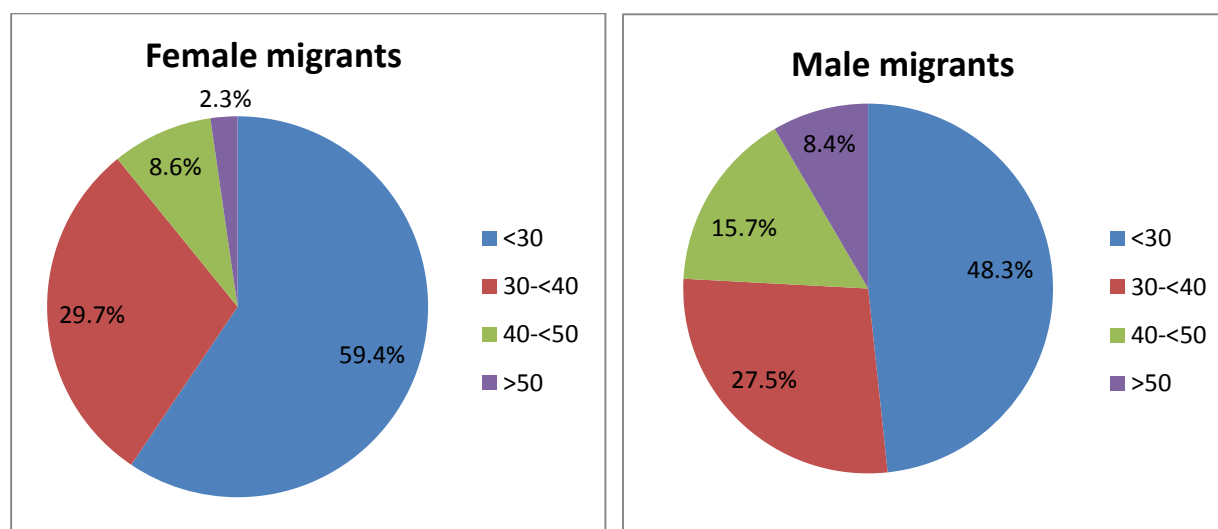
Table 2: Correlation between age and sex groups of migrants

Age range	Migrant groups				Total	
	Male migrants		Female migrant			
	N	%	N	%	N	%
16-<30	86	48.3	104	59.4	190	53.8
30-<40	49	27.5	52	29.7	101	28.6
40-<50	28	15.7	15	8.6	43	12.2
50-60	15	8.5	4	2.3	19	5.4
<i>Total</i>	178	100.0	175	100.0	353	100.0

Source: Household survey, 2015

In this research, the majority of the migrants are younger than 30 (see figure 1), with more than half (53.8%) of the entire sample aged 16 -30. The age group 30-40 accounts for 28.6 percent of sample, while the age group 40-50 and over 50 years of age account for only 12.2 and 5.4 percent respectively. While 59.4 percent of female migrants are under the age of 30, only 48.3 percent of male migrants belong to this age group. Similarly to other age groups, thus, the female migrants tend to be younger than their male counterparts.

Figure 1: Age composition of female and male migrants



Source: Household survey, 2015

2.2.2 Marital status and education of migrants

The other important aspects of the relationship between migration and agricultural production related to the quality of labor and the decision making process. The marital status, the relationship to the household head and education level are important indicators that reflect the quality of migration labor.

Table 3: Marital status and education of migrants

Indicators		Migrant groups				Total	
		Male migrant		Female migrant			
		N	%	N	%	N	%
Marital status	<i>Married</i>	140	78.7	149	85.1	289	81.9
	<i>Single</i>	38	21.3	26	14.9	64	18.1
Relationship to HH head	<i>Head</i>	43	24.2	3	1.7	46	13.0
	<i>Spouse</i>	6	3.4	37	21.1	43	12.2
	<i>Children</i>	128	71.9	132	75.4	260	73.7
	<i>Other</i>	1	0.6	3	1.7	4	1.1
Education	<i>Primary</i>	11	6.2	14	8.0	25	7.1
	<i>Secondary</i>	64	36.0	61	34.9	125	35.4
	<i>High school</i>	69	38.8	65	37.1	134	38.0
	<i>Higher education</i>	34	19.1	35	20.0	69	19.5

Source: Household survey, 2015

The survey shows that most of migrants (81.9%) have been married. There are slightly differences between men and women in different marital groups (see table 3). Among female

migrants, 85.1 per cent are married, whereas for male respondents, the figure is at 78.7 per cent. Only 14.9 per cent of female migrants and 21.3 per cent of male migrants are single. As the Vietnamese tradition, the woman normally gets married earlier than man do. This might explain some of the differences in marital status of female and male migrants. Also, the higher percentage of male migrants as household head in comparison to that of female migrants have the roots in the typical patriarchal Vietnamese family. It is needed to be taken into account this tradition when looking at the decision making process related to migration.

The migration decision-making is usually not an individual's decision rather it is made through the consensus of the whole family. Even though the migrants made decision by themselves, the ideas of the family members such as parents, brothers, relatives and particular spouses are more appreciated. It indicates that migration is adopted by most households as a household strategy rather than an individual response. This point was stressed by both migrants and the people left behind in almost interviews and discussions. The migrants explained because firstly they need support from family and relative to help in agricultural work and housing care. In most cases, the arrangement of household labor allocation is organized before a family member migrated out. Secondly, when the migrants have the family support, they will more easily access to the social network which mostly based on the kinship. Social network is an important aspect that minimizes the movement costs and risks, and hence it seems to be fundamental factor influencing decisions to migrate (Nguyen, 2001). Migration, especially the circular migration in this locality is mostly based on the strong social networks that have already been built from the first migrant generations. The villagers mostly circulate whenever they are ensured about the work (majority is in the informal sector such as making lime, doing construction for males and domestic servant for females) and their living place. According to the patriarchal tradition, the head of household normally is the older man in the family (the husband or the father). The results in previous section have showed that the most of migrants are younger than 30 years old. Given that, it is not surprising that in this research most migrants are the sons or daughters (73.7%) and the male migrants as the head of household are higher than their female counterpart (24.2% and 1.7%). In this research, we focus only on the households that are allocated agricultural land but not other types of household in rural communities. Beside the widowers and single moms, in the case that the husbands are state officers, the wives as farmers are allocated agricultural land and they become the household heads. The results from interviews show that the decisions related to migration as well as the labor division seem to be affected by the negotiations of the head and members and based on the benefits of household as a whole rather than the individual interests.

The education level of migrants related to the quality of labor force. The common trend is that the migrants are not only younger but also have higher education level in comparison to farmers. The data in table 3 shows that only 7.1 per cent of migrants have primary education, 35.4 percent have a secondary education; 38.0 percent have a high school education; and 19.5 percent have a university degree. The female migrants tend to have a lower level of education to their male counterparts because the proportion of female migrant is higher in primary school but lower in secondary and high school. However, at university level female proportion is slight higher than

male proportion (20.0% and 19.1%). Many women in this group graduated from universities in Ha Noi, stayed in this city after graduation in order to find jobs, even though they still settle down in Bac Ninh province.

2.2.3 Migration patterns

The largest proportion of migrants participated in commuting migration or daily shift which is up to 83.9% of total migrants. This popularity could be explained because moving back and forth helps them to minimize the living cost and maximize the earnings. Besides, migrants, especially female migrants still can taking care their children, family, housing and agriculture– which were considered as their responsible and bounce. Therefore, the proportion of female migrants in daily shift is higher than male with 88.0% and 79.8% respectively. Other types of migration share the very small part of migrating population and the male migrants involve in long-term migration, permanent migration and international migration with higher proportion than the female migrants (table 4).

Table 4: Migration patterns of male and female migrants

Migration patterns	Migrant groups				Total	
	Male migrant		Female migrant			
	N	%	N	%	N	%
Commuting	142	79.8	154	88.0	296	83.9
Seasonal migration	8	4.5	10	5.7	18	5.1
Long - term migration	15	8.4	5	2.9	20	5.7
Permanent migration	8	4.5	4	2.3	12	3.4
International migration	5	2.8	2	1.1	7	2.0

Source: Household survey, 2015

2.3 Interactions of gendered migration and agricultural production

The interactions of migration and agricultural production can be seen in different aspects. In this research we pay attention on agricultural land use, labor division, household's income structure and capital investment behaviors of farm households. We want to figure out how gendered migration affects on agricultural production and overall the duality of migrants' lives and its implications on the fixed categories.

2.3.1 Gendered migration and agricultural land use

As the crucial livelihood resource, land is vital for farm households. However, the roles of land have changing to the local context. Although the return from agricultural production is low in comparison to other sources of income, most of surveyed households use their allocated agricultural land for agricultural production. In this research we found that there is the highest proportion of the female migration households using their allocated agricultural land, renting in

land and buying more land for agricultural production while less of households in this group abandon their land.

Table 5: Land use patterns of surveyed households

Land use patterns	Groups of household								Total (N=215)	
	G1: Non migration (n=38)		G2: Male migration (n=40)		G3: Female migration (n=38)		G4: Both sex migration (n=99)			
	N	%	N	%	N	%	N	%	N	%
<i>For agri. Production</i>	36	94.7	34	85.0	37	97.4	91	91.9	198	92.1
<i>Rent out</i>	2	5.3	5	12.5	3	7.9	10	10.1	20	9.3
<i>Rent in</i>	8	21.1	3	7.5	10	26.3	9	9.1	30	14.0
<i>Selling</i>	0	0.0	3	7.5	0	0.0	4	4.0	7	3.3
<i>Buying</i>	2	5.3	2	5.0	3	7.9	4	4.0	11	5.1
<i>Abandon</i>	10	26.3	11	27.5	7	18.4	33	33.3	61	28.4

Source: Household survey, 2015

First, the pattern of migration that female migrants choose might explain this. When female labors migrate, they tend to find the job not too far from their villages so that they can manage to do the agricultural works, especially during the peak time. The detailed results of the interviews showed that female migrant workers tend to evaluate highly the job close to their house, with many voicing their concerns about the children. Male migrants tend to seek higher income more than employment location and thus change jobs more frequently or become self-employed. Moreover, the industrial companies in the nearby industrial zones also prefer to recruit female workers than male workers because the female workers are suitable for the production and business of their companies (There are many companies producing the textile, electronic, ceramic, plastic ...products). Beside the female workers are preferred because they are not trouble-makers according to the reports of villages. The female migration includes mostly daily shift migration working in Que Vo industrial zone. The female migrants prefer the stability of this job; and their actual frequency of movement as well as their need to return home due to family obligations is higher than that of the male respondents.

Secondly, gender norms might affect the participation of women in agricultural production. In the Vietnamese families, the women are not considered as main breadwinners and very few of them are the household head. Women are closer to works at home whether it is agricultural or domestic work. Therefore, when migrating they keep in mind their housework and they act differently to the male migrants. Even the men as the left behind members are responsible mainly for agricultural production of family, women also support the men and they work together with

the men. As the result, the female migration has the positive impacts on agricultural land use for agricultural production. The male migration has the different impacts on agricultural land use. The male migrants normally find the job far from home so that they cannot do agricultural works and their migrating jobs at the same time. The opportunities to find the jobs in the industrial companies and the gender norms can explain also the lower proportion of male migration household groups using their allocated land, renting in land and buying land for agricultural production while higher proportion of households in this group abandoning their land.

Beside the gender differences in agricultural land use, we can see that migrating peasants who obtain their cash incomes from non-agricultural and off-village still keep their own land, and the maintenance of land rights is always their priority, even when they have other opportunities of other employment and income from elsewhere (Portes 2010). Even when they migrate out, they are unlikely to sell their land, but rather leasing that land or even leaving it fallow for certain crops. They sought to maintain that land as insurance for their lives and unstable jobs in the cities (Kerkvliet and Porter 1996).

2.3.2 Labor division: aging and feminizing agricultural production

As mentioned in the previous section, most of migrants are young so that the farm labors as the left behind members are aging. In this research the average age of farm labor force is 49.6 years old. The number of female labors stay with agricultural works is higher than that of male labor. However there is no evidence for lacking of labor because the migrants, especially the female migrant contributes their labor during the peak season, for example they work together with the left behind in transplanting and harvesting. Beside almost all the day, they spent their time for agricultural activities. They work in the fields or dry out the agricultural products at home. Moreover, some households can hire farm labors from other households in the villages. Thus, it is likely that the migration does not create the labor shortage in rural communities.

Table 6: Demographic features of farm and migration labor

Demographic Indicator		Farm labor	Migration labor				
			Worker	Officer	Laborer	Trader	Artisan
Age (Years old)	<i>Mean</i>	49.6	29.0	33.8	36.2	34.8	31.7
	<i>Maximum</i>	60.0	60.0	60.0	57.0	48.0	44.0
	<i>Minimum</i>	18.0	18.0	23.0	20.0	25.0	24.0
Sex (Person)	<i>Male</i>	95	85	20	52	5	16
	<i>Female</i>	129	130	21	12	8	4
	<i>Total</i>	224	215	41	64	13	20

Source: Household survey, 2015

The participation of migrants in agricultural production illustrates that the great population movement out of a village does not approving the “de-agrarianization” process (Bryceson 1997). Peasants (young or old, male or female) are choosing non-farm business in the rural areas or migrating to urban areas does not mean that they pay no attention on agricultural production. The

diversification is for securing and improving their livelihood. In other words, this research figures out that farm households are reasonably in their labor allocation and division and the increasingly rural labors less engaging in agriculture is only the first glance but not the underline reality of rural population in the current context. It is inadequate to consider migration and migrant adjustment as a one-way journey from rural out because many individuals and groups forge connections and social fields across expanses of space and time”(McHugh 2000) and “migration is a complex system of various types of movement in which non-permanent forms are as important” (Skeldon 2005). In fact, as mentioned above, source of income deriving from outside of the village have contributed to the diversification of rural household livelihoods, which means that livelihoods are no longer needed to be localized to either rural or urban areas but rather straddle the two (Soda 2007; Rigg 2005).

Looking at the gender labor division in agricultural works of farm households, we can see that in all groups of households, although the higher proportion of female members as the principal labors are responsibility for agricultural production there are always the contributions of both male and female labors in agricultural works of households (table 7). Agriculture and land are still the basis for sustainable livelihoods in most places, even where access to land is relatively not viewed as the best avenue for raising rural incomes. The migrants involve in agricultural production of households to reduce the cost, especially labor cost and enhancing their livelihood. In many households, agricultural production is primary for subsistent need and for food safety in the context of growing pollution.

The other aspects related to quality of labor and labor allocation in investigating the interaction between migration and agricultural production are the self identity as farmer and losing farm skill of labors. The results from interviews and participation observations show that the farm labors has become the migrant workers but these people still keep “the fundamental characteristics of peasant” (having access to land, and securing the family livelihood by agricultural production) (Edelman 2013). It is clear that migration was not enforced and the migrants feel forced to go out for employment, but they want to stay back as well. The duality is part of the nature of migrants’ lives. Migrant workers may come home for harvesting period or ceremonies even when there was a shortage of workers (deHaan, 1994:244). In this way or other way, they see themselves as villagers or farmers. Relating to the lose of farming skills(Croll and Huang 1997; Rigg 2007) and the desire on farm, it cannot denied that a part of migrants, especially the young one, have seeing a bright future in urban area with better social service and white collar jobs; hence they lose their interests in agriculture as well as rural areas. The desire of rural household members to escape from the heavy work of farming might also act as a restraint to improve agriculture. However, in this research we found that the fear of de-skill and losing interest in agriculture is unwarranted because of the change in agriculture practices itself (Mendola 2005). The out-migrating of household members has created the changes in agricultural production systems that are engaged in by households or a shift from more intensive to less intensive forms of agriculture (Jokisch 2002; McKAY 2003). In return, the way

agricultural practices in general have continuously changed has influenced on the way people interact with agriculture. With the supports of technology and social services from seeding to ploughing and harvesting, it does not take time and workforce of people in doing agriculture as much as before. If the household member could rearrange it on the right way, they could release their members to migrate out elsewhere. Or in other word, migration is not necessarily an alternative to agriculture, but it can be a complement. Besides, the skills which are required to run agriculture are not “traditional” anymore. Because on the one hand, in the meantime, agricultural productivity increases must be sufficient to release people to migrate out and to supply sufficient food for people. On the other hand, agricultural productivity increases mostly derived from the use of chemical fertilizers, pesticides and herbicides, and many other technical innovations, which come from the growing towns (Dyson, 2001:76).

Table 7: Gender labor division in agricultural production activities

Agricultural activities	Principal Members	Groups of household								Total	
		G1: Non migration		G2: Male migration		G3: Female migration		G4: Both sex migration			
		N	%	N	%	N	%	N	%	N	%
Rice production	<i>No practice</i>	5	13.2	3	7.5	2	5.3	2	2.0	12	5.6
	<i>Male</i>	0	0.0	5	12.5	6	15.8	5	5.1	16	7.5
	<i>Female</i>	16	42.1	18	45.0	17	44.7	35	35.7	86	40.2
	<i>Both MF</i>	17	44.7	14	35.0	13	34.2	56	57.1	100	46.7
Cash crop production	<i>No practice</i>	22	57.9	27	67.5	25	65.8	70	71.4	144	67.3
	<i>Male</i>	2	5.3	0	0.0	3	7.9	0	0.0	5	2.3
	<i>Female</i>	7	18.4	10	25.0	5	13.2	21	21.4	43	20.1
	<i>Both MF</i>	7	18.4	3	7.5	5	13.2	7	7.1	22	10.3
Pig production	<i>No practice</i>	26	68.4	24	60.0	29	76.3	83	84.7	162	75.7
	<i>Male</i>	1	2.6	5	12.5	2	5.3	2	2.0	10	4.7
	<i>Female</i>	2	5.3	8	20.0	6	15.8	6	6.1	22	10.3
	<i>Both MF</i>	9	23.7	3	7.5	1	2.6	7	7.1	20	9.4
Poultry production	<i>No practice</i>	26	68.4	25	62.5	28	73.7	64	65.3	143	66.8
	<i>Male</i>	1	2.6	4	10.0	3	7.9	6	6.1	14	6.5
	<i>Female</i>	6	15.8	8	20.0	5	13.2	19	19.4	38	17.8
	<i>Both MF</i>	5	13.2	3	7.5	2	5.3	9	9.2	19	8.9
Cattle production	<i>No practice</i>	34	89.5	37	92.5	34	89.5	94	95.9	199	93.0
	<i>Male</i>	3	7.9	1	2.5	2	5.3	4	4.1	10	4.7
	<i>Female</i>	0	0.0	1	2.5	1	2.6	0	0.0	2	0.9
	<i>Both MF</i>	1	2.6	1	2.5	1	2.6	0	0.0	3	1.4
Aquaculture production	<i>No practice</i>	34	89.5	33	82.5	31	81.6	84	85.7	182	85.1
	<i>Male</i>	1	2.6	2	5.0	3	7.9	4	4.1	10	4.7
	<i>Female</i>	2	5.3	4	10.0	3	7.9	5	5.1	14	6.5
	<i>Both MF</i>	1	2.6	1	2.5	1	2.6	5	5.1	8	3.7

Source: Household survey, 2015

2.3.3 Income and behaviors in using remittance for agricultural investment

In order to have better understanding of how gendered migration interacting to agricultural production, we investigate the income structure and the remittance use to invest in agricultural production. Table 8 illustrates descriptive statistics of income indicators of surveyed farm household. Farm income mainly comes from rice cultivation, cash crops (vegetable, bean, potato...) and livestock production while the main sources of off-farm are remittance, pension, small trading business and services... The diversification of income generation away from the agricultural sector is a typical characteristic of economic development in the rural area of Red River Delta.

Table 8: Income indicators of surveyed households

Indicators	Unit	Groups of household				Total	P values
		Group 1 Non migration (n=38)	Group 2 Male migration (n=40)	Group 3 Female migration (n=38)	Group 4 Both sex migration (n=99)		
Annual income	Mean	87.3 ^a	121.2 ^a	114.2 ^a	162.1 ^b	132.8	0.00***
	SD ¹	59.5	100.3	53.2	120.1	102.2	
Farm income	Mean	32.7 ^a	23.0 ^{ab}	28.5 ^{ab}	19.0 ^b	24.0	0.13*
	SD	30	20.1	25.4	15.0	20.0	
Off-farm income	Mean	54.5 ^a	98.2 ^b	85.6 ^{ab}	143.1 ^c	109.0	0.00***
	SD	48.2	87.1	50.2	122.5	102.5	
Proportion of farm income (%)	Mean	36.3 ^a	21.3 ^{bc}	25.0 ^b	14.6 ^c	22.0	0.00***
	SD	20.0	19.0	20.4	10.9	19.5	
Proportion of off-farm income (%)	Mean	63.7 ^a	78.8 ^b	75.0 ^{bc}	85.4 ^c	78.0	0.00***
	SD	31.7	20.0	26.4	19.0	24.5	
Monthly income per household	Mean	7.2 ^a	10.1 ^a	9.5 ^a	13.5 ^b	11.0	0.00***
	SD	4.9	8.3	4.4	10.0	8.5	
Monthly income per worker	Mean	2.6 ^a	4.0 ^b	2.9 ^a	3.7 ^a	3.4	0.2
	SD	1.6	3.0	1.3	2.4	3.0	
Monthly income per capita	Mean	1.8 ^a	2.6 ^b	2.0 ^a	2.4 ^a	2.3	0.2
	SD	1.1	2.5	1.6	1.8	1.8	

Source: Household survey 2015

Note:

*, and ***, are significant levels at 10% and 1%, respectively;

abc; Means in the same row without common letter are different at $P < 10\%$ by Ducan test.

SD¹: Standard Deviation

As shown in table 8, the annual income of the group 1 is ranked as the lowest level among targeted groups. Farm income of the group 1 accounts for 36.3 % and reaches the highest share in annual income among groups. Off-farm income of this group occupies a dominant share in

their annual income (63.7%). Without labor migration, the households in group 1 have earned money from various off-farm activities (such as house for rent, running a small business or taking care of child of migrants). It implies that nowadays off-farm activities play a crucial role in income generation for majority of farm households in the Red River Delta.

The annual income of group 2 is higher than those of the group 1 and group 3. For the group 2, the off-farm income of this group occupies 78.8 % of the annual income whereas farm income accounts for 21.3%. Finding from household survey showed that it is not easy for male migrants to find jobs in the companies located surrounding their communes as mentioned earlier. So that the male labors of the group 2 move to other provinces to work as daily hired labors or to run small business. Daily their wives are responsible for agricultural production without assistant of male workers. Therefore, working far from home of male labors and doing agricultural production alone of the female labors can explain the lower farm income of the group 2. However, the households in group 2 get higher proportion of off-farm income. The higher salary or wage of male migrants and the possibilities to run lucrative off-farm business of this group are the main reasons for this.

The annual income of group 3 was ranked as the third high-level among groups, because farm income and off-farm income were generated by both male workers and female workers. The male labors that did not migrate outside their village to find jobs engage not only in agricultural production but also provide land preparation and other agricultural services for farmers in their communes. The female labors are mainly workers of the companies located near their commune, or to be daily hired labors in housing construction sites. Daily, they come back their home after finishing of non-farm income activities and spend their time for crop cultivation and livestock production. On the other hand, the group 3 also rent land from neighboring to expand their crop production. Therefore, the group 3 generates the highest income from agricultural production. It implies that female labors of the group 3 play an important role in generation of both farm income and off-farm income.

The group 4 obtains the highest annual income (162.1 million VND) compared to remaining groups. For this group, off-farm income occupied 85.4 % of the annual income while farm income only is 14.6 %. Both male and female labors of this group migrate to other provinces (such as Lang Son, Quang Ninh, Hanoi...) to run business. They have kept agricultural land but their land was mainly cultivated by their parents or relative peoples. It is likely that keeping of agricultural land is more important than generating income from agricultural production of the group 4.

In terms of monthly income indicators, there are differences among groups. All indicators of monthly income of the group 1 are lowest compared to those of the remaining groups. It indicates that migration has positive effect on income generation for farm households in the Red River Delta. All indicators of monthly income of the group 2 are higher than those of the group

3. It also implies that, migration of male labors contributes a higher income to farm households than migration of female workers.

It should to highlight that income indicators of the group 2 and of groups 4 is higher than those of remaining groups however there is a considerable income disparity among households of the group 2 and among households of the group 4, reflected by standard variation (SD). It reveals that differentiation between low income group and high income group.

As a household economic strategy, migration and its remittance plays an important role in household income. The volume and frequency of remittances sent back are largely determined by the level of income earned at the destination and the commitment within households. Even though the amount of money depends on level of income individuals earn, most migrants report that they remit half of their income home. At the level of households, when compares means of remittance table 9 shows that the households which have both male and female migrants received a significant higher amount of remittance.

Table 9: Remittance of surveyed households

Groups of surveyed households	Remittance (mean, million VND)
Group 1: Non-migrant households	0
Group2: Male-migrant households	51.9 ^{ab}
Group 3: Female-migrant households	66.3 ^{ab}
Group 4: Both male and female migrant households	120.8 ^c

Source: Survey household 2015

Note: abc; Means in the same row without common letter are different at $P < 10\%$ by Duncan test.

After remittance was gathered into the whole household income, whether it is used for productive purpose or not is always at the heart of the debate. The survey data shows that the share of households which use part of their remittance for productive investments, especially in agricultural production, is relatively small, 38.6 percent of the surveyed households indicated that they had invested in agriculture production. However, not all migrants, especially the new migrants, can send remittance to their households and in the context of agricultural land decline of Red River Delta region, this proportion is really meaningful for agricultural production.

Among migrant groups, the proportion of female-migrant-households investing remittance in agriculture is highest (60.5%) and both-male-and-female-migrant households is lowest (42.4%). The reasons are reported that the female-migrant households can manage better in combination migrating with doing agriculture. At the same time, the households which released more than 2

member migrate out constrain more or less the labor deficit at the peak season, therefore, they are likely to reduce in investing in agriculture activities.

Table 10: Remittance investment in agricultural production

Using remittance for agricultural investment	Groups of household								Total	
	Non migration		Male migration		Female migration		Both sex migration			
	N	%	N	%	N	%	N	%	N	%
Yes	0	0.0	18	45.0	23	60.5	42	42.4	83	38.6
No	38	100.0	22	55.0	15	39.5	57	57.6	132	61.4
Total	38	100.0	40	100.0	38	100.0	99	100.0	215	100.0

Source: household survey 2015

Conclusion

This paper provides the evidences of interactions between gendered migration and agricultural production in three important aspects: land use, labor allocation and capital investment. The paper concludes that migration is a crucial diversification strategy which enables the farm households to gain access to cash income in urban areas while allows them to keep their foosts in rural areas. Migration induces the diverse patterns of agricultural land use in which using agricultural land for agricultural production is not necessary the only one way. The research has found that it is common that the farm households still keep the possession of land even if it is not a mean of production. In comparison to male migration, the female migration has the positive impacts on agricultural land use for agricultural production because the traditional gender norms associated with their choices related to the pattern of migration allow female migrants combining the migrating job and agricultural production.

Second, migration leads to the aging and feminizing agricultural production with higher participation of older and female labors in agricultural works. However, there are the less evidences of labor shortages at both household and communities level because of the participation of migrants on agricultural production and hiring labors. The study indicates that migration does not support the “de-agrarianization” process. Moreover, the worries about de-skill of youth on agriculture are unwarranted because of the changing in agricultural production technologies.

Third, although the income of the female migration households is lower to that of male migration households, they have higher interest in using their remittance for agricultural investment. This implies that although remittance constitutes the main part of household income, agriculture production is still a fundamental livelihood activity for household security.

Forth, this research special emphasizes the duality in the nature of migrants' lives in changing the gender identity, professional identity and resident identity. The interactions of gendered migration and agricultural production created the reality that male and female migrants take the roles of their counterparts. The migrant worker keeps defining themselves as the peasant and as village members regardless their residence. Thus, the impacts of migration on agrarian change are immensely variable, reflecting often unique combinations of complex and even conflicting processes.

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