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**The Value of Labor in Agricultural Production
A Case Study in The Red River Delta Vietnam**

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PRESENTATION OF THE AUTHOR

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ABSTRACT/TOM TẮT

In Vietnam rural area, agricultural production is still a main occupational activity of millions laborers and be major income source of them. Despite this important role, it is often debated that the most concerning issue in labor market of Vietnam rural areas is job creation. In other word, the actual capacity of agriculture to create new employment is rather low compare to non-agricultural sectors. This issue leads to the large migration of young, experienced and skilled laborers from rural to urban areas as well as from agriculture to non-agricultural sectors. As a consequence, agricultural labor in many provinces of the country are mostly un-trained and the old aged. This shortage of skilled laborers not only directly affects agricultural production at farm household level but also is a challenge to the implementation of rural renewal targets of the Vietnamese Government. Furthermore, the lack of new job creation for agricultural works in parallel with poor skilled and old aged result in the low wage rate of laborers who work in agricultural sector. This wage rate is equivalent to two-third of the wage of employees in industrial sector, and 50% of the wage of those working in service sector. Not only wage, other forms of value of agricultural employees such as social protection, working condition are also less concerned by employers in rural labor market and the current Vietnam Labor Code neither. In order cope with the shortage of skilled farm labor, rural households in the Red River delta diversify their use of labor by combining family laborers with hired laborers for agricultural activities. Family labor source contains both family farm laborers and family non-farm laborers but still participating in farming activities of the household, especially in the peak season. Within 220 households of the three provinces investigated in this thesis, the highest proportion of family farm laborers is over 45 years old and women are discovered to mostly in charge in agricultural production, especially in rice farming. That is because more non-farm jobs opportunities open for young, healthy, and skilled men rather than women. Hired laborers in agriculture in Bac Ninh, Hai Duong and Thai Binh provinces are divided into two types, seasonal hired laborers and permanent hired laborers. Seasonal laborers are often hired to work in peaking time. In rice farming households, seasonal hired laborers usually work for short period of time

such as for the land preparing, transplanting, and harvesting. In clam farming households, seasonal laborers are widely rent in preparing clam plots and harvesting. In general, women are observed to work in seasonal hiring more frequently than men in both household groups. However, seasonal hired laborers are not detected in pig farming group. Alternatively, laborers in this group are hired on a permanent or longer-term basis, normally from three months to a year. When using hired laborers in agricultural production, farm households give the laborers payment that are equivalent to their labor value. Of these payment, wage is considered as the most important value of hired laborers. Basically, the wage is paid in two methods, daily wage for seasonal laborers and monthly wage for permanent ones. The daily wage is applied for farming activities which last within a few days such as manual transplanting, manual harvesting in rice farming or clam harvesting. The daily wage may be paid in piece for activities such as land preparation and spraying pesticide. Whereas, the monthly wage is common for laborers in pig farming and clam plot guarding. The wage is counted for 30 working days. Average monthly wage of a hired laborer is 161 USD in pig farming and 175 USD in clam farming. Thus, wage rate of hired farm labor in the study sites is equivalent to 70% and 66% of the wage of laborers in industrial and service sector, respectively. A part from the wage, there are different forms of labor values paid by the householders through remuneration such as drink, lunch, bonus for good performance and support for sickness. Such remuneration can be paid in cash or in kind which ranges from 0.3 to 9 USD. For hired laborers, labor welfare usually is a luxury metric as they work in farm households with only verbal agreement. Without written contract, they receive no health insurance and social insurance support. Despite the rather low in wage and labor welfare, hired laborers still present the satisfaction with their employment. Wage is a work feature which contributes the most to their satisfaction, relation with householder is the second important factor. This relationship proves a crucial function of social relation in driving labor supply and demand in agricultural labor market rather than an economic one. Similar to many developing countries, imperfect information is a typical characteristic of the agricultural labor market of the Red River delta, Vietnam. This imperfection influences labor demand in terms of raising cost for monitoring hired laborers of farm households. On the other side, labor

migration is considered as a determinant impacting on labor supply of the rural labor market. This study discovers a positive correlation between remittance of migrated laborers sending home and wage paid to hired laborers in the pig and clam farming groups. Conversely, the more development of agricultural machinery renting market, the less value that householders have to pay for hiring manual farm laborers. In addition to these external determinants, farm size of household, gender and work experience are internal factors which impact on the wage rate that hired laborers can receive. Among the three household groups, the wage of hired laborers in the clam farming is 3.9% higher than the one in the rice farming group. In order to increase the labor value in agricultural production, several interventions by central government and local authorities at different levels in the Red River delta should be taken into account: (1) including agricultural wage laborers into the governance of labor code; (2) promoting the operation of employment service centers in rural areas; (3) improving work skill of farm laborers above 40 years old through training courses which connect with labor demand in the rural labor market.

Số liệu thống kê năm 2018 cho thấy GDP từ nông nghiệp vẫn chiếm gần 15% tổng giá trị sản phẩm quốc nội của Việt Nam, tuy nhiên con số này giảm 0,5% hàng năm do số lượng việc làm trong khu vực nông nghiệp liên tục giảm. Năng lực tạo ra việc làm mới của khu vực nông nghiệp thấp hơn so với khu vực phi nông nghiệp. Điều này dẫn đến sự di cư mạnh mẽ của lao động trẻ, có kinh nghiệm và kỹ năng từ nông thôn ra thành thị cũng như từ khu vực nông nghiệp sang phi nông nghiệp; gây nên sự thiếu hụt lao động nông nghiệp ở nhiều địa phương của Việt Nam. Sự thiếu hụt lao động không chỉ ảnh hưởng trực tiếp đến sản xuất nông nghiệp ở quy mô hộ mà còn là thách thức đối với việc thực hiện các mục tiêu xây dựng nông thôn mới của Chính phủ Việt Nam. Bên cạnh đó, việc thiếu tạo việc làm mới trong nông nghiệp cùng với trình độ tay nghề kém là nguyên nhân khiến cho thu nhập của lao động nông nghiệp khá thấp. Mức thu nhập này tương đương với 2/3 thu nhập của người lao động trong khu vực công nghiệp và 50% thu nhập của người làm việc trong khu vực dịch vụ. Không chỉ tiền lương, các hình thức giá trị khác của lao động nông nghiệp như an sinh xã hội và điều kiện làm việc cũng ít được người sử dụng lao động quan tâm.

Để đối phó với tình trạng thiếu hụt lao động có tay nghề, các hộ nông dân khu vực đồng bằng sông Hồng của Việt Nam đã đa dạng hóa việc sử dụng lao động bằng cách kết hợp lao động trong gia đình với lao động làm thuê trong sản xuất nông nghiệp. Trong số 220 hộ nông dân của ba tỉnh được điều tra, lao động nữ trên 45 tuổi đảm nhận hầu hết các công việc trong sản xuất nông nghiệp, đặc biệt là trồng lúa. Nguyên nhân chính là vì có nhiều cơ hội việc làm phi nông nghiệp hơn cho nam giới. Lao động làm thuê trong nông nghiệp ở các tỉnh Bắc Ninh, Hải Dương, Thái Bình được chia thành hai loại là lao động làm thuê theo thời vụ và lao động làm thuê cố định. Lao động thời vụ thường được thuê để làm việc trong thời gian cao điểm. Ở các hộ trồng lúa, người làm thuê thời vụ thường làm việc trong thời gian ngắn ở các khâu làm đất, cấy, gặt. Tại các hộ nuôi ngao, lao động thời vụ được thuê trong việc chuẩn bị vùng nuôi và thu hoạch ngao. Nhìn chung, phụ nữ làm công việc thuê theo mùa vụ thường xuyên hơn nam giới trong cả hai nhóm hộ gia đình. Tuy nhiên, lao động làm thuê theo thời vụ không được phát hiện trong nhóm chăn nuôi lợn. Ngoài ra, những người lao động thuộc nhóm này được thuê dài hơn, thường từ ba tháng đến một năm.

Khi sử dụng lao động làm thuê, hộ nông dân trả công tương ứng với giá trị sức lao động của họ. Trong các hình thức trả công này, tiền lương được coi là giá trị quan trọng nhất. Về cơ bản, tiền lương được trả theo hai phương thức: lương theo ngày đối với lao động thời vụ; lương tháng đối với lao động cố định. Mức lương ngày được áp dụng cho các hoạt động nông nghiệp kéo dài trong vòng vài ngày như cấy tay, gặt tay trong trồng lúa hoặc thu hoạch ngao. Tiền công hàng ngày còn có thể được trả cho các hoạt động như làm đất và phun thuốc trừ sâu. Trong khi đó, lương tháng được trả phổ biến cho lao động chăn nuôi lợn và lao động canh gác các bãi nuôi ngao. Tiền lương được tính dựa trên 30 ngày làm việc. Ngoài tiền lương, còn có các hình thức thù lao khác được chủ hộ trả thông qua tiền ăn trưa, tiền thưởng và hỗ trợ ốm đau. Thù lao như vậy có thể được trả bằng tiền mặt hoặc hiện vật, dao động từ 50 nghìn đồng đến 200 nghìn đồng. Đối với những người làm thuê, phúc lợi lao động thường là một thước đo xa xỉ vì họ làm việc trong các nông hộ chỉ có thỏa thuận miệng. Nếu không có hợp đồng bằng văn bản, họ không được hỗ trợ bảo hiểm y tế và bảo hiểm xã hội. Mặc dù mức lương và phúc lợi lao động khá thấp, những người làm thuê vẫn thể hiện sự hài lòng với việc làm của họ. Tiền lương là yếu tố đóng góp nhiều nhất vào sự hài lòng với công việc, mỗi

quan hệ với chủ hộ là yếu tố quan trọng thứ hai. Mối quan hệ này chứng tỏ một chức năng cốt yếu của quan hệ xã hội trong việc thúc đẩy cung và cầu lao động trên thị trường lao động nông nghiệp chứ không phải là quan hệ kinh tế.

1. INTRODUCTION

1.1. Rational

The process of industrialization in Vietnam for 30 years since “Đổi mới”¹ reform has created a wave of labor mobility from rural areas to cities to work in the industrial and services sectors with higher income. Overall, migrant labor to the cities and industrial areas are young and skilled labor or they are manual labor in good health (UNFPA, 2016). This makes most of the remaining workforce in the agricultural sector are un-trained, low-skilled, and old-age laborers. At macro level, the transformation as debated by different organizations are the declining tendency of paid employment in the agricultural sector in both supply and demand dimensions; the poor quality of the agricultural labor force; and the shortage of agricultural labor in rural Vietnam (Worldbank, 2008) cited in (Nguyen, 2016)). At household level, the shortage of family farm labor increases the requirement of additional human labor for agricultural production. As a result, various forms of labor exchange have emerged. Labor exchange between farm households can be presented in a kind of mutual help “either help other households and/or received help from other households” (Nguyen, et al., 2015). However, Bergstedt (2012) also observed in the North of Vietnam that “the increased access to money provided the option of hiring labor, and organizing work in a way that released people from the time-consuming task of recompensing other people’s labor efforts by an equivalent amount of working hours” (Bergstedt, 2012). Notwithstanding hiring labor for agricultural production has become common, family farm laborers still dominate farming in developing countries as Vietnam for many reasons, “but perhaps the primary reason is that many field operations are difficult to supervise and monitor, and are therefore done better by self-motivated workers”. Nevertheless, family farm laborers are mostly observed to work only part-time on the farm, and hire themselves out for off-farm activities in slack season. “A few do hired farm work particularly in peaking season, but hired workers are less common in agriculture than in other sectors”

¹ This reform started since 1986 after the VI meeting of the Vietnam Communist Party in Hanoi December 1986. Since then the term “Đổi mới” goes along with the process of economic transformation in Vietnam and is used in original Vietnamese form by almost all scholars all over the world.

(Norton, et al., 2010). The limitation of agricultural wage employment in rural Vietnam as pointed out by the World Bank (2008) is because of the low level of investment in rural agricultural sector, that leads to “the inappropriateness of on-site jobs” generating in agricultural production (Nguyen, 2016). Not enough agricultural hired works in parallel with poorer skilled and older aged result in the low wage rate of laborers who work in agricultural production. This wage rate is equivalent to two-third of the wage of employees in industrial sector, and 50% of the wage of those working in service sector (Nguyen, 2015) cited in (Nguyen, 2016)). Not only wage, other forms of value of agricultural employees such as social protection, working condition are also less concerned by employers in labor market in comparison with attention paid for non-agricultural workers. Basically, the labor code and a number of other laws in Vietnam are designed to provide a common legal framework for labor-management relations in non-agricultural sectors (Dao, 2016).

The Red River Delta is the cradle of agricultural production in Vietnam with diverse activities including farming, animal husbandry and poultry, and aquaculture. This delta includes 10 provinces with high population density, rapid industrialization and urbanization processes narrowing the land available for agriculture. During the fastest period of revoked farmland (2001-2007), the Red River Delta has the largest number of people affected by the loss of farmland with about 300,000 households (Hoang, 2009). Consequently, a surplus agricultural laborers was supplied in rural labor market of this delta. Furthermore, as other economic regions in Vietnam, the majority of employees working in the agricultural sector in the Red River delta is characterized by unskilled and seasonal features. These features result in a small added value generated in agricultural sector and the rather low value paid to laborers for their agricultural job. Facing this low value paid to farm workers under the context that agriculture still plays a such important role in the economy, it is extremely necessary to take the issue of increasing value of farm workers into account of study. Moreover, literature reveals that there is still lack of reseach in that topic in the Red River Delta, Vietnam.

Starting from these above theoretical and practical discussions, the study on valuing of labor in agricultural production in the Red River Delta will be a contribution to fill the gaps in this field.

1.2. Objective of the study

The overall aim of this study is to provide insights on labor use and the basis ways to value labor in agricultural production at farm households in the Red River Delta of Vietnam. Specific objectives of this research are described in the followings:

- To review the theory of labor value in agricultural production at farm household;
- To investigate the current situation of labor use and labor value in agricultural production at farm households in the Red River Delta;
- To examine factors affecting the value of labor in agricultural production at farm households;
- To draw policy implications for improving the value of agricultural workers in rural labor market of the Red River Delta Vietnam.

1.3. Methodology

1.3.1. Reason for choosing the study area

The Red River delta consists of 10 provinces, of which Bac Ninh represents a province with fast industrialization that attract a huge amount of labor from agricultural sector shifted to industrial and service sector. Conversely, Thai Binh is a typical agricultural province with agricultural land area and households as well as the amount of agricultural labor greatest among the whole delta. Located between Bac Ninh and Thai Binh, Hai Duong is a province with industrialization speed as high as Bac Ninh in 2003-2009 period and gradually slow down in 2009-2013 period. The proportion of agricultural production value of this province is much higher than of Bac Ninh but still lower than of Thai Binh. In other words, the labor shifting from agriculture to industry and services in Hai Duong follows a common trend of other provinces in the Red River delta. It is not as strong and fast as in Bac Ninh and not as slow as in Thai Binh. Because of these typical characteristics, Bac Ninh, Hai Duong and Thai Binh are opted to be study site for this research with expectation that the difference in changing economic structure from agriculture to industry there will result in the differences in the use of agricultural labor as well as issues relating to remuneration of agricultural laborers.

1.3.2. Data Sources

- Secondary data: Secondary data is inherited from various sources such as books, newspapers, scientific journal, and annual reports of ministries which are relevant to the content of the study.
- Primary data: Primary data is collected by different methods and techniques including interview based on semi-structural questionnaires, group discussion and participatory observation. Primary data is collected through the field survey of households and laborers.

The first field survey: The main purpose of this field survey are to gather both qualitative and quantitative information on (1) general information of the households; (2) agricultural production of the farm households including rice cultivation, pig breeding and clam production; (3) labor use and value of labor in households; (4) implications of households for improving labor use and value of labor. A total of 220 farm households in three selected provinces are drawn for the survey using simple random sampling. Simple random sampling is a method that the selection is made purely by chance. In other words, the probability of a person being selected is independent of the identity of the other people selected (Fox, et al., 2007).

The second field survey: The second survey aims to collect both qualitative and quantitative data on paid laborers who are participating in agricultural production of households in terms of labor characteristics (age, gender, educational level, main occupation); working hour; wage rate agreement/satisfaction; labor contract; vocational training; working condition, etc. A total of 150 farm laborers in three selected provinces are randomly drawn for this survey.

Focus Group Discussions (FGD) is organized. Group discussions among key-informants help to check the reliability of the answers obtained. In this study, 3 focus group discussions in three provinces with participation of head of households, unpaid laborers, and paid laborers are held to: (i) identify the factors affecting the value of laborers; (ii) recognize laborers' satisfaction of their value. In addition, 2 focus group discussions in each province are implemented separately with husbands and wives to determine gender aspect of labor value.

2. LITERATURE REVIEW

2.1 Measuring value of hire labor

This study identifies the value of hire laborers in agricultural work as their wage paid by farm householders either in kind or in cash. In other words, hired farm labor is valued at the wage rates (regular or piece rate) plus fringe and other benefits (Huffman, 1996). The wage is the monetary measure corresponding to the standard units of working time (or to a standard amount of accomplished work, defined as a piece rate). The earliest such unit of time, still frequently used in agriculture, is the day of work (Dohrn-van & Gerhard, 1996). However, the wage could also be in non-monetary form, for instance unpaid apprenticeships is regarded as forms of employment because the skills and knowledge acquired by a trainee could be classified as a “wage” ((Belchamber & Schetagne, 2013) cited in (Oya & Pontara, 2015)).

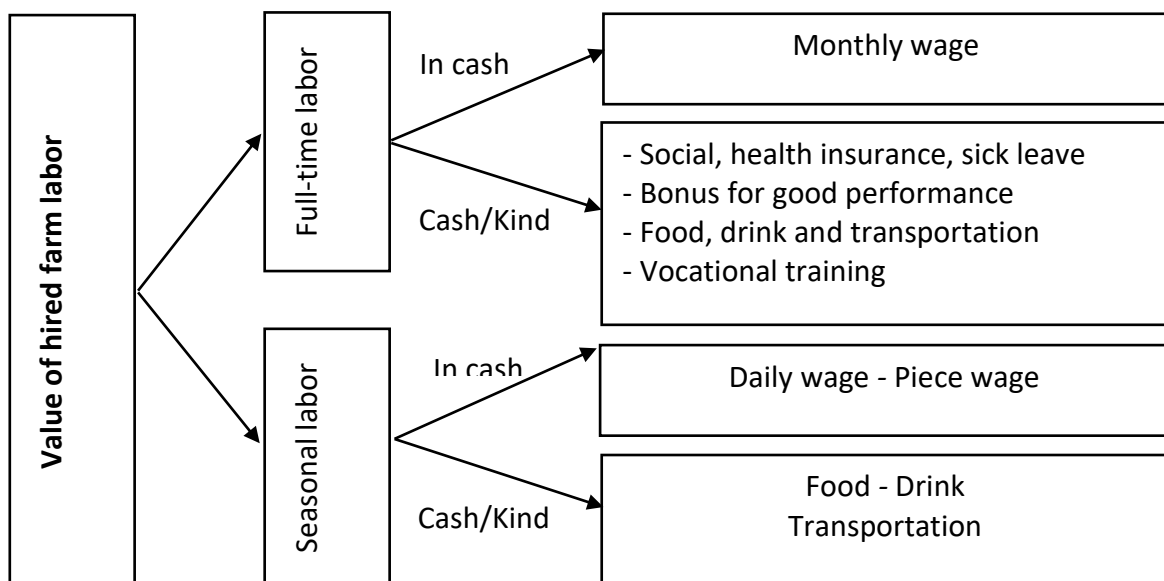


Figure 1: Value of hired farm labor

For what concern to fringe and other benefits, according to Huffman (1996), these can be included the following, the employer's contribution to social security, workman's compensation and retirement plans; the

value/cost of time spent screening and training new workers; paid vacation and sick leave time of workers; health insurance; and employer housing, food, and transportation costs, etc (Huffman, 1996). This study takes into account the contribution of farm householders to social and health insurance; payment for sick leave; bonus for good performance; and employer food, drink and transportation cost as benefits that hired laborers are paid by farm householders except from wages (Figure 1).

2.2 Measuring value of family farm labor

Though family farm labor does not generally receive a wage, it does have an economic cost. Implicit compensation for family farm labor is based on the opportunity cost of off-farm work. In microeconomic theory, the opportunity cost or alternative cost of making a particular choice is the value of the most valuable choice out of those that were not taken (Colander, 2004). According to Huffman (1996), the opportunity cost of unpaid farm labor is the maximum value per unit among the alternative uses of that labor. In his work, he mentions a number of alternative measures that could be used to estimate the value of unpaid farm labor. They are (1) the marginal value of farm labor obtained via shadow values or value of the marginal product from econometric models; (2) wage rates of farm managers and/or hired farm labor; (3) off-farm wage rates of farm people (Huffman, 1996). Detail description of these alternatives by Huffman (1996) are provided in the followings:

Alternative 1: “The cost of a unit of family farm labor in one enterprise can frequently be measured as its value in another farming enterprise. The value of labor in a particular farming enterprise is generally determined by a number of other farm decisions, such as the quantity of accompanying inputs and type of technology used”.

Alternative 2: For unpaid farm labor, “the wage rate of professional farm managers is sometimes used to approximate the (replacement) cost of the hours used by a farm operator in decision making, and the wage rate of hired farm labor is used as the cost of all other unpaid farm labor”.

Alternative 3: “Off-farm wage rates of farm people contain valuable information about wage opportunities of similarly skilled and located individuals who do not work off-farm. This method views off-farm work as the best alternative to farm work. A major advantage of this approach is

that it uses labor market information to value personal and locational characteristics, which are generally more objective than other values. This approach does not assume that all family farm labor has the same skills or productivity in farm work, or that they have the same opportunities in off-farm work”.

3. RESULTS

3.1. Labor use in agricultural production at farm households

3.1.1. Family labor use

In order to measure labor value, working time is one of the factors need be taken into account. For industrial and service sectors, working time is normally 8 hours/day. However, this measurement is not encouraged to apply to agricultural production because farmers usually work in different amount of time depending on the amount of agricultural works of their households and their other non-agricultural activities. Therefore, measuring farm labor as person-hours per period used in farming is the appropriate measure (Huffman, 1996). In this research, working time of laborers is analyzed by the number of hours a laborer spends a day to do agricultural works.

Table 1: Family labor use by working time

Description	Unit	Rice farming	Pig farming	Clam farming	P-value
Male family labor	Persons	55	55	56	
Mean	Hours/day	6.30	3.08	7.75	0.000***
Std. Deviation		3.73	2.53	2.46	
Min-Max		0-10	0-8	0-10	
Female family labor	Persons	86	77	57	
Mean	Hours/day	8.37	4.40	6.17	0.000***
Std. Deviation		1.82	1.62	2.29	
Min-Max		0-10	0-7	3-10	

Source: Household survey 2017-2018

Kruskal Wallis Test ***Significant at p-value < 0.01

It is difficult to define exactly daily working hours of family laborers in agriculture because they may combine farm work with non-farm work in a day. With full time family farmers, daily working hours is often long. Besides working in daytime, they use their nighttime to do some more works, especially non-farm works at home. In agricultural production, they are employers and employees as well. So that, they use thoroughly their time to cut cost for hiring outsource labor, particularly female family

laborers are observed to work longer than male family ones. In peaking season of rice cultivation, a wife works about 2 hours longer than her husband or son in some typical cases. Commonly, female family laborers in rice cultivation extend their daily working time to more than 8 hours in peaking seasons, they explain that land preparing, transplanting and harvesting are three important activities which need to be done quickly in time so they need to work more than usual. Similarly, wives in pig farming usually last their working time 1.3 hours/day longer than husbands but in comparison with wives in rice farming, they work 4 hours/day less (Table 1). It is because pig farming does not face with seasonality as rice farming does. In the opposite side, female family laborers in clam farming are found to work about 1.5 hours/day less than male family laborers. Beside the means of working time per day of family laborers, Table 1 presents the results of Kruskal Wallis Test for the difference between the means of the 3 household groups being surveyed. The P-value of less than 1% leads to a conclusion that there is a statistically significant difference in the working time of 3 groups.

3.1.2 Paid labor use

Rice, pig and clam farming are the 3 types of agricultural production with different characteristics in both operation and labor use manners. In this part, the way farm households use paid labor in their farming activities is considered in detail.

Paid labor use in rice farming activities

Table 2: Workdays of paid labor in one rice crop activities

Activities	HH hire labor	Days	HH exchange labor	Days	P-value
Land preparing	50%	1-2	-	-	-
Transplanting	53%	1-5	25%	1-3	0.032**
Pesticide spraying	15%	1-4	-	-	-
Harvesting	50%	1-3	10%	1-3	0.079*

Source: Household survey 2017-2018

Mann-Whitney U Test **Significant at p< 0.05, *Significant at p< 0.1

Land preparing, transplanting, pesticide applying and harvesting are the 4 production activities in which the rice farm households usually use paid labor. The proportion of households hiring labor is highest (53%) for transplanting and lowest (15%) for pesticide applying. The time duration of hiring labor for transplanting is longest with about 1 to 5 days/season. Time of hiring labor for land preparation is shortest with the average of 1 to 2 days/season (Table 2). With the ascending use of machines in rice production in the Red River delta, the term of hired labor in this research means hired laborers and their machines such as tractor, transplanting machines, and harvester. In the field, it can be observed that machines are applied in land preparation and harvesting rather than in transplanting. Most of the households prefer manual transplanting to using machine. That is why the duration of hiring labor for transplanting is longer than for the other activities. Besides, labor exchange for transplanting and harvesting is also applied in households which have small plot area and abundant labor. The result of Mann-Whitney U Test in Table 2 shows a statistically significant difference in the proportions of households hiring seasonal labor and exchanging labor.

Paid labor use in pig farming activities

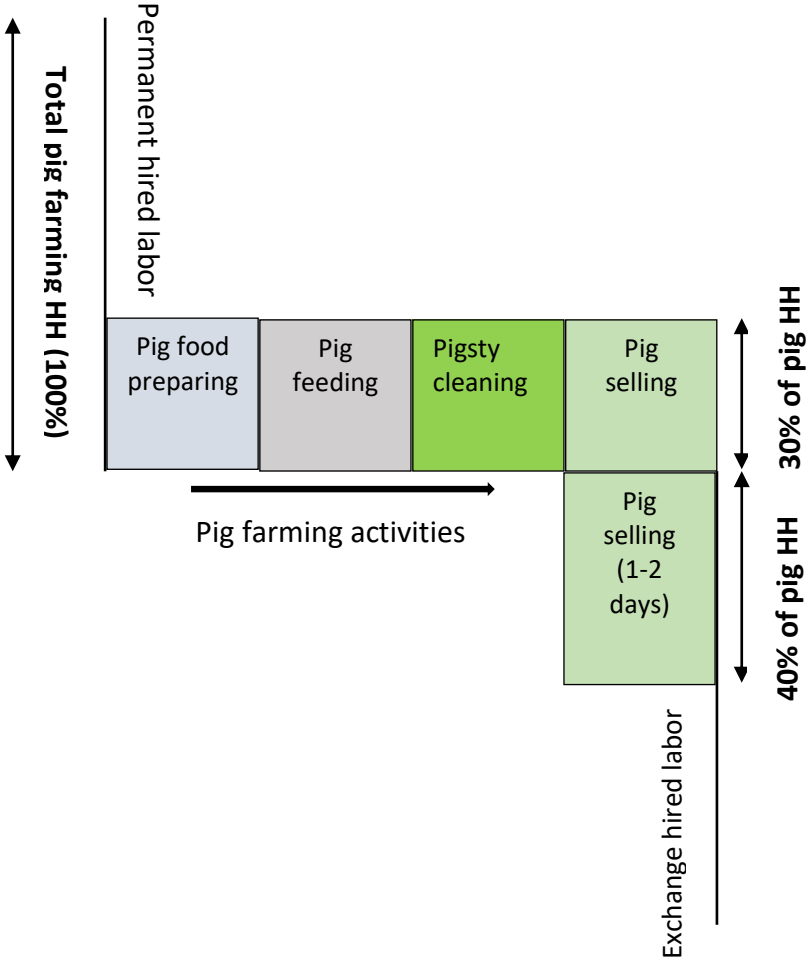


Figure 2: Labor use in pig farming activities

As being observed, the pig farming households do not hire seasonal labor like rice farming households do but they hire permanent labor. Hired time is at least in one pig farming cycle which is about 4 months. The statistical data show that 30% of the pig farming households (mostly medium to large scale production households) usually hire 1 permanent laborer to participate in all activities because only 1 to 2 family laborers cannot fulfill huge amount of work (Figure 2). In addition, the households also exchange labor. The householders told that with the production scale of more than 50 pigs, all households need helpers to catch pigs and take them to trucks at selling time. With average weight of each flattening pig of about 100kg, female family laborers cannot do that, so male family laborers have to exchange labor to help each other. Traders drive trucks to farms to buy flattening pigs. So that, selling time normally last only 2 to

3 hours and in 1 to 2 days. Because of this short time, it is difficult for the households to hire seasonal labor to catch pigs and, therefore, 40% of the households have to exchange labor.

Paid labor use in clam farming activities

In clam farming, seasonal labor is hired by all households for 1 to 3 days for preparing plots and 1 to 2 days for harvesting clam. For baby clam stocking, the households having large plot areas usually have to hire seasonal labor (33% of the households). The households having smaller areas (less than 2 hectares) usually exchange labor because the householders think that stocking just requires 4-6 laborers working in 2-4 hours, so labor exchange is the most suitable method.

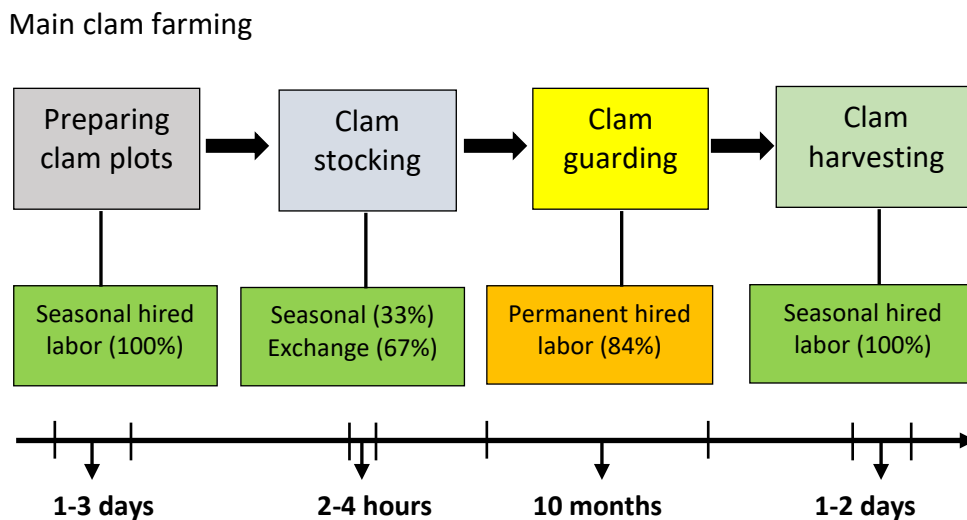


Figure 3: Labor use in clam farming activities

Different to rice and pig farming, clam farming requires much larger area. In addition, clam plots are normally 5-6km far from the coastline. Therefore, clam, especially baby clam, is easy to be stolen. The price of 1kg of market clam is only 0.5 USD, while the price of 1kg of baby clam is ten times higher. Baby clam is small, easy to transport, so it is easy to be stolen. Thus, most households (84%) have to hire male laborers to stay on watching huts on the sea guard clam plots (Figure 3). Each clam plot of 2 hectares requires 1 laborer for about 10 months a year. During high tide or rough sea days, the guardians do not need to stay on the huts.

Briefly, the situation of paid labor use in all 3 groups of the surveyed households is like a multicolor painting about this labor type in agricultural production in the Red River delta. When hiring seasonal labor

commonly occurs in the groups of rice and clam, it absolutely does not appear in the pig farming households. Similarly, hiring permanent labor happens commonly in pig and clam farming households but not in rice farming ones. In addition, for each type of farming and for individual production activity, the households use the 3 types of paid labor differently. This diversification leads to a difference in the way the farm households measure the value of each type of paid labor.

3.2. Measuring value of hired labor at farm households

3.2.1. Daily wage

Table 3: Daily wage of hired labor

Description	Rice farming		Clam farming	
	Daily wage (USD)	N	Daily wage (USD)	N
Mean	10	50	11.30	20
Min	8.70	15	8.70	2
Max	10.87	19	13.04	6

Source: Hired labor survey 2017-2018

Daily wage for hired workers exist only in rice and clam farming households. The average wage paid to hired laborers in the rice production is about 10 USD/day. It ranges from 8.7 USD/day to 10.8 USD/day depending on each certain activity. In comparison to the clam farming, the average wage of the rice production laborers is lower by 1.3 USD/day (Table 3). The difference comes from 2 reasons: clam farming activities usually are harder because workers have to work while dipping in water or have to move in wide area of 1 to 2 hectares; because profit of clam farming is much higher than the one of rice production, hired workers have reason to ask high wage.

In order to confirm the difference in the average daily wage for hired workers working for rice and clam farming groups, the author performed T-test for the similarity of the 2 average wages. The result asserts that the difference is statistically significant between the two (sig <0.01). That truly reflects actual situation happening in labor market in general and in

agricultural labor market in particular where laborers performing harder works need be paid higher.

3.2.2. Monthly wage

As mentioned above, pig farming and clam farming households also need to hire permanent laborers, they are paid monthly wage. Basically, permanent workers in clam farming households are hired to guard clam plots and each of them receives wage of 152 USD to 260 USD each month. The most common wage is 152 USD/month. The second common level is 175 USD. It also is the average wage of all hired laborers in the survey. This level is paid based on total working days of 30 days/month and working time from 6 pm of the previous day to 6 am of the next day morning. The laborers have to stay on guarding huts at night. Only 3.3% of laborers receive wage level of 260USD/month. In order to get this level, they not only guard clam plots but also do other works such as cleaning plots when clam dies, driving stakes in to ground and making net fence for clam plots.

In comparison to permanent laborers in clam farming households, the ones in pig farming households receive lower average salary of 160 USD/month ranging from 130 to 183 USD/month. The two common levels are 130 USD and 175 USD. Usually, a permanent laborer is hired to do almost all activities from foodstuff preparation, feeding, pigsty cleaning, to night guarding at pig farm. Therefore, wage level depends on the number of pigs he takes charge of. In addition, laborers staying at pig farms for night guarding are paid higher than the others.

In fact, permanent laborers in pig farms suppose that they used to be paid better. However, because fattening pig price has decreased fast and strongly since 2017, in some certain time to only 1 USD/kg, pig farming households must reduce farming size and cannot pay high wage. Many households even cannot hire labor but have to use family labor or exchange with other households to cut down cost. However, many local laborers still opt to work for pig farming households because the works there are simple, do not require skills and working time is only 7 to 8 hours a day that they can arrange their time to do their own house works as well.

3.3. Measuring the impact of personal determinants on wage

In this part, the impact of personal demographic characteristics on labor value is measured by a multiple linear regression where dependent variable is calculated by logarithmic value of daily wage for individuals. For laborers who receive monthly wage, daily wage is calculated by dividing monthly wage by 30 days. Independent variables are quantities typical for personal characteristics including: gender of hire laborers (which is a dummy variable taking value of 0 for female laborers and 1 for male laborers), working experience (which is a continuous variable measured by number of hired-working years of laborers), educational level of laborers (which takes value of 1 for secondary school grade, 2 for high school grade, 3 for college grade). Besides the above mentioned independent variables, the author used 2 dummy variables (so-called reference category) which are called “clam farming” and “pig farming” to compare the wage rates of laborers in these 2 types of farming households with the wage rate of laborers in the rice farming households.

The result of regression model presented in Table 4 indicates that the estimated coefficients of the variables of gender, working experience and the dummy variable “clam farming” are statistically significant with expected signs. Two coefficients which are not statistically significant are educational level and the dummy “pig farming”. The impacts of each statistically significant coefficient are analyzed in detail as below. The negative coefficient of gender indicates a distance in daily wage between female and male laborers in agricultural sector. In other words, a female laborer tends to have daily wage 13.1% higher than the value a male laborer gets. That seems conflict with the preference of hiring male laborers mentioned earlier. But that reflects the actual situation happening in the agricultural labor market in rural area of the Red River delta where the proportion of female laborers participating in is higher than the one of male laborers. In addition, female laborers usually take seasonal works and receive daily wage, while male laborers usually take permanent jobs and get monthly wage. Therefore, the equivalent daily wage of male laborers is lower than the daily wage of female ones.

Table 4: Estimation results of Log (wage) function for hired agricultural laborers

Variation	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
Gender	-.131**	.020	-.503	-6.534	.000
Working experience	.005**	.002	.255	3.149	.002
Educational level	-.018	.017	-.089	-1.025	.307
Clam farming	.039**	.013	.249	3.014	.003
Pig farming	-.002	.003	-.100	-.638	.527
Constant	2.248	.030		74.602	.000
Adjusted R Square	.583	F	28.579	Sig.	.000

Source: Compiled from analysis result of authors in SPSS 2019

For hired agricultural laborers, the most important factor is working experience. When the other factors are kept unchanged, with each 1 year of experience added the daily wage rate will increase 0.5%. Even this increment is not considerable, it still indicates positive effect of working experience on wage rate of hired laborers. In other side, it contributes to confirm the verdict that good experience of laborers in agricultural production is more important than educational levels they achieved (Osmani, 1991). The verdict is also proved by the result of the model: in the model, “educational level” does not affect wage rate of hired laborers. When type of farming is taken into account to consider its impact on daily wage, only the dummy “clam farming” is statistically significant in the model. That means the daily wage of hired laborers in the clam farming households is higher (3.9%) than the daily wage in the rice farming households. Meanwhile, the difference in daily wage between the pig farming and the rice farming households is not statistically significant.

4. CONCLUSION

This study discovered meaningful findings to response to these objectives. These findings drive the author to the following conclusions:

Firstly, farm households in the study sites combine the use of their family laborers with hired laborers. On average, the number of intensive working days of a family farm labor ranges from 32-50 days in rice farming; 150-210 days in pig farming; and 30-45 days in clam farming. At farm households, agricultural hired laborers consist of two types, seasonal hired laborers and permanent hired laborers. In rice farming households, seasonal hired laborers are found to work for short period of time in land preparing, transplanting, and harvesting. In clam farming households, seasonal laborers are widely rent in preparing clam plots and harvesting.

Secondly, farm households measure value of hired employees in various forms. Of these measurement, wage of hired laborers is paid by two means: daily wage for seasonal laborers and monthly wage for permanent ones. The daily wage is paid to manual laborers for farming activities which last within a few days such as transplanting and harvesting in rice farming or clam harvesting. The daily wage may be paid in piece for activities which apply machines such as land preparation and spraying pesticide. Basically, piece wage ranges from 4-5 US dollars and is much lower than daily wage (from 8.7 to 10.8 US dollars). The monthly wage is common for laborers in pig farming and clam plot guarding.

Thirdly, type of household, gender and work experience are internal factors which significantly impact on the wage rate that hired laborers are paid. Also, if comparing the wage rate of hired laborers among the three household groups, the author investigate the wage of hired laborers in the clam farming is 3.9% higher than the one in the rice farming group.

Policy implications

- (1) Including hired laborers in agriculture in the control of the Labor Code.
- (2) Stepping up and expanding activities of employment service centers to district and commune levels for agricultural laborers to have opportunity to approach labor market with timely and correct information.

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GRAESE : Groupe de Recherches Asie de l'Est et du Sud Est



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En pratique le **GRAESE** a pour objectif :

- 1) de stimuler la recherche interdisciplinaire concernant les problèmes et les enjeux du développement en Asie orientale et sud orientale
- 2) de publier sous forme de Working Papers (format papier ou online) des résultats de recherche liés aux projets en cours et aux questions concernant les diverses thématiques du développement appliquées à l'Asie orientale et sud-orientale, avec une attention particulière aux thèmes évoqués ci-dessus.
- 3) de réaliser des publications scientifiques de divers types concernant ces problèmes et réalisées par des chercheurs des différents centres partenaires en Europe et en Asie.
- 4) de fournir un lieu de rencontres entre chercheurs concernés par ces thèmes, particulièrement dans le cadre des doctorats en cours.
- 5) d'organiser des activités d'enseignement et d'information sur les problèmes du développement de l'Asie de l'Est et du Sud Est, notamment à travers l'organisation de conférences et séminaires donnés par des académiques et chercheurs asiatiques de passage en Belgique.

En Belgique les activités du **GRAESE** sont coordonnées par Ph. Lebailly (UEDR-Gembloux-ULiège) et J.Ph. Peemans (CED-UCL). Le secrétariat du **GRAESE** est assuré par l'UEDR.

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