

修士論文

**Effectiveness and Sustainability of Japanese FDI Project in
Vietnam's Agriculture**

Case Study in Lam Dong Province

ベトナム農業の日本 FDI プロジェクトの効果性と持続性について

Lam Dong 省のケーススタディより

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主査_____

ABSTRACT

In Vietnam, AFF (Agriculture, Forestry and Fishery) remains an important sector which provides jobs for more than 60% of the population (General Statistics Office, 2011). Nevertheless, on one hand, this sector is not only highly vulnerable to environmental changes including climate change, rising sea levels, deforestation and soil erosion; on the other hand, it also faces challenges including non-competitive technologies, poor infrastructure, undertrained workforce, and insufficient quality standards for export goods (Anders Corr, Tuan Nguyen, 2015).

Although investment in Agriculture has been considered as a key instrument to achieve socio-economic goals by Vietnam Government, the country still faces problems in resource allocation between Agriculture and Industry sector (FAO (b), 2012). Correspondingly, FDI is believed to build a strong competitive commodity Agriculture with high effectiveness on the basis of making full use of comparative advantages and application of new hi-technology (FAO, 2010). Unfortunately, there has been a downward trend in FDI in Agriculture (FAO (b), 2012). By December 2014, there have been 524 AFF FDI projects in Vietnam with the total registered capital of more than 3.6 billion USD, just accounting for 1.5% of the total capital amount (Ministry of Planning and Investment, 2015).

In recent years, aiming to build Agricultural value chain with high technology, high productivity and product value, Vietnam and Japan have promoted the trading in Agriculture as well as the favorable environment for Japanese enterprises to invest directly in this sector in Vietnam (Ministry of Agriculture and Rural Development, 2015). However, until July 2015, there are just 35 Agricultural projects from Japanese investors (nearly 6.7% of the total Agricultural FDI projects) with the total registered capital of nearly 190 million USD and the charter capital of over 71 million USD (JETRO Hanoi, 2015). Besides, per-project scale in this field is still small, standing at 6.6 million USD, compared with that of 15 million USD for other sectors (Anders Corr, Tuan Nguyen, 2015).

In order to promote further development and contribution of Japanese FDI in Agriculture, this research will deeply study the implementation of such project to understand its effectiveness in local context as well as the constraining factors from both sides of Vietnam and Japan. Typically, the research aims to evaluate the effectiveness of Japanese FDI Agricultural project on products' quality and productivity, local workers' (mainly farmers) income and working skill; identify difficulties of both workers and enterprise during project operation; and suggest recommendations for them basing on those existing obstacles.

Following case study design, this research would study a typical Japanese FDI project in Vietnam Agriculture, which is the "Japan-Vietnam High Technology Agriculture Farm" (JVAT) in Lam

Dong province. The fieldwork was executed from August 2, 2015 to August 25, 2015. Methods used in the site survey include field observation, semi-structured interview (with representatives from local Governmental agencies and JVAT), and individual questionnaire (with 50 project local workers). The respondents, which accounts for 71.4% of the total population, were chosen randomly among 70 current workers of the project. The collected primary data of project's impacts on workers before and after their participation as well as other surrounding opinions would be analyzed both qualitatively and quantitatively (MS Excel, STATA,). Secondary data from books, journals, researches and other reports aim to build literature review; and establish valid hypotheses. Moreover, comparison among literature findings and field survey findings is also made to examine their consistency. Also, GIS-ArcMap is used to show the geographical location of the case study and other Japanese FDI projects in Vietnam as well.

As shown through the results of the research, it is clear that the income of local workers after joining JVAT is not only higher than their previous income but also higher than the Commune's income per capita, along with better working and living stability. Moreover, excepting for the similar productivity, the project achieves better performance on product quality proven through higher production value/ha, higher export percentage / total production, higher export unit price, and better diseases and insects control. However, regarding working skill, regardless of the Government's expectation, there is little concrete evidence to state that working skill of project's workers is positively changed from their conventional ineffective working style. It is highly likely that these workers still concern more about the salary than skill improvement. Basically, this decision of mindset changing of workers depends on their education level, how much different their income can change after working at the project, and how long they have been working there. Interestingly, people with lower education background seem to be more flexible in changing their working style if they believe in the effectiveness of the new method. Equally importantly, it is also found that the willingness of people in acquiring new knowledge and the communication among directing board and employees within the Company have strong impact on the possibility of changing mindset of local workers.

Regarding the investing environment, despite investment incentives from the Government, the instability in legal framework, the loose connection between foreign Enterprises and local authority, the weak at-sight materials supply, and the limited labor's quality are found to be the constraining factors to project operation. On the other hand, the weak inside understanding seems to degrade worker's working satisfaction as well as their belief in the Company's production method. Therefore, in order to sustain the effectiveness of Japanese Agricultural FDI in Vietnam, practical actions from both sides of Vietnamese Government and Japanese investors based on current problems are indeed required.

DEDICATION

To my family

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I would like to express my sincere gratitude to my family and a lot of people around me both in Japan and Vietnam for their great care, support, and encouragement during the two years of my master. Without them, I would have never been able to finish this thesis.

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LIST OF ACRONYMS AND ABBREVIATIONS

ASEAN	: Association of Southeast Asian Nations
FAO	: Food and Agriculture Organization
FDI	: Foreign Direct Investment
FIA	: Foreign Investment Agency (MPI, Vietnam)
GDP	: Gross Domestic Product
GSO	: General Statistics Office (Vietnam)
IMF	: International Monetary Fund
IPM	: Integrated Pest Management
JETRO	: Japan Export Trade Research Organization (Japan)
JICA	: The Japan International Cooperation Agency (独立行政法人 国際協力機構)
JVAT	: Japan-Vietnam High Technology Agriculture Farm (Vietnam)
MAFF	: Ministry of Agriculture, Forestry and Fisheries (Japan)
MARD	: Minister of Agriculture and Rural Development (Vietnam)
MPI	: The Ministry of Planning and Investment (Vietnam)
ODA	: Official Development Assistance
OECD	: Organization for Economic Co-operation and Development
OLS	: Ordinary Least Squares
RIETI	: Research Institute of Economy, Trade and Industry (Japan)
R&D	: Research & Development
TPP	: Trans-Pacific Partnership
USD	: United States dollar
UNCTAD	: United Nations Conference on Trade and Development (the United Nations)
VND	: Vietnam Dong
WB	: World Bank
WTO	: World Trade Organization

CHAPTER 1. INTRODUCTION

1.1. Significance and Problem Statements

Thanks to the Government's efforts of industrialization and modernization, Vietnam has changed basically to an Industry and Services-based country over the past 30 years. Yet, Agriculture remains an important sector, which accounts for 21% of GDP (FAO, 2012). After these 30 years of reform, from the country still struggling with food security after War, agricultural export of Vietnam has increased continuously. Vietnam is now one of the top world exporters in rice, rubber, coffee, pepper, cashew nuts, wood products and fisheries (Vietnam Trade Promotion Agency, 2014). However, despite the favorable natural conditions, the country's agricultural products are still considered to be in low quality comparing with other nations like Thailand. Against the higher and higher demand of the world's market, Vietnam's Agriculture still needs to overcome a number of challenges, including over-exploiting natural resources but low technology, low-qualified labor forces, loose production value chain,...

In that context, private investment, especially Foreign Direct Investment (FDI), is expected to play an important role in bringing the new face to Vietnam's Agriculture sector thanks to its advances in financial, technical and human resources. Accordingly, these investment activities are believed to create breakthroughs in restructuring the sector and guiding Viet Nam's small- and medium-sized farming enterprises during the integration process (The Minister of Agriculture and Rural Development (MARD), 2015).

In the next coming years, the increasing interest of Japanese firms in favorable natural and socio-economic factors between the two countries is expected to raise the number of Japan's FDI projects in Agriculture. To attract such investment from Japanese investors, Vietnam's Government, cooperating with other organizations, has conducted various conferences and connecting events in Agriculture for enterprises from both Japan and Vietnam in many regions throughout the country (Investment journal, 2015). In the future, when both Japan and Vietnam officially join the Trans-Pacific Partnership (TPP) agreement, Japan will have to open more for Agricultural import and reduce Government's incentives for this sector. In this way, it seems to be more profitable for Japan's companies to invest in Vietnam's potential Agriculture to enjoy the export tax rate of 0% from Vietnam to Japan, and the high possibility of meeting the criterion of 70% of the exported products comes from intra-TPP. Therefore, it is necessary to promote the cooperation between the two countries in Agriculture to make use of this opportunity for the benefit of both sides. Especially, on 12th August, 2015, the 2nd Summit for Vietnam - Japan Cooperation on Agriculture was held in Hanoi under the supervision of the Ministry of Agriculture and Rural Development (MARD) (Vietnam), collaborating with the Ministry of Agriculture, Forestry and Fisheries (MAFF) (Japan). This event had the attendance of not only the two countries' Ministers but also the Ambassador of

Japan in Vietnam. The two sides agreed to promote more the import – export of agricultural product as well as create favorable environment for Japanese enterprises to invest directly in Vietnam for better agricultural value chain and higher product value. At the end of the meeting, the Minutes on "medium and long term vision of Vietnam – Japan cooperation in Agriculture" was also signed (MARD, 2015).

Nevertheless, despite those efforts, the current situation of Japan's FDI in Agriculture is still far from what is expected. Typically, if the average investment of an FDI project is approximately 14.7 million USD, this number of an FDI project in Agriculture is only 6.6 million USD (JETRO Vietnam, 2014).

Despite the contrast between the high expectation in the impacts and the low execution of Japanese FDI in Agriculture, there is few research done on how effective it really is and how we can improve its performance. Filling this current academic gap, this research aims to look deeply into project-level to evaluate its effectiveness and contributions to local Agriculture and labor forces. Besides, any difficulties that constrain project development are also studied properly, from which feasible recommendations will be pointed out. These suggestions aim to promote not only project's long-term benefits but also its possible contributions to the modernization of Vietnamese Agriculture. The result will become a useful data source both for policy makers and investors to refer to and see how they can change for better, thus, contributing to the development of the cooperation between the two countries in this important sector.

1.2. Research Objectives

Heading for the above mentioned issues, the research is developed to tackle some certain aspects of the effectiveness of Japanese FDI project, basing on the following three objectives:

- (i) To evaluate the effectiveness of Japanese FDI Project operating in the Agriculture sector in Vietnam, typically, on products' quality and productivity, local workers' income and working skill
- (ii) To identify obstacles constraining the development and contribution of such Agricultural FDI in local context
- (iii) To suggest solutions not only for Project further development but also for its long-term contribution to local Agriculture, as well as the whole economy and society

1.3. Research Hypotheses

Respectively, the below hypotheses for the first two objectives are assumed and tested with the result of the study. Basing on these findings, recommendations are made, which is also the answer for the third objective of the research.

(i-1) In comparison with the average level of local production, the product of the FDI project performs better in quality and productivity.

(i-2) In comparison with the previous income level and the local income per capita, the current income of Project's workers is higher

(i-3) After joining the Project, workers' working skill are positively changed following Project's working method and working discipline.

(ii) Difficulties coming from the shortages in investment environment and human resource constrain Project operation and contribution.

1.4. Conceptual Framework

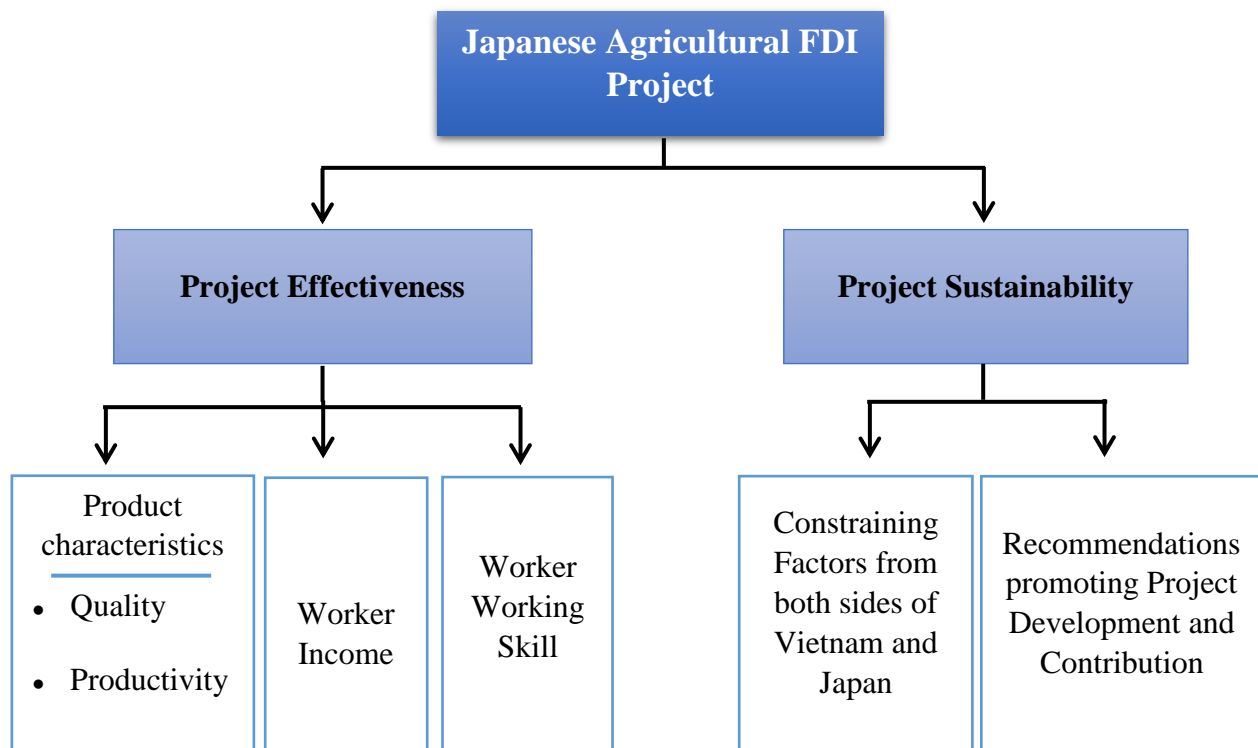


Figure 1: Research's Conceptual Framework

As can be seen from the Figure 1 above, the central subject of this study is Japanese FDI Project operating in Agriculture sector in Vietnam, which is deeply studied in two aspects: (1) its Effectiveness on Product Quality and Productivity, as well as on Worker Income and Working Skill in comparison with the local average level; and (2) its Sustainability in the development in local context and contribution to local Agriculture in long term, meaning to discover the Constraining Factors derived from both Vietnam and Japan sides, then propose Recommendations for those issues.

1.5. Research Methodology

Both qualitative and quantitative analyses are used in the research.

Among the various designs of social research, this research follows the Case Study Design to enable the detailed and intensive analysis of a single case (Alan Bryman, 2012). Typically, under the combination of both quantitative and qualitative approach, one outstanding case of Japanese FDI Agricultural project will be focused on, from which the effectiveness of FDI project can be examined, clarified and measured properly. Besides, field observation is applied to collect data of the project and local workers.

Methods used in the site survey are semi-structured interview and individual questionnaire. While the questionnaire allows local workers to easily reveal their subjective opinions, the interview with the representatives from local Authority and Project's managing board aims to discover the viewpoints and opinions of both sides about different matters of the Project operation and contribution. The semi-structured design of the interview will enable the flexibility to obtain suitable data while still having the core content built.

Secondary data from books, journals, researches and other organizations' reports aim to provide sufficient understanding about Japanese FDI in Vietnam's Agriculture to build literature review and establish valid hypotheses for the study. Moreover, comparison among literature findings and field survey findings is also made to examine their consistency.

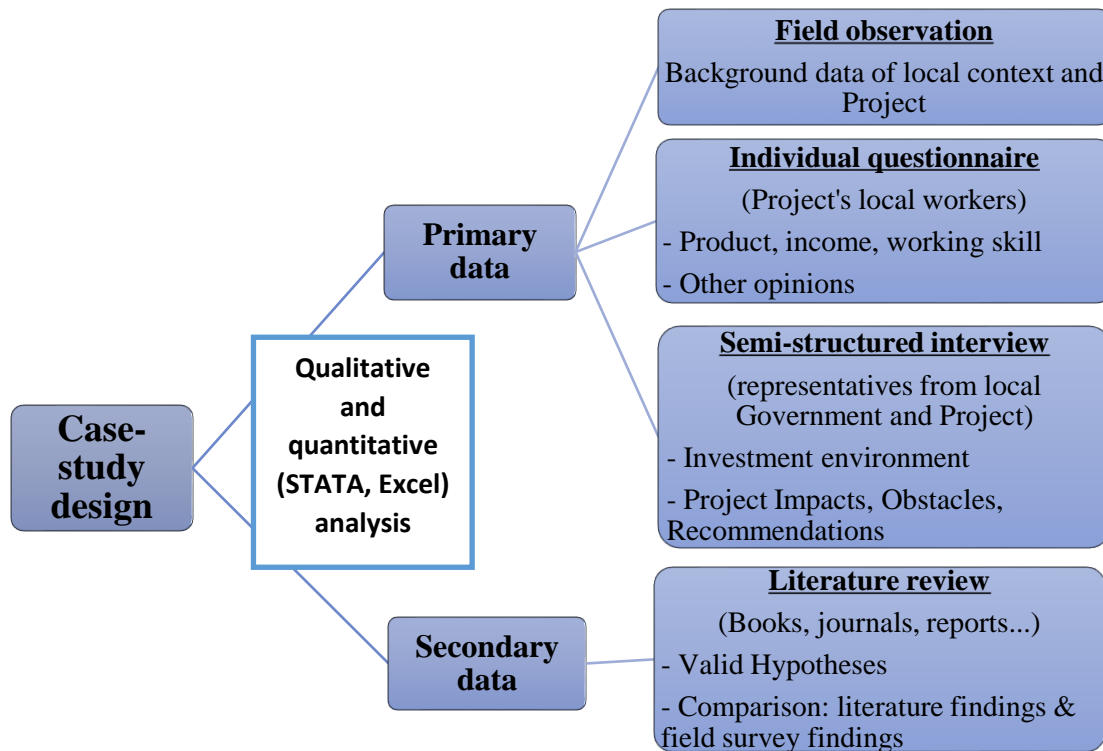


Figure 2: Research's Methodology

1.6. Thesis Outline

This paper is divided into seven chapters as follows:

- Chapter 1: *Introduction*: comprehensive information of the research's significance, its objectives and corresponding hypotheses, as well as how this study is executed
- Chapter 2: *Foreign Direct Investment (FDI) in Vietnam's Agriculture*: background understanding in Vietnam's geographic and natural conditions, as well as the importance and brief situation of Agriculture sector in Vietnam, along with the data of FDI in general and FDI in Vietnam's Agriculture in particular
- Chapter 3: *Japanese FDI and its importance in Vietnam's Agriculture*: Japanese FDI in general and in Agriculture sector in particular; its role in Vietnam's society and economy; along with the existing strengths and weaknesses of the Nation's Agriculture sector in attracting FDI
- Chapter 4: *Case study - JVAT*: introduction of the case study (FDI Project - JVAT) and the survey site of the research
- Chapter 5: *JVAT's performance on production capability, worker income and working skill*: data analysis and result on the effectiveness of the Project on productivity, product quality, worker income and working skill
- Chapter 6: *Discussion on project's performance and sustainability*: further discussion on the research results and the sustainability of Japanese Agricultural FDI, including other arguments on product quality, worker income, working skill, and working satisfaction, along with Project's strengths and weaknesses
- Chapter 7: *Conclusion*: outcomes of the study, recommendations drawn from those findings, as well as research's limitations and future works

CHAPTER 2. FOREIGN DIRECT INVESTMENT (FDI) IN VIETNAM'S AGRICULTURE

2.1. Geographic and Natural Conditions of Vietnam

The Socialist Republic of Vietnam (hereinafter in short called Vietnam) is located on the Indochina Peninsula, the continental portion of Southeast Asia, connecting with the Pacific coast. The country has the land border of 4,550 km long in total, sharing with China to the North, Laos to the Northwest, Cambodia to the Southwest, and connecting the East Sea to the East. On the map, extending from the latitude of 23⁰23' North to 8⁰27' North, the S-shaped land of Vietnam lasts 1650 km long from North to South. Covering the total area of nearly 340,000 square kilometers, the widest part on land of Vietnam from West to East is around 500 km, while the narrowest place is just 50 km. In 2015, the population of Vietnam is estimated to approximately stand at 91,700,000 people, in which male accounts for 49.3% and the rest 50.7% is female (GSO, 2015).

Vietnam is divided into 58 provinces, adding 5 centrally-controlled municipalities, including Hanoi (the capital), Hai Phong, Da Nang, Ho Chi Minh City, and Can Tho. Besides, the whole country is classified into eight regions with typical characteristics of geography and nature, listed as follows: the Northwestern Region (Tay Bac), the Northeastern Region (Dong Bac), Red River Delta (Dong Bang Song Hong), North Central Coast (Bac Trung Bo), South Central Coast (Nam Trung Bo), Central Highlands (Tay Nguyen), Southeastern (Dong Nam Bo), and the Southwestern region - Mekong River Delta (Tay Nam Bo - Dong Bang Song Cuu Long).

Lying inside the tropics belt, Vietnam owns the year-round high temperatures and high humidity. While the Northern part has the continental climate due to the influence of the Chinese mainland, the features of humid tropical monsoon climate can be found on the rest mainland due to the impact of the East Sea. Especially, in Vietnam, the climate changes seasonally and regionally from low to high parts, from North to South, and from East to West. Because of the strong influence of the Northeast monsoon, the average temperature of the country is lower than the average temperature of many other Asian countries located at the same latitude.

Basically, there are two major climate regions in Vietnam separated by the Hai Van pass located at the end of the North Central Coast region: (1) the North region - a tropical monsoon climate area with high humidity and four distinct seasons (Spring-Summer-Fall-Winter), under the influence of the Northeast monsoon and Southeast monsoon; (2) the Southern region – a more stable tropical climate area due to less influence of the monsoon, with two seasons (dry and rainy ones) and being hot throughout the year. In addition, the topographical structure enables Vietnam to have some sub-climate regions, such as the temperate zones (Sa Pa, Lam Dong province) or the continental zones (Lai Chau, Son La province).



Figure 3: Administrative Map of Vietnam

Source: <http://www.nationsonline.org/oneworld/map/vietnam-administrative-map.htm> (Retrieved on June 2, 2016)

Vietnam has the average temperature ranging from 21⁰C to 27⁰C, which ascends from North to South. While in summer the country's average temperature is 25⁰C, in the North, especially in December and January, in some mountainous regions it can down to 0⁰C with snow.

Every year, Vietnam receives around 1400-3000 hours of sunshine, the average rainfall of 1,500 to 2,000 mm, and the air humidity of around 80%. Given the influence of monsoon and complex topography, the Nation is often prone to several disasters such as storms, floods and droughts.

With the height descending in the direction of Northwest – Southeast, Vietnam's terrain diversifies from mountains, plains, coast to continental shelf. Basically, low hills account for 75% of the whole territory (in which 85% of the area is lower than 1,000 meters), while high mountains of above 2,000 meters account for only 1%. Accounting for a quarter of the total land area, the delta area of Vietnam is separated into different areas with mountains and hills. Among them, there are two large deltas at the two ends of the country, called the Northern delta (Red River basin, 16,700 square kilometers in area) and the Southern delta (Mekong River basin, 40,000 square kilometers large). Located between these two main deltas, a chain of small deltas distributes along the Central coast with the total area of 15,000 square kilometers.

Regarding river system, Vietnam has a dense network with 2360 rivers of over 10 kilometers in length, flowing in two main directions of Northwest - Southeast and arcs shape. In flood season, the water amount accounts for 70-80% of the total yearly amount, which often causes flooding (Vietnam Government Portal, 2016).

2.2. Agriculture sector in Vietnam

With any economy, Agriculture and Rural Development always play a fundamental role, which can be basically illustrated as follows (Nga, 2016):

- Agriculture provides food for consumption, creates stability and security for the development of the nation. At the same time, Agriculture sector is also the inputs and raw materials supplier for other industries. Besides, Agriculture also brings foreign currency and human resource for the economy.
- Rural area is not only the place for food production and food supply for the whole society, but also an important consumption market for products from urban areas. Besides, since it covers the majority of natural resources, land, and human resource as well, the sustainable development of rural area should have a tremendous impact on the ecological environment. The effective exploitation of resources in rural areas is critical to ensure the long-term development and sustainability of the country.

Despite the drastic changes of the country over the past 30 years and the gradual change of the economic structure towards the Industry and Service sectors, in Vietnam, Agriculture remains an important sector (FAO, 2012), accounting for nearly 18% of the whole country's GDP (GSO, 2015). According to the Ministry of Natural Resources and Environment, in 2011, 26.23 million hectares of agricultural land (75% of the total natural area) are used in AFF field. Nearly 70% of Vietnam's population lives in rural areas, of which the number of households working in AFF sector was 9.53 million, accounting for 62.2% of the total rural households. According to the Institute of Policy, MARD, in the context of the turbulent and changing world, Agriculture and Rural Development plays an important role in stabilizing the politics and society of Vietnam with the continuous reduction of 2% per year of the average poverty rate for decades. Moreover, it is the Agriculture sector that produces the jobs and income for farmers, the majority of the population, especially in remote and ethnic minority regions. Also, in the report about the new challenges and opportunities for Vietnam's Agriculture, the Vietnam Trade Promotion Agency, the Ministry of Industry and Trade (2014), points out the viewpoint that after 27 years of reform, despite market difficulties and natural disasters, agricultural production remains relatively good growth rate, making significant achievements and developing into a very key sector in Vietnam's economy. These achievements are shown through the remarkable growth of farming, livestock, forestry and fisheries production, the advancing export value, as well as the enhanced living standard of farmers and the bettered rural economy (Tân, 2013).

To conclude, with a country where agricultural production serves as the basic like Vietnam, Agriculture and rural areas development is considered to be the key issues, which decides the success of the socio-economic development process in general and the procedure of industrialization and modernization in particular. Thus, it can be said that this is an inevitable mission to improve the country's economy, society, culture and environment (Nga, 2016).

Owning the diverse types of land with high fertility, Vietnam has favorable conditions for developing Agriculture. According to the Agriculture survey in 2013, within 262,805 square kilometers of AFF land in Vietnam, 101,511 square kilometers are used as Agricultural land, followed by 153,731 square kilometers of Forest land, and 7.120 square kilometers of Aquaculture land (The Farmer Association of Vietnam, 2016).

Despite the effects of natural disasters and the global economic crisis in 2008, the growth rate of Agriculture sector still reached 2.8% in 2011. During the period 2007-2011, the average growth stood at 3.37% per year (FIA, 2012).

According to the GSO's report on the socio-economic situation of Vietnam in 2015, the production value of AFF sector, in comparison with the prices in 2010, was estimated at 858.4 trillion VND, increasing by 2.6% comparing to that value of 2014. Correspondingly, Agriculture reached 637.4

trillion VND (up 2.3%); Forestry contributes 26.6 trillion VND (up 7.9%); and the value brought by Aquatic products was 194.4 trillion VND (up 3.1%).

The Agriculture of Vietnam is featured by several typical varieties, including Rice, perennial cash crops (Tea, Coffee, Rubber, ...), annual crops (vegetables, potatoes, flowers, ...); as well as the poultry and cattle breeding. Regarding Rice cultivation, the total output increased by 240.9 thousand tons comparing to that value of 2014 to reach 45.2 million tons in 2015. Besides, the total cultivating area was also widened by 18.7 thousand hectares to stand at 7.8 million hectares, along with the average yield of 57.7 quintal / ha. Nevertheless, in the same year, the productivity of several other annual crops was quite low, with the downward trend in both yield and cultivating area. Particularly, the yield of some main crops were as follows: sweet potato: 1330.4 thousand tons (70.9 thousand tons and 3.2 thousand ha declining from the previous year); sugar cane: 18.3 million tons (reduction of 1.5 million tons and 20.5 thousand ha); peanuts: 451.8 thousand tons (downing by 1.5 thousand tons and 8.7 thousand ha); soybeans: 146.4 thousand tons (reducing by 10.1 thousand tons and 8.6 thousand ha). Meanwhile, the production of cassava, legumes, and other vegetables, experienced the significant increase, standing at 10.7 million tons (increase of 464 thousand tons and 13.7 thousand ha); and 15.9 million tons (rise of 282.2 thousand tons and 9.5 thousand ha), respectively. Besides, some major crops of perennial trees and fruit trees also continue to grow in both area and productivity in comparison with the production value of 2014. Coming to the Forest area, in 2015 the total area increased by 8.5% comparing to that of 2014, estimated at 240.6 thousand hectares. On the other hand, the total fishery production in 2015 was also estimated to increase by 3.4%, reaching 6549.7 thousand tons.

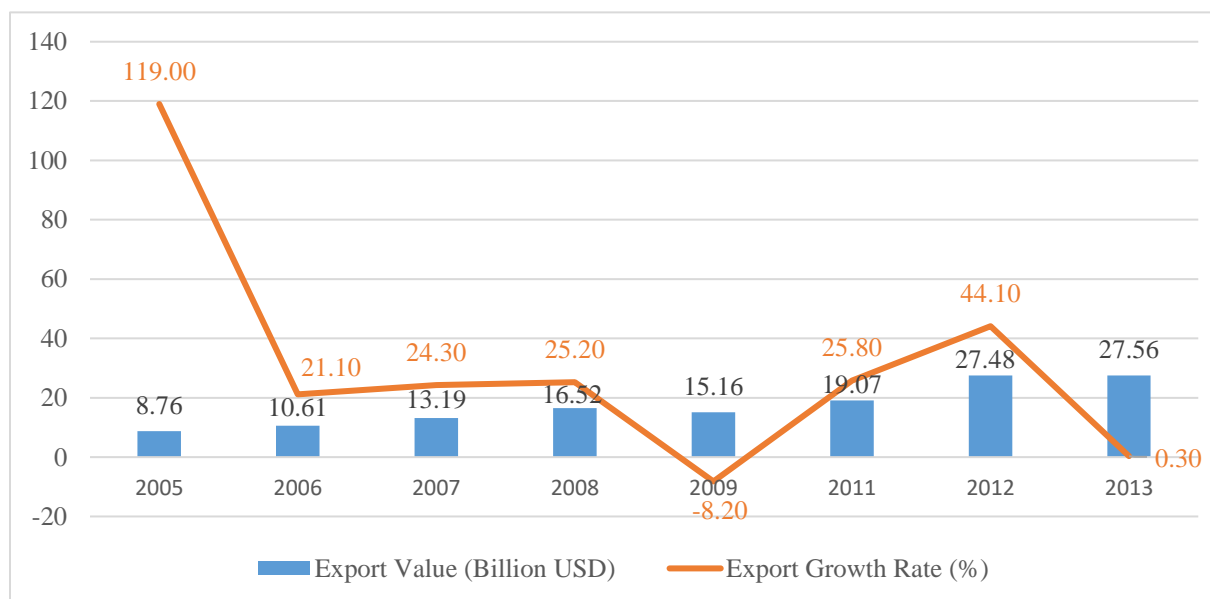


Figure 4: Export Value and Growth Rate of AFF products of Vietnam

Source: Calculated basing on the data of GSO from 2004 - 2013

As can be seen from Figure 4, in the period 2005-2013, there had been a significant and quite continuous increase in the value of agricultural exports, from 8.76 billion USD in 2005 to 27.56 billion USD in 2013. However, the export growth rate was fluctuated noticeably through times. In 2005, the last year in the 5-year Socio-Economic Development scheme (2001-2005) of the Government, not only the export of AFF products but the total goods exports also experienced high growth rate comparing to previous years. Apart from the support of Government, this achievements in 2005 were thanks to the strong economic recovery and the high import demand of those countries / regions that have commercial relationship with Vietnam, leading to the increase in both volume and price of Vietnam's exporting products. Moreover, it is also because of the better reputation of many major export items of Vietnam on the world market (An, 2005). On the other hand, due to the world economic crisis in 2009, the price of most of these key items declined remarkably, leading to the reduction in both export value and growth rate (The Central Institute of Economic Management of Vietnam, 2014).

Recently, the downward trend has been found in the export value (both volume and price) of Vietnam's AFF products. Towards the severe competition of other countries in both price and quality, adding the stricter technical barriers and higher demand of importing countries, Vietnam needs to tackle with the existing obstacles and promote the advantages more to enable a breakthrough in this important sector.

2.3. Foreign Direct Investment (FDI)

2.3.1. Definition

In the current context of globalization in which nearly all the economies in the world are moving closer and interdependent to each other, the term *Foreign Direct Investment* (FDI) has become more and more familiar to scientists, economists, policy makers, and even to any ordinary citizens of the world. Nevertheless, regarding the exact definition of FDI - one of the most basic forms of international investment, each organization has their own different interpretation that not exactly matches each other.

According to WB (2016), FDI refers to direct investment equity flows in the reporting economy. It is the sum of equity capital, reinvestment of earnings, and other capital. Direct investment refers to the cross-border investment of a resident in one economy (the source country) having control or a significant degree of influence on the management of an enterprise that is resident in another economy (the host country). Particularly, the ownership of 10% or more of the ordinary shares of voting stock is the criterion to determine the existence of a direct investment relationship.

Meanwhile, in the publication of OECD - *Benchmark Definition of Foreign Direct Investment* (2008), this organization mentions that FDI reflects the objective of establishing a lasting interest

by a resident enterprise in one economy (direct investor) in an enterprise (direct investment enterprise) that is resident in an economy other than that of the direct investor. In addition, OECD also makes it clear that the lasting interest implies the existence of a long-term relationship between the direct investor and the direct investment enterprise and a significant degree of influence on the management of the enterprise. Yet, being similar to WB's viewpoint, the direct or indirect ownership of 10% or more of the voting power (ordinary shares) is also the popular characteristic to identify this relationship.

On the other hand, basing on the *Balance of Payments Manual* (Fifth Edition, 1993) of IMF, UNCTAD also agrees that FDI refers to an investment made to acquire lasting interest in enterprises operating outside of the economy of the investor, UNCTAD (2013) adds the feature that the degree of equity ownership is almost always considered to be associated with an effective voice in the management of an enterprise. Besides, IMF clarifies more that such investment is called direct since the investor, which could be a foreign person, company or group of entities, is seeking to control, manage, or have significant influence over the foreign enterprise.

Not only those mentioned international organizations, many individuals, including researchers and scientists, also exploit FDI to be the topic of their studies, as well as each nation defines this term in their way associating to the country's different purposes.

Correspondingly, FDI takes place when a corporation in one country establishes a business operation in another country, through setting up a new wholly-owned affiliate, or acquiring a local company, or forming a joint venture in the host economy (Theodore, 2012).

In Japan, deriving from the standard theory of Caves (1982) and Dunning (1988), the two scholars - Ito and Fukao (2001) – state in the paper of the Research Institute of Economy, Trade and Industry (RIETI) about *FDI in Japan* that FDI is a form of long-term international capital movement accompanied by investors' intangible assets, such as the stock of technological knowledge accumulated by R&D or the accumulation of marketing know-how from past advertising activity. The host country is expected to benefit from the inflow of such intangible assets. Especially in the case of Service sector, many of which are not tradable, customers in one country cannot enjoy the advanced services of foreign firms, if these do not establish affiliates in that country.

Besides, in Vietnam, although the concept of FDI was already mentioned in the Nation's legal document in 1977, it was until 2005 that this term was most clearly explained in the new Investment Law. Typically, direct investment is one investment form that along with the capital the investors also participate in the management of investing activities. Thus, it can be understood that FDI is one investing form that foreign investors bring along capital and participate in the

management of investing activities in Vietnam (Financial Journal, 2013). Meanwhile, foreign investors include both foreign organizations and individuals who invest capital to carry out investing activities in Vietnam. This definition, according to many Vietnamese researchers, still does not clarify fairly enough the concept of FDI. Particularly, bringing capital and assets into Vietnam is, in essence, part of the procedure of not only FDI but also the general investing operation. Apart from moving money and assets from abroad into the country, FDI activities also include the transfer of money as payments for the provision of technique, service, interest of foreign loans, as well as cash and other assets owned legally. Moreover, this legal interpretation of FDI also does not accurately reflect the content of FDI activities in Vietnam. Accordingly, FDI activities in Vietnam are almost legally defined to be the activities of foreign investors, while in fact, Vietnamese enterprises, varying by projects, also contribute capital, participate in management, share profit and risks with those foreign investors. Therefore, the definition in the Investment Law of Vietnam does narrow down the content of FDI activities, leading to the misunderstanding and difficulties in the investing execution.

To sum up, although there are various ways to interpret the term *FDI*, nearly all of them refers to the following characteristics, which is also the nature of this international investing form:

- Generally speaking, FDI involves capital and technology transfers from the foreign entity; provides them with the access to newer markets and raw materials, as well as enables the target company to access to technology.
- FDI involves a long term commitment, not just gaining quick capital overturn and benefits. In all such transactions, there is a significant degree of influence and control of the foreign investors over the management of the target company. Particularly, an investment is considered as FDI if it involves the acquisition of at least 10% of the equity of the target company.
- FDI is expected to increase the production capacity of the target company, thus generating employment and consequently economic growth in the host country.

2.3.2. Classification

Sharing the common nature, yet FDI activities can be executed in various forms. Depending on the distinguish dimensions, there are also different ways to classify FDI. Among them, the classification of P. Pazienza in the publication *The Relationship between FDI and the Natural Environment* is likely to be the quite completed classification, composing of not only the viewpoints of large international organizations such as IMF, OECD, UNCTAD but also the achievements of previous researches. Typically, the study's FDI classification is as follows.

- Basing on the viewpoint of investment operation of the source country and the host country:

- From the eye of the source country (foreign investor), FDI can be categorized in horizontal, vertical and conglomerate.
 - Horizontal FDI: refers to an investment that mainly aims to expand horizontally. Correspondingly, the foreign investor decides to produce abroad (at the host country) the same or similar type of product he produces at home with the aim of expanding his market opportunity. The key characteristic of Horizontal FDI is the lack of product differentiation between that produced at home and that in the host country. Typically, for this kind of investment, the investor tends to make use of a certain power position in the market (such as monopoly or oligopoly) that the firm in the host country is holding.
 - Vertical FDI: this form of FDI is normally implemented in two main ways, which are to buy other firms in the host country to work as raw materials suppliers (backward vertical FDI), or as distribution outlets (forward vertical FDI). By undertaking this type, the investor wants to have better management of his organizational chain through the choices of being as close as possible to the market of raw materials (the former vertical FDI) and/or to the final consumers (the latter vertical FDI).
 - Conglomerate FDI: represents a mix of the above two types.
- From the eye of the host country, FDI can be divided into import-substituting, export-increasing and government-initiated one.
 - Import-substituting FDI: refers to an investment which enables the host country to become producer of certain products which were previously imported from the source country. The market size of the host country and the existence of transportation costs and/or trade barriers are basically the aspects to determine whether or not to implement this investment form.
 - Export-increasing FDI: the investor wants to seek new sources of input factors in the host country. In such a case, the export of certain products from the host country (normally raw materials and/or intermediate goods) to the investor's country and/or other countries where his subsidiaries are located will increase.
 - Government-initiated FDI: refers to the form of investment which is stimulated by the provision of incentives of the Governments to attract investment in the attempt to improve their balance of payments conditions.
- Basing on the aspect that the foreign investor wants to exploit from the host country:
 - Expansionary FDI: aiming for the firm-specific advantages (such as scale effects, R&D intensity, profitability and technology acquisition, etc.) in the host country. Moreover, the investment also brings the additional contribution of sales growth for the investing firm both at home and abroad.
 - Defensive FDI: aiming at the cheap labor as well as other cheap input factors to reduce production costs in the host economy.

On the other hand, regarding the number of ways used for market entry purpose, the investing company can either set up a subsidiary (Greenfield FDI) or associate with an existing company in the host country by acquiring shares of that overseas company, or forming a merger or joint venture (Mergers & Acquisitions (M&As)) (UNCTAD, 2009):

- Greenfield FDI: relates to the establishment of new entities and the setting up of offices, buildings, plants and factories from the beginning. These establishments can be a branch, an unincorporated enterprise or an incorporated enterprise (a separate unit maintains its own accounting books)
- Mergers & Acquisitions (M&As): This entails the taking over or merging of capital, assets and liabilities of existing enterprises in the host country.

2.4. Importance of FDI to Developing Countries

The FDI activities involve the transfer of various elements (including but not limited to financial capital, technology, labor skills) from the source country (the source of the investment) to the host country (the destination or recipient of the investment), which implies the rise of costs and benefits for both sides. Nevertheless, FDI is likely to have more effects on the host country's point of view (P. Pazienza, 2014).

Since the early 1980s, FDI has grown at a phenomenal rate, and the world market for it has become more competitive (Padma and Karl, 1999). Also according to the two authors, FDI has become an important source of private external finance for developing countries. Differing from other major types of external private capital flows, FDI is motivated largely by the investors' long-term benefits for making profits in production activities that they directly control. Yet, for those developing host countries, the significance of FDI is much greater, not only adding to investible resources and capital formation, but also transferring production technology, skills, innovative capacity, and organizational and managerial practices between locations, as well as accessing international marketing networks.

Nimal (2011) once again reaffirmed the strong relationship between foreign investment and economic growth by stating that larger amount of foreign investments is needed for the country to achieve a sustainable high trajectory of economic growth. In his opinion, private FDI is risk free to the country and brings with it the advantages of advanced technology, management practices and assured markets. While the local workforce can gain knowledge of the manufacturing processes and management practices, the value added in these industries is a contribution to GDP and foreign exchange earnings. Moreover, FDI also contributes to employment creation and income increase, especially for skilled and semi-skilled workers in these industries.

Meanwhile, P. Pazienza, in his study of the *Relationship between FDI and Natural Environment* in 2014, did mention the other aspects of FDI effects on a host country rather than just focusing on the Economic side. Correspondingly, these effects are divided into three types: Economic, Political and Social effect. Briefly, while leaving impact on natural environment, Economic effects are distinguished, more detailed, in macro and micro effects, in which the former one consists of capital provision, growth rate, employment rate, trade flows as well as national balance of payment; whereas the latter effect involves in production capacity, skill and technology transfer and market structure. Besides, the Social issue mainly concerns the cultural and behavioral changes as a consequence of the contact between the foreign and local entities. The Political effect in the author's work refers to the issue of national sovereignty, as well as the existing threat for the national political autonomy due to the control and the management of the foreign investors over the investing activities.

In 2008, the Social impacts of FDI was also discussed in one Policy Brief of OECD titled '*The Social Impact of Foreign Direct Investment*'. Accordingly, it is popular that FDI is expected to bring significant benefits by creating high-quality jobs comparing to their local counterparts (higher pay and better working conditions) and introducing modern production and management practices. Interestingly, FDI is also found to have strong effect on average wage in local firms through its impact on those firms' productivity, reflecting the competition among foreign and domestic firms for local workers. Nevertheless, the abroad activities of multinational enterprises have also caused many controversially social concerns, such as practicing unfair competition by taking advantage of cheap labor at the host country, violating human and labor rights in developing countries where Governments often fail to enforce such rights effectively.

According to FAO estimation, an annual investment of 83 billion USD is required in Agriculture sector of developing countries to meet the food demand in 2050. In the last years, along with the decline in the public expenditure as well as the amount of Official Development Assistance (ODA) invested in the Agriculture sector in developing countries, the role of FDI in this fundamental sector is gaining more attention. The increasing trend of commodity prices have become the wake-up call to give more support to agricultural development and ensure food security and poverty reduction as well. From only 1% of total world's FDI inflows, FDI in Agriculture in developing countries has increased recently, particularly, in Asia and Oceania, Latin America, the Caribbean and South-East Europe (Christine and Erwin, 2012).

Considering the effects of FDI in food security, poverty reduction, rural development, as well as technology and access to land and water resources, some developing countries are making efforts to attract foreign investment into their agricultural sectors. Those investments will play an important role in filling the gap left by the shortage of ODA and public expenditure, as well as the

limitation of the domestic budget and resources in creating job, income and enhancing production capacity through technology transfer (FAO, 2013).

Teshome (2011), in his paper discussing the *Structures, Opportunities and Impacts of FDI in Agricultural Sector in Ethiopia*, claimed that by creating the changes in new technologies, knowledge and international market, FDI paves the way for the increase in the productivity and total production of Agriculture sector in the country, which is essential to achieve sustainable growth and significant reduction in poverty in developing countries. Moreover, such investments also enable this sector to achieve structural transformation and be more competitive in international market, which in turn improves the country's earning from export and enables it to invest back for country development.

However, besides such developmental benefits, FAO (2013) also clarifies that those benefits cannot automatically come as expected without any risks for the host country. To ensure that the country and smallholder farmers can take advantage from FDI, it is necessary for the Government to ensure the availability of rural infrastructure, agricultural institutions, extension services, education, sanitation in Agriculture, as well as to provide incentives and opportunities for farmers to increase their private investment (Christine and Erwin, 2012).

In conclusion, the importance of FDI in the world's socio-economic development, especially in the growth of developing countries, is undeniable. Nowadays, besides FDI in Industry & Service sector, the emerging role of such investment in Agriculture sector is now gaining attention of Governments and researchers. However, to ensure the effectiveness of FDI in either Agriculture or other sectors, the actual impacts of FDI, including benefits and risks, on every aspect of the host country (locally and nationally) as well as their determinants need to be studied and assessed thoroughly.

2.5. FDI in Vietnam

2.5.1. General FDI situation

Since the execution of the important reform policy (*Doi Moi*) in 1986, there has been dramatic increase in the annual FDI inflows into Vietnam, from 0.32 billion USD in 1988 to nearly 4 billion USD in 2005, with an annual growth rate of 28%. Since 1988, during the Economic transition process from a centrally planned Economy to a market oriented Economy of Vietnam, FDI has been regarded as a very impressive actor (Lan, 2006).

Although recently there have still been controversial opinions toward the role of FDI in Vietnam, it has been widely and officially recognized that this international investment form has, in one way or another, significantly contributed to the Nation's development, including but not limited to foreign capital attraction, technology transfer, international payment balance improvement, as well

as the development of new industries (such as oil and gas exploitation, car industries, food and beverages, garment and textile industries). Especially, since 2001, it has been confirmed in the amended Vietnamese Constitution that FDI is an integral part of the national economy, and attracting FDI should be a long term strategy of Vietnam. On the other hand, thanks to FDI, a new group of young and dynamic managers has been formed with modernized management and corporate governance skill. Particularly, many successful domestic entrepreneurs owe their skills and experience to the training and working period at the foreign companies, meaning that FDI promotes the process of international integration, as well as deepens the global cultural exchange within the country's boundary (Doanh, 2002).

Sharing the same approving attitude to FDI, Hong (2014) in her paper of *The Role of FDI in Economic Development* claimed that FDI plays an important role in the development of Vietnam, mentioning the quite similar functions of this foreign investment, adding the role of not only transferring advanced technology and managing skill to domestic companies but also creating the globally competitive environment for domestic companies. Moreover, FDI has also contributed greatly to the Nation's budget through times. Together with the development of FDI companies, in 2006 and 2007, Vietnam collected nearly 1.5 billion USD each year, as twice as the amount of the period 1996 - 2000. Especially, the author also mentioned the positive environmental impact of FDI in Vietnam. Accordingly, deriving from the data of the Central Institute of Economic Management, the percentage of FDI companies which obey the Vietnamese Environment law is higher than that value of domestic companies. Moreover, 60% of FDI enterprises operating in Food Industry has qualified waste water treatment system, while this rate of domestic enterprises just stands at 10%.

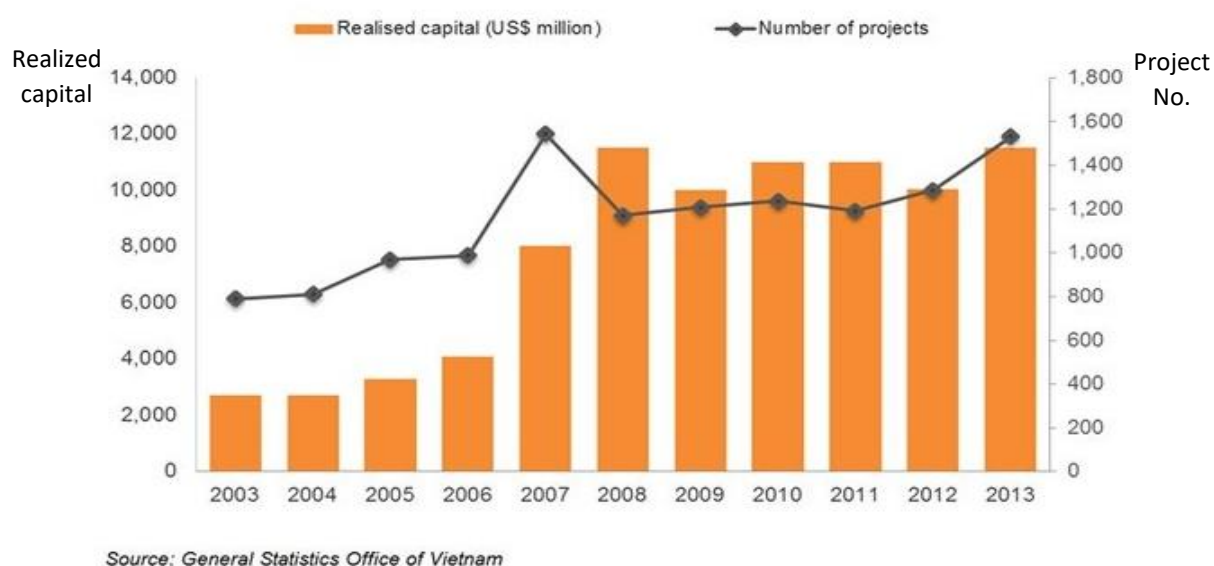


Figure 5: FDI in Vietnam from 2003 to 2013

Source: <http://blogs.duanemorris.com/vietnam/2015/10/01/foreign-direct-investment/>, retrieved on June 10, 2016

Note: The above data are the one recorded for only newly-registered projects in one year (not accumulated data).

As can be seen from the Figure 5 above, generally speaking, in the 10-year period of 2003 – 2013, the annual realized FDI capital in Vietnam has continuously risen five times larger, from more than 2,000 million USD in 2003 to nearly 11,000 million USD in 2013, along with the gradual increase in the number of projects. Typically, during the period from 2006 to 2008, there was a remarkable climb in both FDI realized capital and project number, the main reason of which is the participation of Vietnam in the WTO.

Up to 2013, Vietnam has attracted 15.696 projects with 230 billion USD of commitment capital, of which the actual inflows has been 78.5 billion USD (Hong, 2014).

Table 1: Top 10 countries investing in Vietnam up to 2013

Order	Country	Project No.	Registered Capital (million USD)	Charter capital (million USD)
1	Japan	2,127	34,583	11,222
2	Singapore	1,219	29,312	7,623
3	Korea	3,546	29,041	9,156
4	Taiwan	2,287	27,915	11,379
5	British Virgin Islands	518	15,638	5,288
6	Hong Kong	760	12,595	4,005
7	America	674	10,620	2,562
8	Malaysia	451	10,331	3,606
9	China	977	6,992	2,883
10	Thailand	333	6,469	2,799

Source: Hong, 2014

Until the end of 2013, within more than 100 countries investing in Vietnam, Japan is the one that has the highest project number of 2.127 projects, along with the registered capital of 34.6 billion USD and the charter capital of 11.2 billion USD, followed by Singapore, Korea and Taiwan.

Nevertheless, besides the positive effects, there are also the opposite concerns of the negative impacts of FDI in Vietnam. Correspondingly, Doanh (2002) said that due to the majority of FDI share has been in those capital-intensive industries, it, in fact, has not created as much employment as expected. Noticeably, Anh et al. (2006), in their research of FDI impacts, did mention about the negative “spillover effects” of FDI, which means that in some cases, the presence of foreign firms, along with the gap between them and domestic counterparts, can cause market disturbance and exert too large competition pressures on those domestic enterprises.

2.5.2. FDI in Agriculture sector

Since 1987 up to now, despite the intention of the Government to attract foreign investors to Agriculture sector, FDI capital into this sector is still low because of the higher risk of this sector comparing to others (Hong, 2014). Thus, FDI in Vietnam's Agriculture is regarded to be still under-proportionate in comparison with its importance and huge potential.

In the context that the share of public agricultural investment in the total public investment has been decreased from 12.2% in 2000 to 5.9% in 2010 (FAO, 2012), along with the fact that most of domestic private investment in Agriculture focuses on the fields having high turnover rate such as agro-processing and inputs production... instead of the ones creating more added value with technology through production, the cooperation and support from other countries in Agriculture sector via FDI is becoming more and more important, which is believed to become the push factor that changes the current backward situation and promotes the development of Agriculture sector. The important role of FDI in building strong commodity agriculture, making full use of the Sector's comparative advantages and promoting the application of new hi-technology is once again reaffirmed in another FAO's report of *Some Insights on the Role of Foreign Direct Investment in Agriculture* (2010).

Data from the FIA (2012) show that FDI for Agriculture and Rural area only accounted for small proportion in the total Vietnam's FDI attraction, which still keeps declining from 8% in 2001 to only 0.5% in 2011. From 1998 to 2010, the amount of Agricultural FDI capital reached only 3.1 billion USD, making up 2.3% of the total value.

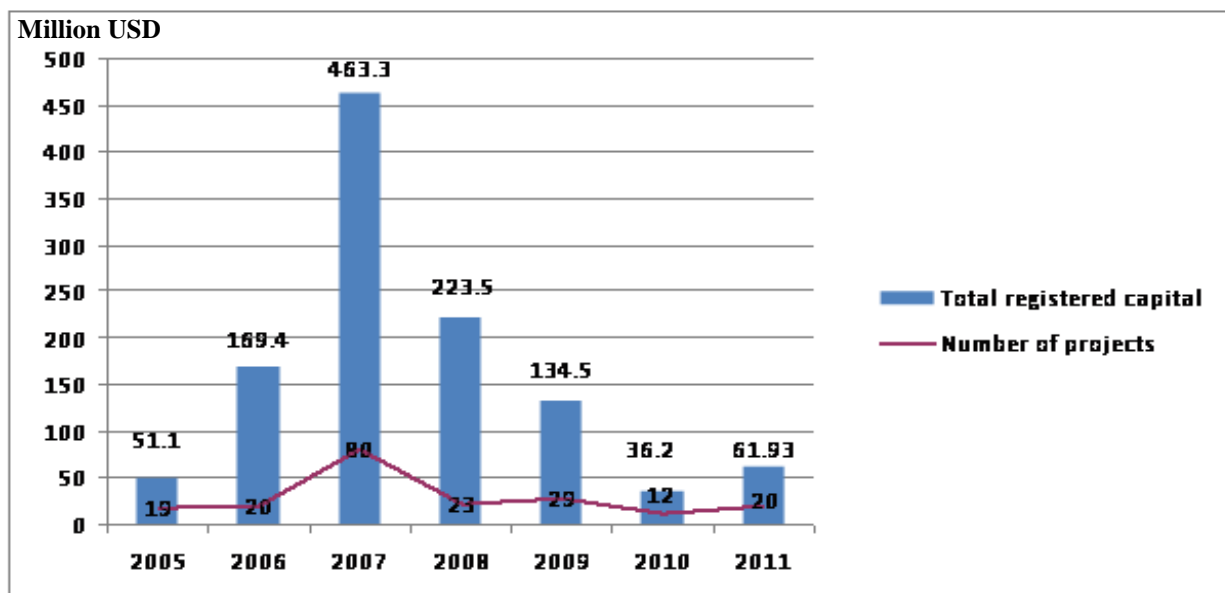


Figure 6: FDI Projects in AFF

Source: Foreign Investment Agency - Ministry of planning and investment 2012

During the period 2005 - 2011, this sector saw a tremendous rise in both FDI registered capital (by 293.9 million USD) and projects number (by 60 projects) in 2007. After such rapid increase, due to the world economic crisis, there was a gradual decrease until 2010, after which the number of projects and total registered capital recovered slightly to stand at 20 projects and nearly 62 million USD in 2011. Normally, although the majority of FDI projects operates in agriculture field, the average investing value in forestry and fishing fields is much higher than that of agricultural project.

Until 2014, there have been more than 30 countries and territories investing in the Agricultural sector in Vietnam, in which Taiwan leads the list (*National Center for Economy – Information – Forecast _NCEIF*). By December 2014, there have been 524 FDI projects in this sector in Vietnam, with the total registered capital of more than 3.6 billion USD, accounting for 3% of the total FDI project number and 1.5% of the total capital. However, these projects' investors mainly come from Asian countries with lower technology background such as Thailand, Taiwan, Indonesia,... instead of developed countries such as the US, Japan, the EU (*Ministry of Planning and Investment*). Meanwhile, if the average investment of other Sectors is nearly 15 million USD, this amount in Agriculture sector only stands at 6.6 million USD (*Anders Corr, Tuan Nguyen, 2015*)

Although Agriculture is a sector that requires long-term investment, considering the current difficulties of the Sector in developing international brand for Vietnam's agricultural products, foreign investors still stand a lot of opportunities to invest in this sector, especially in forecasting, analyzing market and enhancing the value of agricultural products in the global value chain.

CHAPTER 3. JAPANESE FDI AND ITS IMPORTANCE IN VIETNAM'S AGRICULTURE

3.1. General investment situation

Generally speaking, Japan's FDI is processed in the following basic principle: (i) investing in the mining industry at the countries which are rich in natural resources, (ii) investing in the manufacturing industry at the countries which own both natural resources and human resource, (iii) investing in the commerce and services industry at the countries which have high-developed Industry sector. Accordingly, in Southeast Asia and in Vietnam, the majority of Japanese FDI is in manufacturing industry to exploit the rich natural resources and abundant labor resource of this area (Hoàng, 2012).

Since 1995, Japan has been one of the most important economic partners and the top ODA donors in Vietnam. From the very first day of opening the Economy in Vietnam, Japan has poured its FDI in Vietnam, which has always been appreciated for its quality and stabilization (Hoàng, 2012). According to a report of the Ministry of Planning and Investment (MPI), by May 2011, the average capital of Japanese projects in Vietnam was approximately 14.65 million USD, lower by around 1 million USD than the average volume of FDI projects nationwide. Besides, most of these projects were small-scale projects. Typically, those having the capital of from 5 thousand to below 10 million USD account for 80.8% of the total Japanese FDI projects. Regarding projects location, apart from those in oil and gas exploitation, 66.3% of the total projects, equivalent to 13.9 billion USD, was condensed in well-developed provinces such as Hanoi, Ho Chi Minh City, Thanh Hoa and Dong Nai (Vuong, 2012).

By the end of 2010, the Japanese was amongst the top four prominent investors in Vietnam in terms of investment capital, just behind Taiwan, Korea and Singapore. From Japan's side, the result of a survey conducted by the Japan Bank for International Cooperation (JBIC) shows that among the promising overseas destinations for Japanese manufacturing companies, Vietnam ranks the third (after China and India) over medium term and the fifth (following India, China, Russia and Brazil) over long term. Despite such huge potential, Vietnam is still left quite far by other neighboring countries in attracting Japanese FDI. Accordingly, in comparison with Thailand or China, the cumulative Japanese FDI capital into Vietnam from 1996 to 2010 is still limited, making up only 21% and 8% of the Japanese investment amount in the two countries respectively, and only 2.6% of the total Japanese FDI in Asia (Vuong, Yokoyama, 2011).

Until now, investors from Japan have led the list to become the most popular FDI investor in Vietnam. Especially, in the processing and manufacturing industries, FDI from Japan plays an important role, ranking the first among countries investing in this area with more than 1,280

projects and more than 30.5 billion USD, accounting for 14% of total projects and 22% total investment capital of the whole country (FIA, 2016). There are many large Japanese corporations which are now operating in Vietnam, gaining high market share and contributing greatly to the Nation's economy and society, including electronic assembly companies such as Cannon; Panasonic, Sanyo; or automotive and motorcycles enterprises which are leading the consumption market in Vietnam like Toyota Vietnam; Honda Vietnam; Yamaha Vietnam; Suzuki Vietnam.

As shown on Table 2 below, until July 2015, both the number of FDI project and the capital in Manufacturing and Processing Industry lead the list of all the industries invested by Japanese investors in Vietnam, accounting for 50.6% and 83.3% of the total value respectively, which also matches the Japanese investing principles mentioned above.

Table 2: Accumulated valid Japanese FDI projects by sector until July 2015

No.	Sector	Project No.	Registered Capital (million USD)	Chartered Capital (million USD)
1	Manufacturing and Processing	1425	31,751.85	9,624.38
2	Professional contract and technology	362	293.51	118.08
3	Information and Telecom	355	812.93	258.29
4	Distribution and Retail	289	1,090.59	725.83
5	Construction	72	1,172.81	252.74
6	Logistics and transport	71	451.39	156.10
7	Hospitality and Food-drink	45	127.61	67.92
8	Real Estate	44	1,677.97	587.29
9	Agriculture, forestry and aqua products	35	147.44	74.96
10	Education and training	26	97.69	8.92
11	Administration and business support services	19	11.43	6.61
12	Others	19	52.45	12.53
13	Art and entertainment	10	34.58	11.97
14	Water supply and waste treatments	10	76.53	31.86
15	Banking, finance and insurance	9	176.79	167.81
16	Healthcare and social assistance	9	9.84	5.04
17	Power production and transmission	9	21.10	15.41
18	Mining	6	100.17	99.62
Total		2,815	38,106.67	12,225.36

Source: JETRO Hanoi, 2015

3.2. Investment in Agriculture sector

Regarding the context in Japan of having high level of science and technology, but little advantage in Agriculture, adding the country's participation in TPP and the coming policies of dropping agricultural subsidies, Japanese enterprises is seeking other investing environment with favorable natural conditions to avoid the risks, widen production scale and consumption market, as well as increase profits. Particularly, Vietnam is among the appropriate choices for Japanese FDI in Agriculture sector, using capital, science and technology to produce high-qualified products for export to not only Japan but also other abroad markets (FIA, 2015).

According to the FIA – the MPI of Vietnam (2016), those FDI projects from Japan are considered to be in effective operation, along with good technology. Moreover, Japanese companies have always been appreciated for their diligence, intelligence and high sense of responsibility. On the other hand, as reported by the Planning and Investment Agency of Lam Dong province (2015), where most of the Japanese Agricultural FDI condenses, despite the limited project number and investing scale, Japanese enterprises have contributed significantly to the economic development and social change of the Province, via changing the thinking and awareness of local people, forming the agricultural production model applying high technology. At the same time, the operation of these enterprises also enhances the labor's working discipline, skill and managing capacity. Thanks to the high prestige of Japanese investors in the region, so far the local people and enterprises have been actively cooperating with them to improve the agricultural production, thus enhancing the general living standard.

Despite those efforts, the current situation of Japan's FDI in Agriculture is still far from expectation. Until 2015, within 50 countries investing in Agriculture sector in Vietnam, those investors from Japan have shared 5.9% in project number and nearly 4% in capital amount (MPI, 2015). On the other hand, out of 18 industries that Japan has currently invested in, those investment in Agriculture sector just ranks at the ninth place, with 35 projects and the registered capital amount of 147.44 million USD, making up for only 1.2% and 0.4% of the whole amount respectively.

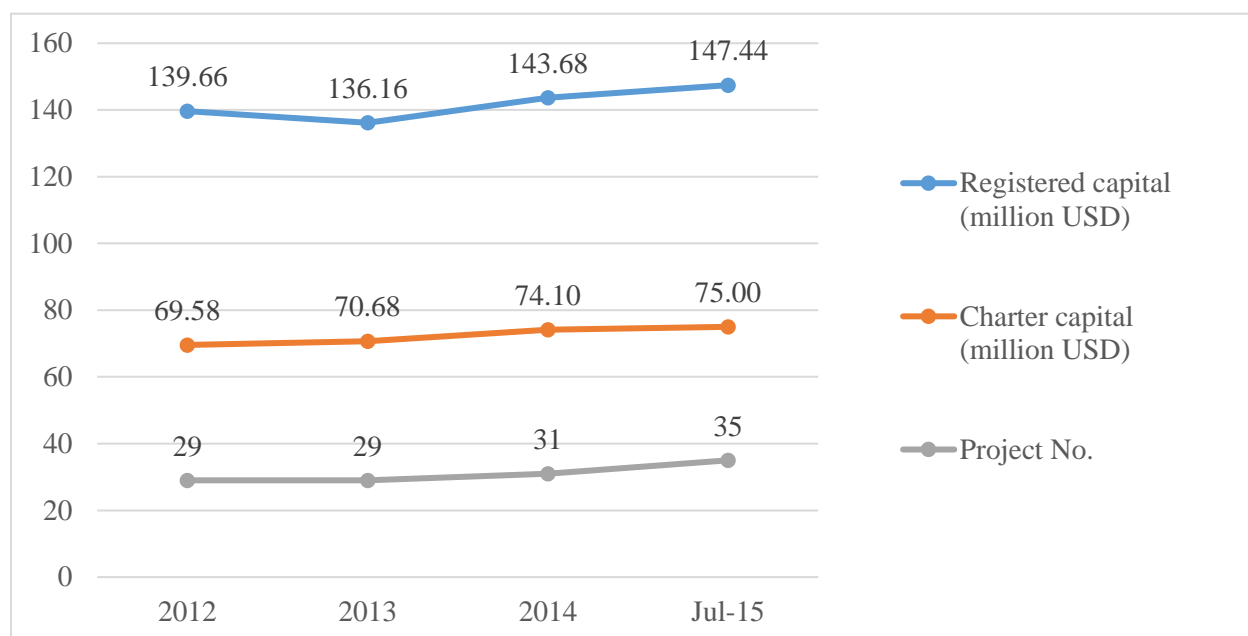


Figure 7: Japanese FDI in AFF in Vietnam in 2012 - Jul.2015

Source: JETRO Hanoi, 2015

In the period 2012 – 2015, although there has been an upward trend in Japanese Agricultural FDI, the increase is quite small, only 6 projects, nearly 6 million USD of charter capital and nearly 8 million USD of registered capital in this 3-year period.

Table 3: Japanese FDI in AFF until July 2015 by sector

Unit: million USD

Field	Number of projects	Total registered capital	Total charter capital
Agriculture	21	94.52	28.97
Fishery	11	45.84	30.11
Forestry	3	48.62	12.33
Total	35	188.98	71.41

Source: JETRO Hanoi, 2015

**Note: Due to the data source problem, the data of FDI capital in the Figure 7 and Table 3 differ from each other.*

Although up to 60% of those FDI projects operates in Agriculture field, the average registered capital per project in the other two fields – Fishery and Forestry, especially in the latter one, is recorded to be higher than that of Agriculture field, standing at 4.17, 16.2, and 4.5 million USD respectively. Yet, until July 2015, the overall FDI capital per project from Japan in Agriculture

sector is still much lower by 9.3 million USD than that value in other sectors, reaching at 5.4 million USD comparing to 14.7 million USD of the others.

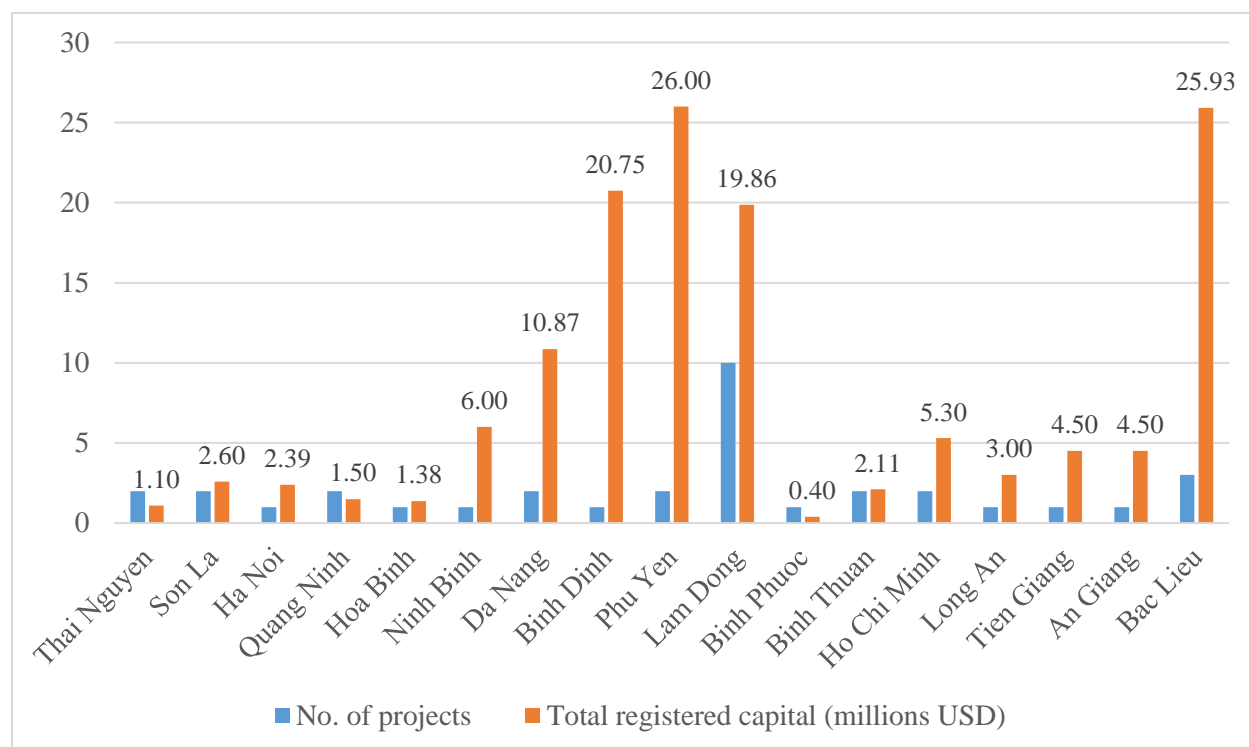


Figure 8: Japanese FDI in AFF in Vietnam by Province

Source: JETRO Hanoi, 2015

**Note: Provinces are arranged in the North – South direction*

As indicated in the Figure 8, though Japanese Agricultural FDI scatters all over the country, mainly in the Red River Delta and Mekong Delta, Lam Dong province, with its unique temperate climate and fertile soil, exceeds others to become the most popular destination for Agricultural investment to Japanese investors, holding 28.6% of the project number and 14.4% of the registered capital. Besides, it is also noticeable that despite the limited project number in Binh Dinh, Phu Yen and Bac Lieu province, since most of them is in Fishery and Forestry fields, these regions still share large amount of FDI capital.

Nevertheless, within the limited researches of FDI in Agriculture, there is very little empirical analysis on evaluating not only qualitatively but also quantitatively the effects of Japanese Agricultural FDI in Vietnam, especially looking deeply into project level as a case study. Regarding the high expectation of its merits, such study is expected to provide a more powerful and insightful result on the real impacts and constraints of Japanese FDI in Agriculture sector, basing on which meaningful policy recommendations are made to support the development of such foreign investment as well as its contribution to Vietnam's Agriculture.

3.3. Vietnam's Agriculture towards FDI attraction

3.3.1. *Advantages*

Vietnam is now one of the top world exporters in rice, rubber, coffee, pepper, cashew nuts, wood products and fisheries. Particularly, Vietnam is currently the second biggest rice exporter in the world after Thailand, the second largest coffee exporter following Brazil, and also the biggest pepper exporter (Vietnam Trade Promotion Agency, 2014), which reflects the strong potential of Vietnam in developing global Agriculture.

Regarding climate condition, hardly does any country in the region own special climatic characteristics as Vietnam. Spreading over 15 latitudes, the climate of the country also differs significantly within regions, including continental climate, tropical climate, subtropical climate, and even temperate zones. The varied temperature, adding the large annual precipitation and sunshine hours, facilitates Vietnam to develop Agriculture featuring its own identity (Tạn, 2013).

As for land resource, with the total area of about 33 million hectares, consisting of both land and inland water, it is eligible for Vietnam to promote comprehensive industrialization of farming, animal husbandry, forestry and fisheries (Tạn, 2013). This high land fertility, combining with Vietnam's other natural conditions, enables it to cultivate industrial crops for not only guaranteeing the Nation's food security but also exporting out of the country (FIA, 2016).

Considering water resource, Vietnam has enormous water volume of about 835 000 million m³ per year, most of which gathers in the Mekong River Delta. Besides, although the groundwater is unevenly distributed, this is also a valuable resource of the Country with the total potential exploitable reserves of 3.3 billion m³ per year (FIA, 2016).

Concerning forest resource, in Vietnam, the Government has designated 16 million ha of forestland officially, of which around 13 million ha are actually forested with various species and distribution forms. Wood reserves are estimated at about 600 million cubic meters with plentiful precious species such as peg, ironwood... Besides, it is estimated that Vietnam has high level of biodiversity with nearly 15 thousands species, more than 300 flora and more than 11 thousands species of animal (FIA, 2016).

About the Nautical resources of the Country, a 3260 km-long coastline together with 100000 gulfs and swamps turns Vietnam into a favorable location for seafood farming. Especially, the floodplain and rice field areas of the Mekong and Red river deltas are the important sources for Inland Fisheries. Considering that the floodplain area of about 1 million ha of Mekong Delta is covered during the rainy season each year, the potential for Inland Fisheries in those parts of the country would far exceed the current exploitation and contribution (FIA, 2016).

With the population of nearly 92 million people in 2015, most of which works in Agriculture sector, Vietnam owns the advantage of cheap labor cost, leading to the cheap production cost, thus, decreasing the products selling price. Besides, experiencing a long agricultural history, Vietnamese farmers are featured with the characteristics of being hardworking and creative facing difficulties in daily life and in production as well.

On the other hand, understanding the importance of Agriculture sector in the general development of the whole country, the Vietnamese Government has been focusing on the Sector as one of the core developing missions of the Nation, along with various favorable policies and incentives. Typically, the National program of Building New Rural Areas, including the content of enhancing production associated with restructuring the Agriculture sector, creating new rural culture, improving rural infrastructure, as well as protecting environment, has been executed since 2010. Besides, many supports on production land, tax, labor force training and legal procedure have also been promoted to attract more domestic and foreign investment into the Sector, contributing to its further significant changes. Especially, regarding the emergence of Japan as a promising partner of Vietnam in this sector, to attract its FDI capital and promote the cooperation in the future, in collaboration with JICA, JETRO as well as other financial organizations, many provinces of Vietnam have held conferences and other connecting events in Agriculture with the participation of enterprises from Japan and Vietnam. From the Agreement of the two Governments on bilateral agricultural cooperation in 2014, in August 2015, the approved "Medium and Long-term Vision" to establish "Agricultural Value Chain in Vietnam" of the two sides, includes production, processing, distribution, and marketing, which promotes the investment in Agriculture sector from the enterprises of both countries. These priorities create favorable conditions for this Sector to develop, also make it more advantageous to invest in.

3.3.2. Challenges

Despite the favorable natural conditions, Vietnam's agricultural products are often eyed as being low-qualified in comparison with other countries like Thailand. In Vietnam, the Agriculture's growth has been mainly based on the increase in area and the intensity of the production inputs such as labor, capital, materials and land. Besides, it is noticeable that the current conventional Agricultural production has left negative impact on the environment, including the loss of biodiversity, depletion of natural resources, water pollution, production cost increase ..., which threatens the sustainability growth of the Sector (Vinh, 2013). Against the background of deeper integration into the world economy and the effort to attract more FDI into this sector, Vietnam's Agriculture has to face with a number of challenges.

First of all, the typical geographic and natural characteristics make Vietnam more vulnerable to natural calamities which constantly happen and cause great loss every year, including hurricanes, floods, droughts, pests, diseases, ... Meanwhile, the activities of weather forecasts, prevention and

mitigation of those natural disasters remain poor, thus hardly reducing loss in case of serious disaster (MARD, 2003). Moreover, recently, Vietnam is considered to be among the top countries that are seriously affected by climate change, leading to the higher vulnerability of Agriculture sector, including the shrinking of arable land, unexpected negative weather events, and diseases on crops / animals,... In the future, resources for Agricultural growth will no longer be abundant, while it will still have to compete with Industry and Services sector. In addition, facing with the higher production costs in Vietnam, the competitiveness of advantageous cost will gradually disappear comparing with other countries and regions around the world.

Secondly, Vietnam has a tropical Agriculture with small scale and fragmented production. Under the standards of the world, Vietnam is one of the countries having the highest level of land fragmentation. While agricultural land per capita in the world is 0.52 ha, and in the area is 0.36ha, this number in Vietnam just reaches 0.25ha. For every two decades, the state of land fragmentation nearly doubles, leading to the waste of land used as boundaries, embankments (not less than 4% of the whole cultivated area) (Thông, 2015). This feature was formed mainly due to the land policy and the orientation of social justice for all Vietnamese people in 1988. Although this policy has brought a new face to the Nation's Agriculture after War, it seems to become one of the main constraints to the development of the sector in this new era due to the difficulty in mechanizing and applying new technique to improve productivity and production value. In recent years, agricultural land continues to decline due to the uncontrolled industrialization and urbanization. Statistics from the General Department of Land Management, the Ministry of Natural Resources and Environment of Vietnam show that agricultural land declines nearly 100 thousand hectares averagely every year, while the annual number of farmers walk out of the sector is only about 400 thousand people, causing the sharp decline in arable land per capita (Thông, 2015).

Thirdly, in comparison with other countries in the region and the world, the quality of labor force of Vietnam, including the human resource in Agriculture sector, is still low. According to the International Labor Organization (ILO), the labor productivity of Vietnam in 2013 is in the lowest group in Pacific Asia, lower than Singapore, Japan and South Korea respectively 15 times, 11 times and 10 times. Even comparing to other ASEAN countries, labor productivity of Vietnam is only one fifth of Malaysia and two fifth of Thailand. On the other hand, the number of Vietnam rural labors getting compulsory education from Primary level accounts for only 11.2%, in which the percentage of High school and University level is 4.3% and 2.2% respectively. The highest ratio of rural skilled labors from High school level belongs to Red River Delta, standing at 12.7%; while Mekong River Delta has the lowest ratio of only 5% of the total number (GSO, 2011). In fact, this criterion is measured based on the level of farmer's education, including compulsory (scientific and cultural) education or vocational education. Although these kind of education is not really suitable to evaluate farmers' competence, certain degree of basic knowledge is still necessary for farmers to be able to timely acquire new knowledge and access new technologies to

improve production. Due to the lack of the application of scientific and technological achievements in production and product processing, adding the traditional backward production method of the majority of farmers, the effectiveness of the Sector in both quality and productivity remains low (Vĩnh, 2013).

As for the investor side, according to JETRO Hanoi, despite the interest of Japanese enterprises in Vietnam's Agriculture, they are still mostly refrained from investing by the shortage in agricultural land resources, adding the relatively time-consuming and complicated administrative procedure and legal system. Besides, those foreign firms are still afraid of the problems of the distribution and logistics after production due to the lack of synchronized infrastructure system (VOV, 2016). Additionally, to reduce manufacturing costs, most of the FDI enterprises, including the Japanese, tend to buy cheap raw materials from local suppliers. However, regarding the quality and the ability of meeting this demand of the investors, Vietnam only stands at less than 30%, comparing with 56% of Thailand. According to the survey of JETRO with about 10,000 Japanese enterprises, among 19 countries in the Asia - Pacific region, Vietnam is ranked at the eighteenth place in the investing attractiveness (JETRO Ho Chi Minh, 2015).

To sum up, in the process of creating a new face of modern and industrial Agriculture sector to reduce poverty and improve the living standard of people, as well as protect environment and implement the Millennium Development goals, those mentioned challenges are the issues that Vietnam needs to focus on with more effective strategies.

CHAPTER 4. CASE STUDY - JVAT

4.1. Case choice

Concerning the significant share of foreign investment in agriculture field among the three fields of AFF sector, along with the condensation of these projects in Lam Dong province, one agricultural project in this area is chosen to be the case study.

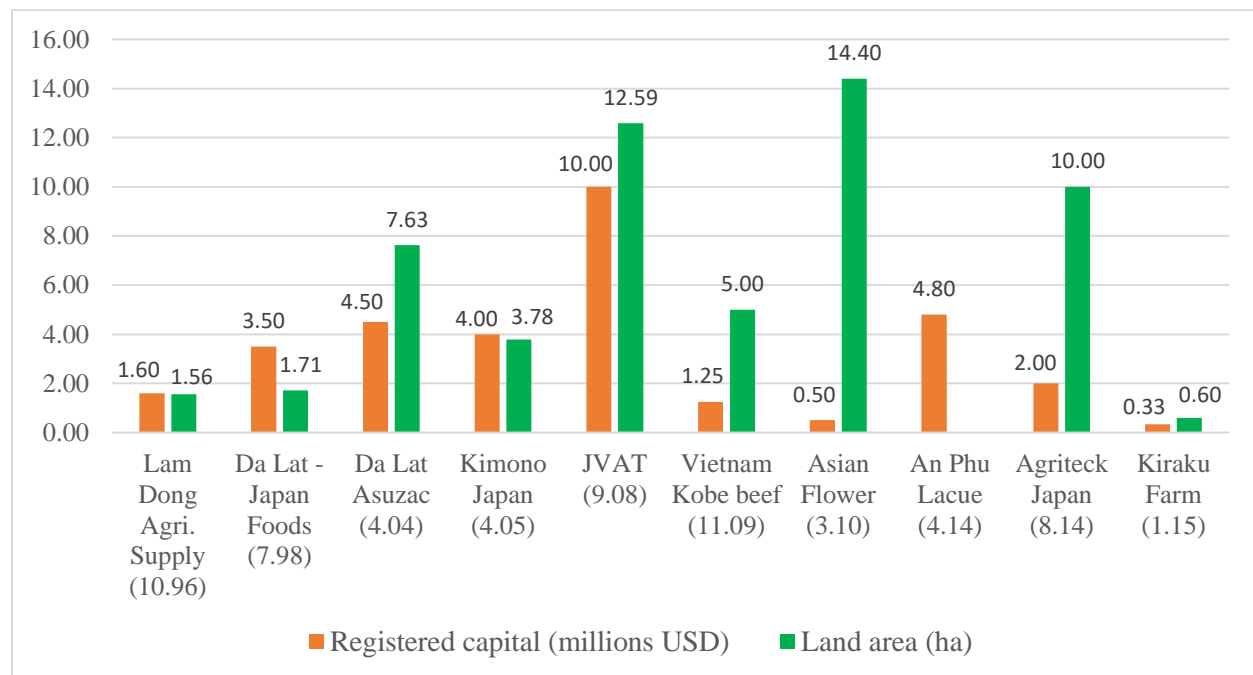


Figure 9: Japanese FDI projects in AFF in Lam Dong province until 2015

Source: The Planning and Investment Agency of Lam Dong, 2015

**Note: The two numbers under each project are the date (month, year) that they officially went into operation
Missing data on the area of the An Phu Lacue project*

Among those 10 FDI projects in Lam Dong, it can be seen that JVAT is the one that has the highest registered capital and the second largest land area, standing at 10 million USD and nearly 12.6 ha respectively, along with the quite long operating time - 7 years - until 2015, which makes it become the suitable representative from all the current projects for the research's case study.

The followings are some detailed information of JVAT (The Planning and Investment Agency of Lam Dong, 2015):

- Project Name: "Japan-Vietnam High Technology Agriculture Farm" (JVAT)
- Foundation: 22nd September, 2008 under the investment of the Ocean Trading Co., Limited
- Location: Da Ron commune, Don Duong district, Lam Dong province

- Main activity: producing and exporting high-qualified flowers (Chrysanthemum)
 - Registered capital: 10 million USD (increasing from 6 million USD to 10 million USD at the end of March 2015)
 - Charter capital: 5 million USD
 - Number of local employers: 70
- Land area: nearly 12.6 hectares
Number of departments: 12

Table 4: JVAT's financial performance in 2012 – 2015

Year	Revenue (million USD)	Expenditure (million USD)	Loss/Profit (million USD)
2012	4.40	5.63	- 1.23
2013	7.27	7.85	- 0.58
2014	7.59	7.52	+ 0.07
2015 (the first 7 months)	3.20	<NA>	<NA>

Source: Department of Cooperation and Investment, the Planning and Investment Agency of Lam Dong, 2015

**Note: 1 USD = 22,517 VND (validated on December 28th, 2015) (Source: Vietnam Customs, from <http://www.customs.gov.vn/Lists/ExchangeRate/Default.aspx>, retrieved on July 3rd, 2016)*

Data on the Expenditure and Loss/Profit in 2015 was not available at the obtaining time

Hiring land for 50 years, JVAT now has two engineers (one from Japan) and six local assistants, yet, the deciding right still belongs to the Japanese chief engineer. Local workers working here are ensured with full rights and responsibilities following Vietnam's Labor Law.



Figure 10: JVAT's production inside greenhouses

(Photo taken in August, 2015)

4.2. Background of the Survey site

4.2.1. Agriculture sector in Lam Dong province

Lam Dong is a Southern Highlands Province, which is about 1,300 km far away from Hanoi capital and about 300 km away from Ho Chi Minh City. Lam Dong province is the mountainous area, located in the tropical monsoon climate area with mild and cool weather all year round. The average temperature here varies depending on different height: 18 – 20°C (above 800 meters), or below 18°C (over 1000 meters). With 9,773.5 square kilometers (km²) of natural area, over 61% of which is covered with forest, Lam Dong has the population of over 1.262 million people. Its labor force is about over 760 thousands, in which until 2013 the number of labors that have received compulsory education accounted for 48% (35.7% of them received vocational training). Lam Dong is divided into 12 administrative units, stretching from 250m to 1,600m above the sea level. This is a multicultural province with 43 different groups (about 286 thousand people) of ethnic minorities, accounting for 24% of the whole population (Planning and Investment Agency of Lam Dong, 2015; Lam Dong Tourism, Trade and Investment Promotion Center, 2014)

With favorable natural conditions, Lam Dong has potential for developing agriculture, forestry and poultry with high-tech applications, especially cultivating and processing particular crops such as tea, coffee, vegetables, flowers, medicinal plants; growing cold-water fish; exploiting and processing mineral resources as well (Lam Dong People Committee, 2012).

In 2014, Lam Dong's GRDP (Gross Regional Domestic Product) increased by 17.8%, reaching 56.557 billion VND, in which AFF sector contributed 21.794 billion VND (approximately 38.5% of the total value). GRDP per capita in the same year reached 44.8 million VND, which was nearly equal to the whole country's level. Regarding economic structure, the highest share went to AFF sector (38.5%), service sector accounted for 35.3%, then industry and construction held the smallest ratio with 26.2%. The province still wants to maintain high ratio of AFF (36-37%) over Industry / Construction (27-28%) and Service sector (35-36%), which is also one of the local developing target in 2015. At the end of 2014, Lam Dong had the total crops area of approximately 340.6 thousand hectares, the forest coverage of 2,851 hectares (adding 250.9 thousand trees), and the aquaculture area of about 3,129 hectares, which respectively accounts for 34.8%, 0.29% and 0.32% of the province total natural area (Lam Dong People Committee, 2014).

Aiming to become one of the leading provinces in high-tech Agriculture in Vietnam, Lam Dong has implemented three main programs:

- Farmers are encouraged to invest in high-tech applications. Until 2014, Lam Dong has 39,237 hectares of high-tech production, accounting for around 4% of the total land (an increase of 4,292 hectares comparing to that data of 2013) and 30% of the total production value of the sector. Besides, productivity of crops and livestock also increased by 25-30%.

- New coffee variables continue to be transformed and replanted, in which the high yield new models of grafting and transplanting coffee shoots have also been replicated.
- The national program of building new countryside (new rural areas) is being conducted with the aim to ensure the balanced and sustainable development of the province, as well as reduce the disparities between rural and urban areas.

4.2.2. FDI in Agriculture sector in Lam Dong

Until July 2015, Lam Dong has 66 FDI projects in AFF sector with the registered capital of 227.9 million USD, accounting for 62.3% of the total FDI projects number and 47.4% of the total registered capital here. Most of these projects are small and medium ones, the average capital of which is about \$ 3.6 million. In particular, within these 66 projects, Taiwan leads the list with 35 projects, followed by the investors from Japan with 10 projects, British Virgin Islands with 4 projects, and Korea with 4 projects. The rest countries are Thailand (1 project), Australia (2 projects), Singapore (two projects), America (1 project), Canada (2 projects), France (2 projects), Russia (1 projects), the Dutch (1 project), Indonesia (1 project).

Among them, standing at the second position, the total registered capital from Japanese investors reach USD 32.48 million, with the cumulative implementation capital until March 31st, 2015 of USD 19.97 million (equivalent to 61.49% of the registered capital). The total revenue of these enterprises in 2014 was 19.21 million USD, of which revenue from export was 11.75 million USD, having created regular jobs for 891 workers.

To effectively exploit the local potentials for sustainable socio-economic development, Lam Dong has prioritized those projects which are high value-added, labor-intensive, high-tech, and environmentally friendly. Especially, in AFF, the Government hopes to attract manufacturing, preserving and processing projects, including: high-qualified vegetable and flower growing/exporting, materials manufacturing (tea, coffee, mulberry, rubber, cocoa...); biotechnology applying to produce high-qualified seed, economic reforestation associating with forestry product processing, as well as poultry and fishery industry developing. Moreover, projects operating in building rural infrastructure also receive supports from the Government.

Besides, the province has also adopted the most beneficial policies as investment incentives to investors in accordance with nation's regulations, which varies depending on specific investing fields and areas (areas with difficult socio-economic condition, and areas with extremely difficult socio-economic condition) (The Planning and Investment Agency of Lam Dong, 2015).

Incentives regulated by the Central Government:

- Exemption or reduction of Income tax calculated continuously from the first year that enterprise has revenue from business activities (varying depends on investing fields and areas)
- Exemption or reduction of Import tax of necessary facilities to create fixed assets for projects (varying depends on investing fields and areas)
- Support of land and/or water surface hiring cost (varying depends on investing areas)

Incentives added and regulated by the local Government:

- Support in labor training cost (varying depends on training place, content and types of trainees)
- Support in gathering farming land and other set-up works at the first stage such as fire protection education

With an aim to attract more FDI in the future, especially in Agriculture sector, the province is continuing to provide foreign investors with other necessary investment incentives.

4.2.3. Overview of Da Ron Commune

Established in 2000, Da Ron commune has 8 villages with the population of 9,018 people. Ethnic minorities account for 43% of the whole population, mainly living in 4 out of 8 villages. Most of them lead difficult life and also have low literacy level. The commune has a total natural land of 3240.13 hectares, in which agricultural and forestry land is 2,745 hectares (84.7%), the rest (495.13 hectares) is non-agricultural land.

The total number of poor households is currently 72 households, making up 3.66% of the whole Commune's population. Among them, 50 households (69.4%) are ethnic minority. Within 5,400 people in working age of the Commune, 4,100 employees are working in AFF sector, which accounts for 75.9% of its total labor force. Until 2014, nine companies (eight of them are foreign enterprises) have been operating here, creating stable jobs for more than 850 workers (accounting for 15.7% of the commune's labor force). Besides, 390 employees (7.2%) are working in public and state agencies, as well as other sectors such as handicrafts, services and construction (Da Ron Commune People's Committee, 2015).

In 2014, the Commune's income per capita reached 32 million VND/year (while income per capita of Vietnam at that time was around 45 million VND/year). Agriculture, especially dairy cows growing and commercial vegetables cultivating, is the main activities of Da Ron, which accounted for 86%, while the Industry, Construction and Services made up the rest 14% of the Commune's economic structure. Regarding crops production, the whole Commune has 37 hectares of rice paddy field; 1,973 hectares of commercial vegetables (including 1,095 hectares of tomatoes, cabbage, and lettuce, 647 hectares of eggplant, the remaining areas of other varieties); 30 hectares

of sweet potato; 150 hectares of maize; 10.8 hectares of flowers; 228 hectares of coffee; and 218 hectares of meadow (Da Ron Commune People's Committee, 2015).

One of the central developing goal of Da Ron in 2014 is to promote the comprehensive high-tech agricultural program. This program aims to expand high-tech production areas of vegetables, flowers, and to increase the number of dairy cows in the Commune. Commercial vegetables are focused to develop more through applying technological advances in production. As a result, the total area of annual crops of Da Ron under this program reached 2,190 hectares, including commercial vegetable area (2,082.1 hectares), net house area (11.4 hectares), greenhouse area (1.5 hectares), and vegetable area with automatic irrigation (95 hectares).

4.3. Flower and chrysanthemum cultivation in Lam Dong province

As shown in Figure 11, in the period 2012 - 2015, there has been a stable increase in the total flower area of Lam Dong, which is still expected to rise more in the future. This increasing trend also can be seen in the three main cultivating regions of the province, which are Da Lat, Lac Duong and Don Duong. Exceptionally, the data illustrates the decrease by 556 ha of flower in the same period in Duc Trong district, since this region has been planned to make priority for vegetables concerning more suitable natural conditions.

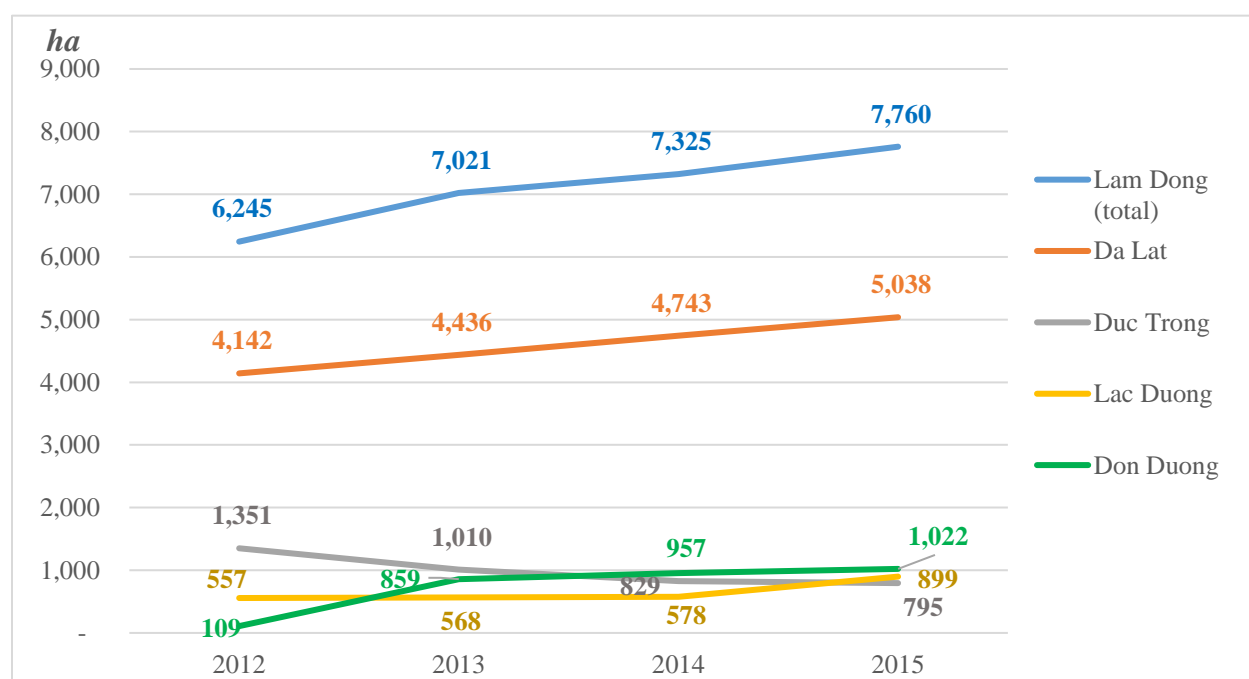


Figure 11: Flower cultivation area in Lam Dong by Regions

Source: The General Statistics Agency of Lam Dong Province, 2015

Recently, the local Government of Lam Dong province has promoted the policy of enlarging the new cultivation area that applies technology to improve productivity and product value (Lam Dong People Committee, 2015). Accordingly, within different types of crops, high-qualified flower area reaches 2,416 ha, accounting for 6.2% of the new area. It is also noticeable that these flower area accreted nearly double in 2011, which has fallen a little bit in the next year and kept quite stable until 2015. Thanks to the release of the Resolution on Promoting High-tech applications in Agriculture sector for the period 2011 - 2015 of the local Government of Lam Dong in 2011, including establishing advanced bio-technology R&D centers, developing high-skilled labor, producing and commercializing high-qualified materials and products, the year 2011 experienced a remarkable increase in the high-tech flower area, reaching the growth rate of nearly 95% comparing to the previous year.

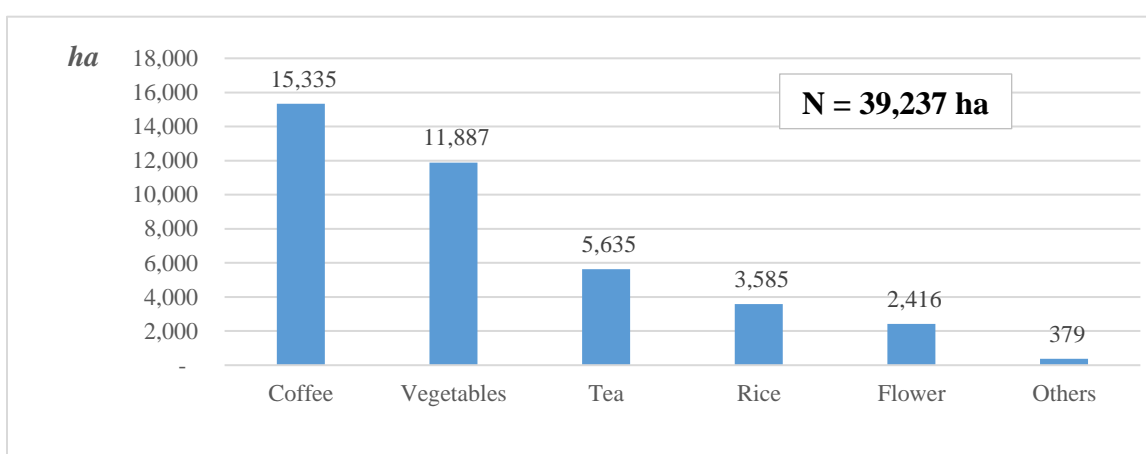


Figure 12: Production area applying high technology in Lam Dong by types of crop

Source: The Agriculture and Rural Development Department of Lam Dong, 2014

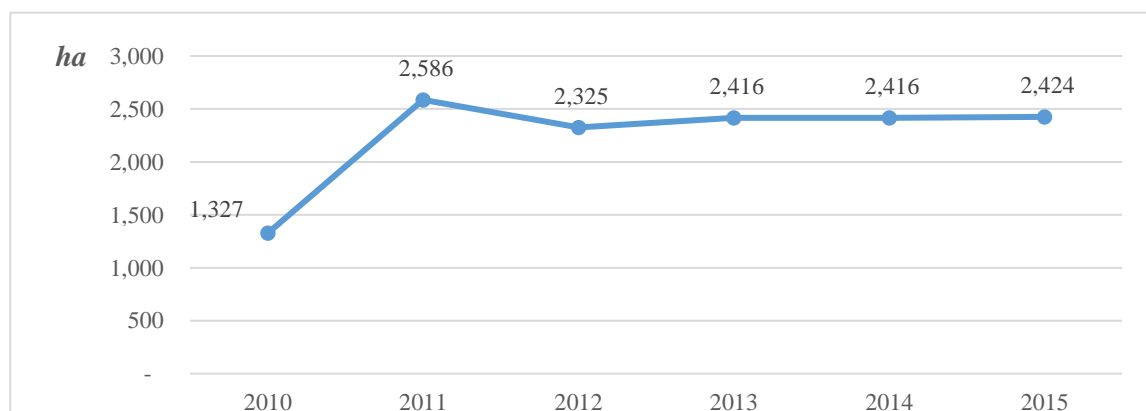


Figure 13: Flower area applying high technology in Lam Dong

Source: The General Statistics Agency of Lam Dong Province, 2015

**Note: High technology involves using greenhouses and grids, automated irrigation system (or drip irrigation system), harvest and post-harvest technology... Especially, some enterprises also use the automated computer system to automatically control the technical parameters of the crop such as moisture, air, light, plant's growth...*

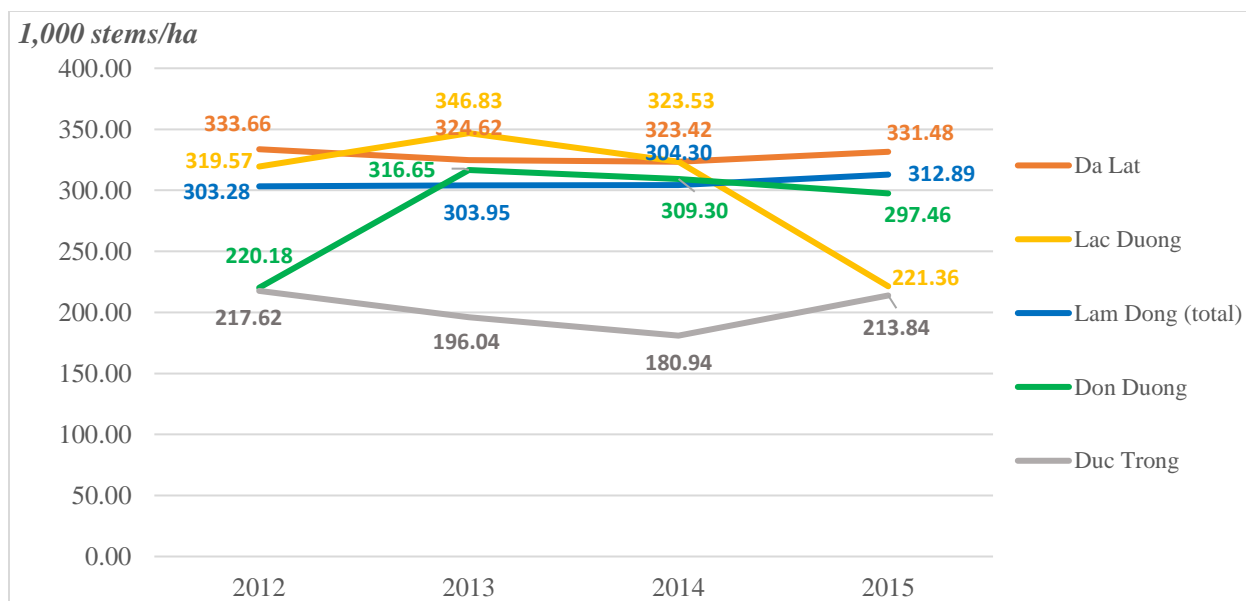


Figure 14: Flower productivity in Lam Dong by Regions

Source: The General Statistics Agency of Lam Dong Province, 2015

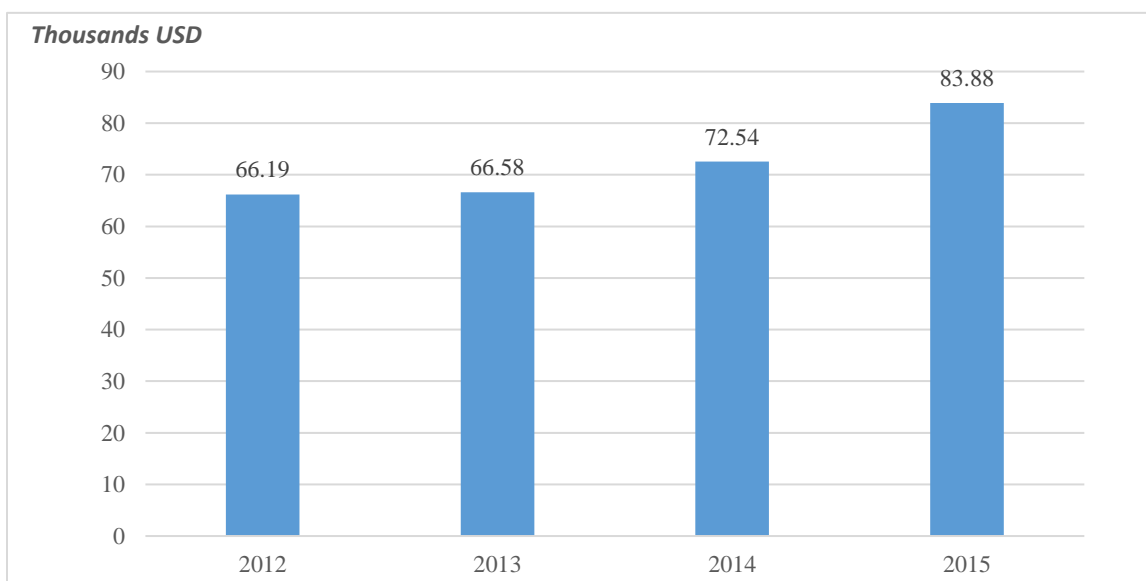


Figure 15: Flower production value per ha in Lam Dong

Source: The General Statistics Agency of Lam Dong Province, 2015

**Note: 1 USD = 21,246 VND (2014 exchange rate)*

Vietnam in general and Lam Dong in particular has favorable geographic features for chrysanthemum cultivation. Being near the equator, the change in season and temperature in Lam Dong is smaller comparing to Japan, which makes the temperature control (heating) process easier and cheaper. Thus, chrysanthemum can be cultivated all year round in this province. Meanwhile,

in Japan, it is more difficult to control the temperature since it is very hot in summer, and very cold in winter. Therefore, Japanese farmers usually just cultivate chrysanthemum in summer due to the high cost to heat up the growing area in the cold period. Besides, the advantageous characteristic of fertile soil in Lam Dong also turns this province into an attractive location for flower as well as chrysanthemum cultivation.

Being the central flower cultivation area in Lam Dong, Da Lat city leads the list to be the region having the largest Chrysanthemum area, making up nearly 84% of the total number. However, Don Duong district, the location of JVAT, is still rather new to this kind of flower with only 30 ha, accounting for just nearly 3% of the whole province's Chrysanthemum area.

Source: Lam Dong Plant Protection Sub-department, 2015

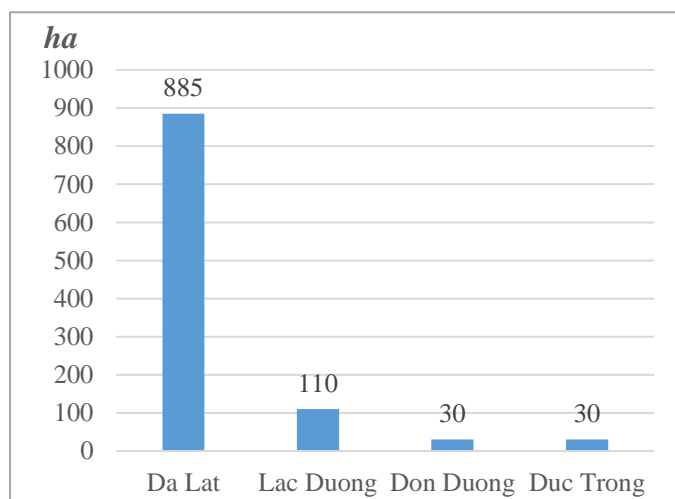


Figure 16: Chrysanthemum cultivation area in Lam Dong by regions

In Da Ron Commune, Don Duong district, the total area of all kinds of flowers just shares the very small percentage (0.21%) of the whole farming land, meaning that local farmers are still not familiar with flower cultivation. Meanwhile, out of the total crop land of 2,427 ha in 2015, vegetables (tomato, cabbage, lettuce,...) shares the largest portion (2,022 ha – 83.31%), followed by Coffee and Corn area which are 8.24% and 5.56% respectively.

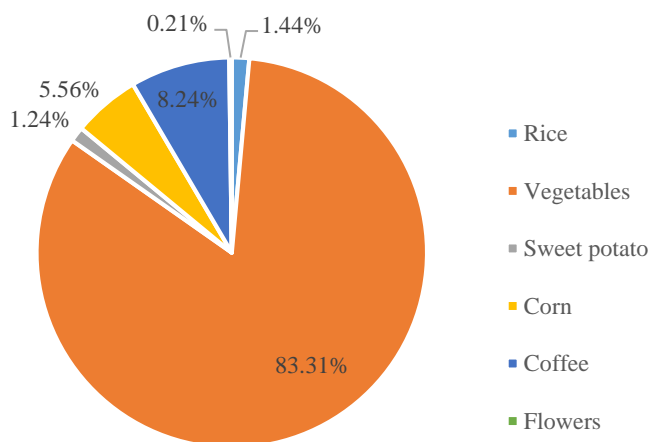


Figure 17: Types of crop in Da Ron Commune

Source: The People Committee of Da Ron Commune, 2015

CHAPTER 5. JVAT'S PERFORMANCE ON PRODUCTION CAPABILITY, WORKER INCOME AND WORKING SKILL

5.1. Data collection

From August 2015 to September 2015, I conducted questionnaire survey and interview with both local Government Agencies and representatives from JVAT along with its local workers in Da Ron Commune, Lam Dong Province, Vietnam.

To understand the local economic features (including Agriculture sector in particular), as well as to obtain specific data of Japan Agricultural FDI and JVAT, along with other inside viewpoints, individual interviews were conducted with Representative from International Cooperation Office (Planning and Investment Agency of Lam Dong), Agriculture Office (People Committee of Don Duong district), and People Committee of Da Ron Commune (Don Duong district). From JVAT side, I also had meeting with the managing board of the project, including Farm Director; Chief Engineer; and Head of Human Resource Department.

Regarding the questionnaire survey with employees, in JVAT, there are currently 80 workers, who live scattered around the Commune. Since they often go out for other daily tasks outside the working time, it is quite difficult to access them at home. Therefore, the survey was conducted at JVAT within their working time under the permission of the Managing Board. In order to draw random sample of workers, I went through every department (12 departments in total) of JVAT and had workers finish the survey randomly. In that way, 50 samples were collected out of the total 80 employees. Concerning people's jobs before working at the Farm, within these 50 samples, there are 22 farmers, 13 workers, 4 traders, and the other 11 people whose first working place is JVAT.

To understand the characteristics of the respondents, the survey asked for their personal information, including (i) sex, (ii) age, (iii) education level, and (iv) previous main job. Moreover, to see how these workers have changed after working for JVAT, the data of before (1) as well as after (2) joining JVAT were also collected, including (1-i) Farming Land Area, (1-ii) product Distributing Method to the market, (1-iii) the Channel through which they get information about market and other technical advices, (1-iv) Price Maker (who has more power on deciding product selling price), (1-v) Monthly income from that main job (Income_1); (2-i) Working Period at JVAT, (2-ii) Monthly income (salary) from JVAT (Income_2), (2-iii) Income Difference (the change in worker's income before and after joining JVAT: $\text{Income}_2 - \text{Income}_1$), (2-iv) Training (whether or not worker received training after joining JVAT, whether or not he/she wishes to apply those skill and knowledge for his/her own production). To standard the characteristics of these respondents, I also asked for their subjective valuation of their farming jobs, including: Crop

quality stability, and Income_1 stability, as well as their overall satisfaction towards JVAT. The respondents were to rate the levels using 5 scales from 1 – the lowest level to 5 – the highest level.

Nevertheless, within 50 samples, there are 7 samples which contain missing data of “after/current income” (the salary they receive from JVAT). When being asked, these people refused to provide their salary information with the reason that the company has the regulation of not revealing this specific data (even though the survey already got permission from the Company’s managing board). Therefore, for them, the information of whether the current salary (Income_2) is higher or lower than the previous one (Income_1) was asked instead of the exact figures of Income_2. The Table 5 below is the summary of these 7 missing samples:

Table 5: Summary of the 7 samples of “Missing Income_2”

Personal Information	Sex	Male	6
		Female	1
	Age (average)		35.6
	Education	1	2
		2	4
3		1	
Before joining JVAT	Job	2	5
		3	2
	Monthly Income_1 (average)		5.93
	Income_1 Stability	2	1
		3	1
		5	5
	After joining JVAT	Working Period (months) (average)	
Income Difference		Higher	6
		Lower	1
Skill Training		0	3
		1	4
Skill Apply		1	3
		2	1
Satisfaction degree		3	2
		4	5

It can be seen from the table that these respondents who seem to be highly aware of Company’s regulation and information confidentiality are mainly males (85.7%) and have quite high level of Education (85.7% of them graduated from University or College, which accounts for 37.5% of the

total respondents of the same education level). Besides, since all of them work in non-farming sector (either worker or trader), their average Income_1 is higher than the average Income_1 of the whole population by 2.8 million VND, in which 71% of them can ensure the same amount every month (meaning the very high degree of income stability). Regarding the working period at JVAT of these 7 people, with the longer average period of around 12 months comparing to the whole population's value, nearly 86% of them stated that they can earn more than before; 75% of those people who has received training confirmed their applying knowledge for their own production. The overall working satisfaction degree at JVAT of these respondents is also quite high with more than 71% of them choosing the second highest satisfied degree.



**Figure 18: Field Observation and Interview
with JVAT Directing Board and Workers**

(Photo taken in August, 2015)

5.2. Estimation method

The aim of the research is to (1) evaluate the effectiveness of JVAT (representing for Japanese Agricultural FDI) in raising product quality, productivity, and increasing worker income, skill; and (2) identify the obstacles constraining project operation and solutions to improve its performance.

Because of the unpopularity of flower farmers in local area, especially around the survey site, and the variety in background of JVAT's workers, to guarantee the validation of data comparison and avoid bias afterwards (for example, in general, flower farmers may have higher income than farmers working on other crops), only primary data of JVAT's workers were obtained, which is later compared to the data of average flower production of the whole Province and Commune.

Regarding product quality and productivity, in order to reveal whether there is any difference between JVAT and local production (in both Province and Commune level) or not, the quantitative and qualitative comparison was made basing on 5 criteria: productivity, production value/ha, export percentage/total production, exporting unit price, and diseases and insects control.

In terms of worker income, skill and judgements, STATA was applied making use of the collected primary data to check statistic relation among variables, from which conclusions are drawn. Due to the small sample size, several methods were employed to enhance the robustness of the results as well as minimize any bias arising from data collection.

Firstly, I used the paired sample T-test to test the difference in income of respondents in two different times: before and after their working for JVAT (Income_1 and Income_2). Besides, the comparison between the current salary of JVAT's workers (Income_2) and the average revenue per capita of Lam Dong province / Da Ron commune using T-test was also conducted. Since the paired sample T-test assumes that the difference between the two incomes obtained for each subject should be normally distributed, the Shapiro–Wilk test of normality is used to test the assumption satisfaction of the data. In principle, since the null-hypothesis of the Shapiro–Wilk test is that the population is normally distributed, thus if the p-value is less than the chosen alpha level, then the null hypothesis is rejected and the data tested are not normal, and vice versa. However, basically, with the sample size of over 30, violation of this assumption is unlikely to cause any serious problems (Julie, 2007). In the research, the Shapiro–Wilk test will be used in every T-test. For those which do not satisfy this assumption and/or have the sample size of just around 30, the Wilcoxon Signed Rank test is used in addition to the paired sample T-test as the representation of the more rational statistic results, which enables the comparison between the two models and better understanding of the results. The advantage with this Wilcoxon Test is that it neither depends on the form of the parent distribution nor on its parameters. It does not require any assumptions about the shape of the distribution. For this reason, this test is often used as a non-parametric alternative to T-test's whenever the population cannot be assumed to be normally distributed. Even if the

normality assumption holds, it has been shown that the efficiency of this test compared to t-test is almost 95% (Explorable.com, 2009). On the other hand, out of the 50 samples of the survey, there are 11 people who were students, housewives or soldiers before working at JVAT, thus, having no Income_1. Although they may well represent the situation of production workers in the local agricultural sector, since the variables of interest are income and others related to income, having many samples without income may yield biased results, especially when running the model that is based on the mean value and highly sensitive with outliers like T-test. Therefore, after testing with the full sample (without 7 samples of missing Income_2), I dropped these 11 samples and ran another T-test and Wilcoxon test to confirm the results again.

Secondly, with an aim to clarify which factors affect the before and after income of the respondents, which enables me to come up with the recommendation of how to increase this value, thus improving people livelihood, the OLS regression models of the income as dependent variable on the independent variables list of Sex, Age, Education (Edu), Job, Area, (crop) Quality Stability (Q. Stab), Distribution Method (D. Me), Info Channel (Info), Price Maker (P. Maker), Working Period (W. Period) (at JVAT) were run.

$$Income = \beta_0 + \beta_1 Sex^* + \beta_2 Age + \beta_3 Edu^* + \beta_4 Job^* + \beta_5 Area + \beta_6 Q. Stab^* + \beta_7 D. Me^* + \beta_8 Info^* + \beta_9 P. Maker^* + \beta_{10} W. Period + \mu$$

Moreover, to check which factors affect the income increasing potential of workers, the regression between Income Difference (Difference) and the above list of independent variables was also conducted.

$$Difference = \beta_0 + \beta_1 Sex^* + \beta_2 Age + \beta_3 Edu^* + \beta_4 Job^* + \beta_5 W. Period + \mu$$

Note: [Variable]: categorical variables*

Depending on different purposes, the above list of independent variables is adjusted suitably

Especially, when running regression with the dependent variables of Income Difference, two separate models of two different sample size, one with all respondents (excepting 11 cases of Income_1 = 0 and 7 cases of missing Income_2) and another with only those who worked on agricultural sector before (18 samples), were run for better understanding of the effects of those factors on the income of farmers in particular and local workers in general.

Thirdly, the change in worker skill was revealed based on the criteria of the percentage of respondents receiving training from JVAT and the percentage of respondents wishing to apply that knowledge for their own production (including specific reasons for not applying). Afterwards, the logit regression model was applied to identify which factors (including Sex, Age, Education,

Income_1, Work Period, Income_2) affecting the respondents' decision in skill applying. Along with the model, marginal effect showing not only the direction but also the magnitude of the relation was also calculated. Since the dependent variable – skill apply – is a dummy variable (0 = No/Not sure, 1 = Yes), logit model is more suitable to measure the relationship between variables than the OLS regression model. However, OLS was still run as a demonstration of the basic regression model and basic sign of the relation among variables.

Finally, using the workers' judgements on JVAT's strengths and weaknesses as well as their overall satisfaction and recommendations collected during the survey, OLS regression, logit regression (for JVAT's strengths and weaknesses) and ordered logit regression (for workers' satisfaction degree) were run to clarify how worker's characteristics (Sex, Age, Education, Working Period, Income_2, and Income Difference) affect their working satisfaction and dissatisfaction. During the survey, the respondents were asked to evaluate their satisfaction using 5 scales from 1 – very dissatisfied to 5 – very satisfied; as well as to write down any judgements they have towards JVAT (strengths and weaknesses of JVAT). These opinions, later on, were classified into 4 groups of issues: Working Environment (working style, colleague relationship, communication, working facilities ...), Administrative Issues (labor management, salary system (policy-related issues) ...), Technical issues (production procedure, usage of fertilizers ...), and No opinion. To be able to run logit model, these data of judgements was reformed into dummy variables, taking the value of 1 if the person's opinion belongs to that group, and the value of 0 for others. After that, once again, marginal effects were figured out for the latter two models (since in OLS, the coefficients are also the marginal effect value) for better interpretation of the result. These data, adding the interview information from JVAT and Authority side, are the answer for the latter objective of identifying project's constraining factors and raising suitable recommendations to JVAT as well as Japan agricultural FDI development and local contribution.

Nevertheless, when applying above methods, one limitation of the research is the small sample size, which may affect the result significance and robustness.

5.3. Data analysis

5.3.1. *Chrysanthemum Productivity*

- Lam Dong

As in case of chrysanthemum, planting density depends on the season and the characteristics of each variety. In Lam Dong, farmers are advised to plant at the density of 55000-60000 plants / 1000 square meters (m²) (the gap is 10 x 14cm or 12 x 14cm) for single flower bud varieties and at the density of 45000-50000 plants / 1000m² (the gap is 10 x 16cm or 12 x 16 cm) for multiple flower buds varieties (Lam Dong Plant Protection Sub-department, 2015).

In reality, Da Lat city, which accounts for 83.89% of the total chrysanthemum area in Lam Dong, achieves an average yield of 450 -500 thousand stems / ha.

- JVAT

At the moment, the productivity of JVAT also stands at around 500,000 stems / ha, meaning that they are planting at the density of around 50,000 stems / 1000 m², which is also similar as local production.

5.3.2. Chrysanthemum Quality

5.3.2.1. The exporting percentage out of the total production volume

To be able to meet the exporting standards, besides the requirement in packaging, the minimum weight of exporting flower (type A: 500 gram; type B: 400 - 499 gram) must also be higher than that of those for domestic consumption (type A: 250 gram; type B: 200 - 249 gram) (The Agriculture and Rural Development Department of Lam Dong). Moreover, to prevent the entry and spread of diseases and pests from foreign countries, Japan has imposed the Plant Protection Act which mandates the inspection of plants imported into this country, including cut flowers. Accordingly, the importer must promptly submit the Quarantine Certificate issued by the competent Government agency of the exporting country. In addition, the goods also needs to be checked again at designated certain ports of entry for plant imports which are equipped with plant quarantine facilities in Japan (JETRO, 2011). Due to such strict exporting requirements, especially into the highly demanded market like Japan, the exporting percentage out of the total production volume can be one of the criteria in showing and proving the product's quality.

- Lam Dong

In the period 2010 – 2014, there has been a gradual rise in both flower export value and volume of Lam Dong province. In 2015, although the export amount reaches the peak at 250 million stems, the revenue drops slightly by nearly 2.7 million USD to stand at 26 million USD.

Although the cut flowers production area and production volume of Da Lat – Lam Dong – one of the flower growing centers of Vietnam – makes up 40% and 50% of the total number of the country respectively, around 89.3% of its products is still consumed domestically. Despite the annual increase of over 15% of the flower production, the export of Da Lat - Lam Dong has just fluctuated around 10% (The Sciences and Technology Department of Lam Dong, 2016).

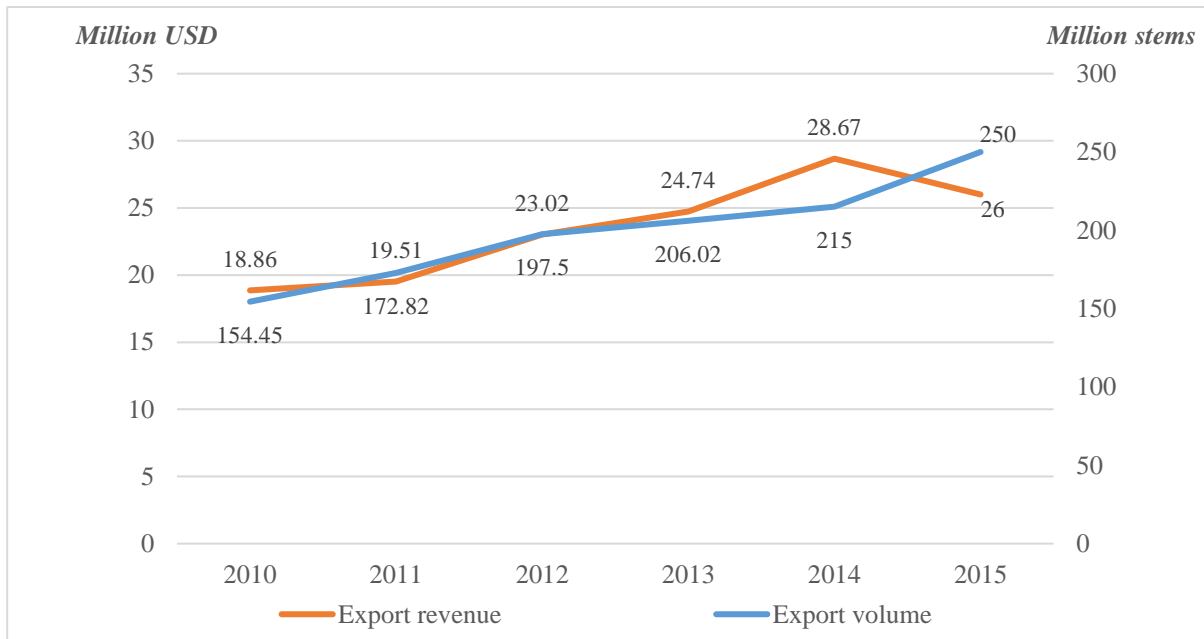


Figure 19: Flower Export of Lam Dong in 2010 - 2015

Source: The Sciences and Technology Department of Lam Dong, 2016; Lam Dong 2015 Statistical Yearbook, 2016

On the other hand, excepting for some domestic companies having good ability of exploiting market, the majority of the flower export of Lam Dong is contributed by FDI enterprises.

In recent years, promoting the province's export has been one of the central missions in Lam Dong development plan. Among the 2016 socio-economic goals of Lam Dong, the province has targeted to increase the total exports by 14.6% comparing

to that value of 2015. In particular, the local Government aims to boost the exports of its major agricultural products, including but not limited to tea, vegetables, flower,... Until 2020, the Flower industry of Vietnam is striving to widen the flower production area to 22,000ha with a total output value of 450 million USD, in which exporting value reaches 100 million USD.

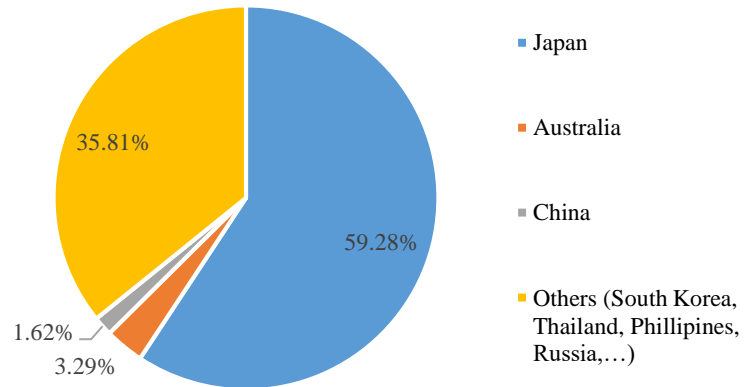


Figure 20: Flower Export of Lam Dong by Country in 2015

Source: The Sciences and Technology Department of Lam Dong, 2016

- JVAT

Due to local cheap selling price, JVAT started exporting its products to Japan in 2011 and has kept improving the quality to raise the exporting percentage to 100% from 2015 to this demanding market.

5.3.2.2. *Production value per cultivating unit (hectare)*

- Lam Dong

In Da Lat – the biggest flower producing area of Lam Dong with more than 95% of Chrysanthemum cultivated in greenhouse, the annual output of 900 million stems generates the revenue of 300-500 million VND / ha /year (approximately 14,120.3 USD – 23,534 USD) (Lam Dong Plant Protection Sub-department, 2015).

Especially, in the local context of unstable and downward selling price, high technology application in production not only improves the product quality to meet the stable "premium" demand of the domestic and foreign markets, but also increases the product value to many times comparing with conventional production. Particularly, the revenue of production area applying high technology is twice as high as the average value of the whole province. Accordingly, with high-qualified chrysanthemum, farmers are able to get an average revenue of 800 - 1,200 million VND / ha / year (approximately 37,654.2 – 56,481.2 USD) (The Sciences and Technology Department of Lam Dong, 2016).

- JVAT

In 2014, with the total land area of nearly 12.6 ha, JVAT made the total revenue of 8.044 million USD (under the exchange rate: 1 USD = 21,246 VND, validating on December 30th, 2014) (Planning and Investment Agency of Lam Dong, 2015), which means that the production value per hectare of the Farm reached 638,412.7 USD.

5.3.2.3. Export value

- Lam Dong

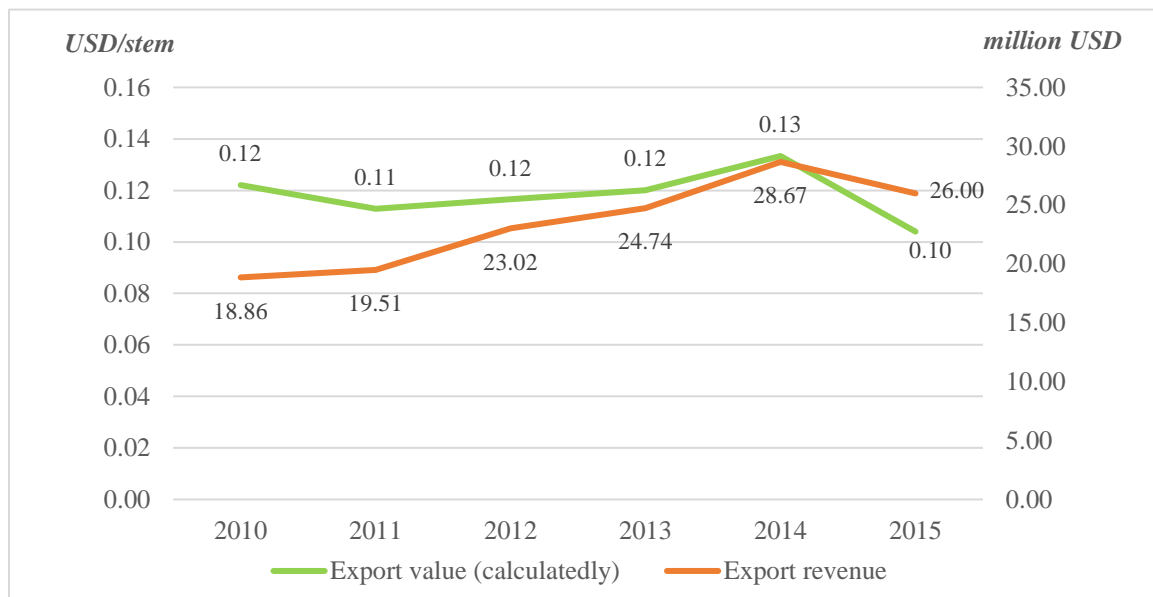


Figure 21: Flower unit export value of Lam Dong in 2010 - 2015

Source: Sciences and Technology Department of Lam Dong, 2016; Lam Dong 2014 Statistical Yearbook, 2015

One of the biggest problems of local production in general and chrysanthemum in particular is the unstable quality. Because of this weakness, both flower export volume and value of the Province are still far from its potential and the Government's expectation.

In 2014, chrysanthemum imported from Vietnam were traded at the price of 29 yen / stem (approximately 0.26 USD/stem) on the wholesale market of Tokyo, which was just half of the price of flower grown in Japan and 30-40% lower comparing with the imported chrysanthemum from Malaysia and China.

- JVAT

Until 2015, in comparison with Japanese products and the requirement of Japanese customers, the product of JVAT is still of middle quality level. At the moment, JVAT's selling price in Japan is lower by around 10% than Japanese high-qualified products. On the other hand, besides the difference in flower quality, when exporting products to Japan, taking the advantages of the well-developed distribution and supply chain management of the current flower business of the headquarters in Japan, JVAT can enjoy the much higher price at the intermediate wholesale market and even at the global market outside of Japan, comparing to the selling price of Vietnam's domestic firms.

Calculatedly from the data of JVAT's production value per ha, which reached 638,412.7 USD in 2014, and the Farm's productivity of around 500,000 stems per hectare, the average value of its flower stands at 1.28 USD / stem.

5.3.2.4. Diseases and Insects Control

- Lam Dong

In Lam Dong, Chrysanthemums are cultivated all year round under the mild climate, which is the suitable condition for the development of many harmful insects and diseases. In particular, some typical insects such as Red Spider, Thrips, Cutworm, Bug, Leaf Flies; as well as some typical diseases including White Rust, Wilting, Foot leaf shedding, Nematodes ... are the ones that frequently appear and cause damages on local Chrysanthemum.

In dry season (average outdoor temperature: 14,7-19⁰C, relative humidity: 80-85%), those sap-feeding insects (Thrips, Red spider, Fly) usually grow fast in density and damage degree on Chrysanthemum as well. According to the results of the survey on May 1st, 2015 conducted by Lam Dong Plant Protection Sub-department, the average density of some insects is as follow: 8-10 Red spider / leaf; 5-7 Thrips / branch; around 15-20% of the leaves was damaged by Leaf Flies; other 15% of the leaves was ruined by White Rust, about 3-5% of the whole plants was affected by Fusarium (one kind of Wilting). Moreover, although it is not too serious, some diseases such as Black Spot, Yellow / Shedding leaves, and even Bugs also appeared scattered in some gardens. Especially, many Chrysanthemum growers reflected that they have had difficulty controlling those pests inside the soil that cause Wilting and Foot-leaf Shedding.

Recently, diseases and insects on Chrysanthemum tend to increase both in scale and consequence, especially serious diseases such as Wilting or Foot-leaf Shedding.

- JVAT

At the first production stage, JVAT also had to suffer diseases (mainly White Rust) and insects (mainly Thrips, Leafminer, Cutworm, Aphid and Spider mite). Especially, it is more typical for White Rust to appear in winter season, and Insects also tend to increase between March and May (in the beginning of dry season).

However, until now, along with the increase in product export, JVAT can totally control the diseases and insects (nearly 100%)

Table 6: Productivity and flower quality comparison between JVAT's and local (Lam Dong) production

Criteria	Da Lat – Lam Dong	JVAT
Chrysanthemum Productivity (2015)	450,000 -500,000 stems/ha (<i>Lam Dong Plant Protection Sub-department, 2015</i>)	500,000 stems/ha (<i>Interview result</i>)
Chrysanthemum Production Value / ha (2014)	14,120.3 – 23,534 USD (<i>conventional production</i>) (<i>Lam Dong Plant Protection Sub-department, 2015</i>) 37,654.2 – 56,481.2 USD (<i>high tech applied production</i>) (<i>The Sciences and Technology Department of Lam Dong, 2016</i>)	638,412.7 USD* (<i>Planning and Investment Agency of Lam Dong, 2015</i>)
Export Percentage / Total Production (2015)	10.7% (<i>Lam Dong 2015 Statistical Yearbook, 2016</i>)	100% (<i>Interview result</i>)
Chrysanthemum Export Unit Price (2014)	0.26 USD/stem (<i>The Sciences and Technology Department of Lam Dong, 2016</i>)	1.28 USD/stem** (<i>calculated from the above data</i>)
Diseases and Insects Control	Still out of control (<i>Lam Dong Plant Protection Sub-department, 2015</i>)	100% (<i>Interview result</i>)

Source: Synthesizing from the data of the previous parts

638,412.7 USD: the accuracy of this datum has been confirmed again with the supplier.*

*1.28 USD/stem**: thanks to the available distribution network and marketing strategy, Japanese FDI Enterprises can enjoy much higher price selling products to Japan, comparing with Vietnam's domestic companies through the wholesale market.*

5.3.3. Worker Income and Working Skill

Out of the whole sample of 50 respondents, female accounts for 60%. On average, the respondents are in their early-thirties, having various background of previous jobs and education (from middle high school). Particularly, within 22 farmers (44% of the whole sample), nearly 95.5% is female and those with the education level of middle high school and high school are the majority (40.9% and 45.5% respectively). Besides, those farmers having the above education level also account for 90% and 63% respectively of the whole respondents having the same level. This also illustrates two characteristics of gender and education level of local farmers.

Table 7: Characteristics of respondents who work in farming sector

Sex		Average Age	Education				
Male	Female		1	2	3	4	5
1	21	34	1	1	1	10	9
4.5%	95.5%		4.5%	4.5%	4.5%	45.5%	40.9%

Table 8: Education level by Sex

	Male		Female	
1	6	30%	2	7%
2	6	30%	2	7%
3	6	30%	2	7%
4	2	10%	14	47%
5	0	0%	10	33%
Total	20	100%	30	100%

As can be seen from the above table of the difference in education level between male and female, the majority of respondents who own longer schooling years, including University or above (1), College (2), and Vocational College (3), is male, while female mainly have the lower education level of High school (4) and Middle high school (5). To be more specific, out of the total number of each gender, the percentage of male who gets the education level of (3) or higher and that of female who gets the education level of (4) or lower is 90% and 80% respectively. Therefore, it can be said that generally female gets shorter schooling years, meaning lower education degree, than male.

Coming to the difference in the income by gender, it seems like because of the fact that Male owns higher education level, thus tends to work in non-farming sector, than Female, the comparison by gender in average monthly income shows the remarkable higher by 2.7 million VND of Male (5.5) over Female (2.8).

Moreover, the survey reveals another feature of local Agriculture of fragmented and unplanned production: the average farming area of each farmer who has their own land is just around 6000 m²; 100% of them admitted that the stability of their product quality just reaches low to average level, leading to the very low to middle stability of income; half of these producers accesses necessary information of market via television or radio while 33.3% of them does not refer to any source during their production at all; moreover, not only in production, but these farmers also take a passive role in market distribution with nearly 89% of farmers sells products to middle man and 78% of them said that they do not have the power to decide or strongly affect the selling price.

On the other hand, the average working period at JVAT of the sample, including both farming and other non-farming groups, is 31 months (around 2.5 years). After joining, 80% of the respondents receives work training from the company, the other 20% includes 2 people of farming group and 8 people of non-farming one. Basically, it is more likely for the farming group to receive training than the non-farming group, in which the trained percentage of the former group reaches 93% out of the total 30 members, while this number of the latter one is just 60%.

5.3.3.1. Worker Income

- Income Stability

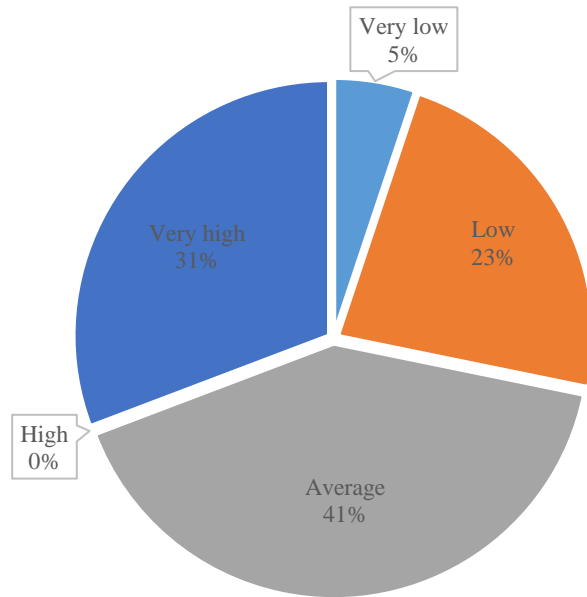


Figure 22: The stability of income before joining JVAT

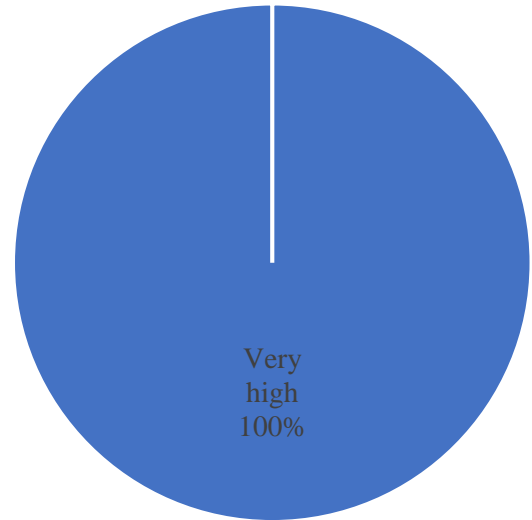


Figure 23: The stability of income after joining JVAT

Before working at JVAT, the income of the employees, especially those doing farming work, was in unstable condition. If the weather and other conditions (inputs' price, market demand and supply) are favorable, they can get significant profit, otherwise they have to suffer loss and other related difficulties in life. As shown in the Figure 22, 41% of the employees just got average degree of income stability, while 23% and 5% of the whole sample just get the low and very low degree respectively. On the other hand, the other 30.77% of the sample which is in very high degree of stability belongs to those people who do not work in agriculture sector and can get monthly salary.

After joining JVAT, regardless of the Farm's production and business condition, 100% of the employees receives monthly salary, meaning very high stability degree of income.

- Income Change

First of all, running the T-test with the sample of 43 respondents excepting 7 people of missing Income_2 data, I find that there is a significant difference between the income before and after joining JVAT of the respondents. For this case, since the Shapiro–Wilk test (Swilk test) is satisfied (the p-value here is bigger than 0.1, thus, the null hypothesis of normal distributed data is not

rejected), meaning that the Income Difference obtained for each subject is normally distributed, adding the sample size of over 40, it can be stated that for the nearly full sample size, the statistic result of T-test is proven to be robust. Typically, before working for JVAT, the average income of these people is 2.67 million VND, while this number after being JVAT worker is 3.83 million VND. It can be observed that averagely JVAT helps its employees earn an income difference of 1.16 million VND every month, which is found highly statistically significant at 1% level.

Nevertheless, as mentioned in the Estimation Method part above, the fact of including too many samples of having no Income_1 may affect the result of the T-test. To avoid this bias, another T-test and Wilcoxon test (due to the failure of the sample in meeting the assumption with the Swilk test and the size of just around 30) are run after excluding those ‘no Income_1’ people. Obviously, the mean values of both Income_1 and Income_2 are higher, standing at 3.59 and 3.91 million VND respectively. However, this time, the T-test finds no statistically significance in the difference of 0.33 million VND of the two income groups, meaning that although the calculation within the sample shows the positive difference, there is no concrete evidence of the increase in income of the local workers after joining JVAT. Yet, within the same sample, the Wilcoxon test illustrates the statistically significance at 10% level of the Income Difference of 0.33 million VND. In this case, since the result of the Wilcoxon test is said to be more believable, even removing the group of people having no Income_1 out of the sample, there is still statistic evidence, although it is not quite strong, that the income of local workers has been raised since they work for JVAT.

Equally important, not only the comparison between the two times, but the comparison between the current income (Income_2) of the respondents and the local Income per capita is also necessary to understand the significant contribution of JVAT in increasing the livelihood through the income level of local workers. Accordingly, comparing with the average income of 3.08 million VND of Da Ron Commune, both T-test and Wilcoxon test show the highly statistical significance at 1% level of the difference of 0.75 million VND. Nonetheless, when coming to that value of the whole Lam Dong province, which stands at 3.77 million VND, JVAT’s workers just earn a little bit higher by 0.06 million VND than the average revenue of local residents. Also, both models finds no statistical significance with this small difference.

Table 9: Comparison of “Income_1” (I1) and “Income_2” (I2)

	Swilk test (<i>Difference</i>)		T-test			Wilcoxon test	
	z-score	p-value	Mean_I1	Mean_I2	Difference	z-score	p-value
N = 43	1.05	0.15	2.67	3.83	1.16*** (3.71)	–	–
N = 32	2.18	0.015	3.59	3.91	0.33 (1.14)	1.65	0.098

Table 10: Comparison of Income_2 (I2) and Local income per capita

		Swilk test (Income_2)		T-test			Wilcoxon test	
		z-score	p-value	Mean_I2	Local	Difference	z-score	p-value
Da Ron	N = 43	4.59	0.000	3.83	3.08	0.75*** (3.6)	3.36	0.0008
Lam Dong					3.77	0.06 (0.31)	-0.51	0.61

**Note: t-statistics in parentheses*

p < 0.1; ** p < 0.05; * p < 0.01*

N = 43: without 7 data of “missing I2”; N = 32: without 7 data of “missing I2” + 11 data of “I1 = 0”

5.3.3.2. Working skill

As mentioned earlier, the farming group is more likely to receive training than the non-farming one, given that while only 7% of the former group has not been trained, this number in the latter one reaches 40%.

Table 11: Skill training

Receiving training		Training content		
Yes	No	All unknown	Some already known	All known
40	10	15	25	0
80%	20%	37.5%	62.5%	0

Since the training contents focus more on the usual farming skills of growing flower than the high technique ones, including the timing and the know-how of weeding, picking sprouts, or picking leaves, more than 60% of the trainees said that around 50% of what they have been instructed is not new to them.

Nevertheless, among five reasons for working at JVAT raised by the respondents, the number of people who choose the option of learning and enhancing farming skills just makes up 26% out of the total 50 respondents. Whereas, nearly 70% of the whole sample (34 out of 50 people) picks the option of increasing income to be one of their working motivations.

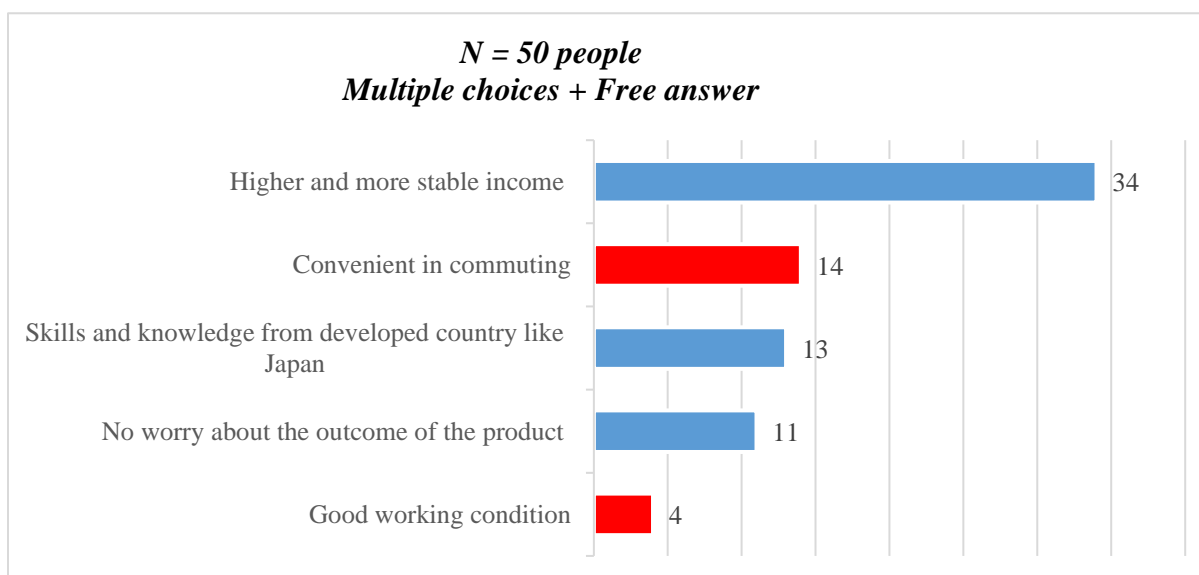


Figure 24: Reasons for working at JVAT

Noticeably, besides three expected working reasons that are written in advance for the respondents' reference (the ones in blue), it is quite interesting that the two unexpected reasons of convenient commute and good working condition (the one in red) were also raised by these people, the former of which even shares the second highest percentage within the total options, accounting for 28% of the whole population.

Table 12: Reasons for not applying new skills

Reason	Number of people	Ratio
Limited capital, facilities and production scale	10	62.5%
Limited information of inputs, outputs, and production technique	6	37.5%

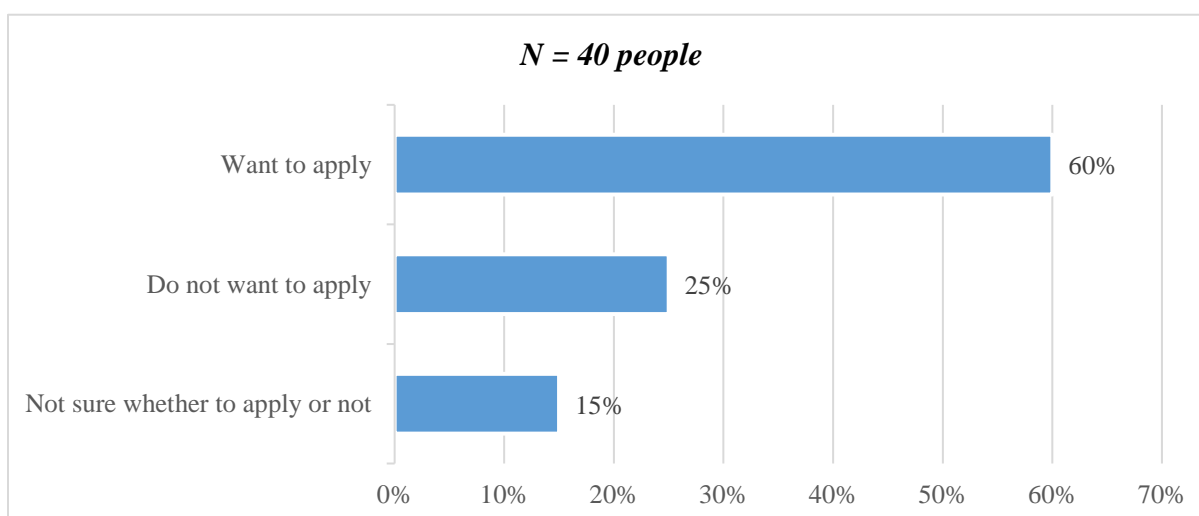


Figure 25: Whether or not worker wants to apply new skills into their production

More importantly, when being asked about the intention to apply these skills and knowledge in their own production, 40% of trained workers showed their reluctance to change their traditional working way.

5.4. Findings

Excepting the quite similar productivity, it is noticeable that JVAT's products own better quality than the average local flowers, proved by higher production value, export volume and export value, as well as better control of diseases and insects. Importantly, to be able to achieve such high export value, on one hand, high and stable quality is the key factor, on the other hand, it is crucial that the firm needs to build up the effective global marketing strategy as well as business and distribution network to enhance the competitive ability and promote the good trading in international market.

Regarding the role of JVAT in the income of local worker, on one hand, it improves the income stability of local people; on the other hand, it can be stated that the income of JVAT's employees is higher than both their previous income and the average level of Da Ron Commune, but there is still little concrete proof to declare that their income is also higher than that of the Lam Dong province. Besides, the lower income per capita by 0.69 million VND of Da Ron commune comparing with that average level of the whole province is one evidence showing the low economic development of this agricultural Commune in the region. Being the only Japanese Agricultural FDI project and one of the limited number of FDI projects here, the presence and operation of JVAT, along with its effectiveness in increasing workers' income, brings a more significant contribution to the socio-economic situation of Da Ron commune as well as its residents' livelihood.

Nevertheless, concerning people's acquiring new knowledge, there is little concrete evidence in the changing of workers on working style and mindset after working for JVAT. Particularly, the main obstacle refraining them from following new producing way is the perceived thought of needing huge investment, adding the fear of applying new method, and distrust in the effectiveness of JVAT's method. Basically, the main working motivation of local people is to get the monthly salary instead of learning the effective procedure, which affects significantly their decision of applying such new skill. Besides, excepting for the salary, people also highly consider the chance of being able to work near their house when choosing the working place. Thus, it will be more beneficial if the local Government can attract such FDI projects into the specific regions that are still under-developed of the province. By this way, it is easier for the local residents to settle down and stabilize in their own hometown, thus promoting the local economic and social development.

CHAPTER 6. DISCUSSION ON PROJECT'S PERFORMANCE AND SUSTAINABILITY

6.1. Reasons for the difference in flower quality between JVAT and local conventional production

To achieve such positive differences under the same conditions of nature and labor force, the following unique characteristics of JVAT production procedure in comparison with the local current conventional method are believed to be the key factors.

Regarding JVAT's production chain:

- It is very important to take good care of the mother plant, since if the mother plant is affected with disease, it is easy for the disease to spread across wide area.
- Regarding insects control, although JVAT uses the same products that can be bought locally, the Farm is following IPM process (Integrated Pest Management) to solve pest problems while minimizing risks to people and the environment. With this process, to deal with pest, instead of only using chemicals directly, the following major components also need to be considered and combined: Pest identification, Monitoring and assessing pest numbers and damage, Guidelines for when management action is needed, Using a combination of biological (using of natural enemies), cultural (reducing pest establishment, reproduction, dispersal, and survival), physical/mechanical (killing a pest directly or making the environment unsuitable for it) and chemical management tools (using of pesticides) (UC IPM, University of California Agriculture & Natural Resources). On the other hand, in the world, FAO also chooses IPM to promote as the preferred approach to crop protection and regards it as a pillar of both sustainable intensification of crop production and pesticide risk reduction. In the case of JVAT:
 - The greenhouse needs to be kept clean (no weed both inside and surrounding production area). Since weed becomes nest of many kinds of insect, weed control is the first and foremost step to control insect on crop. Besides, fly screen is also used to prevent insects from entering the greenhouse (cultural and mechanical tools)
 - Depending on the type of insect, insecticide needs to be selected suitably. Although JVAT uses the same product as local farmers, they take care of timing (using at the right time) and rotation (changing chemicals used) (Pest identification, Assessing damage, and chemical tools).
- Besides insect and disease control, it is also critical to control day length (by using blackout curtain to adjust light period around 11 – 12 hour when the plant starts to make flower), and temperature (by heating inside the greenhouse).
- As for soil treatment, sometime JVAT use Methyl bromide (the same chemicals as local farmers) to kill disease and Nematode. However, according to the Montreal Protocol on the

Substances depleting the Ozone Layer, Methyl bromide is one of the chemicals appearing in this list. Therefore, nowadays, it cannot be used in Japan and most of the world. Since Vietnam has joined the Protocol and processed to completely eliminate the use of Methyl Bromide excepting for quarantine purpose from January 2015, in near future JVAT will use other chemicals (Basamid, D-D, chloropicrin ...) that are being used in Japan instead of Methyl Bromide for soil treatment.

- While pre- and during-production process greatly affects the flower's quality, post-harvest treatment play an important role in maintaining such high quality and value until the products reach to the customers.

- At JVAT, flowers are harvested from 7am to avoid high temperature.
- Right after harvesting, flowers are classified by weight (including 2L, L, M, S ...), then put into bucket for water uptake. At the moment, since the water used for this stage is underground water, JVAT also mix it with a suitable chemicals amount (sodium hypochlorite) to sterilize the water.
- The process of water uptake then lasts at least 4 hours in the refrigerator.
- It is significant to notice that fertilizer and water uptake can effect flower's self-life after harvest. For example, if the flowers are provided too much nitrogen during cultivation, their size will become bigger, but it is also easier for them to wilt after harvest. On the other hand, if too much water is provided, the root will rot, but if the water is not enough, the plant cannot take enough nutrient, which shortens its self-life.
- After all, the flowers will be packed 10 stems to the bunch before putting into the box. By sea shipment exporting, after 10-14 days from harvesting, the customers will receive the goods.

To conclude, to be able to achieve and maintain high product quality, the key factor is not really necessary to be modern and expensive technology, but it is the high attitude of creating product good quality and the carefulness in every small task. Thus, knowing how to do is not enough but farmers need to understand the importance of every steps as well as thoroughly conduct it, which is also the principle for success of JVAT and the way Japanese farmers work.

Meanwhile, the shortages of local conventional production in not only facilities but also growing technique and experience significantly limit product quality and productivity.

The survey of the Sciences and Technology Department of Lam Dong in 2015 indicated that the cultivation scale of the majority of Lam Dong's flower farmers is below 5,000 m². As a result, the application of high technology as well as production mechanization is still limited, which reduces the productivity and quality. Specifically, up to 90% of the greenhouse is built with bamboo frame, 60% of the farmers just exchange experiences with each other, and more than 70% of the using seeds comes from self-growing seed or purchasing at small retailed stores. About 98% of the survey's farmers hasn't applied fertilizer supply through irrigation systems, over 70% of them does

not collect the package of plant protection products after using. Moreover, skilled labor force is also limited, in which flower farmers (mainly rose and gladioli farmers) who have experience of 5-10 years just account for 31.4%, those with over 15 years of experience make up 37.2%.

Regarding pest control, the majority of farmers just base on their custom and experience, which leads to the inadequate selection and use of pesticides (mixed variety, increase the dosage and periodic spraying is not following the instructions on the label). In addition to using a variety of pesticides, results of the survey in 2015 of the Lam Dong Plant Protection Sub-department showed that 100% of the farmers often mixes 2-4 kinds of pesticides for one spraying time, 85% of them increases dosages of drugs used regardless of technical recommendations, and 80% of the farmers sprays pesticides periodically (which can make the chemicals become useless with pests).

According to the survey conducted by the Economic Chamber of Da Lat in 2015, local farmers still do not pay enough attention to the maintenance and post-harvest stage, which degrades remarkably flower quality and commercial value as well. Particularly, only 54.28% of the flower grower classifies products by quality after harvest (due to the fluctuated selling price, they usually gather flowers of low and high quality together, leading to the significant decrease in commercial value of chrysanthemum), while only 5.7% of household goes through the post-harvest process, which can help lengthen the life of chrysanthemums from only 4-5 days to 10-15 days, before selling to traders. In addition, the percentage of farmers who maintain Chrysanthemum in clean water after harvest is only around 5%, which leads to the quality loss of 15%. Besides, excepting the only 8.57% of the farmer producing under contract, most of the farmers often sell products to middleman basing on the loose and unstable relationship between them.

6.2. Factors Affecting Worker Income

Regarding the **previous income**, the result of the regression model run with the full list of independent variables, including *Sex*, *Age*, *Job*, *Edu*, only shows the statistical significance of *Sex* at 5% level, meaning that Male can earn more by 2.56 units than Female. However, when other models are run on the variables of *Job* and *Edu* separately, the highly significance at 1% level is found for many categories of both factors. Specifically, people who are workers or traders tend to have higher income by 2.47 and 3 units respectively than those being farmers; the respondents with the education level of *High school* (4) and *Middle High school* (5) are highly likely to earn less than those with *University* level by 2.73 and 2.89 units respectively.

As for the **current income**, the variables of *Job*, *Edu*, and *Work period* are found to be the strong explaining factors of the respondents' *Income_2*. Typically, in term of *Job*, those people who were workers or traders in the past are likely to get higher salary from JVAT by 1.13 and 2.09 units than those whose previous job is farmers, which is found statistically significant at 10% and 1% level, respectively. Besides, comparing with the group of *Education* level 1, the lower education groups

of 2, 3, 4 and 5 all decrease the income of the employees by 1.25, 1.18, 1.09, and 1.15 units respectively, which are all significant at 5% level. Last but not least, being significant at 1% level, 1 month more of working at JVAT is highly likely to raise their salary up by 0.04 unit. Similarly, when running regression separately, the variables of *Sex* and *Income_1* are found highly significant at 1% level despite their insignificance at the first combining model, meaning that Male is highly likely to receive higher salary than Female by 1.92 units, and each unit increasing in the worker's previous income associates with 0.27 unit increasing in his/her current income.

Since Male tends to have higher education level, thus, work in non-farming sectors and earn more than Female, it is quite understandable that these independent variables control each other, leading to the result of their changing from significant to insignificant in the full model.

To sum up, since the features of people in each group (farmer, worker or trader) are quite similar, little statistic evidence is found in pointing out which factors affect local people income. Though, generally, the analyzing result indicates that Male, associating with *higher education* and *non-farming career*, earn more than Female. Similarly, those factors of *Education* and *previous Job* are also found to affect the salary of JVAT's workers in the same direction with more concrete statistic proof. Especially, since JVAT has the policy of raising salary basing on the working period (experience) of the workers, besides the above common factors, the current *Income_2* level of the respondents is also strongly affected by the variable of *Work period*.

On the other hand, the result of the regression model on the *Income Difference* with the sample including all available respondents illustrates that the *previous non-farming job* and *higher education level* have positive impacts on their potentials of getting higher income after joining JVAT, which is statistically significant at 10% level. Meanwhile, for farmers, at 10% level, some characteristics of *Gender*, *Info Channel* and *Price maker* are shown to have the explaining power in their *Income Change* before and after working for JVAT, in which those farmers who can be active in collecting market information and deciding product selling price may enjoy bigger change in income.

Table 13: Factors affecting worker income

	Income_1			Income_2			Difference	
							Farmer	Full
Sex	2.56**			0.52	1.92***		5.45*	-2.71
	(2.30)			(1.19)	(5.66)		(2.51)	(-1.51)
Age	0.01			-0.02			0.14	-0.02
	(0.32)			(-1.33)			(1.18)	(-0.53)
Job								
1 - base								
2	-1.16	2.47***		1.13*				3.74*
	(-0.79)	(4.80)		(1.95)				(1.83)
3	-0.47	3***		2.09***				4.11*
	(-0.33)	(3.75)		(2.89)				(1.88)
4				0.43				
				(0.92)				
Edu								
1 - base								
2	0.21	0.13		-1.25**			-3.19	-2.04*
	(0.26)	(0.15)		(-2.41)			(-1.29)	(-1.74)
3	-0.87	-0.86		-1.18**			0.49	-1.16
	(-0.99)	(-0.98)		(-2.52)			(0.14)	(-0.93)
4	-1.76	-2.73***		-1.09**			-0.97	0.42
	(-1.62)	(-3.33)		(-2.62)			(-0.58)	(0.30)
5	-1.68	-2.89***		-1.15**			2.65	0.12
	(-1.53)	(-3.47)		(-2.53)			(1.18)	(0.09)
Distribution								
1 - base								
3							4.26	
							(1.16)	
4							2.65	
							(0.95)	
Info channel								
5 - base								
1							5.23*	
							(3.02)	
3							1.23	
							(0.65)	
6							2.75	
							(1.58)	
Price maker							4.90*	
							(2.47)	
Aream2							-0.0001	
							(-1.63)	
Income_1				0.13	0.27***			
				(1.41)	(3.09)			
Work period				0.04***			-0.07	0.03
				(4.51)			(-1.25)	(1.58)
Constant	3.91***	2.88***	5.5***	3.64***	3.21***	3.13***	-4.55	0.17
	(2.99)	(9.16)	(8.24)	(4.87)	16.60	(10.47)	(-1.70)	(0.11)
R2	0.58	0.46	0.47	0.81	0.44	0.19	0.96	0.40
Adjusted R2	0.47	0.43	0.41	0.74	0.42	0.17	0.75	0.15
N	39	39	39	43	43	43	18	32

*T-statistics in parentheses; *p < 0.1; ** p < 0.05; *** p < 0.01*

**Note: N = 43: without 7 samples of “No Income_2”*

N = 39: without 11 samples of “No Income_1”

N = 32: without those 18 samples

N = 18: the number of farmers who have their own farming land and their own production

Depending on different purposes, the list of independent variables is adjusted suitably; “blank space”: the variable is not included in the model

6.3. Factors Affecting Worker’s Decision of Applying New Skill

With an aim to discover the factors having impact on worker’s decision, both OLS regression and Logit regression models are run, in which OLS is used as a basic result suggesting any possible relation between variables before referring to Logit result for more rational statistical interpretation. In the two models, the dependent variable *Skill_apply* is reformed into dummy variable (referred as *Skill_apply**), taking two values: 0 for *Not apply/Not sure* and 1 for *Apply*, to be able to use Logit regression for more understandable and robust result.

Accordingly, the OLS regression result suggests that this decision of the respondents depends strongly on their *Education level*, as well as their *Previous and Current income*, which is in the direction that people with lower education level, lower previous income and higher current salary are more likely to apply new knowledge to their production. Moreover, once again, the result of the Logit model also shows the similar relationship between these variables. Typically, those employees whose *Education* stands at the third, fourth and fifth level are 52%, 27% and 71%, respectively, more likely to apply new skills than those with the highest education level. Besides, for 1 unit increase in the *Previous Income*, the applying possibility of the worker decreases by 22%. Meanwhile, for 1 unit increase in the *Current Salary*, the worker is 37% more likely to follow JVAT procedure for their own production. Remarkably, all the above impacts of the independent variables on the dependent of *Skill_apply** are found strongly statistically significant at 1% level. In addition, the very close predicted probability of both the two models, OLS regression and Logit, (0.58 and 0.56 respectively) comparing with the actual mean of the *Skill_apply** (0.6) of the sample demonstrates the goodness and the reliability of the models.

To conclude, although most of the training contents from JVAT are not too strange with local workers (farmers), the percentage of people who do not have intention to make use of them is still high. Interestingly, people with *lower educational background* seem to be more willing to try new methods if they believe them to be effective. Also, the *larger difference in income* that the worker can enjoy, the more likely that he/she is convinced to follow JVAT’s way of producing.

Table 14: Factors affecting worker's decision of applying skill

	Skill_apply*			
	Regression	Logit	Marginal Effect_Reg	Marginal Effect_Logit
Sex	-0.29 (-1.09)	-0.87 (-0.52)	-0.29 (-1.09)	-0.095 (-0.53)
Age	0.007 (0.48)	0.11 (0.88)	0.007 (0.48)	0.01 (0.91)
Edu				
2	1.56*** (3.34)	0 0	1.56*** (3.34)	not estimable not estimable
3	0.49 (1.50)	7.29* (1.81)	0.49 (1.50)	0.52*** (2.72)
4	0.36 (1.14)	4.72* (1.65)	0.36 (1.14)	0.27*** (3.07)
5	0.84** (2.40)	9.13** (2.37)	0.84** (2.40)	0.71*** (5.88)
Income_1	-0.16*** (-3.22)	-1.99** (-2.18)	-0.16*** (-3.22)	-0.22*** (-2.92)
Work period	-0.007 (-0.93)	-0.05 (-0.80)	-0.007 (-0.93)	-0.006 (-0.82)
Income_2	0.34*** (2.81)	3.38** (2.20)	0.34*** (2.81)	0.37*** (2.94)
Constant	-0.75 (-1.17)	-15.83* (-1.94)		
R2	0.46	0.49		
Adjusted R2	0.28			
Prob > chi2		0.0034		
N	36	34	36	34

Note: - For Regression: t-statistics in parentheses

- For Logit and Marginal Effect: z-statistics in parentheses

*- *p < 0.1; ** p < 0.05; *** p < 0.01*

- N = 36: without 4 samples of "No Income_2" within 40 samples receiving training; N = 34: excepting more the only 2 samples of having "Education = 2" within 36 samples (cannot be estimated due to the too small size)

Table 15: Predict Probability of the models

	Observation	Mean	Standard Deviation	Min	Max
Skill_apply*	40	0.6	0.5	0	1
Regression	36	0.58	0.34	-0.37	1.30
Logit	34	0.56	0.38	9.58e-06	0.98

Note: 9.58 x 10⁻⁶, or 0.00000958

6.4. Workers' Satisfaction and Judgements towards JVAT

6.4.1. Workers' satisfaction

When being asked to give out the subjective evaluation of their overall satisfactory degree on JVAT basing on the five-level scale, 50% of the respondents rates JVAT at the level 4 out of the total 5 degrees, which means working at JVAT highly lives up to their expectation. Besides, out of 50 workers, 15 people (30%) choose the score of 3, the middle level, concerning their working satisfaction, followed by 12% of people choosing the Low level and just the rest 8% picking the Very high level.

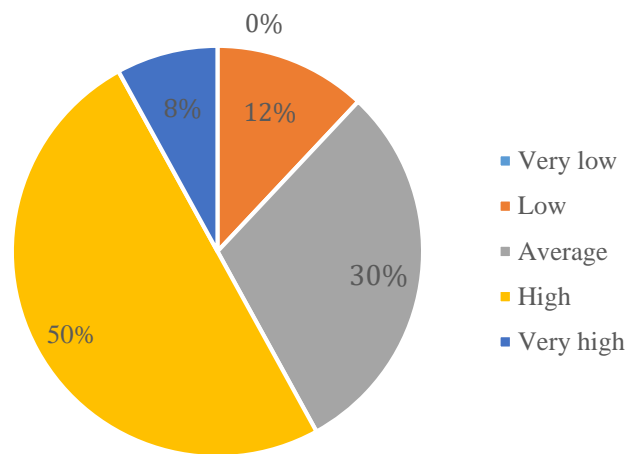


Figure 26: Worker overall satisfaction toward working for JVAT

Although all the analyzing results seem to prove that JVAT gains good achievements in not only bettering product quality but also improving workers' livelihood, the share of the group who just give the satisfaction score of 3 or 4 is more than 40% of the whole sample, which is still quite high. To reveal any possible explanation for this, the Ordered Logit model is run, along with the conducting of OLS regression for the purpose of reference and result strengthening.

Basically, the OLS regression suggests the weak statistical relation (at 10% level) between the *satisfaction degree* and *Edu_2*, *Work period*, and *Income Difference* in the direction that those people who have lower *Education* level (comparing with level 1), longer *Work period* and higher *Income Difference* will be more likely to be in higher degree of Working Satisfaction, meaning that they are likely to feel satisfied more with JVAT. These relations are also confirmed again in the result of the Ordered Logit model with stronger statistic evidence (at 5% level). However, due to the limitation of the data in meeting the model's assumption, the estimation in both direction and magnitude can only be conducted with the restricted list of independent variables including *Age*, *Work Period*, *Income_2*, and *Difference*, in which *Work Period* is the only factor that is statistically significant at 5% level. Particularly, with 1 month increase in *Work period* at JVAT, the worker's satisfaction degree is 0.4% less likely to be at the "Low" level, 0.8% less likely to be at the "Average" level, 0.9% more likely to be at the "High" level, and 0.3% more likely to be at the "Very high" one.

Table 16: Factors affecting Worker's Satisfaction toward JVAT

	Regression	Satisfaction					
		Full	Restricted	Ordered logit			
				Marginal Effect			
				Satis_2	Satis_3	Satis_4	Satis_5
Sex	-0.15 (-0.35)	-0.77 (-0.75)					
Age	0.005 (0.28)	0.001 0.02	0.003 (0.07)	-0.0003 (-0.07)	-0.0005 (-0.07)	0.0006 (0.07)	0.0002 (0.07)
Edu							
2	1.18* (2.02)	3.18** (2.07)					
3	0.74 (1.47)	1.92 (1.51)					
4	0.29 (0.57)	0.71 (0.54)					
5	0.07 (0.12)	-0.12 (-0.08)					
Work period	0.02* (1.86)	0.06** (2.10)	0.05** (2.26)	-0.004** (-2.01)	-0.008* (-1.90)	0.009** (1.97)	0.003* (1.70)
Income_2	-0.02 (-0.12)	-0.03 (-0.07)	0.02 (0.07)	-0.001 (-0.07)	-0.002 (-0.07)	0.003 (0.07)	0.0009 (0.07)
Difference	0.15* (1.90)	0.42** (2.08)	0.21 (1.21)	-0.02 (-1.15)	-0.03 (-1.15)	0.04 (1.16)	0.01 (1.09)
Constant	2.39** (2.60)						
R2	0.33	0.18	0.11				
Adjusted R2	0.15						
Prob > chi2		0.03	0.02				
N	43	43	43				
Predict Mean				0.14	0.29	0.48	0.10
Sample				0.12	0.30	0.50	0.08
Percent							

***Note:** *For Regression: t-statistics in parentheses*
 For Ordered Logit model: z-statistics in parentheses
 p < 0.1; ** p < 0.05; * p < 0.01*
 N = 43: without 7 data of “missing Income_2”

6.4.2. Workers' judgement of JVAT's weaknesses and strengths

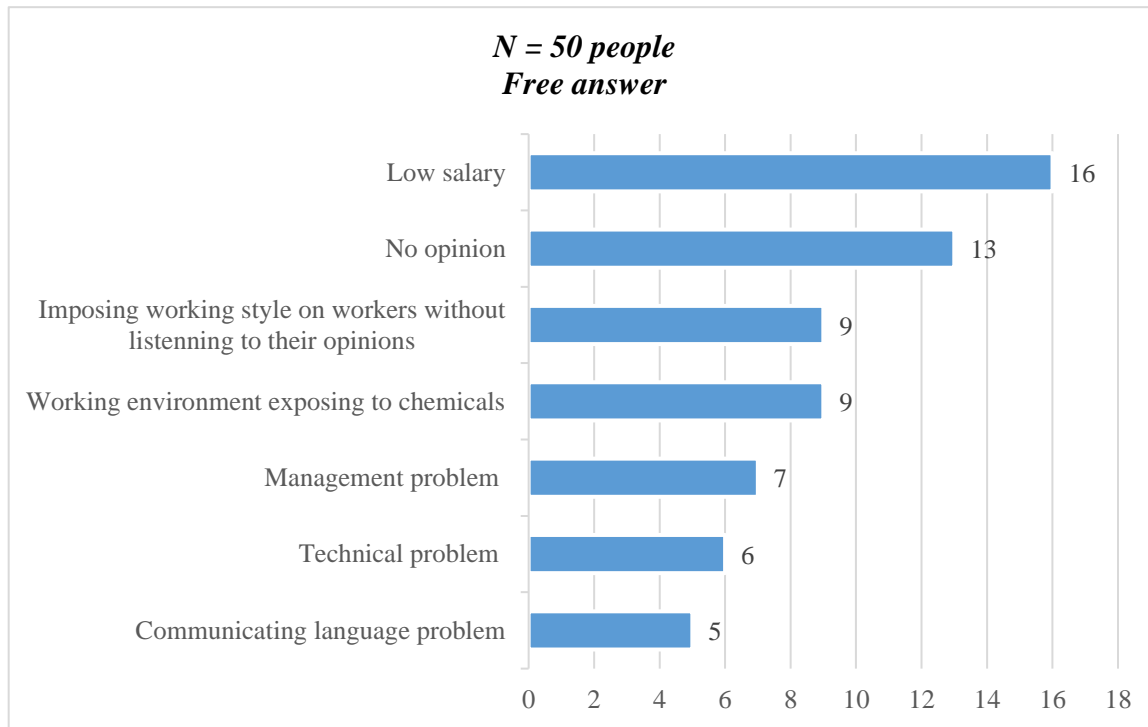


Figure 27: Weaknesses of JVAT according to employees

**Note: Management problem: slow/low salary increase system, unsatisfied human management*

Technical problem: problems in production procedure, or post-harvest maintenance procedure

The Figure 27 above shows all the respondents' opinions of JVAT's weaknesses recorded at the end of the survey. Correspondingly, although the statistical result reveals significant increase in the income of workers comparing with their previous situation as well as local level, still 32% of the whole sample (16 out of 50 people) complains about the *Low salary*. Particularly, yet these people express their appreciation to JVAT of being able to earn stable income every month, they said that such income level is not high but just satisfactory enough to settle down; and they can earn more with their previous job if everything is on the right track. Also, the matter of salary is mentioned again by 14% of the respondents in the *Management problem*, saying that comparing to other companies with salary being increased for every 6 months, the salary in JVAT is increased annually and the increase amount is not that high. Besides, the same percentage of people (18%) express their concern in the issue of harmful working environment inside the greenhouse due to agriculture chemicals (although JVAT does equip their workers with specialized tools for this purpose), and the issue of the opinionated working style of the Farm. Especially, these people demonstrate their dissatisfaction with the distrust of the Japanese engineer in local workers, as well as the lack of communication in production procedure. According to JVAT chief engineer, the flower quality varies greatly depending on the way workers conduct their job. Therefore, to ensure

the product quality, JVAT requires all the employees to follow strictly its own production procedure. Accordingly, even the Vietnamese assistant engineers cannot make any small change without asking for permission from the Japanese chief engineer. More importantly, since workers are asked to obey the procedure without clear understanding its necessity in ensuring product high quality, they tend to complain about other technical issue as well as decide not to apply the procedure for their own production. In addition, not only the production procedure, their lack of understanding in the Farm's developing orientation also makes them misjudge the effectiveness of the Company.

Concerning JVAT's plus points, once again, the majority of the respondents vote for the *Stability* (in income and in environment) to be one of the JVAT's features that lights up their working period here, accounting for nearly 50% of the sample. Typically, JVAT provides them with stable income, easy-going working environment, and convenient commute from their house to work. Many of these workers express their gratefulness to JVAT for being able to work near their house without traveling too much, which makes them feel comfortable and secure thinking about their family. Apart from those workers who judge the *salary* to be under their expectation, still 16% of the whole sample expresses their satisfaction in the *income and management system*, followed by the other praises of colleagues, directing board and facilities as well. Nevertheless, the technical strength of the Farm as well as the good chance of learning *new farming knowledge* is only raised by 14% of the employees.

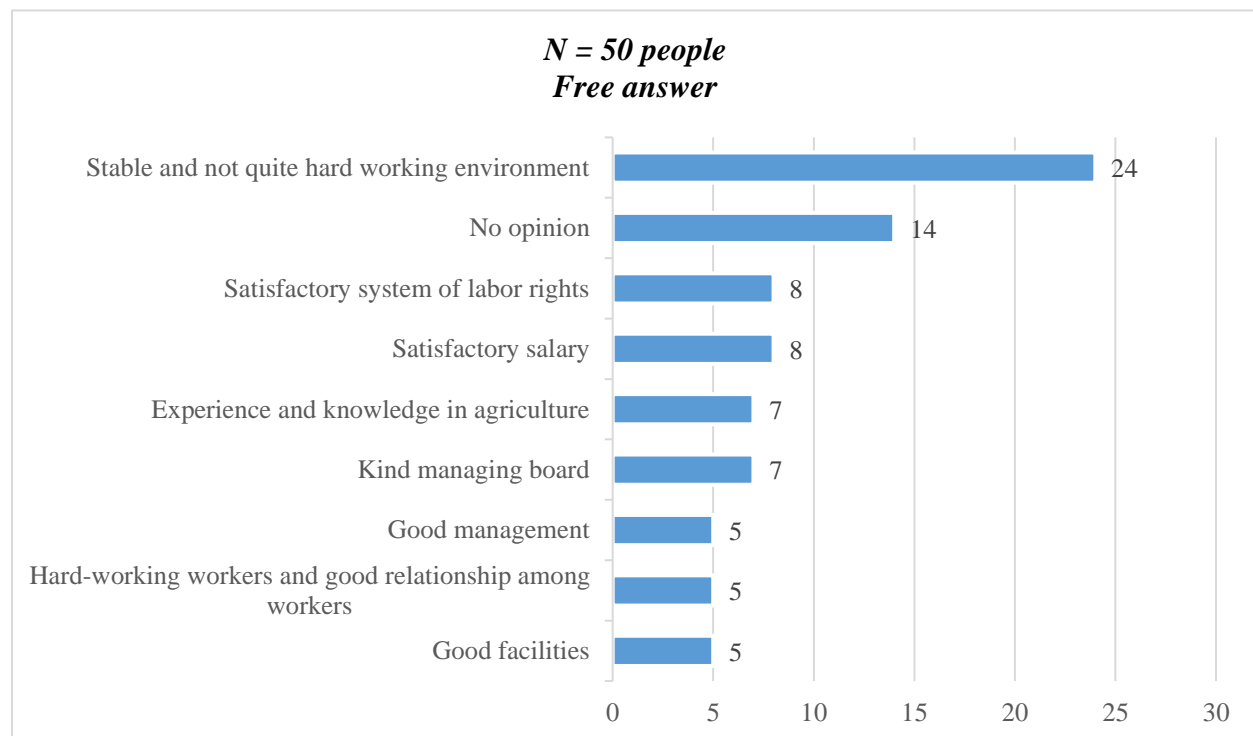


Figure 28: Strengths of JVAT according to employees

In order to discover how the specific characteristics affect those above dissatisfaction of workers statistically by Logit model, all of the opinions are divided into 4 groups:

- Group 1 - Working Environment: Communicating language problem, Working environment exposing to chemicals, Imposing working style on workers without listening to their opinions
- Group 2 - Administrative Issues: Low salary, Management problem
- Group 3 - Technical problem
- Group 4 – No opinion

As demonstrated on the Table 17 below, excepting for the group 3 of being not able to estimate (too few people) and group 4 of finding no statistical significance, for the group 1, 1% significant level is found in the marginal effect calculation of those factors of *Sex*, *Edu*, and *Income Difference*, along with the 5% level of *Income_2*. Specifically, Male is 85% more likely to dissatisfy about *Working environment* than Female; comparing with those people having University degree, the respondents who have lower education level are more likely to concern about this issue. In addition, those who receive *higher salary* and enjoy *larger change in income* are also more likely to focus on this group. On the contrary, people with these above characteristics are less likely to complain about the matter of salary and human management. Moreover, though there is little concrete evidence of the relation between *Work period* and these judgements, all the regression result suggest that the longer the employee works for JVAT, the less likely he/she feels offensive about either administrative or technical problems, the more likely he/she either concerns about the working style or has no special opinion on JVAT's weaknesses.

In conclusion, firstly, it cannot be denied that *salary* is the matter that attracts workers' attention the most, from being the main working reason with nearly 70% people choosing, to being one of the significant factors affecting workers' decision of applying new skills as well as workers' working satisfaction degree. Whereas, those people who have the *motivation of acquiring new skill* and improving their own agricultural production through working at JVAT is just the minority. Secondly, due to the annual change in salary and maybe better understanding through time, the *longer people work at JVAT*, the more likely they seem to satisfy with it. Yet, the problem of *communication* still constrains the employees accepting and following the producing method of the Farm, which is quite different from the conventional concept of local farmers. Last but not least, besides various judgements from the respondents, those people who *do not point out any opinion* also share the second largest percentage after those concern of salary, which illustrates the hesitation of local workers in expressing their own ideas.

Table 17: Factors affecting Worker's Attitude toward JVAT

	Weakness									
	Group 1			Group2			Group 3		Group 4	
	Reg	Logit	ME	Reg	Logit	ME	Reg	Logit	Reg	Logit
Sex	0.15 (0.69)	10.30* (1.95)	0.85*** (2.81)	0.12 (0.47)	0.89 (0.65)	0.16 (0.67)	-0.01 (-0.13)	-	-0.26 -1.09	-1.45 -0.93
Age	-0.007 (-0.74)	0.05 (0.49)	0.004 (0.50)	-0.008 (-0.65)	-0.05 (-0.83)	-0.008 (-0.85)	0.004 (0.83)	-	0.01 0.99	0.07 1.01
Edu										
2	0.47 (1.62)	21.08** (2.04)	0.28*** (2.68)	-0.69* (-1.91)	-4.13 (-1.63)	-0.63*** (-2.65)	0.34** (2.13)	-	-0.12 -0.37	-
3	0.29 (1.18)	20.77** (1.98)	0.26*** (3.49)	-0.39 (-1.25)	-2.23 (-1.30)	-0.38 (-1.64)	0.08 0.60	-	0.01 0.05	0.10 0.06
4	0.18 (0.73)	17.46* (1.88)	0.10** (2.57)	-0.22 (-0.69)	-1.48 (-0.87)	-0.25 (-0.99)	0.22 (1.58)	-	-0.18 -0.65	-1.09 -0.65
5	0.47* (1.70)	29.27** (2.04)	0.62*** (13.53)	-0.16 (-0.45)	-1.27 (-0.69)	-0.21 (-0.76)	0.16 (1.08)	-	-0.48 -1.55	-2.83 -1.40
Work period	0.005 (0.91)	0.08 (1.39)	0.007 (1.62)	-0.003 (-0.35)	-0.006 (-0.19)	-0.001 (-0.19)	-0.005* (-1.73)	-	0.003 0.43	0.01 0.30
Income_2	0.11 (1.25)	2.17* (1.76)	0.18** (2.28)	-0.10 (-0.96)	-0.76 (-1.05)	-0.14 -1.09	0.05 (1.13)	-	-0.06 -0.61	-0.39 -0.53
Difference	0.008 0.21	3.22* (1.92)	0.27*** (2.69)	-0.10** (-2.10)	-0.54* (-1.93)	-0.10** (-2.29)	0.02 (1.05)	-	0.07 1.65	0.45 1.36
Constant	-0.43 (-0.93)	-44.97** (-2.02)		1.48** (2.60)	6.21* (1.76)		-0.33 (-1.31)	-	0.28 0.54	-1.32 -0.37
R2	0.34	0.54		0.27	0.23		0.21	-	0.24	0.19
Adjusted R2	0.16			0.07			-0.004	-	0.03	-
Prob > chi2		0.003			0.14			-		0.34
N	43	43	43	43	43	43	43	-	43	39
Correctly classified			81.40%			76.74%		-		-

**Note: ME: Marginal Effect*

For Regression: t-statistics in parentheses; For Logit model and Marginal Effect: z-statistics in parentheses

p < 0.1; ** p < 0.05; * p < 0.01*

N = 43: without 7 data of “missing Income_2”

N = 39: for Group 4, since within the 7 excluded data of “missing Income_2”, there are 4 data of “Edu = 2”, the rest 4 data of “Edu = 2” are also eliminated from the model due to the too small size

6.4.3. Suggestions from workers for JVAT in the future

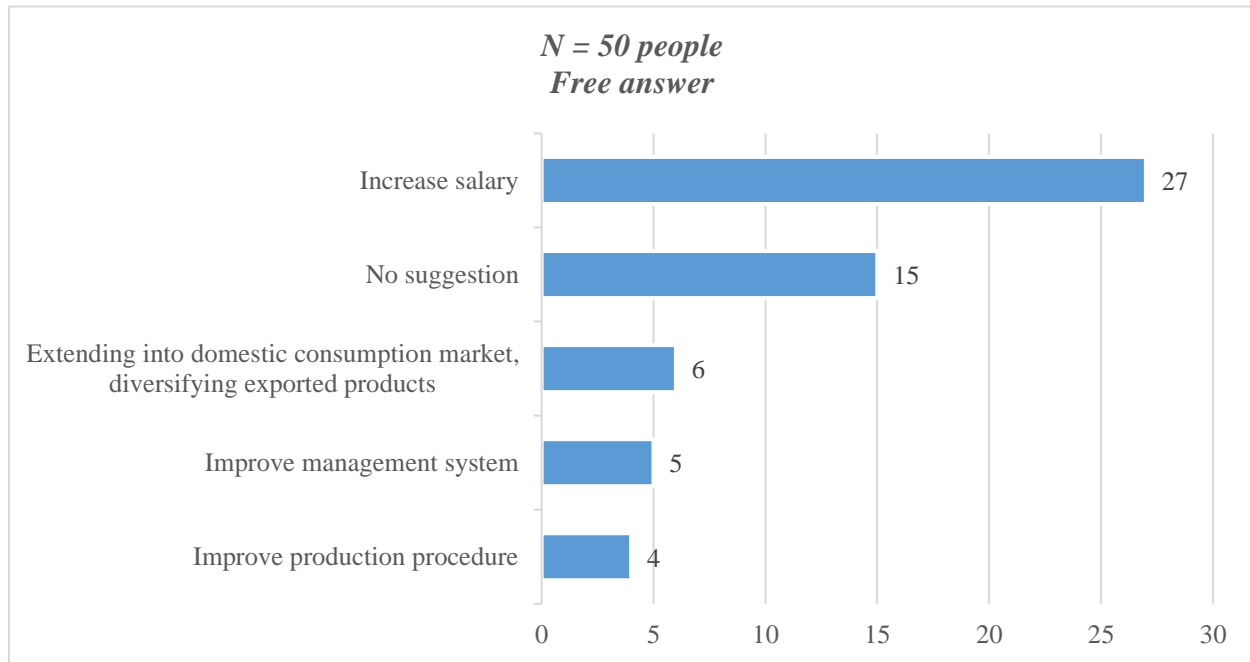


Figure 29: Workers' suggestions for JVAT in the future

Being asked to share any suggestion for the Company to develop in the future, 54% of the respondents raises the opinion of increasing salary, yet most of them also believes that the salary level will still be higher after the Company comes over the setting-up stage to operate stably. Once again, salary is confirmed to still be the major concern of workers. Especially, a fairly number of people hope JVAT to not only export flower oversea but also consume the product domestically, and not only focus on chrysanthemum but also broaden the Farm's products with other crops as well, which is expected to raise the Farm's profit. By doing that, these respondents express their expectation in the increase of the profit and the widening of the scale of the Farm in the future. Interestingly, the majority of these respondents derives this recommendation from imitating the operating model of other Agricultural FDI projects in the region, among which the Agrivina Ltd. (as known as Dalat Hasfarm) of those investors from British Virgin Islands seems to be the most popular one.

6.5. The Difficulties and Sustainability of the local contribution of Japanese Agricultural FDI under the viewpoint of local Government and JVAT

Although both local Government and JVAT share the same opinions on the local advantages of natural conditions and FDI incentives, as well as some existing disadvantages of complicated legal framework, the low working discipline and medium-skilled level of the labor force, there are still matters that show the contrast viewpoints between them.

Firstly, despite the effort of the Government in renovating the legal framework and administrative procedure, according to the representatives from JVAT, the Farm still has difficulty in the import and export procedure due to the unstable regulation. For instance, JVAT once could not import the necessary inputs for production due to the sudden change in the good's regulated name to be declared on the importing documents, which results in certain loss and troubles to solve the matter afterwards.

Secondly, while the local Government insists on the enhancement of the connection between the authority and foreign investors through various events to timely support and solve investors' problem, the managing board of JVAT reveals that only once or twice a year do they have meeting with authority agencies. Moreover, hardly can they receive timely respond from local Government whenever they have concerns or requests sending to such agencies. As a result, in such situations, it is better for the Company to actively look for solutions in one way or another, rather than waiting for the response of local Authority.

Thirdly, although it is officially expected that Japanese Agricultural FDI would play an important role in both the improvement of production capacity and the growth of local rural labor force, in fact, the analyzing results at JVAT can only prove its positive impacts on product quality and worker income, but due to several reasons coming from both sides, little concrete evidence is found on the matter of whether or not the Farm can make local workers change their mindset of working attitude and working style. Moreover, the current low localizing rate in the production chain of JVAT also raises the question of its possible spillover effect in the region, though this concern has not been given enough attention from the local Government. Particularly, although JVAT has tried to use local input (young plants) of Da Lat area before, its quality still did not meet the Company's requirement to be able to replace those materials imported from Japan. Besides, due to the cheap domestic selling price, although JVAT has plan to widen the producing scale in the future, the Company still does not have plan to consume flower domestically but keeps exporting 100% of its products to Japan.

Table 18: Opinion comparison between the Government and JVAT

Content	Local authority/Media	JVAT
Local advantages for Agricultural FDI	<ul style="list-style-type: none"> - Beneficial national and provincial policies to investors regarding tax, land hiring cost, and other supports - Cheap labor cost - Favorable natural condition to promote agriculture 	<ul style="list-style-type: none"> - Incentives from local Government (preparing production land, supporting fire protection activities of the Farm) - Cheap labor cost - Favorable natural condition
Difficulties constraining agricultural FDI project operation	<p><i>Host country (Investing environment):</i></p> <ul style="list-style-type: none"> - Shortage of clear agricultural land - Shortage of the public infrastructure and facilities (roads, water supply systems, wastewater treatment ...) - Difficulty in accessing production loans - Not timely updating related policy changes - Not timely solving investors' problems, especially those requiring coordination among agencies. - Shortage of high-qualified human resources <p><i>Investor (in general):</i></p> <ul style="list-style-type: none"> - Not totally understanding all the regulations relating to project implementation - Still bearing the intention of occupying land to transfer project for illegal profit 	<ul style="list-style-type: none"> - Shortage of legal framework (complicated and unstable administrative procedure) - Loose connection with local Government agencies, not timely solving investor's concerns and problems - Labor force: unstable quality, not quite high working discipline - Shortage of at sight high-qualified inputs (need to import from Japan)
Connection between authority and investors	<ul style="list-style-type: none"> - Companying with enterprises through meetings, discussions to timely solve their difficulties - Holding the program: "Discussion on administrative reform", broadcasted live on local media monthly - Holding extra meeting if needed 	<ul style="list-style-type: none"> - Once or twice a year (mainly discussing about land matter) like meeting with local residents - Not timely being updated with legal change - Not timely get answers from the Authority during the connection

Importance of Japan FDI in local agriculture and local economy	<ul style="list-style-type: none"> - Raising agricultural commodity value and land use efficiency, developing local agro-processing industries, and contributing actively to the socio-economic development of the province. - Creating a joint venture of producing - processing – distributing - Promoting the application of high technology in agricultural - Changing the awareness, working discipline, managerial capacity, and skills of workers 	<ul style="list-style-type: none"> - Improving product quality and product value through the introduction of the Japanese farming style - Contributing to the local economy as well as the stability of local workers' livelihood - Connecting the production to the market distribution stage - Little evidence in changing local people's thinking and traditional agricultural working style
Long-term developing plan	<ul style="list-style-type: none"> - Applying more incentives to support foreign investors - Conducting investment promoting programs (improve investment environment, supply information, complete public infrastructure ...) 	<ul style="list-style-type: none"> - Expanding the production in the future to be able to export the flowers by sea transportation for low cost - Continuing to supply high quality of flower with reasonable price to Japan and bring benefit to everyone
Localize the procedure, or distribute products locally	<ul style="list-style-type: none"> - Little literature is found in the issue of localizing agricultural FDI - High expectation of the great contribution of FDI enterprises to local agricultural exporting value as well as the supply of high-qualified products for domestic markets 	<ul style="list-style-type: none"> - Local input (young plants): having tried once but the quality is not good enough → import from Japan - Agricultural chemicals: using local products - Domestic consumption: since the unit price is so cheap, JVAT exports 100% of the flowers to Japan
Satisfaction degree with investment environment (1–5)	<No data>	Middle level (3)

Source: Synthesizing from interview data and official reports of local Governmental Agencies

CHAPTER 7. CONCLUSION

7.1. Conclusions

Understanding the importance of Agriculture in both economy and society of Vietnam, the Government has been paying specific attention and resources in developing this fundamental sector, including the effort of attracting more Agricultural FDI with an aim to overcome the existing drawbacks of the sector to build an industrial Agriculture with effectiveness production value chain. Vietnamese farmers, who are also the majority of Vietnamese population, still lead a harsh life with unstable and passive conventional production as well as lack of information and orientation, which is also shown through the characteristics of the sample and the negative relationship between these drawbacks of farmer and their monthly income. Among investing countries, Japanese investors, along with the experience in high-qualified Agriculture and the industrial working discipline, are expected to bring a new face to the sector, contributing to the process of building the international brands of Vietnam's Agricultural products.

- Objective (i)

The data collected from JVAT – one of the promising Japanese Agricultural FDI projects in Vietnam – show the positive performance on product quality under the similar productivity and the increase in the income of local workers, comparing with the local production and situation. Education background is proved to affect significantly to people's income both before and after working for JVAT in positive direction. Moreover, it is also undeniable that the Farm contributes significantly to stabilize local workers' livelihood through providing them with secure working place and monthly salary. Importantly, according to JVAT engineer, the key principle leading to this success of JVAT, which is also the working style of Japanese farmer, is the good attitude and the carefulness in every small thing with the aim of achieving the best quality and bringing benefit for not only the producers themselves but the customers as well. Besides, the success of the Farm in achieving the very high export value and production value in comparison with that amount of the local producers also puts an emphasis on the significance of distribution chain management and global marketing strategy in the process of supplying Vietnamese agricultural products to the world.

However, unlike the expectation of the host country in the upgrade of human resource, the possibility of changing working mindset and working discipline of local workers, as well as applying new skill into their own production is not so high. It is found out in the study that the limitation in learning motivation and understanding new knowledge is the factor that decreases this possibility.

- Objective (ii)

On the other hand, it is interesting to find out that the communication between the foreign investors and local workers at JVAT is not really good, indicated through the distrust of Japanese side in Vietnamese employees, especially in technical aspect, as well as the Vietnamese employees' distrust in the effectiveness of the production procedure and the unknown in the developing direction of the Farm. These disconnections is found to degrade the working motivation of people and their dedication to the Company as well.

Consequently, the decision to apply such new skill, as well as the working satisfaction of workers depends greatly on the salary they can get from JVAT and the working period here, since the longer people work at JVAT, the higher salary they can earn and the more likely they can deepen their understanding toward the Farm. Besides, the original working motivation as well as the main focus on the salary rather than the new knowledge and new production method of local workers also discourages them to try to acquire new knowledge and change their working mindset in such working environment. Noticeably, communication issue leaves different impact on people of different education background. Particularly, people with higher education tend to require more working mutual understanding, thus, they are less likely to apply new skill from JVAT.

In addition, concerning the local investing environment, despite the certain positive changes reported in official documents, it is still illustrated in the field survey result that the operation of the FDI project is constrained by the existing shortages, including unstable legal system, weak connection with the Governmental Agencies, under-developed internal ancillary industry, and the limited quality of labor force.

At the moment, the spillover effects from the Farm, including promoting high technology in Agriculture, raising local agricultural commodity quality and value chain, are still not clear enough due to the current low localization of the production chain and the loose connection between the FDI firm and local organizations in the region. However, since it surely takes time to clearly see the effects of such investment in changing the surrounding environment. Regarding the project's significant contribution in local Economy, and its expanding plan in the future, practical actions are indeed required to promote its development and its potential positive spillover effects in local area in long term.

7.2. Recommendation

7.2.1. For the Government

- Completing the legal framework following the simple and stable direction

As mentioned as one of the findings of the research, unstable and too complicated administrative procedure in the local seems to be the constraint that distracts the foreign investor the most from investing in those developing countries including Vietnam, especially investing into Agriculture sector which is highly prone to risks than others. When considering whether a host country is promising to pour the capital in or not, legal framework is always among the first concerns that are studied thoroughly by the Enterprises. Typically, under the local context, those related laws regulate the Company's operation and affect directly its performance. Therefore, a transparent and secure legal environment can help the investor to save cost, increase profits and, thus, encourage them to invest more in long term.

Despite the effort of Vietnamese Government in building up such advanced regulation system in general and investing law in particular, the high frequency of issuing new law and the complicated administrative system, combining with the delay in information display are still recorded as one of the complaints of foreign investors. Therefore, it is fundamental for the Government to invest more country's resources into this task for better achievement, not only in FDI attraction but also in the whole Nation's economic development. During this process, active support from the Authority in updating information and solving arising related problems is necessary to help foreign investors overcome the existing shortages and operate effectively.

- Enhancing the connection between local Authority and FDI Firms as well as the connection between the domestic and foreign Enterprises

The case study at JVAT indicates the fact that the contact degree between the two sides is still low regardless of those positive records in official reports and national media. Moreover, the speed of supplying data and solving requests from foreign investors of the local Authority is also criticized as being slow with frequent delay by the representatives from Investor's side.

Although Vietnamese Government has applied certain connecting forms including periodic meeting and conference in an attempt to accompany and timely support foreign Enterprises, it seems that the real implementation of the policy in provincial level does not really go close to what is expected from the Central Government, thus, does not achieve the expected effectiveness. Regarding this situation, the current important task of the Authority is to ensure the execution and the frequency of this policy in local areas through not only reports but also at-sight check and feedbacks from foreign investors. Especially, those crucial feedbacks from Enterprises can be collected both by email / post mail and telephone (hotline), through which the information security needs to be guaranteed. Besides, the content of these meetings also needs to be updated and follow the concerns of investors.

On the other hand, with a view to enhance more spillover effects of Agricultural FDI, it is also equally important for the Government to promote the contact between such FDI Enterprises and

domestic Companies in the same fields. The connection can be executed in the forms of conference, meeting or field observation. Such contacts can enable the experience and knowledge exchange between the two sides for production improvement and better operation, in which not only the FDI Enterprises are able to understand deeper local context including the features of labor force and conventional production, but the domestic Enterprises can also have chance to access with global working style and build international business network within the national boundary.

- Developing the rural infrastructure and ancillary industry

Along with legal framework, public infrastructure is also one of the primary factors that are considered by the investors when deciding to invest abroad. Especially in the sector of Agriculture, of which the location is mainly in rural area with limited conditions, the matter of infrastructure always gains special concern from foreign investors. Typically, the convenience in logistics relates significantly to the production, product distribution and, thus, profits of the Company. Therefore, the investment in public infrastructure in general and transportation in particular is among those urgent needs to open more developing opportunities in the future.

Besides, heading to promote the long-term contribution of FDI project in local region, developing advanced ancillary industry, such as fertilizers, agricultural chemicals, mother plants or other inputs, to meet the need of those foreign enterprises can be a step in the process of raising the localization rate of Agricultural FDI. Moreover, by providing such input materials, those domestic suppliers can upgrade their products to follow the global strict requirements, which later creates the developing wave to other industries as well. Yet, it is also important that the Government should have certain actions to support such domestic enterprises both financially and technically to achieve the developing target.

- Creating opportunities for young people with strong learning motivation to access with the working environment of Agricultural FDI projects

As shown through the result of this research, the motivation of learning new things plays a crucial role in the possibility of whether workers change their working mindset and want to acquire new knowledge after working at those promising FDI projects. In fact, since the majority of local farmers still lives a harsh and uncertain life, most of them just cares about the salary level when deciding to work at one company, including FDI enterprises, which refrains them from spending time and effort to learn useful new knowledge in that working environment. On the contrary, those people who have clear wish of experiencing and improving their skill seem to be more willing and pay more attention in acquiring things as well as apply it as much as possible in their own production. Therefore, basing on this findings, to be able to enhance the spillover effect of FDI projects on improving the quality of local labor force, it will be more advantageous if the local Government can gather groups of young local people (farmers) with strong motivation of learning

new skill and create opportunities for them to work in such FDI working environment. Afterwards, these people will become the pioneers in spreading those knowledge and effective working style, thus, enhancing the general level of local workers.

On the other hand, to promote the local farmers' motivation of learning and improving their production, it is also important that FDI firms in the region, including those from Japan, should be supported and encouraged to cooperate more with farmers in production. On the opposite side, to ensure the optimistic result of this work, local Government also needs to pay enough attention in the operation of those foreign firms as well as the capability and attitude of those local farmers. Through this kind of cooperation, under the instruction and supervision of the FDI enterprises' engineers, not only the working skill of labor forces can be sharpened directly in production, but the local agricultural production value chain can also be tightened from the first stage of cultivation to the step of outputs distribution and consumption, which is, in turn, expected to leave the positive spillover effects on the local domestic companies and the whole region.

7.2.2. For Japanese investors

From foreign investor side, regarding the differences in language, culture and working style, improving the communication inside the company is necessary for the sustainable operation and development of the FDI Enterprise under the local context of the host country.

The case study of JVAT shows that the weak communication and the distrust between foreign investors and local workers seems to be the serious factor that decreases not only the working satisfaction of workers but also their working efficiency and the overall achievement of the Farm. Typically, to ensure that there is no unexpected problem that can affect the final product quality, the directing board usually inspects strictly their workers' performance, which, however, turns into the distrust of the Company towards its employees. Moreover, instead of making the employees understand the production procedure and the developing direction of the Company, those foreign managers are more likely to force them follow the process without listening to their opinions or concerns. Besides, it is also found that the matter of improving the working communication is essential in raising the skill applying rate of local workers since the statistic result shows that people are more likely to apply what they have learned if they find it understandable and effective, especially with those of highly-educated background.

To be able to fulfill this goal, the connection can be held in the forms of periodic short meeting with all employees or casual parties, in which the working spirit of the Company can be transferred to its workers as well as the relationship among colleagues can get better. In addition, concerning the growing number of workers, it is better to organize them into small groups, which enables the directing board to timely grasp their necessary information, opinions and feedbacks as well for better management.

7.3. Limitations

The first and foremost limitation of this study is the small sample size, both in the number of the case study and the respondents of the questionnaire survey (one FDI project and 50 samples in total). Due to the restricted funding and the difficulty in accessing local data as well as getting permission to conduct fieldwork from local Government and projects' managing board, concerning the possible representative feature of each project, only one project – JVAT - was chosen as the case study. Such small scale of the research may not only lead to the inconsistency and biasness of the data quantitative analysis results, but also limit the possible findings derived from the comparison among projects.

Another limitation to be mentioned is the data collected method of the questionnaire survey. For this research, also because of the funding and access limitation, the survey was conducted at JVAT during both the working time and breaking time. Although the respondent was picked up and asked individually, concerning the shyness of local workers, the surrounding working environment may refrain them from revealing their true feelings or opinions, especially the ones asking for their judgements and satisfaction towards the Company. Therefore, regarding such possible data missing, conducting the questionnaire at private home should be a good way which enables more exact data exploitation and collection.

7.4. Future works

Due to the limitation of the case study, another research following the multiple case design with larger scale can be applied, which can help to overcome such mentioned limitations of the origin study for more convincing conclusions. Accordingly, the comparison between two or more Japanese FDI projects can make it possible for us to find out the common investing characteristics of Japanese investors for more effective investment attraction policies, as well as any specific difference between them that can lead to better performance of the Company. For instance, unlike JVAT that hires local workers to work for them in the Company's land, some other FDI projects cooperate with local farmers to produce in those farmers own land under the instruction and quality inspection of the Enterprise. Afterwards, depending on the quality, these products will be bought and consumed by the Company. In that way, a research working on both forms can discover whether or not one form can create more benefits and motivation for local farmers to change their traditional mindset and improve their production procedure. On the other hand, the research taking cases study at both FDI projects from Japan and other countries can also be another worth-taking direction in the future for understanding thoroughly the strengths and weaknesses of each side in local context, from which the solutions and recommendations are supposed to effectively enhance the performance and essential spillover effects of Agricultural FDI in Vietnam.

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APPENDIX I: TABLE OF DESCRIPTIVE STATISTICS

	Unit/Categories	Percentage (Categorical Var.)	Observation	Mean	Standard Deviation	Min	Max
Sex*	0 = Female	30 (60%)	50				
	1 = Male	20 (40%)					
Age	Years old		50	31.3	8.38	16	60
Education*	1 = University and higher	8 (16%)	50				
	2 = College	8 (16%)					
	3 = Vocational College	8 (16%)					
	4 = High school	16 (32%)					
	5 = Middle high school	10 (20%)					
	6 = Others	0					
Previous Job*	1 = Farmer	22 (44%)	50				
	2 = Worker	13 (26%)					
	3 = Businessman	4 (8%)					
	4 = Others	11 (22%)					
Area	Square meters		18	6127.78	6381.02	300	30000
Quality Stability*	1 = Very low	0	18				
	2 = Low	1 (6%)					
	3 = Average	17 (94%)					
	4 = High	0					
	5 = Very high	0					
Distribution*	1 = Middle man	16 (88.9%)	18				
	2 = Cooperatives	0					
	3 = Yourself	1 (5.6%)					
	4 = Others	1 (5.6%)					
Info channel*	1 = Television, Radio	9 (50%)	18				
	2 = Newspaper	0					
	3 = Internet	1 (5.6%)					
	4 = Local channel	0					
	5 = No	6 (33.3%)					
	6 = Others	2 (11.1%)					
Price maker*	0 = Buyer (Trader)	14 (77.8%)	18				
	1 = Seller (Farmer)	4 (22.2%)					
Income_1	Million VND		50	3.13	2.4	0	7
Income_1 Stability*	1 = Very low	2 (5.1%)	39				
	2 = Low	9 (23.1%)					
	3 = Average	16 (41%)					
	4 = High	0					
	5 = Very high	12 (30.8%)					
Work period	Months		50	30.78	19.58	3	72
Working reason*	1 = Higher and stable income	34 (68%)	76				
	2 = No worry about the outcomes	11 (22%)					

	3 = Skill and knowledge	13 (26%)		<Multiple choice>			
	4.1 = Convenient commute	14 (28%)					
	4.2 = Good working condition	4 (8%)					
Income_2	Million VND		43	3.83	1.37	2.5	10
Income_2 Stability*	Very high	50 (100%)	50				
Difference	Million VND		43	1.17	2.06	-4.5	5.4
Training*	0 = No	10 (20%)	50				
	1 = Yes	40 (80%)					
Skill Apply*	0 = No	10 (25%)	40				
	1 = Yes	24 (60%)					
	2 = Not sure	6 (15%)					
Plus*	1 = Working Environment	31 (62%)	72	<Multiple choice>			
	2 = Administrative issues	19 (38%)					
	3 = Technical issues	7 (14%)					
	4 = No opinion	15 (30%)					
Minus*	1 = Working Environment	21 (42%)	61	<Multiple choice>			
	2 = Administrative issues	21 (42%)					
	3 = Technical issues	6 (12%)					
	4 = No opinion	13 (26%)					
Satisfaction*	1 = Strongly dissatisfied	0	50				
	2 = Dissatisfied	6 (12%)					
	3 = Average	15 (30%)					
	4 = Satisfied	25 (50%)					
	5 = Strongly satisfied	4 (8%)					

Note: [Variable]*: categorical variable

Income_1: Monthly income of worker before working for JVAT

Income_2: Monthly income of worker after working for JVAT

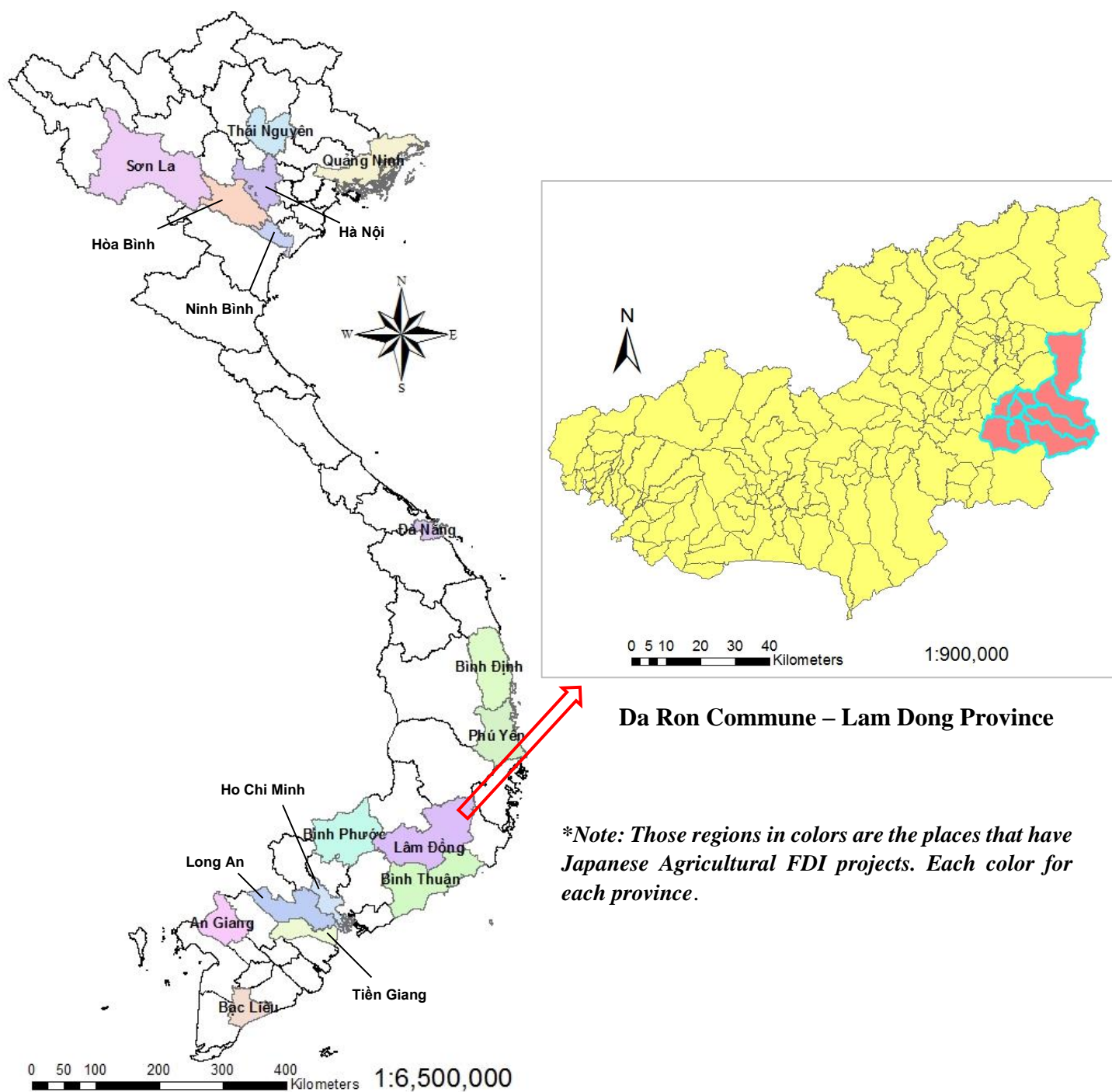
Difference: the change in monthly income of worker ($Income_2 - Income_1$)

(1) **Working Environment:** working style, colleague relationship, communication, working facilities ...; (2) **Administrative Issues:** labor management, salary system (policy-related issues) ...; (3) **Technical issues:** production procedure, usage of fertilizers

APPENDIX II

LOCATION OF JAPANESE AGRICULTURAL FDI PROJECTS IN VIETNAM BY PROVINCE

LOCATION OF JVAT PROJECT



APPENDIX III

FDI PROJECTS IN FLOWER INDUSTRY IN LAM DONG

No.	Project	Total registered capital (USD)	Investing country
1	Apollo company, Limited	30,000,000	Taiwan
2	Agrivina company, Limited	25,000,000	BVI
3	<i>Japan - Vietnam Agricultural Technological Farm company, Limited</i>	<i>10,000,000</i>	<i>Japan</i>
4	Inova Đa Lat Agricultural company, Limited	6,000,000	Taiwan
5	TFB Viet Nam company, Limited	5,830,000	Taiwan
6	Lam Dai vegetable seed company, Limited	5,275,000	Taiwan
7	Florama Viet Nam company, Limited	3,946,179	Taiwan
8	Hoa Truong Xuan company, Limited	3,000,000	America
9	Bonnie Farm company, Limited	2,500,000	Taiwan
10	Fusheng company, Limited	2,500,000	Taiwan
11	Viet Nam Thanh Cong company, Limited	2,000,000	Thailand
12	Samgong Farm company, Limited	1,900,000	Korea
13	Hung Nong company, Limited	1,500,000	Taiwan
14	Hoa Đa Lat VN joint stock company	1,360,000	Australia
15	Trieu Minh company, Limited	1,000,000	Taiwan
16	Đong Thang company, Limited	1,000,000	Australia
17	Hoa A Chau company, Limited	800,000	Japan
18	Anh Duong company, Limited	600,000	Taiwan
19	Nova company, Limited	600,000	Taiwan
20	Nhat Viet Dai company, Limited	500,000	Taiwan
21	Thiem Nhan company, Limited	500,000	Taiwan
22	K K Farm company, Limited	500,000	Taiwan
23	Organik Đa Lat joint venture company, Limited	300,000	Canada

Source: Lam Dong Tourism, Trade and Investment Promotion Center (TIPC), 2015

*Note: BVI = British Virgin Islands

APPENDIX IV

QUESTIONNAIRE FOR INDIVIDUAL SURVEY

Date:

Interviewer:

Objectives:

- To evaluate the effectiveness of JVAT on products' quality and productivity, its impacts on local workers income and working skill
 - To identify obstacles constraining the development and contribution of JVAT in local context
 - To suggest solutions not only for Project further development but also for its long-term contribution to local Agriculture, thus, the whole economy and society
-

I. PERSONAL INFORMATION

1. Sex: ☐ Male (1) ☐ Female (0)
2. Age:
3. Background education
 - ☐ Undergraduate and Graduate level (1)
 - ☐ College (2)
 - ☐ Vocational college (3)
 - ☐ High School (4)
 - ☐ Middle high school (5)
 - ☐ Others (6)

II. BEFORE JOINING JVAT

1. Occupation:

*** If you work in Agriculture sector, please answer from question 2. Otherwise, please skip to question 8.**

2. Working area
 - a. Total area (m2):
 - b. Varieties:

3. Product quality

a. The stability degree of product quality:

☐ Very low (1) ☐ Low (2) ☐ Average (3) ☐ High (4) ☐ Very high (5)

4. Product distribution method to the market:

☐ Middle man (1) ☐ Cooperatives (2) ☐ Yourself (3) ☐ Others (4) (.....)

5. Access channels to market information (multiple choice):

☐ Television, Radio (1) ☐ Newspaper (2) ☐ Internet (3) ☐ Local channel (4)
☐ No (5) ☐ Others (6) (.....)

6. Price decision maker: ☐ Buyer (Trader) (0) ☐ Seller (You) (1)

7. Monthly income (from main source):

8. The stability degree of income:

☐ Very low (1) ☐ Low (2) ☐ Average (3) ☐ High (4) ☐ Very high (5)

III. AFTER JOINING JVAT

1. Working period until now (months):

2. Reasons for joining JVAT (multiple choice):

☐ Higher and stable income (1)

☐ No worry about the outcome of the product (2)

☐ Skills and knowledge from developed country like Japan (3)

☐ Others (4) (Please specify:

.....
.....

3. Monthly salary:

4. Employee's skill training

a. Do you receive training after joining? ☐ Yes (1) ☐ No (0)

b. Regarding the training contents, how well do you know in advance?

☐ All the contents are new to me (1)

- ☐ Some of the contents I have already known (2) (Details:)
- ☐ All the contents are old to me (3)

5. Do you wish to apply these knowledge and skill for growing Chrysanthemum (or flower) at home?

- ☐ No (0) ☐ Yes (1) ☐ Not sure (2)

If your answer is “Not sure” or “No”, please specify the reason:

.....

.....

.....

6. Please write anything that you are NOT satisfied with JVAT:

.....

.....

7. Please write things that make you satisfied most with JVAT:

.....

.....

8. Your comment/suggestion in any aspects for JVAT operation and development in the future:

.....

.....

9. Your overall satisfaction towards working for JVAT:

- ☐ Strongly dissatisfied (1) ☐ Dissatisfied (2) ☐ Average (3) ☐ Satisfied (4)
- ☐ Strongly satisfied (5)

Thank you very much for your cooperation!

(The End of Questionnaire)